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A tenseless account of tensed sentences and tensed belief.

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A TENSELESS ACCOUNT OF TENSED SENTENCES AND TENSED BELIEF

A Dissertation Presented

by

STEPHAN V. TORRE

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A TENSELESS ACCOUNT OF TENSED SENTENCES AND TENSED BELIEF

A Dissertation Presented

by

STEPHAN V. TORRE

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

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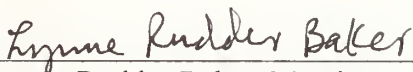
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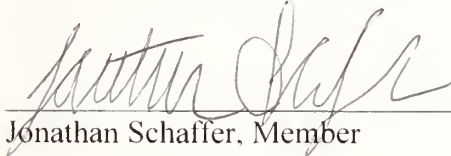
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ABSTRACT

A TENSELESS ACCOUNT OF TENSED SENTENCES AND TENSED BELIEF

MAY 2008

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In this dissertation I provide a tenseless account of tensed sentences and tensed belief. I begin by distinguishing *tensed* theories of time from *tenseless* theories of time. Tensed theories of time hold a) that there is a time that is objectively present and b) that the moment that is objectively present changes from one moment to the next. I reject tensed theories of time. I deny that there is a time that is objectively present that changes from one moment to the next. Instead, time is in many ways analogous to space and ‘now’ is in many ways analogous to ‘here’. Just as there is no one location that is objectively *here*, there is no one moment that is objectively *now*. Nothing metaphysically distinguishes the present moment from past and future moments.

There are two major challenges facing the tenseless theory of time. The first challenge is: can a tenseless theory of time provide a plausible account of the truth-conditions for tensed sentences? Tensed sentences such as ‘The meeting is now!’ provide a *prima facie* reason in favor of irreducibly tensed properties: the sentence is true if and only if the meeting has the tensed property of *being now*. I examine existing attempts by tenseless theorists for providing tenseless truth-conditions for tensed sentences. I argue that they are unable to provide a complete account of what makes tensed sentences true. I formulate and defend a new tenseless account of the truth-

conditions for tensed sentences, the type-context theory, which makes use of David Kaplan's theory of indexicals.

The second challenge facing the tenseless theory of time is: can a tenseless theory of time provide a plausible account of our tensed psychological attitudes? Most of our psychological attitudes such as belief, desire, relief, regret and anticipation are irreducibly tensed: we cannot adequately describe such attitudes without appealing to tensed language. I do not take relief in the tenseless fact that I got my wisdom teeth out in 1998. I take relief in the tensed fact that my wisdom teeth were extracted *in the past*. I do not run to the bus stop merely because I believe that the bus arrives at 8:45. I run to the bus stop because I believe that the bus is arriving *now*. How can the tenseless theory of time explain the central role that tense plays in our psychological attitudes? I claim that the objects of tensed beliefs are properties (or relations). The account I defend is a version of the self-ascription accounts defended by Roderick Chisholm and David Lewis. I argue that such a view can provide a plausible tenseless account of tensed belief.

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CHAPTER 1

INTRODUCTION

In this introduction I distinguish between *tensed* theories of time and *tenseless* theories of time. I describe various versions of tensed theories of time as well as the tenseless theory. I then present some of the reasons that motivate adopting a tenseless theory of time over a tensed theory of time. Next, I present what I take to be the main challenges facing a tenseless theory of time. I then discuss what I take the main goal of this dissertation to be. I conclude by giving an overview of the issues and arguments that are covered in the chapters that follow.

1.1 Tensed Versus Tenseless Theories of Time

On a natural conception of time, future events creep closer and closer towards the present moment while past events recede further and further away from it. I am excited as next month's vacation moves closer towards the present and relieved as last week's painful dental visit fades further into the past. Derek Parfit offers the following explanation for this conception of time (although he claims to be undecided about its truth):

We might say that we are moving through time into the future, or that future events are moving through time into the present, or that presentness, or the scope of 'now' is moving into the future. 'Now' moves down the sequence of historical events, 'like a spot-light moving down a line of chorus-girls' (Parfit 1984, 178).

The metaphor suggests two distinctive features about the nature of time. First, just as there is an objective fact about which chorus girl the spotlight is shining on and which chorus girls are in the dark, there is one moment that is objectively present, the rest being objectively past and future. Secondly, just as the spotlight moves from one chorus girl to the next, the moment that is objectively present changes from one moment to the next. Let us call a theory of time *tensed* if and only if it holds a) that there is a time that is objectively present and b) that the moment that is objectively present changes from one moment to the next.

There are at least three different versions of tensed theories of time depending upon what one takes the ontological status of past and future times and objects to be. One tensed theory of time is *presentism*.¹ The presentist holds that the present time is the only time that exists. According to presentism, past objects and times like the *Santa Maria* and 1492 fail to exist. Similarly, future objects and times like my bio-fueled jet and 2050 fail to exist. Presentism is a tensed theory of time since it claims that there is one time that is objectively present (the only time that exists) and it also claims that the moment that is objectively present changes from one time to the next.

Another tensed theory of time is the *growing block theory*.² The growing block theory holds that present and past times and objects exist, however future times and objects do not. According to the growing block theory, the *Santa Maria* and 1492 exist and are equally real as the present moment; however my bio-fueled jet and 2050 do not

¹ Defenders of presentism include Bigelow (1996), Markosian (2004), Crisp (2003) and (2007), Zimmerman (1998), Merricks (1999).

² Defenders of the growing block theory include C.D. Broad (1923), Michael Tooley (1997) and Peter Forrest (2004).

exist. The growing block theorist holds that the present moment is an ever-changing hyperplane at the edge of being. The total sum of existence increases from one moment to the next. The growing block theory is a tensed theory of time since it claims that there is one time that is objectively present (the hyperplane surface of the block universe) and this hyperplane surface changes from one moment to the next.

Another tensed theory of time is the *moving-spotlight theory*.³ The moving spotlight theorist takes Parfit's metaphor most literally. She holds that past and future times and objects exist, however there is something metaphysically privileged about the present moment. There are irreducibly tensed properties that the present has that past and future times lack. While the *Santa Maria* and my bio-fueled jet both exist, they lack some irreducible property of *being present* that my current Honda Accord enjoys. The moving-spotlight theory is a tensed theory of time in that it claims that one time is objectively present (the hyperplane that enjoys the metaphysical privilege of *being present*) and the hyperplane that enjoys this metaphysical privilege changes from one moment to the next.

I reject tensed theories of time. I deny that there is a time that is objectively present that changes from one moment to the next. Instead, time is in many ways analogous to space and 'now' is in many ways analogous to 'here'. Just as there is no one location that is objectively *here*, there is no one moment that is objectively *now*. Nothing metaphysically distinguishes the present moment from past and future moments. Time is not like a spotlight moving down a line of chorus girls; rather it is like a fully lit chorus line. Let us call a theory of time *tenseless* if and only if it holds

that past and future times are as equally real as the present time; there is nothing that objectively distinguishes the present moment from past and future moments.

1.2 Arguments in Favor of the Tenseless Theory of Time

My rejection of tensed theories of time is based on a number of different arguments. I will briefly discuss some of the arguments I take to be most conclusive and I will explain how they raise difficulties for the various tensed theories of time outlined above. I do not intend to provide a full defense of each argument here. Rather, my goal is to make the reader aware these of arguments and, when appropriate, point the reader towards literature that provides a more detailed defense.

1.2.1 Special Relativity⁴

Any plausible account of time should be compatible with contemporary physics. According to the theory of special relativity, there is no observer-independent notion of simultaneity. Suppose that I sneeze in Amherst and Jonathan coughs in Australia. Special relativity entails that there is no fact of the matter about whether or not my sneeze is simultaneous with Jonathan's cough. The conclusion that there is no observer independent notion of simultaneity raises difficulties for any view that posits the existence of an objective present.

³ See Smith (1993).

⁴ Much of what I state in this section is a result of being persuaded by Ted Sider's discussion of the difficulties that special relativity raises for presentism in Sider (2001, 42-52). Although Sider's discussion is intended to demonstrate that special relativity raises difficulties for presentism, I think these difficulties can be extended to all versions of what I have called tensed theories of time.

In order to better understand special relativity and the implications it has for the nature of time, it is helpful to contrast Minkowski spacetime (the account spacetime that is suggested by special relativity) with a classical or Newtonian account of spacetime. On the Newtonian account, spacetime consists of an ordering of space along a temporal dimension. The structure of space is Euclidean three-space. The structure of time is the structure of a one-dimensional real line. The structure of Newtonian spacetime is given by a set of ordered pairs whose first member is a location in Euclidean three-space and whose second member is a time coordinate on the one-dimensional real line. We can then define the relation of simultaneity as follows: spacetime event x and spacetime event y are simultaneous if and only if the time coordinate of x is identical to the time coordinate of y . On a Newtonian account of spacetime, simultaneity is an equivalence relation and so we can partition the spacetime into hyperplanes of simultaneous events. On such an account, the question of whether Stephan's sneeze and Jonathan's cough occurred simultaneously has a well-defined answer: they occurred simultaneously if and only if they are located on the same hyperplane of simultaneity.

Minkowski spacetime is a four-dimensional spacetime, however it lacks many of the structural features of Newtonian spacetime. According to Minkowski spacetime, it is not meaningful to ask whether two distinct events occurred at the same time. Nor is it meaningful to ask whether two distinct events occurred at the same spatial location. What questions are meaningful? For any event, e , in Minkowski spacetime, it is well-defined what other events in the spacetime are lightlike separated from e , timelike separated from e and spacelike separated from e . Two events in Minkowski spacetime are *lightlike separated* if and only if a lightray emitted from one could reach the other.

Two events are *timelike separated* if and only if a causal signal traveling below the speed of light transmitted from one can reach the other. Two events are *spacelike separated* if and only if no causal signal traveling at or below the speed of light could reach one from the other. For any given event, e , in Minkowski spacetime we can define those events that are in e 's absolute future, those events that are in e 's absolute past and those events that are spacelike separated from e . The *absolute future* of an event, e , will consist of the set of events that could be reached by a causal signal emitted from e traveling at or below the speed of light. The *absolute past* of an event, e , will consist of the set of events that could reach e by emitting a causal signal at or below the speed of light. Although these notions are well-defined, there is no well-defined set of points that are simultaneous with e .

Given that Minkowski spacetime lacks a well-defined notion of simultaneity, difficulties arise for theories that claim that there exists a time that is objectively present. The presentist, the growing block theorist and the moving spotlight theorist all claim that there exists an objectively present moment. Most naturally, this present moment consists of a set of objectively simultaneous events, however Minkowski spacetime denies that such a set exists. This forces the tensed theorist into a difficult position.

Although the notion of absolute simultaneity is non-existent according to Minkowski spacetime, it does recognize the notion of simultaneity relative to a frame of reference. If I am traveling at a constant velocity, then there is a fact of the matter as to which two events are simultaneous with respect to my inertial frame. The tenseless theorist might attempt to rescue the notion of an objective present by claiming that there

is some privileged frame of reference. The present moment is a set of events simultaneous with respect to this privileged frame of reference. However claiming that there is a frame of reference that is in some sense privileged is scientifically revisionary. The scientific evidence suggests that no such privileged frame of reference exists.

If the tensed theorist wishes to avoid being scientifically revisionary and embrace the account of spacetime suggested by special relativity, then she is left with some unattractive options. As noted above, for any given event in Minkowski spacetime, the notions of absolute future and absolute past are well-defined. The tensed theorist could maintain her commitments about the ontological status of the past and future *with respect to a single event* rather than a set of simultaneous events. The presentist could hold either a) that there is one present event, p , that exists and all other events in Minkowski spacetime fail to exist or perhaps more plausibly b) that there is one present event, and, while all the events in p 's absolute past and p 's absolute future fail to exist, all those events that are spacelike separated from p also exist. The growing block theorist could maintain that the only events that exist are some present event, p , and all those events in p 's absolute past. The moving spotlight theorist could maintain that there is a present event, p , that enjoys a metaphysical privilege over all other events in Minkowski spacetime.

These options are all consistent with a Minkowski account of spacetime in that they do not posit absolute simultaneity; however they force the tensed theorist to make implausible commitments that she previously was not committed to. By adopting a single point as the whole of reality, the presentist is committed to claiming that a lot less exists than when the view was originally stated. Similarly, if the growing block theorist

adopts the proposed view, he is committed to the claim that there exists one event in Minkowski spacetime that comprises the present and that all past events are within the absolute past of this one event. This grants one event in Minkowski spacetime a metaphysical privilege that was not enjoyed by any one event in the original statement of the view. The moving spotlight theorist is similarly forced to conclude that a single event, rather than one hyperplane of simultaneous events, is metaphysically privileged.

Special relativity and the fact that there is no observer-independent notion of simultaneity forces tensed theories to adopt commitments that are not at all consistent with the original motivations behind such views. The tenseless theory, in denying the existence of an objectively present moment, is entirely compatible with Minkowski spacetime and its denial of absolute simultaneity.

1.2.2 Truthmaking

A plausible assumption is that truths must be grounded by existence. The truth-maker principle offers one way of making sense of this assumption. The truth-maker principle claims that for every truth, t , there exists some entity in the world that makes t true. The truthmaker principle runs into difficulties when we consider negative existential statements like 'No flying leopards exist'. This statement is true, however there does not exist anything in the world that makes it true.

David Lewis and John Bigelow reject the truthmaker principle, however they acknowledge that what statements are true must depend upon what exists. In place of the truthmaker principle they adopt the principle that truth supervenes on being. Lewis states the view as follows: "no two possibilities can differ about what's true unless they

also differ in what things there are, or in how they are” (Lewis 1992, 206). Although the claim that truth supervenes on being dispenses with the demand that, for every truth there is some entity that serves as its truth-maker, it upholds the intuition that truths “don’t float in a void” (Ibid).

Tensed theories of time have difficulty explaining how certain truths supervene on being. The difficulty is most clearly seen in the case of presentism. The presentist wishes to hold that it is true that dinosaurs once roamed the Earth. However, since the presentist denies the existence of dinosaurs, in virtue of what is it true that dinosaurs once roamed the Earth? If the presentist insists that it is true that dinosaurs once roamed the Earth, he seems committed to violating the principle that truth supervenes on being. It seems plausible that there is some possible world just like the actual world (with respect to the present moment) in which it is false that dinosaurs once roamed the Earth.

There are various ways in which the presentist might try to respond to these worries. One way is to claim that the world contains properties like *previously containing dinosaurs*. If the world does contain such properties, then the claim that truth supervenes on being can be upheld because any world that agrees with the actual world in what things there are and how those things are will be a world that contains the property of *previously containing dinosaurs* and will, thereby, be a world in which it is true that dinosaurs once roamed the Earth.

I am sympathetic to Ted Sider’s critique of such a response. Sider claims that:

...a proper ontology should invoke only categorical, or occurrent properties and relations. Categorical properties involve what objects are actually like, whereas hypothetical properties ‘point beyond’ their instances... whether the world has the property previously containing dinosaurs is not a matter of what the world itself is like, but points beyond itself, to the past” (Sider 2001, 41).

I am inclined to think that anyone who is motivated to uphold the principle that truth supervenes on being will be suspicious of positing properties like *previously containing dinosaurs*. Positing properties like *previously containing dinosaurs* rescues the principle that truth supervenes on being at the cost of introducing non-categorical and seemingly *ad hoc* properties.

Presentism isn't the only tensed theory of time that faces difficulties when it comes to upholding the principle that truth supervenes on being. Although it is perhaps more controversial than the claim that there are truths about the past, I think there are also truths about the future. It is true, for example, that the world will exist tomorrow. If the growing block theorist admits that there are any truths about the future whatsoever, she is faced with a difficulty similar to the one faced by the presentist: in virtue of what are such truths about the future true? The growing block theorist denies the existence of any future times or objects and so it is unclear what would serve to ground such future truths. Admitting the existence of future truths will force the growing block theorist to resort to the same questionable methods that the presentist appealed to in order to accommodate truths about the past.

The moving spotlight theory also faces difficulties in upholding the principle that truth supervenes on being. According to the moving spotlight theory, there is some irreducibly tensed property that the present time possesses that past and future times lack. Let us call this the property of *being-present**. The moving spotlight theorist will agree that although 1975 does not now possess the property of *being-present**, it once did. It is true that 1975 had the property of *being-present**. But on what could the truth

of this claim supervene? It seems possible that there exists a world, *w*, that has the same past as the actual world, however the time that is 1975 in *w* never had the property of *being-present**. If there are such irreducibly tensed properties like *being-present**, there is no reason why God couldn't create a world with a history just like ours, except no time before the present ever had the property of *being-present**. For all we know, our world might be such a world. I conclude that all three tensed theories face difficulties in upholding the principle that truth supervenes on being.

1.2.3 Skeptical Worries⁵

According to some versions of the tensed theory of time such as the growing block theory and the moving spotlight theory, the present is one time among many. However such views claim that the present is in some way ontologically distinguished from those moments that are not present. According to the growing block view, the present is on the "crest of reality": the hyperplane that comprises the ever-changing surface of the block universe. According to the moving spotlight theory, the present possesses irreducibly tensed properties that the past and future lack. Such views lead to the following skeptical worry: how do I know that I am now at the moment that is objectively present?

I am now sitting at my computer typing. If the growing block theory is correct, Columbus exists in 1492 sailing across the Atlantic. Surely Columbus thinks that he exists in the present, but it seems that according to the growing block view, he is wrong.

⁵ The discussion that ensues is based upon arguments given by David Braddon-Mitchell (2004) and Bourne (2002).

He no longer exists on the hyperplane surface that is the objective present. Similarly if the moving spotlight theory is correct, Columbus is wrong when he believes that he exists in the present. The location in time that Columbus occupies fails to contain the irreducibly tensed properties that are unique to the objective present.

But if Columbus is wrong about his belief that he exists at the objectively present moment, why should I be so sure that *I* exist at the objectively present moment? Given either the growing block theory or the moving spotlight theory, it seems possible that 2085 is objectively present and I am typing away in the mere past. David Braddon-Mitchell makes the following observations about the growing block theory:

Of course if our current location *is* the objective present, then there is no future volume, but to *know* that our current location is the objective present we would need to know that there is no future directed volume, and we have no independent access to this. So by a principle of indifference we should regard all alternatives as equally likely. So we should regard the hypothesis that the current moment is present as only one among very many equally likely ones. So we should conclude therefore, that the current moment is almost certainly in the past. This is absurd, and so by *reductio* we should reject the growing [block] view (Braddon-Mitchell, 201).

Braddon-Mitchell's reasoning can also be brought to bear on the moving spotlight theory. Just as I fail to have any independent access to the proposition that there is no future directed volume, if we assume that the moving spotlight theory is true, I also fail to have any independent access to the proposition that I am located at the portion of spacetime that has the irreducibly tensed properties unique to the present. Presumably things do not look any different when one is in the objective present as compared to when one is in the past or future. The growing block theory and the moving spotlight theory both give rise to skeptical worries about whether one exists in the present.

However it seems absurd that one can doubt whether one is in the present. Even more

absurd is the conclusion that one is almost certainly not in the present. Therefore, the growing block theory and the moving spotlight theory are not correct.

The tenseless theory of time claims that 'now' and 'the present' function indexically. My use of 'now' refers directly to the time at which it is used. For me to claim that I exist now is analogous to the claim that I exist here. Since on the tenseless theory there is no objective present, the question of whether I currently exist in the objective present does not arise. The fact that the tenseless theory avoids skeptical worries about whether one is located in the present is a clear benefit of the theory.

1.3 The Challenge of Tensed Language

So far I have used 'tense' to describe a feature of reality. I have claimed that tensed theories of time hold that there exists a moment that is objectively present and in some sense ontologically privileged. Let us call this notion of tense 'ontological tense'.

Tense, however, also describes a feature of linguistic entities such as sentences. Let us say roughly that a sentence is tensed when its truth or falsity is dependent upon when in time it is evaluated. A tensed sentence might either contain a temporal indexical such as 'now' or 'tomorrow' or it might contain a tensed verb such as 'is taking off' or 'rained'. Tenseless sentences are those whose truth or falsity does not depend upon when the sentence is evaluated. Examples of tenseless sentences include 'The Battle of Hastings is before the War of 1812' and 'It snows on November 20th, 2007' (where 'snows' is a tenseless verb form).

Linguistic tense provides a *prima facie* reason in favor of ontological tense.

Consider the following tensed sentence:

(1) The meeting is now!

Just as it is natural to take the sentence 'the poker is hot' to be ascribing the property of *being hot* to the poker, it is natural to take (1) to be ascribing a tensed property to the meeting, namely the property of *being now*. The grammatical structure of (1) provides a *prima facie* reason for positing the existence of tensed properties. Just as it is plausible to hold that the sentence 'the poker is hot' is true if and only if the poker has the property of *being hot*, it seems plausible to hold that (1) is true if and only if the meeting has the property of *being now*.

One response is to claim that tensed sentences such as (1) can be translated without loss of meaning into tenseless sentences. If all tensed sentences can be translated into tenseless sentences, then it seems that the reason in favor of positing tensed properties can be avoided. So-called 'Old B-Theorists' claimed (a) that sentences like (1) can be translated into tenseless sentences and (b) that this demonstrates that tense is not a real feature of the world. Such theorists argued that the existence of linguistic tense does not commit one to the existence of ontological tense since tensed sentences can be translated into tenseless ones. Old B-theorists such as Bertrand Russell, Nelson Goodman and W. V. Quine held that sentences such as (1) could be translated into tenseless sentences containing a reference to a date or time. They claimed that a 2pm, October 23rd, 2007 utterance of (1) could be translated by the sentence:

(2) The meeting is at 2pm on October 23rd, 2007.

The Old B-theorists claimed that since (2) is a tenseless sentence, and (2) expresses the same thing as (1), (1) does not provide reason for the existence of tensed properties.

Tensed sentences are equivalent to tenseless sentences and so the *prima facie* reason for positing ontological tense is avoided.

Another strategy of translating tensed sentences into tenseless ones was adopted by tenseless theorists Hans Reichenbach and J. J. C. Smart. In *Philosophy and Scientific Realism*, Smart makes the following claim:

Let us replace the words 'is past' by the words '*is* earlier than this utterance.' (Note the transition to the tenseless 'is'.) Similarly, let us replace 'is present' and 'now' by '*is* simultaneous with this utterance,' and 'is future' by '*is* later than this utterance'...Similarly, 'he runs' means 'he *runs* (tenseless) simultaneous with this utterance,' and 'he ran' means 'he *runs* (tenseless) earlier than this utterance.' All the jobs which can be done by tenses can be done by means of the tenseless way of talking and the self-referential utterance 'this utterance' (Smart 1963, 134)

Given Smart's proposal, a 2pm utterance of (1) on October 23rd, 2007 means the same thing as:

(3) The meeting is simultaneous with this utterance.

Like (2), (3) is a tenseless sentence and so, by noting that tensed sentences have tenseless translations, Smart claims that the commitment to tensed properties is avoided.

Most now agree that the Old B-theorists' strategy for avoiding the *prima facie* commitment to tensed properties suggested by tensed sentences like (1) has been a failure. Work in the theory of direct reference and the nature of indexicals has demonstrated that tensed sentences cannot be translated into tenseless sentences without a loss of meaning. The work of a number of philosophers such as Perry, Castanada, Lewis, Chisholm, and Kaplan has contributed to the conclusion that tensed sentences such as (1) cannot be translated without loss of meaning into tenseless sentences such as (2) or (3). Rather than expounding on the work of all those mentioned above, I will

briefly describe Kaplan's theory of indexicals and explain its relevance to the Old B-theory of time.

According to Kaplan, a token of the word 'now' is directly referential in that it directly refers to the time of the context in which it is produced. Kaplan refers to what is expressed by a sentence, *s*, in a given context, *c*, as the *content* of *s* in *c*. According to Kaplan, what is expressed by a token utterance of (1) at 2pm on October 23rd, 2007 is identical to what is expressed by an utterance of (2) at 2pm on October 23rd, 2007. However, even though (1) and (2) have the same content, they differ with respect to their *linguistic meaning or character*. Kaplan associates the character of a sentence with the 'rule of use' of the sentence. According to Kaplan, there is a certain rule of use associated with the word 'now' that may be stated roughly as follows: 'now' always refers to the time at which it is produced. The rule of use associated with the phrase '2pm on October 23rd, 2007' is that it always refers to 2pm on October 23rd, 2007. As a result, the rule of use associated with (1) differs from the rule of use associated with (2) and so (1) and (2) differ with respect to their linguistic meaning or character.

According to Kaplan's theory, while (1) and (2) have the same content, they have different characters. From the fact that (1) and (2) differ with respect to their character, it follows that (1) cannot be translated by (2) without loss of meaning.

The so called 'New B-Theory of time' takes the work of Kaplan and others to have successfully demonstrated two important conclusions: First, tensed sentences such as (1) lack (meaning-preserving) tenseless translations. Secondly, temporal indexicals such as 'now' and 'yesterday' do not refer to tensed properties but rather refer directly to the time at which they are produced. The New B-theorist maintains that even though

tensed sentences lack tenseless translations, there is no reason to think that tensed sentences provide reason in favor of ontological tense. The New B-Theorist does not attempt to avoid the *prima facie* commitment to tensed properties by claiming that there are tenseless translations of tensed sentences. Rather she claims that commitment to tensed properties is avoided by noting that tensed sentences such as (1) are made true by tenseless facts. One need not posit the existence of tensed facts in order to explain what makes tensed sentences true.

Tensed theorists such as Quentin Smith and William Lane Craig have argued that the tenseless truth-conditions that the New B-theorist provides for tensed sentences are unsuccessful. The success of the tenseless theory depends upon whether the tenseless theorist can provide a plausible tenseless account of what makes tensed sentences such as (1) true. If the tenseless theorist cannot succeed in this regard, then it seems that the truth of tensed sentences like (1) does require positing the existence of ontological tense. The challenge that linguistic tense poses for the tenseless theorist is to provide a plausible tenseless explanation for what makes tensed sentences true.

1.4 The Challenge of Tensed Psychological Attitudes

Even if the tenseless theorist does manage to provide a plausible tenseless account of what makes tensed sentences true, the tenseless theorist will only succeed if she is also able to give a tenseless explanation of our tensed psychological attitudes. Many of our psychological attitudes such as desire, belief, regret, relief and anticipation seem irreducibly tensed. Consider Arthur Prior's oft-quoted passage from "Thank Goodness that's Over":

One says, e.g. “Thank goodness that’s over!”, and not only is this, when said, quite clear without any date appended, but it says something which it is impossible that any use of a tenseless copula with a date should convey. It certainly doesn’t mean the same thing as, e.g. “Thank goodness the date of the conclusion of that thing is Friday, June 15, 1954”, even if it be said then. (Nor for that matter, does it mean “Thank goodness the conclusion of that thing is contemporaneous with this utterance”. Why should anyone thank goodness for that?) (Prior 1959, 17).

As Prior persuasively argues in this passage, the object of my relief, when I thank goodness that, say, my painful dental visit is over, is not plausibly taken to be a tenseless proposition such as the proposition that my painful dental visit is concludes at 2pm on October 23rd, 2007. When I thank goodness that my dental visit is over I am certainly not thanking goodness for the fact that my dental visit concludes on 2pm October 23rd, 2007. After all I could have known this fact in the weeks leading up to the dental visit without thereby feeling any relief. An explanation of what I take relief in seems to require an appeal to tense: I thank goodness for the fact that my painful dental visit *is past* or *is over*.

Prior’s observations may be generalized for psychological attitudes other than relief. It seems that we need to appeal to tense in order to explain the beliefs that lead to performing certain actions. Suppose that at 2pm I get up to board my plane. In order to explain why I got up to board the plane, it does not seem that we can appeal exclusively to tenseless propositions. I did not get up to board the plane because I believed that the plane begins boarding at 2pm. After all, I believed this proposition all day and it was not until 2pm that I got up and walked toward the gate. Rather I got up and walked towards the gate because I believed that plane was boarding *now* or I believed that it is

now 2pm. A temporal indexical such as 'now' seems essential to explaining why I got up when I did.

The fact that tensed terminology is required in order to explain timely action provides another *prima facie* reason in favor of positing ontological tense. If tensed terminology such as 'now' or a tensed verb form is required in order to adequately describe my psychological attitudes such as belief and relief, then this suggests that the object of such attitudes involve tensed features of the world. In order for the tenseless theory to succeed, it must provide a tenseless account of what I believe when I believe that the plane is boarding now and a tenseless account of what I take relief in when I am relieved that my painful dental visit is past.

1.5 Building the Case for the Tenseless Theory

I have presented some of the reasons in favor of the tenseless theory of time and I have also presented what I take to be two major challenges facing the view. The goal of this dissertation is to further build the case for the tenseless theory by formulating and defending a tenseless account that is able to successfully meet these challenges. If the challenges to the tenseless theory can be met, then it seems clear that the tenseless theory should be adopted. The considerations from special relativity, truth-making and skepticism about the present speak heavily in favor of the tenseless theory of time. If the tenseless theory can also provide an account of what makes tensed sentences true and an account of tensed belief and timely action, then it seems that the case in favor of the tenseless theory is overwhelming. In what follows, I argue that these challenges facing the tenseless theory can be met.

In chapter two, I consider what I call ‘token-based’ approaches to providing tenseless truth-conditions for tensed sentences: the token reflexive theory and the date theory. I argue that the debate over whether the token reflexive theory or the date theory is true has arisen from a failure to distinguish between truth-conditions for tensed tokens and truth-conditions for propositions expressed by tensed tokens. I argue that, rather than being rival theories, there is a true formulation of the token-reflexive theory and a true formulation of the date theory. Nonetheless, I claim that token-based approaches cannot succeed in providing a complete account of what makes tensed sentences true.

The finding in chapter two that token based theory approaches cannot succeed in providing a complete account of what makes tensed sentences true motivates the project of the third chapter. In the third chapter I claim that in order to provide a complete account of what makes tensed sentences true, the B-theorist should provide truth-conditions for tensed sentence-types in a context, rather than for tensed sentence-tokens. I defend an account, the type-context theory, that makes use of David Kaplan’s theory of indexicals according to which sentence-types have contents in contexts. I claim that there are two ways of providing a tenseless account of tensed sentence-types in a context: either by taking the content of sentence-types in a context to be sets of possible world-time pairs or sets of possible worlds. I formulate each option and demonstrate that they provide a complete account of what makes tensed sentences true. I then respond to some objections that have been leveled against a similar account given by Laurie Paul. I argue that the view I defend avoids these objections.

Having provided a complete tenseless account of what makes tensed sentences true, in chapter four I turn to the question of whether the tenseless theorist can provide an account of tensed belief and timely action. Consider my true belief at 2pm that the plane is boarding now. What is it that I believe when I believe the plane is boarding now? Presumably what I believe is not the eternally true proposition that the plane boards at 2pm. After all, I could have known all week that the plane boards at 2pm but it was only when I came to believe that the plane is boarding *now* that I got up and walked towards the gate. Many have taken the fact that a temporal indexical such as 'now' is essential to describing my belief as evidence for a tensed theory of time: ontological tense is in some sense necessary to explain my belief.

In chapter four I defend a self-ascription account of tensed belief. On this account, the content of a tensed belief is not an eternally true (or false) proposition, but rather a property (or a relation). I evaluate an argument given by William Lane Craig that claims that a self-ascription account of tensed belief entails a tensed theory of time. I argue that there are two ways of formulating the self-ascription account of tensed belief depending upon whether one takes the subject of self-ascription to be a momentary stage or an enduring person. I argue that neither formulation commits one to a tensed theory of time. The self-ascription account of tensed belief provides a plausible tenseless account of how timely action is possible.

In the fifth chapter I consider a well-known argument given by Mark Richard. Many have taken Richard's argument to pose a serious threat to temporalism, a semantic thesis about the nature of the propositions expressed by sentences. I argue that the threat posed by the argument lies elsewhere. The argument does not threaten a semantic

thesis about the kinds of propositions expressed by sentences. Rather it threatens the view that the objects of belief are temporal: that they are true at some times and false at other times. Since in the previous chapter I advocate a view according to which the objects of belief are temporal, I consider what implications Richard's argument has for such a view. I conclude by claiming that the real threat of Richard's argument can be avoided.

CHAPTER 2

TENSELESS TRUTH-CONDITIONS FOR TENSED SENTENCES: THE TOKEN-REFLEXIVE THEORY AND THE DATE THEORY

In this chapter I consider two strategies for providing tenseless truth-conditions for tensed sentences: the token-reflexive theory and the date theory. Both theories have faced a number of objections by prominent A-theorists such as Quentin Smith and William Lane Craig. Traditionally, these two theories have been viewed as rival methods for providing truth-conditions for tensed sentences. I argue that the debate over whether the token-reflexive theory or the date theory is true has arisen from a failure to distinguish between conditions for the truth of tensed tokens and conditions for the truth of propositions expressed by tensed tokens. I demonstrate that there is a true formulation of the token-reflexive theory that provides necessary and sufficient conditions for the truth of tensed tokens, and there is a true formulation of the date theory that provides necessary and sufficient conditions for the truth of propositions expressed by tensed tokens. I argue that once the views are properly formulated, the A-theorist's objections fail to make their mark. However, I conclude by claiming that even though there is a true formulation of the token-reflexive theory and a true formulation of the date theory, the New B-theory nonetheless fails to provide a complete account of the truth and falsity of tensed sentences.

2.1. Introduction

According to the B-theory of time, tense is not a fundamental feature of the world.

There is nothing that ontologically distinguishes the present from the past or the future.

Events in time lack the irreducible monadic properties of *being-past*, *being-present* or *being-future*. Rather events in time stand in the relations of *is-earlier-than*, *is-later-than* and *is-simultaneous-with*. The B-Theorist holds that these relations exhaust the temporal features of the world.

Even though B-theorists deny that tense is a fundamental feature of the world, most admit that tensed sentences are sometimes true. The B-theorist agrees that the sentence 'It is now the age of computers' is true whereas the sentence 'It is now the age of dinosaurs' is false. If there is no such thing as ontological tense, then how can tensed sentences be true? The "Old" B-Theorists¹ claimed that tensed sentences have tenseless translations. A sentence like 'The volcano is now erupting' could be translated without loss of meaning into a sentence containing only B-theoretic terminology such as 'The volcano's eruption is simultaneous with this utterance' or 'The volcano's eruption occurs at t'. One implication that can be drawn from work on indexicals by Castañeda (1967), Perry (1979), and Lewis (1979) is that tensed sentences cannot be translated into tenseless sentences without a loss of meaning, and so the project of the Old B-Theory has been abandoned. The "New" B-Theory acknowledges that tensed sentences do not have meaning-preserving, tenseless translations. Instead it claims that all the B-theorist must do is provide tenseless truth-conditions for tensed

¹ Works associated with the Old B-theory of time include Quine (1960) and Smart (1963).

sentences. So long as an account of what makes tensed sentences true can be given without appealing to fundamentally tensed properties, true tensed sentences pose no threat to the B-theory.

However, providing tenseless truth-conditions for tensed sentences raises some questions for the B-theorist. Should the account provide tenseless truth-conditions for tensed sentence *types* or for tensed sentence *tokens*? As D. H. Mellor notes in *Real Time* (1981), many tensed sentence types are not true or false *simpliciter*; rather they are true at some times and false at other times. The sentence type 'It is now raining' is true today but was false yesterday. Tokens, on the other hand, are true or false *simpliciter*. My token utterance today of 'It is now raining' is true "without temporal qualification" (Mellor 1981, 36). Mellor concludes that "the truth and falsity of tensed sentences, therefore, are properties of their tokens, rather than of their types" (40). The New B-Theorist alleges that the truth or falsity of tensed sentences can be fully accommodated by providing tenseless truth-conditions of tensed tokens.² So by providing tenseless truth-conditions for tensed sentence tokens, the new B-theorist can acknowledge that tensed sentences are sometimes true in virtue of having true tokens, and maintain that the explanation for what makes tensed sentences sometimes true involves no appeal to irreducibly tensed facts or properties.

There are two distinct methods that have been given for providing truth-conditions for tensed tokens: the token-reflexive theory and the date theory. The token-reflexive theorist claims that what makes a tensed token true is that a B-theory temporal

² I take this claim to be essential to the New B-Theory of Time.

relation obtains between the token itself and the event mentioned in the token.³

Consider tensed tokens of the form 'e is now'. The token-reflexive theory states:

TR For any token, u, of 'e is now', u is true iff e is simultaneous with u.

Suppose I produce a token utterance of 'The evening news begins now'. My claim is true if and only if the beginning of the evening news is simultaneous with my token utterance. The truth-conditions of tensed tokens are given by a tenseless relation obtaining between the event mentioned in the token and the token itself. In this manner the token-reflexive theory claims to provide tenseless truth-conditions for tensed tokens.

The date theorist provides a different account of what makes a tensed token true. She claims that the token is true because a B-theory temporal relation obtains between the time at which the token is produced and the event mentioned in the token.⁴

Consider tensed tokens of the form 'e is now'. The date theory states:

DT For any token, u, of 'e is now' produced at t, u is true iff e occurs at t.

Suppose that at 6pm I produce a token utterance of 'The evening news begins now'. According to the date theory, my token is true iff the evening news begins at 6pm. The truth-conditions of tensed tokens are given by a tenseless relation obtaining between the event mentioned in the token and the time at which the token is produced. In this manner the date theory claims to provide tenseless truth-conditions for tensed tokens.

³ This view is laid out in Mellor (1981, 29-46). In Mellor (1998), he renounces the view put forth in Mellor (1981) in light of criticisms given by Smith (1993). The implications of Smith's objections for the token-reflexive theory are discussed below. Despite being renounced by Mellor, the token-reflexive theory continues to be defended by many including Nathan Oaklander (1994), Manuel Garcia-Carpintero (1998), Heather Dyke (2002), (2003).

⁴ Proponents of this view include Smart (1980), Oaklander (1994), and LePoidevin (2003).

Both theories have faced a number of objections by prominent A-theorists such as Quentin Smith and William Lane Craig. Traditionally, these two theories have been viewed as rival methods for providing tenseless truth-conditions for tensed tokens. I argue that the debate over whether the token-reflexive theory or the date theory is true has arisen from a failure to distinguish between necessary and sufficient conditions for the truth of tensed tokens and necessary and sufficient conditions for the truth of propositions expressed by tensed tokens. There is a true formulation of the token-reflexive theory that provides necessary and sufficient conditions for the truth of tensed tokens, and there is a true formulation of the date theory that provides necessary and sufficient conditions for the truth of propositions expressed by tensed tokens. I argue that once the views are properly formulated, the A-theorist's objections fail to make their mark. However, I conclude by questioning the New B-theorist's assumption that the truth and falsity of tensed sentences can be fully accommodated by providing tenseless truth-conditions for tensed tokens.

2.2 Disambiguating the Token-Reflexive Theory and the Date Theory

I will claim that there are at least three different formulations of the token-reflexive theory and three different formulations of the date theory depending upon what the theory takes the fundamental bearers of truth to be and what the theory provides truth-conditions for. Both proponents and opponents of the date theory and the token-reflexive theory have failed to distinguish among these formulations. I will show that the objections that have been leveled against each theory succeed only in refuting

certain formulations of the theory, and there is a true formulation of each which avoids the objections entirely.

First, there are different views regarding what the fundamental bearers of truth are. One view is that truth applies fundamentally to tokens. On this view, the predicate 'is true' is properly applied only to tokens. Such a view is committed to denying that there are token-independent truths. I will refer to this view as the 'Token View'. A rival view takes truth to apply fundamentally to propositions.⁵ On this view, tokens are true or false only derivatively: tokens *express* propositions and a token is true iff it expresses a true proposition. This view does allow for the existence of token-independent truths. A proposition can be true even if there is no token that expresses it. I will refer to this view as the 'Proposition View'.

In addition to these views regarding the fundamental bearers of truth, there are also at least three different senses of 'truth-condition'. According to one sense, truth-conditions are associated with the meaning of a sentence. This use of 'truth-condition' can be traced back to Davidson (1967). The motto associated with this sense is "to know the meaning of a sentence is to know the conditions under which it is true." Suppose I am in a crowded lunchroom and I hear someone utter 'I am hungry'. There is a sense in which I know the meaning of the utterance even though I fail to know who uttered it. I know that there is a rule associated with the utterance such that it is true iff the utterer (whoever that may be) is hungry. In this sense, I know the conditions under

⁵ Here and throughout the rest of the paper I take propositions to be eternally true or false if true or false at all.

which the utterance is true. I will refer to this sense of 'truth-conditions' as *m-truth-conditions*.⁶

The New B-theorist should claim that neither the token-reflexive theory nor the date theory are in the business of providing m-truth-conditions. A brief argument for the claim that neither theory provides m-truth-conditions can be given as follows: My 6pm utterance of 'the evening news begins now' has the same m-truth-conditions as my 7pm utterance of 'the evening news begins now'. My 6pm utterance does not have the same token-reflexive truth-conditions or the same date-theoretic truth-conditions as my 7pm utterance. Therefore, neither the token-reflexive theory nor the date theory provides m-truth-conditions.

Suppose I produce a token utterance, U, and we ask the question, "What are the necessary and sufficient conditions for the truth of U?" There are two additional ways we might understand this question. According to the first way, tokens are true in virtue of expressing true propositions. To provide necessary and sufficient conditions for the truth of U is to provide necessary and sufficient conditions for the truth of the proposition expressed by U. The above question can be understood as asking how to complete the right-hand side of the following biconditional:

The proposition expressed by U is such that it is true iff _____⁷

I will refer to this sense of 'truth-conditions' as *p-truth-conditions*.

According to another way of understanding the question, we are not interested in necessary and sufficient conditions for the truth of the proposition expressed by U, but

⁶ This sense of 'truth-condition' corresponds with Kaplan's notion of character.

⁷ Here and throughout the rest of the paper, I take 'iff' to denote the strict biconditional.

rather we are interested in necessary and sufficient conditions for the truth of the token U itself. To state the question in the framework of possible worlds: what conditions are satisfied in all and only those worlds in which U has the property of being true?

According to this second way, the above question is understood as asking how to complete the right-hand side of the following biconditional:

U is true iff _____

I will refer to this sense of 'truth-conditions' as *t-truth-conditions*.⁸ Oftentimes, participants in the debate over the token-reflexive theory and the date theory will speak of providing necessary and sufficient conditions for the truth of a token, and it is unclear whether they have in mind t-truth-conditions or p-truth-conditions. In order to avoid confusion, when I have t-truth-conditions in mind, I will speak of necessary and sufficient conditions *for the truth of a token*. When I have p-truth-conditions in mind, I will speak of necessary and sufficient conditions *for the truth of the proposition expressed by a token*.

Consider my token utterance at 6pm of 'The evening news begins now'. There will be at least three ways of formulating the token-reflexive view depending upon a) whether we adopt the Token View or the Proposition View and b) whether we see the task of the token-reflexive view as providing p-truth-conditions or t-truth-conditions. If we adopt the Token View, then the task of the token-reflexive theory will be to provide

⁸ Consider one who rejects the existence of propositions and takes tokens to be the fundamental bearers of truth. Such an individual will deny that tokens have p-truth-conditions. One who accepts the existence of both tokens and propositions can accept that tokens have both p-truth-conditions and t-truth-conditions, although she might insist that one is a better candidate for the meaning of 'truth-condition'.

t-truth-conditions since the Token View denies the existence of propositions. This version of the token-reflexive view can be stated as follows:

TR1 i) The Token View is true and ii) for any token, u , of 'e is now', u is true iff e is simultaneous with u .

If one adopts the Proposition View, then there are two possible ways of formulating the token-reflexive theory depending on whether one assigns the theory the role of providing p-truth-conditions or t-truth-conditions. Suppose one adopts the Proposition View and assigns the token-reflexive theory the role of providing p-truth-conditions. The resulting formulation of the token-reflexive view can be stated as:

TR2 i) The Proposition View is true and ii) for any token, u , of 'e is now', the proposition expressed by u is such that it is true iff e is simultaneous with u .

If one adopts the Proposition View and assigns the token-reflexive theory the role of providing t-truth-conditions, the resulting formulation of the token-reflexive view can be stated as follows:

TR3 i) The Proposition View is true and ii) for any token, u , of 'e is now', u is true (i.e. expresses a true proposition) iff e is simultaneous with u .

Not surprisingly there are three corresponding formulations of the date theory. If one adopts the Token View, the date theory is given the task of providing t-truth-conditions. This formulation can be stated as follows:

DT1) i) The Token Theory is true and ii) for any token, u , of 'e is now' produced at t , u is true iff e occurs at t .

Again, adopting the Proposition View results in two possible formulations of the date theory depending on whether one assigns the theory the role of providing t-truth-

conditions or p-truth-conditions. Assigning the date theory the role of providing p-truth-conditions results in the following formulation:

DT2) i) The Proposition Theory is true and ii) for any token, u, of 'e is now' produced at t, the proposition expressed by u at t is such that it is true iff e occurs at t

Assigning the date theory the role of providing t-truth-conditions results in the following formulation:

DT3) i) The Proposition Theory is true and ii) for any token, u, of 'e is now' produced at t, u is true (i.e. expresses a true proposition) iff e occurs at t.

2.3 Evaluating the Token-Reflexive Theory

I will now evaluate the three formulations of the token-reflexive theory in light of objections that have been given by Quentin Smith. Quentin Smith (1993) has provided some formidable objections to the token-reflexive theory.⁹ In one objection he argues that the token-reflexive theory does not provide the proper token-reflexive truth-conditions for some tensed sentences.¹⁰ He considers the following tensed sentence:

(1) I am not now uttering anything.

⁹ Craig (2000) provides objections to the token-reflexive theory that are in many ways similar to those provided by Smith (1993). I think that much of what I say in response to Smith's objections can also be applied to Craig's objections.

¹⁰ In presenting Smith's objections I leave the term 'truth-condition' ambiguous since one of my central claims is that his objections fail to recognize the different senses of the term. In evaluating Smith's objections below, I return to my disambiguated usage.

Suppose I produce a token utterance, U, of (1). Smith claims that the token-reflexive truth-conditions for my utterance state that U is true iff:

(2) The event of my not uttering anything is simultaneous with U.

According to Smith, the token-reflexive truth-conditions provide the correct result that U is false. However, Smith notes that some amount of investigation is required in order to determine the truth of (1). Smith states, "But I need not utter [1], I could think it silently to myself... As silently thought, it is true" (Smith 1993, 79). However, Smith claims (2) is false *a priori*. Since (2) is *a priori* false and (1) is not, Smith concludes that the token-reflexive formula fails to provide the proper truth-conditions for (1).

A second, related objection by Smith concerns what he calls "normal" tensed sentences, namely those that, unlike (1), do not contain explicit reference to a token.

Smith considers the following sentence:

(3) The forest is now burning.

He argues that what is expressed by a token of (3) at time t does not have the same truth-value in all possible circumstances as what is expressed at t by the corresponding token-reflexive sentence:

(4) The forest is burning simultaneously with this token.

Smith names what is expressed by a token of (3) at t 'p1' and what is expressed by a token of (4) at t 'p2'. He claims:

If both p1 and p2 are in fact true when expressed at t, it is nevertheless the case that p1 would have been true at t even if it had not then been expressed by any physical or mental sentence-token, whereas p2 would not have been true at t if it had not then been expressed by any sentence token. In possible worlds terminology, we may say that in all possible worlds similar to our own except in that p1 and p2 are not expressed at t, p1 is true at t in those worlds but p2 is not. (Smith 1993, 84)

Smith concludes that since what is expressed by a token of (3) at *t* has different truth values in some possible worlds from what is expressed by a token of (4) at *t*, the token-reflexive theory fails to provide the proper truth-conditions for (3).

I will now consider each formulation of the token-reflexive theory given above and determine whether Smith's objections succeed in disproving it. TR1 is the token-reflexive view adopted and defended recently by Heather Dyke (2002). It is clear that she takes the Token View to be true. She states, "My position entails that sentence tokens, rather than propositions, statements or sentences, are the legitimate bearers of truth" (Dyke 2002, 346). Elsewhere she claims, "The predicate 'true' applies only to linguistic entities. It is sentence tokens that can correctly be described as true or false" (Dyke 2002, 339). Furthermore, as a defender of the Token View, it is clear that she takes the token-reflexive theory to provide *t*-truth-conditions (as opposed to *p*-truth-conditions).

Dyke claims that her view is able to accommodate Smith's objections. Dyke's response to Smith's first objection is to note that it is only if we limit what counts as a token to utterances that (2) is false *a priori*. If we broaden the theory to include mental tokens, which Dyke points out Mellor (1981, 37) accepts, then (2) is not false *a priori*, some investigation is required to determine whether or not my token, *U*, is simultaneous with my not uttering anything. So, Dyke claims that if tokens are construed more broadly, Smith's first objection is avoided.

Dyke responds to Smith's second objection by insisting that the question of truth only arises with respect to tokens. She acknowledges the intuitive appeal of the following rule employed by Smith:

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

However Dyke claims that this natural intuition we have about the nature of truth can be "explained without appealing to the existence of abstract truth vehicles" (Dyke 2002, 342). She considers a case in which the forest burns between t_1 and t_2 . She admits that we have the intuition that the sentence 'The forest is now burning' is true between t_1 and t_2 whether or not any token of it is actually uttered. She claims that this intuition can be explained by appealing to the following counterfactual:

(5) 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. (Dyke 2002, 342)

Dyke notes that the reason the token would have been true is because the token-reflexive truth-conditions would have been satisfied. She concludes that the intuition behind Smith's rule "can be explained perfectly well without the existence of [abstract truth vehicles]" (Dyke 2002, 346).

Dyke's view (TR1) fails not because its account of t-truth-conditions fails but because the Token View is implausible. Dyke's appeal to counterfactuals such as (5) are insufficient for accounting for our intuition that there exist token-independent truths. In order to see this, consider a case similar to Smith's first objection. Suppose I produce a (mental or verbal) token, U, of the following tensed sentence:

(6) I am not now tokening anything.

The token-reflexive t-truth-conditions for my utterance state:

(7) U is true iff the event of my not tokening anything is simultaneous with U.

(7) has the correct result that U is false, however there is an intuition that what is expressed by U might have been true. After all, I might have been knocked unconscious moments before producing U. There is some possible world, W, in which I am knocked unconscious moments before producing U and, intuitively, what is expressed by U is true in W. Note that a counterfactual of the sort Dyke proposes will not account for the intuition that what is expressed by U is true at W. The following counterfactual

(8) If I had uttered a token of the sentence type 'I am not now tokening anything', that token would have been true.

is clearly false at W. If I had uttered a token of 'I am not now tokening anything', the token would have been false since it fails to satisfy the token-reflexive t-truth-conditions. With respect to sentences like (6), Dyke's account is unable to accommodate the intuition that what is expressed by a token of (6) might have been true.¹¹

There are other cases in which Dyke's counterfactual fails to accommodate our intuition that there exist token-independent truths. There is good reason to believe that there are truths for which there is no linguistic expression. Consider the interval from

¹¹ Phillip Bricker has pointed out to me that Dyke's counterfactual approach also fails in cases involving "normal sentences" (those that do not contain an explicit reference to the token). Suppose that there is a causal connection between tokening and forest fires such that a (mental or verbal) token produced between t1 and t2 causes the forest fire to be extinguished. Suppose also that there are no tokens produced between t1 and t2. In

9am to 10am this morning. Assuming that time is continuous, this interval contains continuum many moments. It is true of each of these moments that it is past. There are continuum many truths just like the one we would express by saying '9:30am is past'. However a language made up of finitely long sentences is only capable of producing denumerably many sentences. The intuition that there are these truths, one for each moment in the interval, cannot be accounted for by Dyke's counterfactual because for many of these truths there is no linguistic utterance that is capable of expressing it and, so, no corresponding counterfactual.¹²

I conclude that the Token View, the view that truth only applies to tokens, is an implausible one, and therefore TR1 is false. There are instances in which we have a clear intuition that a truth exists even though there is no corresponding token. I have argued that Dyke's appeal to counterfactuals such as (5) fails to adequately account for this intuition.

Having rejected TR1, let us now consider how TR2 fares with respect to Smith's objections. TR2 fails to provide plausible necessary and sufficient conditions for the truth of the proposition expressed by a tensed token (p-truth-conditions). Consider a token utterance, U, of

(3) The forest is now burning.

such a case, the counterfactual (5) is false even though, intuitively, the sentence type 'the forest is now burning' is true between t1 and t2.

¹² This argument is adapted from similar arguments given by Soames (1999, 19) and Phillip Bricker (personal communication). Soames uses the claim that there are truths about the real numbers to argue that propositions, rather than tokens, should serve as the fundamental truth-bearers.

TR2 claims that the proposition expressed by U is such that it is true iff the event of the forest burning is simultaneous with U. According to TR2, the truth of the proposition expressed by U depends upon whether U is appropriately related to the event mentioned in U. However the proposition expressed by U might not have been expressed by U. The proposition might have been expressed by some other token such as a token utterance of 'the forest is burning now' or by no token at all. In both of these counterfactual cases the proposition is true. So the existence of U standing in the relation of *is-simultaneous-with* to the event mentioned in U is not necessary for the truth of the proposition expressed by U.

The failure of TR2 to provide the proper p-truth-conditions for tensed tokens can be further seen by considering a token utterance, U, of

(6) I am not now tokening anything.

TR2 provides the following p-truth-conditions for U:

(9) The proposition expressed by U is such that it is true iff the event of me not tokening anything is simultaneous with U.

TR2 has the correct consequence that the proposition expressed by my utterance is false. However the proposition that I express by U might have been true for the reasons given above. (9) fails to allow for the possibility in which the proposition expressed by U is true. So TR2 provides the wrong p-truth-conditions for U.

The difficulty with TR2 is that there is no reason to think that the truth of the proposition expressed by a token utterance of (3) or (6) is determined by how the token is related to the event mentioned in the token. It is implausible to suppose that

necessary and sufficient conditions for the truth of the proposition expressed by token utterances of (3) or (6) involve facts about the tokens used to express them.

TR3 fares much better than TR2. TR3 provides necessary and sufficient conditions for when tensed tokens express true propositions (t-truth-conditions).

Consider again a token utterance, U, of:

(3) The forest is now burning.

According to TR3, U expresses a true proposition iff the event of the forest burning is simultaneous with U. The fact that what is expressed by U would have been true even if U had not been uttered does nothing to undermine TR3, since TR3 acknowledges the existence of token-independent truths but only provides necessary and sufficient conditions for the truth of tensed tokens.

Similarly, my token, U, of:

(6) I am not now tokening anything

does not raise difficulties for TR3. According to TR3, the token-reflexive t-truth-conditions for U are given as follows:

(10) U is true iff the event of me not tokening anything is simultaneous with U.

Note that (10) is compatible with the claim that what is expressed by U might have been true. (10) only excludes the possibility of there existing a true *token* of (6). And, after all, the impossibility of a true token of this sort is exactly what we should expect. TR3 does not force us to abandon the intuition that *what is expressed* by U (namely the proposition) might have been true.

Of the three formulations of the token-reflexive theory considered so far, TR3 is the most plausible. Unlike TR2, the examples involving tokens of (3) and (6) fail to

demonstrate that TR3 is false. Unlike TR1, TR3 is not committed to the claim that truth is only a property of tokens, and TR3 can account for our intuition that sentences like 'I am not now tokening anything' might have been true by recognizing the existence of token-independent truth-bearers.

My examination of the three formulations of the token-reflexive theory may be summed up as follows: TR1 is false because it is unable to accommodate the intuition that there are token independent truths. Dyke's attempt to accommodate the intuition in terms of counterfactuals involving tokens is unsuccessful. TR2 is false because it provides implausible p-truth-conditions for tensed tokens. TR3 avoids both of the vices of its sister formulations: it allows for the existence of token-independent truths and provides t-truth-conditions rather than p-truth-conditions. It is plausible that the t-truth-conditions of a tensed token are given in terms of facts about how the token is related to events mentioned in the token. I conclude that TR3 is true.

2.4 Evaluating the Date Theory

In this section I will consider how the three formulations of the date theory fare in light of objections that have been raised against it by Quentin Smith. The force of Smith's objections has been acknowledged by a number of B-theorists, and many agree that they succeed in demonstrating that the date theory is untenable.¹³ Quentin Smith (1987), (1993), and (1999) claims that the date theory is prone to an objection whether one adopts a reductionist or a substantialist account of time. He considers a true utterance

of 'Beth is now waking up' uttered at 12pm. According to the date theory, the utterance, call it 'U', is true iff Beth wakes up at 12pm. Smith attributes to the reductionist the view that times are sets of simultaneous events.¹⁴ Call the set of events simultaneous with Beth's waking up 't'. Smith notes that the set t includes Beth's waking, U, and (Smith supposes) a certain ultraviolet ray (henceforth 'Ray') striking the Empire State Building. However, Smith notes, there is some possible world, w1, in which there exists a set of simultaneous events, t1, that includes Beth's waking, U, and all the other events that are members of t except for the event of Ray striking the Empire State Building. Smith notes that U is true in w1, however since sets have their members essentially, t is not identical to t1. Smith concludes that in w1 the event of Beth's waking does not occur at t. So the event of Beth's waking occurring at t is not necessary for the truth of U. Therefore, given a reductionist account of time, the date theory fails.

Smith argues that a similar objection can be given if one assumes a substantialist account of time. Smith takes a substantialist to be one who holds that, "a time t is a particular that is logically independent of any events that occupy that time" (Smith 1999, 237). He again considers a true utterance of 'Beth is now waking up'. He states:

There is some merely possible world [w2] in which the substantialist time t, which is actually occupied by the event of Beth's waking up, is not occupied by this event and in which some other time, [t2], is occupied by this event and by the utterance of "Beth is waking up". This is sufficient for the utterance to state something true in this possible world. Since the utterance states a truth in this world even though the event of Beth waking up is located at [t2] rather than t, it is false that an utterance of "Beth is waking up" at time t states a truth if and

¹³ See Oaklander (1994), Le Poidevin (1995), Paul (1997), and Dyke (2002).

¹⁴ In Smith (1991) he cites a number of cases in which this view is adopted. I will henceforth follow Smith in using the term 'reductionist' for one who adopts such a view.

only if Beth's waking up occurs at t . Thus the alleged truth conditions proposed by the date-analysis theory are not truth conditions" (Smith, 1999, p.119).

In the possible world Smith considers, Beth's waking and U do not occur at 12pm but rather some other time, say, 1pm. Smith claims that U is true in w_2 so Beth's waking at 12pm is not necessary for the truth of U . Smith concludes that the date theory fails whether one adopts a substantivalist or a reductionist account of time.

Let us consider first which formulations of the date theory Smith's objections apply to. Note that in both the objection given a reductionist account of time and the objection given a substantivalist account of time, the counterexample involves a possible world in which a) U is true and b) Beth's waking does not occur at 12pm. This is meant to show that Beth's waking at 12pm is not necessary for the truth of U . Note however that these objections are aimed at showing that the date theory provides the wrong *t-truth-conditions* for U . Therefore, the objections only apply to DT1 and DT3, both of which attempt to provide t-truth-conditions for tensed tokens. A world in which both (a) and (b) obtain is not necessarily a counterexample to a theory which provides p-truth-conditions for tensed tokens (such as DT2). It might be the case that (a) and (b) both obtain in w_1 yet the proposition expressed by U in the actual world is nonetheless true at w_1 . First, I will consider whether Smith's objections succeed in demonstrating that versions of the date theory which provide t-truth-conditions (DT1 and DT3) are false. Then, I will consider whether Smith's objections provide any threat to a formulation of the date theory that provides p-truth-conditions (DT2).

Do Smith's objections succeed in demonstrating that DT1 and DT3 are false?¹⁵

Smith's objection to the reductionist date theorist differs fundamentally from his objection to the substantivalist date theorist, and so both objections deserve fundamentally different replies. Let us first consider Smith's objection to the date theory given a reductionist account of time. Smith argues that U is true at w1 however Beth's waking does not occur at t (since it occurs at t1 and t1 is not identical to t). I will argue that this objection fails to pose any threat to the date theory. Smith makes certain implausible suppositions concerning how a reductionist would determine whether a time at one world is the same as a time at another world. This raises the issue of the identification of times across worlds: what makes t at world w the same time as t' at world v? One answer to this question is that t at w is the same time as t' at v if and only if t is strictly identical to t'; if t is literally one and the same time as t'. However a reductionist who takes times to be sets of simultaneous events would be foolish to adopt such an account precisely for the reasons Smith suggests. If times are sets of simultaneous events, then times have their members essentially. If the identity of times across worlds requires strict identity, then there will be no possible world in which 12pm lacks the event of Ray striking the Empire State Building. As a result, the following sentence will come out false on the standard possible worlds analysis of modal claims:

¹⁵ In the previous section I gave reasons for the claim that the Token View is false. If those reasons succeed in demonstrating the falsity of the Token View, they will likewise succeed in demonstrating the falsity of DT1. The success of Smith's objections being considered here would provide another, independent reason for rejecting DT1.

(11) It might have been the case that Ray did not strike the Empire State Building at 12pm.

It is false because there is no possible world in which it is 12pm and Ray does not strike the Empire State Building. Being forced to accept the falsity of (11) would be problem enough, whether one adopted the date theory or not. The view Smith attributes to the reductionist is a non-starter independent of anything having to do with the date theory.

Fortunately for the reductionist who takes times to be sets of simultaneous events, there is another answer to the question of what makes times the same across worlds that results in a more plausible position. She should deny that the sameness of times across worlds is a matter of strict identity. Rather she should claim that the sameness of times across worlds is determined by similarity relations: t at w is the same time as t' at v iff t' sufficiently resembles t .¹⁶ The time in w_1 that is the same time as 12pm in the actual world will be the time that sufficiently resembles 12pm in the actual world. The features of resemblance that will determine whether a given time at w_1 sufficiently resembles 12pm in the actual world (and is therefore the same time as 12pm in the actual world) will include both the extent to which the set of simultaneous events in w_1 has the same members as 12pm in the actual world, as well as the extent to which the world segments in which the events in the set are located resemble one another. The time that is 12pm in w_1 will be the one that most resembles 12pm in the actual world in these respects. The one that includes all the events simultaneous with Beth's waking minus Ray hitting the Empire State Building is 12pm in w_1 .

¹⁶ What I am proposing here is a counterpart theoretic treatment of times. For more on this kind of treatment of times see Lewis (1986, 70-71)

Given this method for identifying times across worlds, (11) comes out true since there is a possible world that contains the same time as 12pm in the actual world in which Ray does not strike the Empire State Building. Furthermore, the possible world that Smith describes fails to show that t is not necessary for the truth of U , since t_1 in w_1 is the same time as t in the actual world (even though t is not strictly identical to t_1). So the reductionist should claim that the identification of times across worlds is not a matter of strict identity, but rather a matter of similarity relations between sets of events.¹⁷ So Smith's objection against the date theory given a reductionist account of time fails to pose a threat to any of the formulations of the date theory given above.

It might be objected that denying that sameness of times across worlds is a matter of strict identity, and instead a matter of resemblance relations obtaining between numerically distinct sets of simultaneous events, is an *ad hoc* reply to Smith's objection. I would acknowledge the force of this response if the move to resemblance relations between distinct sets of simultaneous events was merely a way of avoiding Smith's objection to the date theory and lacked independent motivation. However such a move *is* independently motivated. The reductionist will want to deny that the identification of times across worlds is a matter of strict identity in order to accommodate ordinary modal claims about times. The need to accommodate modal claims such as (11) provides independent grounds for adopting a counterpart theoretic treatment of times.

¹⁷ Denying that sameness of times across worlds is a matter of strict identity does not require one to deny that the sameness of objects across worlds is a matter of strict identity. It is coherent to hold that what makes my coffee mug in the actual world the same as some other-worldly mug is a matter of strict identity even though what makes the actual time at which my coffee cup is first empty the same as some other-worldly time is not a matter of strict identity.

The fact that such a move manages to avoid Smith's objection to the date theory is just a consequence of adopting an account of the modality of times that is on the whole more plausible.¹⁸

Let us now consider Smith's objection to the substantialist date theorist. He claims that there is some possible world, w_2 , in which Beth's waking and U do not occur at 12pm but rather some other time, 1pm. Smith claims that U is true in w_2 . So Beth's waking at 12pm is not necessary for the truth of U.

Note that this argument can be restated to apply to the reductionist who holds that sameness of times across worlds is a matter of resemblance relations obtaining between sets of simultaneous events. There is some possible world, w_2^* , in which Beth does not wake up at the time that is the same as 12pm in the actual world (the one that most resembles 12pm in the actual world). Rather Beth's waking and U are both

¹⁸ It has been suggested to me by David Ian Spencer and by an anonymous referee for *Philosophical Studies* that the reductionist could take times to be mereological sums of simultaneous events rather than sets of simultaneous events. Assuming that mereological essentialism is false, the reductionist who takes times to be mereological sums of simultaneous events could respond to Smith's objection by claiming that t can survive the loss of a part. However, I think the view that times are mereological sums of simultaneous events is *also* most plausibly combined with a counterpart theoretic treatment of the identification of times across worlds.

Call the time that has as parts Beth's waking, the utterance U, Ray striking the ESB and all the other events simultaneous with Beth's waking 'Tibbles'. Call the thing made up of all of these events minus the event of Ray striking the ESB 'Tib'. Now, by hypothesis, if Ray did not strike the Empire State Building, Tibbles would still exist:

- (1) Tibbles in @ = Tibbles in w_1
- (2) Tib in @ = Tibbles in w_1
- (3) Tibbles in @ \neq Tib in @
- (4) Tibbles in @ = Tib in @ (By 1,2, Transitivity of identity)
- (5) Contradiction! (by 3,4)

I take the most plausible resolution of this puzzle to be the denial of (1). Although Tibbles in @ is not numerically identical to Tibbles in w_1 , Tibbles in w_1 is the same time as Tibbles in @ in virtue of sufficiently resembling Tibbles in @.

located at the time in w_2^* that most resembles 1pm in the actual world. Intuitively, U is true in w_2^* even though Beth's waking does not occur at 12pm in w_2^* . So Beth's waking occurring at 12pm is not necessary for the truth of U. Whereas Smith's objection against the date theory given a reductionist account of time can be avoided by adopting a plausible account of the identification of times across worlds, Smith's objection to the substantival theory can be extended to apply regardless of which account of time one holds. I will henceforth treat the objection Smith aims at the substantialist date theorist as one that applies whether one adopts a substantival or a reductionist account of time. I will henceforth refer to this objection as 'Smith's Objection'.

Smith's Objection succeeds in demonstrating the falsity of DT1 and DT3. Both DT1 and DT3 provide t-truth-conditions for tensed tokens. According to DT1 and DT3, U is true iff Beth's waking occurs at 12pm. The possible world described by Smith provides a case in which U is true but Beth's waking does not occur at 12pm. So it succeeds in showing that Beth's waking at 12pm is not necessary for the truth of U. There is a variant of Smith's Objection that demonstrates that Beth's waking at 12pm is not sufficient for the truth of U. There is a possible world, w_3 , in which Beth wakes up at 12pm, is fully awake at 1pm and U is produced at 1pm. In w_3 , Beth's waking occurs at 12pm, so the right-side of the biconditional is satisfied, however U is false since Beth is already awake at 1pm. So DT1 and DT3 fail to provide adequate necessary and sufficient conditions for the truth of U.

There is a possible response to Smith's Objection that might be marshaled in defense of DT1 and DT3. Heather Dyke claims that Smith's Objection succeeds, "provided that we allow Smith one crucial assumption" (Dyke 2002, 335). The assumption is that token U in w2 is the same as U in the actual world. If U in w2 is not the same as U in the actual world, then w2 fails to show that Beth's waking at 12pm is not necessary for the truth of U. The claim that U in w3 is the same token as U in the actual world might likewise be denied, and it might be claimed that as a result w3 fails to show that Beth's waking at 12pm is not sufficient for the truth of U.

The main reason, I take it, that an objector might deny that U in w2 (U in w3) is the same token as U in the actual world is because U in w2 (U in w3) occurs at a different time than U in the actual world. It might be claimed that tokens have their times essentially and since U in w2 (U in w3) is uttered at a different time than U in the actual world, the tokens are not the same. This response to Smith's Objection strikes me as implausible mainly because there do not seem to be any good reasons for holding that a token has the time at which it is produced essentially. It seems perfectly natural to claim that a token might have been produced later than it actually was. Tokens are, after all, either utterances, inscriptions, firings of neurons in the brain. Why couldn't such events have happened an hour later than they actually did?¹⁹ Consider my actual utterance at 12pm of 'Beth is now waking'. Clearly it makes sense to ask whether the

¹⁹ The issue might be more complicated than I am suggesting here. It might be that in certain contexts it is perfectly natural to claim that a token might have been later than it actually is. When I emphasize certain features of a token utterance such as its being an utterance produced by the vocal chords, it seems clear that a token (*qua* utterance) might have been later than it actually was. Perhaps when we emphasize other features of the

token would have been true, if I were to have uttered it an hour later. One might respond that what I am asking in this case is whether a later, distinct, token of the same type would have been true. However, unless there are independent reasons for claiming that tokens have their times essentially, insisting that U at w2 and U at w3 are not the same as U at the actual world strikes me as an *ad hoc* response to Smith's Objection.

The lesson to be learned from Smith's Objection, so far, is that the date theory should not be formulated in such a way as to provide t-truth-conditions for tensed tokens. However does Smith's Objection demonstrate that the date theory fails at providing p-truth-conditions for tensed tokens? DT2 states that the proposition expressed by a token of 'e is now' produced at t is true if and only if e occurs at t. This formulation is very much in line with David Kaplan's (1989) directly referential account of indexical expressions. Kaplan claims that 'now' directly refers to the time of the context in which it is produced. So the p-truth-conditions of a token of the form 'e is now' will be identical to the Kaplanian content of the token.²⁰

It is clear that DT2 is immune from Smith's Objection. U in the actual world expresses the proposition that Beth is waking at 12pm. In w2, the same token, U, expresses a different proposition, namely the proposition that Beth is waking at 1pm. The fact that U is true in w2 even though Beth's waking does not occur at 12pm does nothing to undermine DT2, since DT2 does not provide necessary and sufficient

token, such as its role in a semantic theory, we are more inclined to say that it has its time essentially.

²⁰ Strictly speaking, Kaplan's own view does not assign contents to tokens but rather assigns contents to expressions in a context which can be thought of as a pair consisting of a sentence type and a context. In the end, I will side with Kaplan in rejecting token theories in favor of something like his expressions-in-a-context theories.

conditions for the truth of U, but rather it provides necessary and sufficient conditions for the proposition expressed by U in the actual world. The proposition expressed by U in the actual world is the proposition that Beth is waking at 12pm. This proposition is true if and only if Beth's waking occurs at 12pm. W3 also poses no threat to DT2. In w3, U expresses the proposition that Beth's waking occurs at 1pm. Since Beth's waking occurs at 12pm, U is false in w3. However the fact that U expresses a false proposition in w3 does nothing to undermine DT2 since DT2 provides necessary and sufficient conditions for the proposition expressed by U in the actual world. This proposition is true in w3 since in w3 Beth does wake up at 12pm. So the example involving w3 fails to provide a counterexample to DT2.

My considerations concerning Smith's objections to the date theory may be summed up as follows. Smith's objection to the reductionist date theorist fails because it attributes an implausible view to the reductionist about how times are identified across worlds. Smith's objection to the substantialist date theorist can be restated to apply to the date theorist regardless of whether she adopts a substantial or reductionist account of time. This objection, Smith's Objection, succeeds in demonstrating that the date theory should not be formulated in such a way as to provide t-truth-conditions for tensed tokens. DT1 and DT3 both provided t-truth-conditions for tensed tokens and Smith's Objection shows that they are false. I note however that Smith's Objection fails to undermine DT2, a version of the date theory that is formulated so as to provide p-truth-conditions for tensed tokens. In fact, DT2 seems to provide exactly the right results with respect to the possible world Smith puts forth as a counterexample to the date theory. I conclude that while DT1 and DT3 are both false, DT2 is true.

2.5 Conclusion

I have argued that for both the token-reflexive theory and the date theory, there are three different formulations depending upon what one takes the fundamental bearers of truth to be and what sense of 'truth-condition' one has in mind. I argue that there is a version of the token-reflexive theory, namely TR3, that is true and a version of the date-theory, namely DT2, that is true. TR3 provides t-truth-conditions for tensed tokens whereas DT2 provides p-truth-conditions for tensed tokens. I conclude that the token-reflexive theory and the date theory should not be taken to be rival theories but rather should be seen as suited for different purposes. The token-reflexive theory is well suited for providing necessary and sufficient conditions for the truth of tokens (t-truth-conditions), whereas the date theory is well suited for providing necessary and sufficient conditions for the truth of propositions expressed by tokens (p-truth-conditions). To illustrate this point, let us once again consider my utterance, U, at 12pm of 'Beth is now waking'. Suppose we are interested in knowing under what conditions my token utterance is true (i.e. expresses a true proposition). TR3 is best suited for this goal. TR3 says that my token is true if and only if U is simultaneous with Beth's waking. In w2, U is true because U is simultaneous with Beth's waking. In w3, U is false because U is not simultaneous with Beth's waking. TR3 provides us with the correct result in these cases. Suppose we are instead interested in knowing under what conditions the proposition expressed by my token utterance U is true. DT2 is best suited for this goal. DT2 entails that the proposition expressed by my utterance is false in w2 because Beth's

waking does not take place at 12pm and it entails that the proposition expressed by my utterance is true in w_3 because Beth's waking does occur at 12pm. I believe that the debate over whether the token-reflexive theory is true or whether the date theory is true has arisen from a failure to distinguish between p-truth-conditions and t-truth-conditions. Once this distinction is highlighted, it becomes clear that the date theory and the token-reflexive theory are not rival theories, but instead suited for different conceptual tasks.

I have argued that there is a version of the token-reflexive theory that is true and a version of the date theory that is true. Do these formulations vindicate the New B-Theory? Unfortunately, I think not. Both the token-reflexive theory and the date theory arose from an assumption that the truth and falsity of tensed sentences can be fully accommodated by providing truth-conditions for tensed tokens. I think there is good reason to deny this claim. Intuitively, sentences can be true at a time even if they are untokened. Suppose that the forest burns from Monday to Wednesday. Consider once again the following sentence:

(3) The forest is now burning.

It is plausible that (3) is true on Tuesday even though there is no token of (3) produced on Tuesday. Admitting that (3) is true on Tuesday does not demonstrate that either TR3 or DT2 is false since both admit the existence of token-independent truths. However, neither TR3 nor DT2 can give an account of why (3) is true on Tuesday since both provide truth-conditions (albeit two different kinds of truth-conditions) for *tokens*.

A natural response from the New B-Theorist is to claim that TR3 and DT2 can be combined with a counterfactual analysis involving tokens, and that TR3 and DT2,

together with this counterfactual analysis, can provide a complete account of the truth or falsity of tensed sentences. Given TR3 and DT2, there are two ways in which we might attempt to accommodate the truth of (3) on Tuesday by appealing to counterfactuals.

The first option is to combine TR3 with a counterfactual analysis:

(3) is true on Tuesday iff the following counterfactual is true: If a token, U, of 'The forest is now burning' were to have been produced on Tuesday, then U would have been true (i.e. would have expressed a true proposition).

The truth of the counterfactual on the right-hand side of the biconditional is supported by TR3. In the closest possible world in which U is produced on Tuesday, it is true because U's t-truth-conditions obtain: U is simultaneous with the burning of the forest. Similarly, if the forest was not burning on Tuesday, the biconditional would provide the correct result that (3) is false since the counterfactual would be false.

The other option for accommodating the truth of (3) on Tuesday is by combining (DT2) with a counterfactual analysis. This results in the following biconditional:

(3) is true on Tuesday iff the following counterfactual is true: If a token, U, of (3) were to have been produced on Tuesday, then the proposition that would have been expressed by U would have been true.

In this case, the truth of the counterfactual on the right-hand side of the biconditional is supported by DT2. In the closest possible world in which U is produced on Tuesday, U's p-truth-conditions obtain: the proposition expressed by U is true because the forest is burning on Tuesday.

However note that both of these counterfactual approaches fail with respect to sentences such as:

(6) I am not now tokening anything.

As with (3), there is an intuition that (6) can be true at certain times. Suppose I am knocked unconscious moments before 2pm. At 2pm, (6) is true. However consider the following biconditional:

(6) is true at 2pm iff the following counterfactual is true: if I were to have produced a token, U, of (6) at 2pm then U would have been true (i.e. would have expressed a true token).

This provides the wrong result. The counterfactual on the right-hand side of the biconditional is false. In the nearest possible world in which I produce a token of U, U is false. It is false because the t-truth-conditions given by TR3 fail to obtain. Trying to accommodate the truth of (6) at 2pm by appealing to the following biconditional also fails.

(6) is true at 2pm iff the following counterfactual is true: if I were to have produced a token, U, of (6) at 2pm, then the proposition that would have been expressed by U would have been true.

The counterfactual on the right-hand side of the biconditional is again false. In the closest possible world in which U is produced on Tuesday, the proposition expressed by U is false because the p-truth-conditions given by (DT2) fail to obtain. Trying to accommodate the truth of sentences like (6) by appealing to a counterfactual analysis involving tokens does not succeed.

I conclude that, even though (TR3) and (DT2) are both true, they are unable to provide a complete account of what makes tensed sentences true. I believe that the B-theory can succeed in providing tenseless truth-conditions for tensed sentences, however in order for it to succeed, it must abandon the supposition on which the New B-Theory was founded. In *Real Time*, D. H. Mellor realizes that tensed sentence types are not true or false *simpliciter*, but rather true at some times and false at other times. He concludes from this that “the truth and falsity of tensed sentences, therefore, are properties of their tokens rather than of their types” (Mellor 1981, 40). Both the date theory and the token-reflexive theory take Mellor’s conclusion as their starting point by providing truth-conditions for tokens. I think the B-theorist should reject Mellor’s conclusion. The fact that tensed sentence types are not true or false *simpliciter*, but rather true at some times and false at others, should not motivate a move towards taking truth and falsity of tensed sentences to be properties of their tokens. Rather, the B-theorist should evaluate sentence types in a context. Only then will the B-theorist succeed in providing a complete account of what makes tensed sentences true.

CHAPTER 3

TENSELESS TRUTH-CONDITIONS FOR TENSED SENTENCES: THE TYPE-CONTEXT THEORY

In this chapter I will argue that the correct way of providing tenseless truth-conditions for tensed sentences involves evaluating sentence-types within a context. I defend an account that makes use of David Kaplan's theory of indexicals according to which sentence-types have contents in contexts. I claim that one can either (a) provide an account of tenseless truth-conditions that takes the content of tensed sentence-types in contexts to be sets of world-time pairs or (b) provide an account of tenseless truth-conditions that takes the content of tensed sentence-types in a context to be sets of possible worlds. I demonstrate how such a view is able to provide a complete tenseless account of what makes tensed sentences true. Finally, I respond to some objections that have been leveled against a similar account given by Laurie Paul. I argue that the view I defend avoids these objections.

3.1 Motivating the Type-Context Theory

Suppose my plane boards at 3pm. Consider the following sentence-type:

- (1) The plane is boarding now.

In *Real Time*, D. H. Mellor notes that tensed sentences such as (1) are not true or false *simpliciter*, but rather true at some times and false at other times. He concludes from this that "the truth and falsity of tensed sentences, therefore, are properties of their tokens rather than of their types" (Mellor 1981: 40). The New B-Theory of Time

explains the fact that (1) is true at some times and false at other times by focusing on tokens of (1). According to the New B-Theory of Time, (1) is true at some times and false at other times in virtue of the fact that tokens of (1) produced at one time are true *simpliciter* and tokens of (1) produced at another time are false *simpliciter*. The New B-Theorist argues that a 3pm token of (1) is true in virtue of certain tenseless facts obtaining and a 2pm token of (1) is false in virtue of a different set of tenseless facts obtaining. New B-Theorists disagree over exactly what tenseless facts make tokens of (1) true. The token reflexive theorist holds that a token of (1) is true if and only if the token is simultaneous with the event mentioned in the token: A token of (1) is true at 3pm because the token is simultaneous with the boarding of the plane. The date theorist holds that a token of (1) is true if and only if the plane boards at the time at which the token is produced.

The date theory and the token reflexive theory are both 'token-based' approaches to providing tenseless truth-conditions for tensed sentences. They both assume that the truth of tensed sentences can be explained by focusing on tenseless features of tokens of the sentence (either the token standing in a simultaneity relation with an event or the event being located at the time at which the token is produced). In the previous chapter I argued that the debate between the token-reflexive theorist and the date theorist arises from a failure to distinguish between conditions for the truth of tensed tokens and conditions for the truth of propositions expressed by tensed tokens. I argued that there is a true formulation of the token-reflexive theory which provides the proper conditions for the truth of tensed tokens and there is a true formulation of the date theory which provides the proper conditions for the truth of propositions expressed by tensed tokens.

Even though there is a true formulation of the token-reflexive theory and a true formulation of the date theory, the New B-Theory nonetheless fails to provide a complete account of the truth and falsity of tensed sentences.

As I argue at the end of the previous chapter, it is not the case that the truth or falsity of tensed sentences can be fully accommodated by providing truth-conditions for tensed tokens. Suppose that the forest is on fire from Monday to Wednesday. I claim that it is intuitively plausible that the sentence:

(2) The forest is now burning.

is true on Tuesday even though there is no token of (2) produced on Tuesday. This fact, namely that (2) is true on Tuesday even though there are no tokens of (2) produced on Tuesday, suggests that the truth-conditions for tensed sentences cannot be fully accommodated by providing truth-conditions for tensed tokens.

Another difficulty for the assumption that the truth or falsity of tensed sentences can be fully accommodated by appealing to tensed tokens concerns tensed sentences that are false but, intuitively, could have been true. One such example from the previous chapter is the sentence:

(3) I am not now tokening anything.

My 2pm token utterance of (3) is clearly false. However, what I said at 2pm could have been true. After all, I might have been knocked unconscious moments before 2pm. The fact that what I said at 2pm could have been true cannot be explained by appealing to tenseless features of tokens of (3), since it is not possible for there to be a true token of (3).

These considerations do not demonstrate the falsity of either the formulation of the token-reflexive theory (TR3) or the formulation of the date theory (DT2) that I defend in the previous chapter. However, they do demonstrate that (TR2) and (DT2) are unable to provide a complete account of what makes tensed sentences true. In what follows, I will provide an account that is able to explain the fact that (2) is true on Tuesday even though there are no tokens of (2) on Tuesday. Furthermore, the account I propose is able to explain the fact that (3) might have been true even though an actual 2pm utterance of (3) is false.

3.2 Kaplan, Contents and Contexts

Rather than responding to the initial fact that tensed sentences like (1) fail to be true or false *simpliciter* by shifting the focus to tensed tokens, the B-theorist should embrace the fact that tensed sentence-types like (1) fail to be true or false *simpliciter* and provide an account of the truth of tensed sentence-types *relative to a context*.

The notion of truth relative to a context is by no means new. David Kaplan's well-known theory of indexicals assigns truth-values to sentence-types in contexts with respect to circumstances.¹ Kaplan takes contexts to be n-tuples that include at least an agent, a time, a location and a world.² On Kaplan's theory, sentence-types containing indexicals such as:

(4) I am from New Jersey.

¹ These technical notions will be explained below.

² Perhaps the context includes more than an agent, a time, a location and a world. Additional features of the context may also include standards of precision, audience and referent (in the case of demonstrations) to name a few.

are assigned contents relative to contexts. Let us use 'C' to refer to the context that includes Stephan Torre as the agent, 2pm, August 31st, 2007 as the time, Amherst, Massachusetts as the location and the actual world as the world. Kaplan takes the content of the sentence-type 'I am from New Jersey' when evaluated with respect to C, to be the structured proposition that can be represented by the ordered pair containing me and the property of being-from-New Jersey: <Stephan, being-from-New-Jersey>. Consider the context, C*, that includes all the same elements as C except the agent of C* is Jimmy Carter rather than Stephan Torre. The content of (4) in C* is the structured proposition that can be represented by an ordered pair containing Jimmy Carter and the property of being-from-New-Jersey: <Jimmy Carter, being-from-New-Jersey>.

In what follows I will understand sentence-types in a context as determining sets of possibilia, rather than structured propositions. Rather than taking the content of (4) in C* to be the structured proposition represented by <Jimmy Carter, being-from-New-Jersey>, as Kaplan does, I will take it to be the set of possibilia in which Jimmy Carter is from New Jersey.³

On Kaplan's theory, contents are evaluated with respect to circumstances. Kaplan states that a circumstance "will usually include a possible state or history of the world, a time and perhaps other features as well. The amount of information we require from a circumstance is linked to the degree of specificity of contents, and thus to the kinds of operators in the language" (Kaplan 1989: 502). Contents of sentence-types in

³ It is an interesting question whether anything significant depends upon taking contents to be structured propositions or sets of possibilia. Jeffrey King discusses some differences that arise in adopting the latter view over the former in "Tense, Modality

contexts are functions from circumstances to truth-values. Let us first consider a view according to which the content of (4) in C is a set of possible worlds in which Stephan is from New Jersey. If we construe contents in this way, then we can assign truth-values to contents with respect to possible worlds. The content of (4) in C is true at the actual world because the actual world is a world in which Stephan is from New Jersey. The content of (4) in C*, however, is false at the actual world because the actual world is not a world in which Jimmy Carter is from New Jersey. So if we take contents to be sets of possible worlds, then contents can be evaluated with respect to possible worlds.

Consider the following sentence-type:

(5) I am hungry.

Can we evaluate the content of (5) in C with respect to a possible world? The answer depends on what kind of entity we take the content of (5) in C to be. One option is to take the content of (5) in C to be the set of possible worlds in which Stephan is hungry at 2pm on August 31st, 2007. According to this option, the time of the context is built into the content: the content of the sentence-type in the context includes the time 2pm, August 31st, 2007. A second option is to take the content of (5) in C to be the set of possibilities in which Stephan is hungry. According to this option, the set of possibilities is not a set of worlds, but rather a set of world-time pairs at which Stephan is hungry. I am not hungry *simpliciter* at the actual world. Rather I am hungry at some times and not hungry at others. If we take the content of (5) in C to be the set of possibilities in which

and Semantic Values”, *Philosophical Perspectives* 17, 2003 esp. footnote 20 and Appendix I.

Stephan is hungry, the set will contain all and only those world-time pairs at which I am hungry.

If we adopt the first option according to which contents are sets of possible worlds, then possible worlds are sufficient for evaluating the truth or falsity of the resulting content. The content of (5) in C is true at world w if and only if w is a world in which Stephan is hungry at 2pm on August 31st, 2007. However, if we adopt the second option according to which the content of (5) in C is the set of world-time pairs in which Stephan is hungry, then possible worlds are not sufficient for evaluating the truth or falsity of the content of (5) in C. If we adopt the second option, then we must evaluate contents with respect to world-time pairs: The content of (5) in C is true at the world-time pair $\langle w, t \rangle$ if and only if Stephan is hungry at t in w .⁴ So what we take the circumstances of evaluation to be depends upon whether we take the content of a sentence-type in a context to be a set of possible worlds or a set of possible world-time pairs.

Kaplan claims that, in the case of sentence-types such as 'I am hungry' which do not contain a temporal indexical, but do contain a tensed verb form ('I am (present-tense) hungry'), the contents of such sentences in a context are entities that vary in truth-value over time.⁵ His reason for doing so concerns certain assumptions about tense operators. Kaplan states:

⁴ If times are world-bound then we can make due with sets of possible times rather than sets of possible world-time pairs. By formulating the view in terms of world-time pairs I wish to remain neutral on the question of whether or not times are world-bound.

⁵ Kaplan does not take such entities to be sets of possible world-time pairs. Rather he takes them to be structured propositions that vary in truth-value over time.

If we built the time of evaluation into the content (thus removing time from the circumstances leaving only say, a possible world history, and making contents specific as to time), it would make no sense to have temporal operators. To put the point another way, if what is said is thought of as incorporating reference to a specific time, or state of the world, or whatever, it is otiose to ask whether what is said would have been true at another time, in another state of the world, or whatever. Temporal operators applied to eternal sentences (those whose contents incorporate a specific time of evaluation) are redundant. (Kaplan 1989: 503)

Suppose that at 2pm on August 31st, 2007 I produce an utterance of (5) that is intuitively false: At 2pm on August 31st, 2007 in the actual world I have just finished eating a large lunch and so it is not the case that Stephan is hungry at 2pm, August 31st, 2007.

Nonetheless it seems plausible to claim that what is said by (5) in *C* *was* true. Kaplan plausibly assumes that the application of a temporal operator to a present tense sentence may result in a sentence with a truth-value that differs from the truth-value of the original sentence. Consider the following application of the past tense operator 'It was the case that' to (5):

(6) It was the case that (I am hungry).

Most plausibly the truth of a sentence containing a tense operator, in a context, depends upon evaluating what is said by the sentence within the scope of the operator at different times. For example, the sentence-type (6) is true in context *C* just in case there is some time earlier than the time of the context *C* at which what is said by 'I am hungry' in *C* is true. If the content of (5) in *C* is the proposition that Stephan is hungry at 2pm on August 31st, 2007, then it is not the case that there exists a past time at which the content of (5) in *C* is true, since the proposition that Stephan is hungry at 2pm on August 31st, 2007 is false at all times. If we take the content of (5) in *C* to be the proposition that Stephan is hungry at 2pm on August 31st, 2007 and we assume that the

truth of (6) in C depends upon evaluating the content of (5) in C at different times, then the temporal operator 'It was the case that' is, as Kaplan claims, "redundant" in that it always generates the same truth-value as the truth-value of the sentence within the scope of the operator. However, Kaplan wishes to allow that the content of (6) in C may be true even though the content of (5) in C is false. If we take the content of (5) in C to be an entity that varies in truth-value over time, then we can claim that the content of (6) in C is true in virtue of the fact that there exists an earlier time at which the content of (5) in C is true. So, if Kaplan is right about how tense operators function in the language, then the content of tensed sentence-types like (5) in a context is capable of varying in truth-value over time. If tense operators operate on the content of a sentence-type in a context, then the content of a tensed sentence-type like (5) in a context cannot be true at worlds, but rather must be true at world-time pairs.

Another reason for thinking that contents of tensed sentence-types in a context are sets of possible world-time pairs rather than sets of possible worlds concerns considerations about the objects of belief. In "Index, Context, and Content" (1981) David Lewis considers the question of how to assign semantic values to sentences relative to contexts. In the paper he criticizes the accounts provided by Robert Stalnaker and David Kaplan. Stalnaker's account takes sentence-types in a context to determine propositions. These propositions are functions from possible worlds to truth-values.

Stalnaker claims:

I need some argument for the necessity or desirability of the extra step on the road from sentences to truth-values. The step is justified only if the middlemen—the propositions—are of some independent interest,...The independent interest in propositions comes from the fact that they are the objects

of illocutionary acts and propositional attitudes (Quoted in Lewis (1981: 93). Originally from Stalnaker (1970: 277-278)).

Lewis claims that Stalnaker is, “right that propositions have independent interest as suitable objects for attitudes such as belief” (Lewis 1981: 93). Lewis rejects Stalnaker’s view, however, for reasons similar to those that lead Kaplan to reject taking the content of sentence-types like (5) in contexts to have eternal truth-values: the existence of tense operators and other kinds of operators in the language require that the semantic value of a sentence in a context varies in truth-value, not just across worlds, but also across times and locations. Lewis’s objection to Stalnaker’s account is summed up by his observation that, “world is not the only shiftable feature” (Lewis 1981: 95).

Lewis recognizes that he cannot level the same objection against Kaplan’s theory, since on Kaplan’s theory the content of a sentence-type in a context is a function from “moderately rich indices to truth-values”⁶ (Lewis 1981: 96). However Lewis states, “But Kaplan cannot plausibly claim, as Stalnaker did, that his contents have an independent interest as suitable objects for propositional attitudes” (96). Lewis agrees with Stalnaker that propositions have independent interest as objects of attitudes, however since Kaplanian contents are not propositions, Lewis claims that Kaplan cannot defend his view by claiming that contents have independent interest as the objects of attitudes. Lewis then attempts to undermine Kaplan’s claim that the content of a sentence-type in a context has independent interest in that it captures *what is said* by the sentence-type in a context.

⁶ Lewis’ indices correspond to Kaplan’s circumstances.

Lewis's assertion that Kaplan cannot claim that his contents have independent interest as suitable objects of belief is surprising given that in "Attitudes *De Dicto* and *De Se*" (1979), Lewis argues that properties, rather than propositions, are the objects of attitudes. If properties, rather than propositions, serve as the proper objects of attitudes, then the defender of the Kaplanian account *can* claim that his contents have independent interest as the objects of attitudes. As I have noted above, Kaplan takes the contents of sentence-types such as (5) in a context to vary in truth-value over time. Consider the following sentence-type:

(7) The QE2 is departing.

Let us assume that the QE2 is departing at 3pm on September 20th, 2007. Let us call the context that includes the time 3pm, September 20th, 2007 'C'. If we take the content of (7) in C to be the set of world-time pairs, $\langle w, t \rangle$ such that the QE2 is departing at t in w , then we can identify the content of (7) in C with the property had by all and only those things simultaneous with the departing of the QE2. (7) is true in C if and only if the time of the context has this property. In Chapters 3 and 4, I defend the view that the object of one's belief, when one believes that the QE2 is departing, is the property of being an x such that the departing of the QE2 is simultaneous with x . So, if the objects of tensed beliefs are properly understood as properties, then the defender of the Kaplanian account of the content of sentences like (5) and (7) in a context can claim that such contents have independent interest as the objects of attitudes: what serves as the content of (7) in C is the same entity as what serves as the object of a subject's belief that the QE2 is departing. The fact that objects of belief are most plausibly construed

as properties provides another reason for claiming that the content of sentences like (5) and (7) in a context is an entity that is true at some times and false at other times.

So far, the sentence-types that I have been considering contain present tense verbs ('I am (present-tense) hungry' and 'The QE2 is (present-tense) boarding') but lack temporal indexicals (such as 'now'). When it comes to assigning contents to sentence-types in contexts, Kaplan treats these two kinds of sentence-types differently. He claims that the content of 'I am hungry' in *C* is a proposition that changes in truth-value over time, whereas the content of a sentence-type such as 'I am hungry now' in *C* is the eternally true proposition that Stephan is hungry at 2pm. Kaplan takes temporal indexicals like 'now' to be directly referential: they directly refer to the time of the context. Therefore, the content of sentence-types containing temporal indexicals in a context is an eternally true or false proposition.

Let us distinguish between two types of content of tensed sentences: *n*-content and *w*-content. Let us say that the *n*-content of a tensed sentence-type in a context is a set of possible world-time pairs. The *n*-content of the sentence-type 'I am hungry' in *C* is the set of world-time pairs, $\langle w, t \rangle$, such that Stephan is hungry at *t* in *w*. Similarly, the *n*-content of the sentence-type 'I am hungry now' in *C* is the set of world-time pairs, $\langle w, t \rangle$ such that Stephan is hungry at *t* in *w*. It is the *n*-content of a tensed sentence-type in a context that is operated on by tense operators such as 'It was the case that' and 'It will be the case that'. As I will argue in chapters 3 and 4, it is also the *n*-content of a tensed sentence-type in a context that serves as the (narrow) objects of tensed belief. Let us say that the *w*-content of a tensed sentence-type in a context is a set of possible worlds. The *w*-content of 'I am hungry' in *C* is the set of worlds, *w*, such that Stephan

is hungry at 2pm in *w*. Similarly, the *w*-content of 'I am hungry now' in *C* is the set of worlds, *w*, in which Stephan is hungry at 2pm in *w*.

Kaplan claims that the content of sentence-types that contain a temporal indexical in a context is what I have called *w*-content and the content of present-tense sentence-types lacking a temporal indexical is what I have called *n*-content.⁷ There might be good reasons for claiming that sentence-types containing temporal indexicals in a context express what I have called 'w-content' and there might be good reasons for claiming that sentence-types lacking temporal indexicals, but containing tensed verb forms express what I have called 'n-content'. However, it seems unhelpful to talk about *the* content of a tensed sentence-type in a context. Rather, I think there are different semantic values associated with a sentence-type in a context that may serve different functions (perhaps one type of semantic value is most plausibly taken as the entity on which tense operators operate and the other is most plausibly taken as 'what is expressed' by a sentence-type in a context). My goal in this chapter is to provide truth-conditions for tensed sentence-types in a context and such truth-conditions can be stated either in terms of *n*-content or in terms of *w*-content.

⁷ This isn't quite right since Kaplan doesn't take contents to be sets of possibilia but rather structured propositions. His structured propositions that vary in truth-value correspond to my sets of world-time pairs and his structured propositions that are eternally true or false if true or false at all correspond to my sets of possible worlds.

3.3 The Type-Context Theory Formulated

Given these insights, we can provide an account of tenseless truth-conditions for tensed sentences in a context. Consider a sentence-type of the form 'e is now' or 'e is (present tense) occurring'. There are two different ways in which we can go about formulating the truth-conditions for tensed sentence-types in a context depending upon whether we formulate the truth-conditions in terms of n-content or w-content:

Option 1: As claimed above, we can take the n-content of a tensed sentence-type in a context to be a set of possible world-time pairs. I will assume that sets of possible world-time pairs are properties of times at worlds. A time t at world w has the property identified with a given set, S , of possible world-time pairs if and only if the set S contains the world-time pair $\langle w, t \rangle$. Consider a sentence-type of the form 'e is occurring' or a sentence-type of the form 'e is now'. An account of the property that is the n-content of such a sentence-type in a context may be stated as follows:

(Present_n) For all tensed sentence-types, s , of the form 'e is occurring' or 'e is now', and for all contexts, c , the n-content of s in c is the property of being-simultaneous-with- e .

Consider a sentence-type of the form 'e was occurring'. An account of the property that is the n-content of such a sentence-type in a context may be stated as follows:

(Past_n) For all tensed sentence-types, s , of the form 'e was occurring', and for all contexts c , the n-content of s in c is the property of being-after- e .

For sentence-types of the form 'e will occur', an account of the property that is the n-content of such a sentence-type in a context may be stated as follows:

(Future_n) For all tensed sentence-types, *s*, of the form 'e will occur' and for all contexts, *c*, the n-content of *s* in *c* is the property of being-before-*e*.

Given this account of what properties serve as the n-content of tensed sentence-types in contexts, the truth-conditions for a tensed sentence-type in a context may be stated as follows:

(TC_n for Type-Context) For all tensed sentence-types, *s*, and for all contexts, *c*, *s* is true in *c* if and only if a) there exists a property, *p*, such that *p* is the n-content of *s* in *c* and b) $\langle w, t \rangle$ has *p* (where *w* is the world of the *c* and *t* is the time of *c*).

It is clear that (TC_n), in conjunction with (Present_n), (Past_n) and (Future_n), provide a tenseless account of the truth-conditions for tensed sentences. (Present_n), (Past_n) and (Future_n) claim that the n-content of a tensed sentence-type in a context is a B-theoretic property: either the property of being simultaneous with some event in the B-series, being earlier than some event in the B-series, or being later than some event in the B-series. (TC_n) claims that a sentence-type, *s*, is true in a context, *c*, if and only if the time of the context has the B-theoretic property that is the n-content of *s* in *c*. So, the truth-conditions provided by (TC_n) appeal only to B-theoretic properties.

Option 2: As claimed above, we can take the w-content of a tensed sentence-type in a context to be a set of possible worlds. An account of the proposition that is the w-content of a tensed sentence-type in a context may be stated as follows:

(Present_w) For all tensed sentence-types, *s*, of the form 'e is (present tense) occurring' or 'e is now', and for all contexts, *c*, the w-content of *s* in *c* is the proposition that *e* is simultaneous with the time of the context *c*.

Consider a sentence-type of the form 'e was occurring'. An account of the proposition that is the w-content of such a sentence-type in a context may be stated as follows:

(Past_w) For all tensed sentence-types, s, of the form 'e was occurring', and for all contexts c, the w-content of s in c is the proposition that e is before the time of the context c.

For sentence-types of the form 'e will occur', an account of the proposition that is the w-content of such a sentence-type in a context may be stated as follows:

(Future_w) For all tensed sentence-types, s, of the form 'e will occur' and for all contexts, c, the w-content of s in c is the proposition that e is after the time of the context c.

Given this account of what properties serve as the w-content of tensed sentence-types in contexts, the truth-conditions for a sentence-type in a context may be stated as follows:

(TC_w) For all tensed sentence-types, s, and for all contexts, c, s is true in c if and only if there exists a proposition, p, such that p is the w-content of s in c and p is true at the world of c.

It is clear that (TC_w), in conjunction with (Present_w), (Past_w) and (Future_w) provide a tenseless account of the truth-conditions for tensed sentences. (Present_w), (Past_w) and (Future_w) claim that the w-content of a tensed sentence-type in a context is a proposition. The proposition that is the w-content of a tensed sentence-type in a context makes no appeal to tensed properties. Instead it is a claim about the ordering of events within the B-series. (TC_w) claims that a sentence-type, s, is true in a context, c, if and only if the proposition that is the w-content of s in c is true. Since the proposition that

serves as the w-content of *s* in *c* makes no appeal to tensed properties, (TC_w) provides B-theoretic truth-conditions for tensed sentence-types in a context.

A defender of the Kaplanian view who holds that the content of 'I am hungry' in a context is an entity that varies in truth-value over time and holds that the content of 'I am hungry now' is an entity that is eternally true or eternally false, can adopt Option 1 for sentence-types of the former sort and adopt Option 2 for sentence-types of the latter sort. One who holds that the content of 'I am hungry' in a context and the content of 'I am hungry now' in a context is in both cases an eternal proposition can adopt Option 2. One who thinks that talk of 'the content' of a sentence-type in a context is ambiguous between n-content and w-content is free to choose either Option 1 or Option 2.

Consider the example from the previous chapter in which the forest burns from Monday to Wednesday. I argued that there is an intuition that the sentence:

(2) The forest is burning now.

is true on Tuesday even though there were no tokens of (2) produced on Tuesday. Let us call the context that has Tuesday as its time 'C'. We can say that the sentence-type (2) is true in C in virtue of the fact that a) there exists a property of being-simultaneous-with-the-forest-fire that serves as the n-content of (2) in C and b) the time of C, namely Tuesday, has the property of being-simultaneous-with-the-forest-fire.⁸

The proposed account also handles cases such as

(3) I am not now tokening anything.

⁸ Here and throughout the remainder of the chapter I adopt Option 1 (TC_n). It should be clear how to restate what is said in terms of Option 2 (TC_w).

Suppose that at 2pm I produce a token utterance of (3). I argued in the previous chapter that although my 2pm utterance is clearly false, there is an intuition that what I said could have been true. After all, I might have been knocked unconscious moments before producing the token. The type-context theory can explain the intuition that (3) could have been true. Let us take 'C' to refer to the context that contains Stephan Torre as the agent, Amherst as the location, actual world as the world and 2pm, September 19, 2007 as the time. (3) is false in C because it is not the case that the event mentioned in (3), namely my not tokening anything, is simultaneous with the time of the context. However, what is said by (3) in C might have been true because there is some possible world-time pair at which the n-content of (3) in C is true. Consider the world, w1, in which I am knocked unconscious moments before producing a token utterance of (3). The n-content of (3) in C is true at the world-time pair consisting of w1 and 2pm. It is in virtue of this fact that it is true that what is said by (3) in C might have been true.

Consider a case in which I produce a token utterance of the following sentence-type:

(8) There are no tokens.

Clearly my token utterance is false. However, it seems that just as there is an intuition that what I said when I produced a token utterance of (3) *could* have been true, there is also an intuition that what I said when I produced a token utterance of (8) *was* true. There was a time, before the evolution of animals capable of producing mental, verbal or written tokens, at which what is said by my token utterance was true. Quentin Smith discusses how token-based theories are unable to accommodate the fact that what I said was true. The type-context theory is able to explain the fact that what is said by my

token utterance was true. Let us call the context in which I produce the token utterance 'C'. The n-content of (8) in C is the property of being an x such that x is simultaneous with no tokens. What is said by my token utterance of (8) was true in virtue of the fact that there exists a time in the past that has this property. Just as we are able to explain the fact that what is said by my token utterance of (3) *could have been* true by appealing to entities that vary in truth-value across worlds, we are able to explain the fact that what is said by my token utterance of (8) *was* true by appealing to entities that vary in truth-value across times within worlds.

3.4 L. A. Paul's Sentence-Type Approach and Possible Objections

Laurie Paul has defended a tenseless account of the truth-conditions of tensed sentences that involves evaluating tensed sentence-types with respect to a context. Paul argues that such a view is able to avoid an objection that Quentin Smith raises to the B-theory. In this section I will briefly consider Smith's objection to the B-theory and Paul's response to the objection. Paul claims that evaluating tensed sentence-types in a context results in an account that is immune to Smith's objection. Quentin Smith and William Lane Craig have both provided objections to Paul's account. Since the account I have provided above involves evaluating tensed sentence-types in contexts, it is necessary to consider the objections raised by Smith and Craig to Paul's account. In the end, I think the objections to Paul's account arise in part from a poorly stated formulation of the view on Paul's part, as well as a misunderstanding of the view on the part of Paul's objectors. In the end, I argue that neither Smith's objection nor Craig's

objection pose any threat to the tenseless account of truth-conditions for tensed sentences in contexts that I have provided here.

Before we can properly address Paul's theory and the objections to the theory, some background is necessary. Smith (1994) argues that Mellor's (1981) token-reflexive theory cannot explain the logical relation between the following tensed sentences:

(9) It is now 1980.

and

(10) 1980 is present.

Smith argues that the tenseless theory of time should be rejected because of its inability to explain the logical relation between these two sentences. Smith's argument against Mellor's (1981) token-reflexive view can be summarized as follows: If two sentences are logically equivalent to one another, then the truth-conditions for those sentences should entail one another. However the token-reflexive truth-conditions for tokens of 'It is now 1980' and '1980 is present' do not entail one another. The token reflexive truth-conditions for a token, S, of 'It is now 1980' state that S is true if and only if S occurs in 1980, whereas the token-reflexive truth-conditions for a token, V, of '1980 is present' state that V is true if and only if V occurs in 1980. However the tenseless truth-conditions that S occurs in 1980 do not entail the tenseless truth-conditions that V occurs in 1980. After all, V's occurring in 1980 doesn't entail S's occurring in 1980. So, Mellor's account cannot explain the logical equivalence of (9) and (10). Smith argues further that the only way to explain the logical equivalence of (9) and (10) is to introduce tensed facts.

Paul responds to Smith's objection as follows:

To explain the equivalence of 'It is now 1980' and '1980 is present', I will argue that sentences which contain indexicals are unusual because their truth depends upon the context in which they are produced. Thus an explanation of the entailment relations between sentences which contain indexicals may not follow the same rules as those for sentences which do not. Since the truth of a sentence which contains indexicals varies according to the context at which it is evaluated, it must be evaluated with respect to its context (I will call this the 'context of evaluation') in order to determine its truth-value. By 'context of evaluation' I mean an index that includes a possible world, a time, a place and agent (and anything else that is necessary to give the sentence a truth-value). (Paul 1997: 62).

Paul then goes on to provide an account of logical implication for sentences containing indexicals:

For sentences (which contain indexicals) A and B, A logically implies B iff for any context of evaluation C, where A is true with respect to C, B is true with respect to C (Paul 1997: 63).

Sentences A and B are logically equivalent if and only if they logically imply each other.

Paul responds to Smith's objection as follows:

The definition allows us to explain the logical equivalence of [(9)] 'It is now 1980' and [(10)] '1980 is present', since we know that *'It is now 1980' is true iff the time of its context of evaluation is 1980*, and we also know that *'1980 is present' is true iff the time of its context of evaluation is 1980*. Therefore, for the context of evaluation C, when 'It is now 1980' is true with respect to C, '1980 is present' is true with respect C, and when '1980 is present' is true with respect to C, 'It is now 1980' is true with respect to C. This, by our definition, means that 'It is now 1980' and '1980 is present' are logically equivalent. (Paul 1997: 63, Paul's italics).

Given Paul's definition of logical entailment for sentences containing indexicals, (9)

logically implies (10) because for any context of evaluation, c, where (9) is true with

respect to c, (10) is also true with respect to c. Similarly, (10) logically implies (9)

because for any context of evaluation, c, where (10) is true with respect to c, (9) is true

with respect to *c*. So, Paul concludes, that if the B-theorist evaluates tensed sentence-types in a context, and adopts the notion of logical entailment that she provides, Smith's objection to the B-theorist is avoided.

There are some difficulties with Paul's view as she presents it. First, Paul claims that she will, "argue that sentences which contain indexicals are unusual because their truth depends upon the context in which they are produced" (62). However, presumably, her account is intended to apply to tensed sentences in general, not just those containing indexicals. Smith's objection to Mellor's account could just as well be formulated in terms of a token utterance, *Q*, of 'The forest is burning' and a token utterance, *R*, of 'The forest is burning now'. *Q* contains no indexical, yet clearly the token-reflexive truth-conditions for *Q* are not logically equivalent to the token reflexive truth-conditions for *R*. However, presumably, Paul would wish her response to Smith's original argument to apply to this reformulated version of Smith's argument as well. Her account of tenseless truth-conditions and her statement of logical entailment should not be restricted to sentences containing indexicals, but should also apply to sentences containing tensed verb forms such as 'The forest is burning' and 'I am hungry'.

A more serious difficulty with Paul's account lies in her statement of the truth-conditions for tensed sentence-types. In (1999) and (2000) Craig criticizes Paul's account of providing tenseless truth-conditions for tensed sentences. He claims that Paul has given us, "a type-reflexive theory which makes no more sense than its predecessor" (Craig 1999, 269). Craig states Paul's truth-conditions of the sentences (9) and (10) as follows:

It is now 1980 \equiv the time of [(9)]'s context of evaluation is 1980.

1980 is present \equiv the time of [(10)]'s context of evaluation is 1980. (Craig 1999, 268)

This statement of the truth-conditions is an exact restatement of the truth-conditions Paul provides in the passage quoted above. Craig criticizes Paul's statement of the truth-conditions for (9) and (10) as follows:

What Paul has offered us in place of the token-reflexive theory is in fact a type-reflexive theory which makes no more sense than its predecessor. Suppose it is true that it is now 1980. Does that fact imply that the time of the context of evaluation of the sentence-type "It is now 1980" is 1980? Of course not; perhaps nobody during 1980 ever bothers to evaluate that sentence-type, or perhaps people only evaluate it relative to some other time. This may seem silly; but it is silliness forced on us by the conflation on Paul's part of the semantical theory of indexicals, specifying the propositional content or referents of indexical sentences, with the quite different task of specifying the truth-conditions of such sentences. The sentences she supplies cannot state the tenseless truth conditions of [(9)] and [(10)] simply because those sentences are not tenselessly true. There just is no tenseless fact of the matter that the time of, say, [(9)]'s context of evaluation is 1980.

In general, if tensed sentence-types are truth bearers, then they must be temporal entities whose truth-values change, since it is not always true that "It is now 1980". In that case, a sentence-type becomes, in effect, a sort of abstract token, and one is still left with the unsolved problem of supplying tenseless truth conditions for it (Craig 1999, 269).

I think Craig's criticism of the truth-conditions Paul provides is correct. The theorist who claims that tensed sentence-types are true with respect to a context should deny that tensed sentence-types have truth-values *simpliciter*. Paul formulates the truth-conditions for tensed sentence-types in such a way ('It is now 1980' is true iff...) that assumes that tensed sentence-types are true or false *simpliciter*. However, as Craig correctly notes, such sentence-types are not true or false *simpliciter*.

Craig's criticism also points out the other misleading feature of Paul's statement of the truth-conditions for (9) and (10). Her claim that:

'It is now 1980' is true iff the time of its context of evaluation is 1980 (Paul 1997: 65)

states that the truth *simpliciter* of the sentence-type 'It is now 1980' depends upon "its context of evaluation". What is *its* context of evaluation? Sentence-types do not possess contexts of evaluation. The suggestion that they do opens Paul's account up to Craig's admittedly silly objection that "perhaps nobody during 1980 ever bothers to evaluate that sentence-type, or perhaps people only evaluate it relative to some other time" (Craig 1999, 269).

Both of these difficulties arise not from the claim that tensed sentence-types are true with respect to contexts, but rather from Paul's misstatement of the view. One of the central features of the type-context view is that sentence-types are not true or false *simpliciter* but rather true or false with respect to contexts. The proper way of stating the truth-conditions for (9) and (10) with respect to a context is as follows:

For all contexts, c, 'It is now 1980' is true in c if and only if a) there exists a property, p, such that p is the n-content of 'It is now 1980' in c and b) the time of c has the property p.

and

For all contexts, c, '1980 is present' is true in c if and only if a) there exists a property, p, such that p is the n-content of '1980 is present' in c and b) the time of c has the property p.

The property that serves as the n-content of both 'It is now 1980' and '1980 is present' in a context is the property of being-simultaneous-with-1980. Both sentence-types are true in the context that includes the time 1980 because the time of the context has this

property. The logical entailment of (9) and (10) is explained by the fact that, for every context, *c*, the *n*-content of (9) in *c* is the same as the *n*-content of (10) in *c*, namely the property of being-simultaneous-with-1980. Given this formulation of the truth-conditions for (9) and (10) with respect to a context, Craig's objections can be avoided. The account clearly denies that tensed sentence-types have truth-values *simpliciter*. Furthermore, neither of the statements of the truth-conditions for (9) and (10) in a context given above use the phrase 'its context of evaluation', and so Craig's objection that the view is a "a type-reflexive theory which makes no more sense than its predecessor" is avoided.

In "The 'Sentence-Type Version' of the Tenseless Theory of Time" Quentin Smith provides a different objection to Laurie Paul's formulation of the sentence-type in a context approach. Smith's objection could be similarly leveled against my formulation of the type-context theory. Smith considers the following tensed sentence-type:

(11) Jane's nightmares are presently occurring.

Smith supposes that it is now 11 p.m., April 3, 1998 and Jane is now having nightmares.

He makes the following claim:

But the sentence-type "Jane's nightmares are presently occurring" cannot be true with respect to each context in which is located an event-token of Jane's having nightmares... For suppose a token of the event-type Jane having nightmares occurred last night at 11 p.m. The sentence-type "Jane's nightmares are presently occurring" is not now true with respect to last night, since last night is no longer presently occurring, and thus this context fails to include a condition (presently occurring) specified by the sentence-type.

...As we have seen, the present tense sentence-type, "Jane's nightmares are presently occurring", is now true with respect to the present time 11 p.m.

April 3, and now false with respect to a past time, e.g., last night, 11 p.m., April 2. What else (besides the times 11pm, April 3rd and 11pm, April 2, and some tokens of the event type Jane having nightmares) is necessary to give the sentence-type “Jane’s nightmares are presently occurring” the value of being now true with respect to 11pm, April 3 and the value of being now false with respect to 11pm, April 2 (Smith 1999: 240)?

Let us suppose, as Smith does, that it is now 11pm, April 3rd, 1998. Smith claims that (11) is true with respect to the present time, 11pm, April 3rd, and (11) is now false with respect to 11pm, April 2, 1998. However 11pm, April 2, 1998 contains a token event of the same type as the token event that takes place on 11pm April 3, 1998. So in virtue of what is (11) now true with respect to 11pm, April 2, 1998 and now false with respect to 11pm, April 2, 1998? Smith concludes as follows:

Paul allows that “anything else that is necessary to give the sentence a truth-value” should be added to the contexts. But here it seems that it is necessary to add so irreducibly tensed conditions, i.e., the exemplification of some A-properties, such as the condition that 11pm exemplifies presentness, and that 11pm, April 2 exemplifies pastness (Smith 1999: 241).

So Smith concludes that the fact that (11) is now true with respect to 11pm, April 3rd and now false with respect to 11pm, April 2nd cannot be explained by appealing exclusively to tenseless properties.

I do not think that Smith’s objection against the type-context theory has force. First, Smith is incorrect in claiming that “the sentence-type ‘Jane’s nightmares are presently occurring’ cannot be true with respect to each context in which is located an event-token of Jane’s having nightmares” (240). I think it is quite plausible to hold that (11) is true with respect to all such contexts. Suppose we discovered on April 3rd, 1998 that someone produced a token of the sentence-type (11) on April 2nd, 1998. Perhaps

we are listening to a recording from the evening of April 2nd, 1998 and someone on the recording says, “Jane’s nightmares are presently occurring”. I think our intuitions support the claim that the token utterance is true. The type-context theory supports this intuition by entailing that (11) is true with respect to the context that includes April 2, 1998. (11) is true with respect to this context because the time of the context has the property of being-an-x-such-that-x-is-simultaneous-with-Jane’s-having-nightmares.

Smith claims that, “The sentence-type ‘Jane’s nightmares are presently occurring’ is not now true with respect to last night, since last night is *no longer* presently occurring” (Smith’s italics, 240). Perhaps even if we reject Smith’s claim that (11) is not true with respect to April 2nd, 1998, there is nonetheless reason for denying that (11) is *now* true with respect to April 2nd, 1998. Smith’s reason for this claim is that the “context [that includes April 2nd, 1998] fails to include a condition (*presently occurring*) specified by the sentence-type” (240). Smith’s reasoning for denying that (11) is now true with respect to April 2nd, 1998 seems to be based on the belief that if (11) is now true with respect to April 2nd, 1998, then the context that includes April 2nd, 1998 is presently occurring. Smith’s reasoning for denying that (11) is now true with respect to April 2nd, 1998 can be stated as follows (assuming it is now April 3rd, 1998):

- (1) If (11) is now true with respect to April 2nd, 1998, then the context that includes April 2nd, 1998 is presently occurring.
- (2) The context that includes April 2nd, 1998 is not presently occurring.
- (3) Therefore, (11) is not now true with respect to April 2nd, 1998.

Premise (1) of this argument is false. From the fact that (11) is true (or now true) with respect to April 2nd, 1998, it does not follow that the context that includes April 2nd is

presently occurring. In order to see more clearly why premise (1) should be rejected, consider an analogous argument involving a sentence-type containing 'here'. Suppose that we are in Amherst, Massachusetts and it is not raining. Suppose that we are watching a Red Sox game and it is raining at Fenway Park. Consider the following sentence-type:

(12) It is raining here.

It seems plausible to claim that 'here' sentence-types are true with respect to contexts.

(12) is true with respect to the context that includes Boston, but false with respect to the context that includes Amherst. In Amherst we should acknowledge that (12) is true with respect to Boston, even though (12) is false with respect to where we are. We in Amherst should also acknowledge that (12) is true here with respect to Boston (after all if (12) is true with respect to Boston, then (12) is true with respect to Boston everywhere). Now consider the following argument (assuming that it is presented within the context of Amherst):

(1') If (12) is true here with respect to Boston, then the context that includes Boston is here.

(2') The context that includes Boston is not here.

(3') Therefore, (12) is not true here with respect to Boston.

However, clearly premise (1') is false. There is no reason to think that the fact that (12) is true here with respect to Boston entails the fact that the context that includes Boston is here.

It might be claimed that the argument involving (12) cannot be used to show the implausibility of premise (1) since the A-theorist denies that time and space are

analogous in the way that the B-theorist takes them to be. However, this would be a mistake. The B-theorist alleges that the truth-conditions for tensed sentence-types in contexts function in a similar way to truth-conditions for sentence-types containing spatial indexicals. If the A-theorist admits to the implausibility of (1'), then she must explain, in a non-question begging way, why the B-theorist is committed to the truth of (1). Smith offers no such explanation.

3.5 Conclusion

I conclude that the type-context theory provides a plausible tenseless account of the truth-conditions for tensed sentences. I take the type-context theory to be motivated in part by the fact that a tenseless account of the truth-conditions of tensed tokens fails to provide a complete account of what makes tensed sentences true. The type-context theory is most plausibly formulated in terms of sentence-types having contents in contexts. I have claimed that the view can either be formulated in such a way in which tensed sentence-types in contexts have contents that are sets of world-time pairs or in such a way in which tensed sentence-types in contexts have contents that are sets of possible worlds. Finally I have claimed that objections that have been leveled against a similar view (Paul's sentence-type account) can be avoided by a proper formulation of the view and a proper understanding of what it means for a sentence-type to be true in a context. I conclude that the B-theorist should adopt the type-context theory as the correct account of the truth-conditions for tensed sentences.

CHAPTER 4

TENSED BELIEF AND SELF-ASCRPTION

I consider whether the self-ascription theory can succeed in providing a tenseless (B-theoretic) account of tensed belief and timely action. I evaluate an argument given by William Lane Craig for the conclusion that the self-ascription account of tensed belief entails a tensed theory (A-theory) of time. I claim that how one formulates the self-ascription account of tensed belief depends upon whether one takes the subject of self-ascription to be a momentary person-stage or an enduring person. I provide two different formulations of the self-ascription account of tensed belief, one that is compatible with a perdurantist account of persons and the other that is compatible with an endurantist account of persons. I argue that a self-ascription account of tensed beliefs for enduring subjects most plausibly involves the self-ascription of *relations* rather than properties. I argue that whether one takes the subject of self-ascription to be a momentary person-stage or an enduring person, the self-ascription theory provides a plausible B-theoretic account of how tensed belief and timely action are possible.

4.1 Introduction

In this chapter I examine the self-ascription account of tensed belief and its relation to the debate between the A-theory and the B-theory of time. The A-theorist holds that tense is a fundamental feature of the world. Events in time have the irreducibly monadic properties of either *being-past*, *being-present* or *being-future*. The present, according to the A-theorist, is distinguished in some ontological respect from the past and the future. The B-theorist denies that tense is a fundamental feature of the world. Just as I do not confer any special ontological status on Amherst, Massachusetts for being here, the B-theorist claims that I should not confer any special ontological status on 2007 for being now; the present lacks any irreducibly tensed property of *being-present*.

A separate issue concerns the nature of tensed belief. I knew all week that my apartment building is being fumigated on Wednesday. Wednesday morning I got up, not remembering what day it was, and began to make some breakfast. All of a sudden I caught a whiff of noxious fumes and quickly realized: my apartment building is being fumigated now! I immediately put on my jacket and left my apartment. All week I had the tenseless belief:

(FW for ‘Fumigation Wednesday’) My apartment building is being fumigated on
Wednesday.

(FW) is a *tenseless* belief because it can be adequately described without the use of temporal indexicals such as ‘now’, ‘today’ or ‘tomorrow’. It is a belief about a

particular event within the B-series.¹ Holding (FW) did not cause me to put on my jacket and leave the building. It was only when I came to believe:

(FN for 'Fumigation Now') My apartment building is being fumigated *now*. that I put on my jacket and left the building. (FN) is a *tensed* belief because a temporal indexical such as 'now' or 'presently' is required in order to adequately describe the belief. A *prima facie* conclusion to draw from this example is that tenseless beliefs such as (FW) are not sufficient for explaining timely action. My quickly leaving the building on Wednesday cannot be explained by my having the tenseless belief (FW) since I had that belief all week and it did not cause me to perform the action. Nor does there seem to be any other tenseless belief that is capable of explaining why I put on my jacket and left the building when I did. A tensed belief such as (FN) seems necessary for providing an explanation of my action.

The previous example demonstrates that tensed beliefs are necessary for timely action. How can we explain the difference between what I believe when I believe (FW) and what I believe when I believe (FN)? Some have held that what is believed in both cases is the same. The difference in action is explained in terms of distinct ways in which the content is believed.² Others have held that the content of what I believe when I believe (FW) differs from the content of what I believe when I believe (FN). Two defenders of a version of this latter position are David Lewis and Roderick Chisholm. Lewis (1979) and Chisholm (1980) both claim that what I believe when I believe (FW)

¹ The B-series refers to the ordering of events by the relations of *is-before*, *is-after*, and *is-simultaneous-with*.

can be explained by appealing to an eternal proposition. However, they claim that what I believe when I believe (FN) cannot be explained by appealing to an eternal proposition. They claim that the content of my tensed belief is a property rather than a proposition.³ To have a property as the content of one's belief is to ascribe the property to oneself.⁴

Although Chisholm and Lewis both agree that to have a tensed belief is to self-ascribe a property, Chisholm defends the A-theory of time and Lewis defends the B-theory of time. Lewis denies that there are irreducibly tensed properties. His self-ascription account of tensed belief involves self-ascribing tenseless properties: to believe that my building is being fumigated now involves ascribing the property of *being-simultaneous-with-the-fumigation*.⁵ The property of *being-simultaneous-with-the-fumigation* is a purely B-theoretic property since it is constructed out of the B-theoretic relation *is-simultaneous-with* and an event within the B-series.

Chisholm, on the other hand, does hold that tense is necessary in order to distinguish the present from the past and the future. He claims that:

if we take tense seriously, we distinguish *now*—the present time—from all other times in one or the other of two different ways. We could say, on the one hand,

² Kaplan (1989), Perry (1979), Dyke (2003) and Mozersky (2006) advocate such a view. Dyke (2003) and Mozersky (2006) argue that such a view is compatible with the B-theory of time.

³ Here and throughout the rest of the chapter I will use the term 'proposition' to refer to something that is eternally true or eternally false if true or false at all.

⁴ The terminology of 'self-ascribing' a property is Lewis's. Chisholm uses the terminology of 'directly attributing' a property. I think the difference is merely terminological and, for the sake of clarity, I will stick with Lewis's terminology throughout.

⁵ See Lewis (1979). There is more to the story for Lewis's account of tensed belief than I am stating here. These details are discussed in greater detail below.

that the present time is the only time that *does* exist—all other times being such that either they *did* exist or they will *exist*. Or we could say...that times are a certain sub-species of states of affairs and that, like states of affairs, they are such that either they obtain or they do not obtain. In the latter case, the present time would be the time that *is obtaining*, past times would be the times that *did obtain*, and future time would be those that *will obtain* (Chisholm 1981, 51).

Chisholm, in the appendix to *The First Person*, defends the latter option according to which times are states of affairs. The present time is distinguished from past and future times in that the present time is obtaining, where ‘is obtaining’ is understood in the present tense. According to Chisholm, this tensed characterization of the present is necessary for describing the ontological status of the present. There is no way to give an adequate, tenseless characterization of the present. In *The First Person*, he claims that arguments designed to show that “tense is illusory” are “very easy to refute” and “not worthy of our present consideration” (Chisholm 1981, 125).

According to Chisholm, what property do I self-ascribe when I believe (FN)? Chisholm claims, “To say of a state of affairs or event that it occurs *at* the present time is to say, of it, that it is one of the events that are occurring, and we can arrive at *that* conclusion without singling out any identifying property of the present moment” (Chisholm 1981, 51). Elsewhere, in discussing a case in which a weatherman believes that it is presently raining, he states, “he attributed to himself the property of being such that it is raining.” According to Chisholm, to believe that an event, *e*, is presently occurring is to self-ascribe the property of being such that *e* is occurring where ‘is occurring’ is understood in the present tense. Believing (FN) involves self-ascribing the property of being such that the fumigation is (present-tense) occurring.

We have seen that, although Chisholm and Lewis agree that tensed beliefs involve the self-ascription of a property, they disagree on whether tense is a fundamental feature of the world and also how tense figures into what property is ascribed. The questions I wish to address are: to what extent must one “take tense seriously” in providing a self-ascription account of tensed belief? Is it possible to provide a tenseless (B-theory) account of tensed belief that is capable of explaining how timely action is possible? Or, in order to provide an explanation for how timely action is possible, must we posit the existence of irreducibly tensed properties?

Many have claimed that examples such as the fumigation example given above provide a reason to favor the A-theory. Many A-theorists have argued that the B-theory lacks the resources to explain how timely action is possible.⁶ We can see the fumigation example as posing the following challenge for the B-theorist: The B-theorist denies that tense is a fundamental feature of the world. Yet tense seems essential to explaining why I put on my jacket and leave the building when I do. In order for the B-theory to be plausible, it must be able to explain this fact without appealing to irreducibly tensed features of the world.

Few have considered the self-ascription account of tensed belief and whether this account can provide an adequate B-theory response to the challenge posed. One who has considered this issue is William Lane Craig. He claims that “although he is a B-theorist, Lewis’s [self-ascription] theory is quite well-suited to the needs of the A-theorist” (Craig 2000, 128). He then provides an argument for the claim that the self-

⁶ Versions of this argument can be found in Smith (1994), Craig (2000), Prior (1959) and Ludlow (1999).

ascription account of tensed belief entails the conclusion that real tense is ineliminable.

He states his argument as follows:

For if one does not ascribe to oneself tensed properties, one cannot locate oneself so as to act in a timely fashion. In knowing what time it is, one must self-ascribe more than a mere B-series position to oneself, for one occupies tenselessly a multitude of such positions and in order to act reasonably, one must know what time it is now. Alternatively, if I am self-ascribing B-series positions, then the act of self-ascribing must itself be tensed. If I tenselessly self-ascribe a B-series position, then I believe that I tenselessly occupy that position, but I do not know where I am. The act of self-ascribing must be tensed: I am (present tense) at t_1 . Thus in order to have successful self-ascription of properties, I must either ascribe tensed properties or tensedly ascribe tenseless ones. On either account, real tense is ineliminable. (Craig 2000, 128).⁷

Craig understands the claim that “real tense is ineliminable” as equivalent to the claim that “reality is tensed” (Craig 1996, 265). According to Craig’s usage, claiming that real tense is ineliminable is equivalent to claiming that the A-theory is true. So, we can take Craig’s claims as providing an argument for the conclusion that the self-ascription account of tensed belief entails the A-theory. This argument can be stated as follows:

Craig’s Argument

- (1) If the self-ascription account of tensed belief is true, then either one self-ascribes tensed properties or one tensedly self-ascribes tenseless properties.
- (2) If one self-ascribes tensed properties, then real tense is ineliminable.
- (3) If one tensedly self-ascribes tenseless properties, then real tense is ineliminable.

(4) If real tense is ineliminable, then the A-theory is true.

(5) Therefore, if the self-ascription account of tensed belief is true, then the A-theory is true. (from 1, 2, 3 and 4).

As stated, Craig's Argument is valid. In what follows, I wish to evaluate the premises of the argument. My purposes for evaluating the argument are two-fold. The first reason is obvious: doing so will help establish whether the self-ascription account of tensed belief does indeed have any implications for the debate between the A-theory and the B-theory of time. It will help in answering the following question: Can the self-ascription account of tensed belief provide a tenseless (B-theoretic) account of how timely action is possible? If it can, then one of the main arguments for the A-theory is undermined. Secondly, in evaluating the argument, we will be forced to answer certain questions central to the formulation of the self-ascription account of tensed belief, such as: to what extent does the self-ascription account depend upon what we take the subject to be? What exactly is a tensed property? What does it mean to "tensedly self-ascribe" a property? The self-ascription account of tensed belief is underdeveloped in the current literature and my hope is that evaluating Craig's Argument will force us to develop the account in greater detail.

Does Craig's Argument succeed in demonstrating that the self-ascription account of tensed belief entails the A-theory? First, I will attempt to make precise the notion of a tensed property, as well as what it means to 'tensedly self-ascribe' a property. With these clarified notions in hand, I will argue that Craig overlooks Lewis's

⁷ This passage also appears in Craig (1996).

preferred account of tensed belief according to which person-stages self-ascribe tenseless properties. I will claim that this view allows the B-theorist to reject premise (1) of Craig's Argument. On this account, tenseless properties are tenselessly self-ascribed.

Having shown that taking person-stages as the subjects of self-ascription avoids any commitment to the A-theory, I will then consider whether taking enduring persons as the subjects of self-ascription forces one to posit the existence of tensed properties. I will argue that a self-ascription account of tensed belief for enduring subjects most plausibly involves the self-ascription of *relations*, rather than properties. I acknowledge that such a view involves a notion of self-ascription that is irreducibly tensed, however I argue that an irreducibly tensed notion of self-ascription does not commit one to the existence of tensed properties. I conclude that whether we take the self-ascribing subject to be a person-stage or an enduring person, the self-ascription theory allows for a B-theoretic explanation for how tensed belief and timely action are possible.

4.2 Tensed Properties and Tensed Ascription

Craig's first premise claims that if the self-ascription account is true, then one must either *tenselessly* self-ascribe *tensed* properties or *tensedly* self-ascribe *tenseless* ones. What is a tensed property? I take a tensed property to be a property that is *irreducibly* tensed: it cannot be analyzed in terms of events in the B-series and B-theoretic relations such as *is-before*, *is-simultaneous-with*, and *is-after*. Note that the debate between the A-theorist and the B-theorist is not over whether tensed properties such as *having-been-to-Paris* exist. Both should acknowledge that such properties exist. However they

disagree on whether or not such properties can be analyzed in terms of tenseless properties. According to the B-theorist, the property of *having-been-to-Paris* can be analyzed in tenseless terms such as *being-in-Paris-prior-to-t*, where t is some time within the B-series. However, if the A-theorist is right, then there is a property of *having-been-to-Paris* that cannot be analyzed in terms of B-theoretic relations. Ned Markosian states the distinction between the A-theorist and the B-theorist similarly. He claims that, according to the A-theorist, “talk that appears to be about A-properties is not analyzable in terms of B-relations” and, according to the B-theorist, “talk that appears to be about A-properties is analyzable in terms of B-relations” (Markosian 2001, 616).

What is it to “tensedly self-ascribe” a property? According to Lewis’s account, for me to self-ascribe a property F is for me to believe that I, myself, am F. We can make sense of the notion of tenseless versus tensed self-ascription by considering the tense of the verb ‘to be’ in the statement ‘I, myself, am F’. I suggest that we understand the distinction between tensed and tenseless ascription in a manner analogous to the oft-made distinction between tensed and tenseless predication. Consider the sentence ‘The *Santa Maria* is a ship’. We can interpret this sentence as expressing either tensed predication or tenseless predication. On the tenseless reading, the ‘is’ in the sentence ‘The *Santa Maria* is a ship’ is understood as expressing the tenseless fact that there is a two-place instantiation relation obtaining between the *Santa Maria* and the property of *being-a-ship*. On the tensed reading the ‘is’ in the sentence ‘The *Santa Maria* is a ship’ is understood in the present-tense, predicative form. What is expressed according to this reading is equivalent to what is expressed by the sentence ‘The *Santa Maria* is

presently a ship.’ It is natural to claim that sentences expressing a tenseless predication are true at all times or false at all times, if true or false at all. On the tenseless reading, the sentence ‘The *Santa Maria* is a ship’ is true regardless of when it is uttered. On the tensed reading, the sentence ‘The *Santa Maria* is a ship’ is false when uttered in the present context, but true when uttered in 1492.

Just as we can distinguish between tensed and tenseless predication, we can also distinguish between tensed and tenseless self-ascription. Let us say that I *tenselessly self-ascribe* F iff I believe that I, myself, am (tenselessly) F. In this case, ‘am’ is taken to be a tenseless, predicative form of the verb ‘to be’. To tenselessly self-ascribe F is to believe that I tenselessly instantiate the property F. If I tenselessly self-ascribe F, then I believe that I am F *simpliciter*, not relative to some time or to the present moment. Let us say that I *tensedly self-ascribe* F iff I believe that I, myself, am (present-tense) F. In this case ‘am’ is understood as a present-tense, predicative form of the verb ‘to be’. If I tensedly self-ascribe F, then I believe that I am (present-tense) F. This treatment of what it is to tensedly self-ascribe a property is clearly what Craig himself has in mind when he claims, “The act of self-ascribing must be tensed: I am (present tense) at t1” (Craig 2000, 128).

4.3 Momentary Subjects and Self-Ascription

In the passage quoted above, Craig claims, “In knowing what time it is, one must self-ascribe more than a mere B-series position to oneself, for one occupies tenselessly a multitude of such positions and in order to act reasonably, one must know what time it is now.” In this passage, Craig assumes that the subject that self-ascribes properties

occupies multiple moments in time. This overlooks Lewis's preferred account of tensed belief according to which momentary person-stages, rather than persons, self-ascribe properties. If one adopts this account of self-ascription, then one can reject premise (1) of Craig's Argument: It is possible for the self-ascription account of tensed belief to be true and for one to neither self-ascribe tensed properties nor tensedly self-ascribe tenseless ones. In order to argue for this conclusion, I will demonstrate how Lewis's account is able to distinguish between believing (FW) and believing (FN). Furthermore, I will argue that this account can be formulated without resorting to tensed properties or tensed self-ascription in the sense outlined above.

According to Lewis's account, persons are maximal sums of appropriately inter-related person-stages.⁸ Persons have temporary properties in virtue of having person-stages that have those properties *simpliciter*. I am currently bent in virtue of the fact that my present person-stage (or temporal part) is bent *simpliciter*. Lewis claims that when it comes to beliefs about one's location in time, it is these person-stages, not the continuant person, that do the self-ascribing. Lewis considers an insomniac lying awake at 3:49am wondering what time it is. He supposes that the insomniac does not lack propositional knowledge. He further claims that we cannot make sense of the insomniac's wondering by supposing that there is some property that he fails to ascribe to his continuant self; after all, we could suppose that the insomniac, "knows, well enough, what locus through space and time he occupies and what his various segments are like." Lewis goes on to say:

To understand how he wonders, we must recognize that it is time-slices of him that do the wondering... The slice at 3:49am may self-ascribe the property of being one slice of an insomniac who lies awake on such-and-such date at such and such place at such and such a kind of world, and yet may fail to self-ascribe the property of being at 3:49am...It is the slice, not the continuant, that fails to self-ascribe a property (Lewis 1979, 144).

In Lewis's discussion of the insomniac, he provides an account of tensed belief in terms of the self-ascription of properties. Let us restrict our attention to 'now' beliefs, such as the belief that it is now 3:49am or the belief that my building is being fumigated now. His account may be stated as follows:

(SA-P for 'Self-Ascription-Perdurantism') At t, a person, S, believes that e is now iff S has a person-stage that exists at t and it self-ascribes the property of *being-simultaneous-with-e*.

Let us apply (SA-P) to the fumigation example given above. Suppose that I begin making breakfast at 8am and I first smell the fumes at 8:15am. I believe (FW) at 8am, but do not come to believe (FN) until 8:15am. Lewis claims that propositional belief can also be understood in terms of the self-ascription of a property: to believe that p, where p is a proposition, is to self-ascribe the property of inhabiting a world in which p is true. In believing (FW), my 8am stage self-ascribes the property of being in a world in which the fumigation takes place on Wednesday, but it fails to self-ascribe the property of *being-simultaneous-with-the-fumigation*. My 8:15 stage, however, does self-ascribe the property of *being-simultaneous-with-the-fumigation*. At 8:15, I believe

⁸ Lewis presents the perdurantist account of persons in Lewis (1983).

that my apartment is being fumigated now in virtue of having an 8:15-person-stage that self-ascribes the property of *being-simultaneous-with-the-fumigation*. It is only when my person-stage self-ascribes this property that I put on my jacket and leave the building. The timeliness of my action is explained by the fact that my 8:15am person-stage self-ascribes a property that my 8:00am person-stage failed to ascribe.

(SA-P) provides an account of tensed belief that involves neither the self-ascription of tensed properties nor a tensed notion of self-ascription. First, it should be clear that (SA-P) makes no appeal to tensed properties. The property that is ascribed according to (SA-P) is the property of being simultaneous with some event. This property is constructed out of the B-theoretic relation of *being-simultaneous-with* and an event within the B-series. Since the properties that are self-ascribed according to (SA-P) can be properly analyzed in terms of B-theoretic relations and times, they are tenseless properties.

Furthermore, (SA-P) is compatible with the tenseless notion of self-ascription outlined above. Recall that to tenselessly self-ascribe some property is to believe that you are (tenselessly) F. When my 8:15am person-stage self-ascribes the property of *being-simultaneous-with-the-fumigation*, it does so tenselessly, it believes that it is simultaneous with the fumigation once and for all. Since the subject of self-ascription is momentary, any property that it has, it has *simpliciter*. Although I have some properties now and lack them later, my momentary person-stages have properties *simpliciter*. Therefore, when my 8:15 person-stage self-ascribes the property of *being-simultaneous-with-the-fumigation*, it believes that it tenselessly has the property. Recall that Craig states, "If I tenselessly self-ascribe a B-series position, then I believe that I tenselessly

occupy that position, but I do not know where I am.” If (SA-P) is correct, then I don’t tenselessly self-ascribe a B-series position; rather my stage does. My stage’s tenseless belief at 8:15 about its location in the B-series is sufficient for my tensed belief of where I am within the B-series. If we adopt (SA-P), then it is possible to have tensed beliefs by tenselessly self-ascribing tenseless properties.

4.4 Self-Ascription and Enduring Subjects

So far I have argued that if we take stages as the subjects of tensed belief, then premise (1) of Craig’s Argument is false. Craig’s failure to consider (SA-P) as a response to his argument may have been based on his own conviction that the perdurantist account of persons is untenable. In his (2000), Craig claims that “perdurantism flies in the face of the phenomenology of personal consciousness” (208). He states, “for if my self-conscious self is a temporal part of a person, I am still a distinct object from the person-part who thought of himself as “I” a moment ago. He and I are not identical, he did not continue to exist, indeed, the “I” who finishes this sentence is not the same entity which began it” (209). He concludes that “Perdurantism thus fails to make good sense of personal identity over time” (209). Taking momentary person-stages as the subjects of belief is, according to Craig, an implausible view. I think that Craig’s complaints with the perdurantist account of persons can be (and, for the most part, have been) met. Nonetheless, it is interesting to consider whether one *needs* to adopt a perdurantist account of persons in order to provide a self-ascription account of tensed belief that is compatible with the B-theory. It has been successfully argued that the B-theory/A-theory debate is conceptually independent of the

perdurantist/endurantist debate.⁹ D. H. Mellor, one of the best known defenders of the B-theory, defends an endurantist account of objects and persons.¹⁰ Could someone with this combination of views adopt a self-ascription account of tensed belief? Or does Craig's Argument succeed in showing that such a combination of views is untenable? In the remainder of the chapter I wish to consider the following question: Is taking stages as the subject of self-ascription the only way to give a self-ascription account of tensed belief that is amenable to the B-theory?

In order to answer this question, I will consider a view that, like Mellor's, combines the B-theory with an endurantist account of persons, and I will consider whether such a view can adopt a self-ascription account of tensed belief. Mellor claims that, "Things, unlike events, are wholly present at every moment within their B-times. Some B-theorists admittedly deny this... and credit all temporally extended entities with temporal parts; but no one else does. No one else would say that only parts of Sir Edmund Hillary and Tenzing Norgay climbed only a part of Everest in 1953. The rest of us think those two whole men climbed that one whole mountain. and that all three parties were wholly present throughout every temporal part of that historic event" (Mellor 1998, 86). Can Craig's Argument be used to demonstrate that adopting a self-ascription account of tensed belief and an endurantist account of persons entails the A-theory? Let us replace premise (1) of Craig's Argument with the following premise:

⁹ See Sider (2001), especially section 3.4. For an opposing view see Oaklander (2004).

¹⁰ In addition to Mellor, the combination of a B-theory of time and endurantism has been defended by a number of philosophers including Haslanger (1994), Johnston (1987), van Inwagen (1990) and Wasserman (2003).

(1') If the self-ascription account of tensed belief is true and endurantism is true, then either one self-ascribes tensed properties or one tensedly self-ascribes tenseless properties.

The conclusion of the resulting argument can be stated as follows:

(5') Therefore, if the self-ascription account of tensed belief is true and the endurantist account of persons is true, then the A-theory is true. (from 1', 2, 3 and 4).

Before considering how the endurantist¹¹ might formulate a self-ascription account of tensed belief, let us first consider the well-known problem of temporary intrinsics.¹² The solution that the endurantist provides to this problem will be relevant to how she formulates the self-ascription account of tensed belief. Consider the following problem: Now at 2pm I am sitting and I am bent. Earlier at 1pm I was standing and I was straight. How is it that one thing (me) can instantiate incompatible properties (being bent, and being straight)? The obvious answer is that I have the incompatible properties *at different times*: I was straight earlier, but now I am bent. But how is *that* possible? How is it that one thing can have incompatible intrinsic properties

¹¹ In the discussion that follows I will use the term 'endurantist' to refer to one who holds an endurantist account of persons and a B-theory of time. I realize that there are many endurantists who reject the B-theory, however since my main question in this chapter is whether the self-ascription account can provide a B-theory explanation of how timely action is possible, I restrict my attention here to the B-theory endurantist.

¹² The problem of temporary intrinsics is put forth in Lewis (1986, 202-205)

at different times? This is the problem of temporary intrinsics. Lewis takes this problem to be one of the main motivations for adopting a temporal parts metaphysics. According to the temporal parts theorist, I am bent at 2pm by having a 2pm temporal part that is bent and I am straight at 1pm by having a 1pm temporal part that is straight. The endurantist denies that I am composed of temporal parts and so cannot analyze the instantiation of incompatible properties by appealing to distinct temporal parts. Instead, a common endurantist solution to the problem of temporary intrinsics is to deny that I possess the non-relational properties of *being-bent* and *being-straight*.¹³ One who adopts this solution claims that I am bent at 2pm and straight at 1pm by instantiating relational properties such as *being-bent-at-2pm* and *being-straight-at-1pm*, or, alternatively, I stand in the dyadic relation *being-bent-at* to 2pm and *being-straight-at* to 1pm. In either case, contradiction is avoided. There is nothing contradictory about instantiating both the property of *being-bent-at-2pm* and the property of *being-straight-at-1pm*. Nor is there anything contradictory about standing in the *being-bent-at* relation to 2pm and standing in the *being-straight-at* relation to 1pm.¹⁴

Given this solution to the problem of temporary intrinsics, how might the endurantist provide a self-ascription account of tensed belief? Suppose that at 2pm I

¹³ Another is the adverbialist response to the problem of temporary intrinsics. Haslanger (1989) and Johnston (1987) both endorse this response. Although I think it is an interesting question whether the defender of the adverbialist response can provide a tenseless self-ascription account of tensed belief and timely action, my response below focuses on the relationalist response to the problem of temporary intrinsics.

¹⁴ It is worth noting that although Mellor (1981) endorses the relationalist response to the problem of temporary intrinsics, Mellor (1998) rejects such a response. Compare Mellor (1981), chapter 7 and Mellor (1998) especially chapter 8, sections 5 and 6. Thanks to an anonymous reviewer for emphasizing this point. In (2003), Ryan

believe that I am now bent. On Lewis' account, I have this belief in virtue of the fact that my 2pm person-stage self-ascribes the property of *being-bent*. Suppose I am an enduring subject. I do not possess the property of *being-bent simpliciter* so this cannot be the property that I self-ascribe. Instead, I possess the property of *being-bent-at-2pm*, or, alternatively, I stand in the relation of *being-bent-at* to 2pm.

I propose that, in providing a self-ascription account of tensed belief, the endurantist should claim that the "properties" that the subject self-ascribes are, strictly speaking, not properties, but relations. When, at 2pm, I formulate the belief that I am now bent, I do not self-ascribe the property of *being-bent-at-2pm*. After all, I might be completely ignorant about what time it is and, therefore, in no position to self-ascribe the property of *being-bent-at-2pm*. More plausibly, what I self-ascribe at 2pm is the relation of *being-bent-at*. At 2pm I self-ascribe standing in the *being-bent-at* relation.

What does it mean to self-ascribe a *relation*, as opposed to a property? For me to self-ascribe the relation of *being-bent-at* is for me to believe that I, myself, stand in the *being-bent-at* relation. However what about the 'time' relata? Does self-ascribing a relation, R, involve a subject, S, believing that he, himself, stands in R to the present time? To the time at which the belief is had? Or perhaps to some time or other? In order to shed light on these questions it will be helpful to first consider how the self-ascription account handles the case of *de se* belief and then formulate the notion of self-ascribing a relation in a similar manner.

Wasserman defends the plausibility of the relationalist response to the problem of temporary intrinsics (although he denies endorsing the response in footnote 2).

An amnesiac named Lingens pushes his shopping cart around the supermarket not realizing that his bag of sugar is leaking onto the floor.¹⁵ After circling around, the amnesiac sees the trail of sugar on the floor and comes to believe that someone is making a mess. An employee of the supermarket who recognizes the amnesiac as Lingens observes the leaking cart and goes on the loudspeaker announcing, "Lingens, you are making a mess". Lingens formulates the belief that Lingens is making a mess, but since he has forgotten that he is Lingens, he continues to push the cart. However, finally, Lingens looks down and sees the sugar spilling out of his cart and exclaims "I am making a mess!" He quickly adjusts the bag of sugar to avoid any further spillage.

According to the self-ascription account, the object of Lingens's belief changes throughout the ordeal. At first, he believes the proposition that someone is making a mess. Later, after hearing the loudspeaker announcement, he comes to believe the proposition that Lingens is making a mess. However, according to the self-ascription theory, what Lingens believes when he finally exclaims "I am making a mess!" and adjusts the bag of sugar cannot be explained by appealing to either of these propositions, or to any proposition at all. Rather, what Lingens believes when he exclaims "I am making a mess" is the property of *being-an-x-such-that-x-is-making-a-mess*.

How the self-ascription theorist treats the *de se* case is instructive to how the endurantist should understand the self-ascription of a relation in the case of tensed belief. Suppose that my doctor gives me antibiotics and tells me to refrain from drinking alcohol before June 10th at which point I will be healthy and able to drink. On

¹⁵ This example borrows a character from Perry (1977) and a scenario from Perry (1979).

June 10th I go to a bar with a friend and, not realizing what day it is, I order a seltzer, instead of a beer. At the time I order the seltzer, I have forgotten the date at which the doctor told me I would be healthy. I believe that I am healthy on some day or other. Since my belief is a *de se* belief (I believe that I, myself, am healthy on some day or other), it is best understood as the self-ascription of a property. I self-ascribe the property of *being-healthy-on-some-day-or-other*. I then ask my friend “What day did my doctor say that I will be able to drink again?” and my friend responds, “June 10th”. Not yet realizing that today is June 10th, I formulate the belief that I am healthy on June 10th. Since my belief is a *de se* belief (I believe that I, myself, am healthy on June 10th), it is best understood as the self-ascription of a property. I self-ascribe the property of *being-healthy-on-June-10th*. Finally, I ask my friend, “What day is it today?” and he replies “June 10th”. I then come to believe that I, myself, am *now* healthy. This belief causes me to dump out my seltzer, motion for the bartender, and order a beer.

Recall that when Lingens has the belief that someone is making a mess and the belief that Lingens is making a mess, the self-ascription theorist claims that the object of his belief is a proposition. However, when Lingens comes to realize that he, himself, is making a mess, no proposition will adequately characterize the object of his belief. Instead, the self-ascription theorist claims that the object of his belief is a property, the property of *being-an-x-such-that-x-is-making-a-mess*. When on June 10th I believe that I am healthy on some day or other, the object of my belief is a property, the property of *being-healthy-on-some-day-or-other*. Similarly, when I believe on June 10th that I am healthy on June 10th, the object of my belief is a property, the property of *being-healthy-on-June-10th*. But just as no *proposition* will adequately characterize Lingens’s belief

that he, himself is making a mess, no *property* will adequately characterize my belief that I, myself, am *now* healthy. In order to characterize the object of my belief when I believe that I, myself, am *now* healthy, the endurantist must resort to relations, rather than properties. I believe that I, myself, am now healthy in virtue of the fact that I self-ascribe the relation of *being-healthy-at*.

If we take the subjects of self-ascription to be person-stages, then self-ascribing properties *is* sufficient for tensed belief. My belief on June 10th that I am now healthy can be explained by the fact that my June 10th person-stage self-ascribes the property of *being-healthy*. But if we take the subject of self-ascription to be enduring, then the self-ascription of properties won't do. No property that I have *simpliciter* will explain my belief that I am *now* healthy¹⁶ (Just as no property that the world has *simpliciter* (i.e. proposition), will explain Lingens's belief that he, himself, is making a mess). So just as *de se* belief moves us towards taking properties as the objects of belief, tensed belief moves the endurantist towards taking relations as the objects of belief.

We are now in a position to answer some of the questions posed above. My belief on June 10th that I, myself, am now healthy is not equivalent to the belief that I stand in the *being-healthy-at* relation to some time or other. That would be tantamount to self-ascribing the property of *being-healthy-at-some-time-or-other*. Nor is it equivalent to the belief that I stand in the *being-healthy-at* relation to June 10th. That would be tantamount to self-ascribing the property of *being-healthy-at-June 10th*. So for

¹⁶ I take this to be Craig's point when he states, "In knowing that time it is, one must self-ascribe more than a mere B-series position to oneself, for one occupies a multitude of such positions and in order to act reasonably, one must know what time it is now" (Craig 2000, 128).

S to self-ascribe R at t is not equivalent to S believing that he, himself, stands in R to some time or other, nor is it equivalent to S believing that he, himself, stands in R to t. Rather for S to self-ascribe R at t is for S to believe at t that he, himself, stands in R to now. Or, to state it more naturally, at t, S believes that he, himself, now stands in R. Whereas the belief that results from self-ascribing a property must be described using a personal indexical (such as 'I' or 'she, herself'), the belief that results from self-ascribing a relation must be described using a personal indexical *and* a temporal indexical (such as 'now').

The endurantist can provide a general account of what a subject believes when she believes that some event e is now in terms of the self-ascription of relations:

(SA-E for 'Self-Ascription-Endurantism') At t, a person, S, believes that e is now iff at t, S self-ascribes the relation of *being-simultaneous-with-e-at*.

We can apply (SA-E) to the example which I used to introduce the notion of tensed belief. At 8am, prior to smelling the fumes, I fail to self-ascribe the relation of *being-simultaneous-with-the-fumigation-at*. My belief (FW) can be understood in terms of a belief in the proposition that the fumigation takes place on Wednesday. When, at 8:15am, I smell the fumes, and come to believe (FN), I do so in virtue of self-ascribing the relation of *being-simultaneous-with-the-fumigation-at*. My belief (FN) is true at 8:15am if and only if I do in fact stand in the *being-simultaneous-with-the-fumigation-at* relation to 8:15am.

4.5 Is (SA-E) Compatible with the B-Theory?

I have claimed that the endurantist can adopt a self-ascription account of tensed belief that involves the self-ascription of relations. I have also attempted to clarify what it means (as well as what it does not mean) to self-ascribe a relation. I will now return to evaluating Craig's Argument in order to determine whether (SA-E) is compatible with the B-theory of time. I have restated the first premise of Craig's argument as:

(1') If the self-ascription account of tensed belief is true and endurantism is true, then either one self-ascribes tensed properties or one tensedly self-ascribes tenseless properties.

I have argued that the endurantist should claim that enduring subjects have tensed beliefs in virtue of self-ascribing *relations* rather than *properties*. So, (1') is false: it is not that case that if the self-ascription account of tensed belief is true and endurantism is true, then either one self-ascribes tensed properties or one tensedly self-ascribes tenseless properties. I think Craig is correct in his insistence that a subject that occupies multiple moments in time cannot have tensed beliefs by self-ascribing tenseless *properties*. However, this fact does not motivate a move towards *tensed* properties. Rather it motivates a move towards taking *relations* rather than *properties* as the objects of self-ascription.

Might Craig's Argument be restated so as to demonstrate that a theory involving the self-ascription of relations entails the A-theory? Consider the following revised version of premise (1'):

(1") If the self-ascription account of tensed belief is true and endurantism is true, then either one self-ascribes tensed relations or one tensedly self-ascribes tenseless relations.

Is it true that given a self-ascription account of tensed belief and endurantism, either one self-ascribes tensed relations or one tensedly self-ascribes tenseless relations? (SA-E) does not make use of tensed relations. Let us understand tensed relations in a manner similar to our understanding of tensed properties outlined above: a relation is tenseless if and only if it can be analyzed in tenseless terms. The relations that are self-ascribed according to (SA-E) are made up of the B-theoretic relation *is-simultaneous-with* and events within the B-series. So the relations can be analyzed without appealing to A-theoretic terminology and are, therefore, tenseless relations.

Does (SA-E) require *tensedly* self-ascribing tenseless relations? Above I distinguished between tenselessly self-ascribing a property and tensedly self-ascribing a property. For a subject, S, to *tenselessly* self-ascribe a property, F, is for S to believe that he, himself, is (tenselessly) F. For a subject, S, to *tensedly* self-ascribe a property, F, is for S to believe that he is (present-tense) F. Applying this distinction to the self-ascription of relations, we can say that a subject, S, *tenselessly* self-ascribes a relation, R, if and only if S believes that he, himself, stands (tenselessly) in R. We can say that a subject, S, *tensedly* self-ascribes a relation, R, if and only if S believes that he, himself, stands (present-tense) in R. I have argued that to self-ascribe a relation, R, does not involve merely believing that one stands (tenselessly) in R. On June 10th, I might take

myself to stand (tenselessly) in the *being-healthy-at* relation without thereby believing on June 10th that I am now healthy. Rather, to self-ascribe a relation, R, involves S believing that he, himself, now stands in R. (SA-E) does involve tensedly self-ascribing tenseless relations, and so (SA-E) is consistent with the truth of (1").

Even though (SA-E) involves tensedly self-ascribing tenseless relations, there is good reason for thinking that (SA-E) is compatible with the B-theory of time. Restating premise (3) of Craig's Argument so as to correspond with (1") results in:

(3") If one tensedly self-ascribes tenseless relations, then real tense is ineliminable.

I wish to argue that although the endurantist should grant the truth of premise (1") on account of the fact that (SA-E) involves tensedly self-ascribing relations, the endurantist should reject the corresponding premise (3"). It is not the case that tensedly self-ascribing tenseless relations entails the ineliminability of real tense.

In order to motivate the claim that tensedly self-ascribing tenseless relations does not commit one to the existence of tensed properties, consider again the analogous case of *de se* belief. As noted above, the self-ascription theorist claims that when Lingens realizes that he, himself, is making a mess, he self-ascribes the property of *being-an-x-such-that-x-is-making-a-mess*. We might distinguish between two different ways in which one might ascribe properties. Let us say that a subject *impersonally* ascribes a property, F, if and only if the subject believes that someone has F. Let us say that a subject *personally* ascribes a property, F, if and only if the subject believes that

she, herself, has F. Clearly the self-ascription account of *de se* belief makes use of a personal notion of ascription since for a subject to self-ascribe a property, F, is for the subject to believe that she, herself, has F. Now consider the following premise:

(3-P) If one personally ascribes properties, then real personal tense is ineliminable.

Let us understand the ineliminability of real personal tense as the view that there exist properties in the world that cannot be analyzed without the use of personal indexicals such as 'I' 'you' or 'us'. On this view there is, for example, a property in the world of *being-two-feet-from-me* that cannot be analyzed in terms of the property of *being-two-feet-from-Stephan* or any other 'impersonal' property.

There do not seem to be any good reasons why the self-ascription theorist should be committed to (3-P). The fact that the self-ascription relation is personal as opposed to impersonal follows from what it means to have a property as the object of one's belief. To stand in the self-ascription relation to a property just is to believe that you, yourself, have the property. Neither Lewis nor Chisholm claims that there exist personal properties in the world, nor do there seem to be any good arguments for the conclusion that their account entails the existence of such properties.

If the *de se* theorist has no reason to be committed to (3-P), then it is difficult to see why the endurantist should be committed to (3"). It does not follow from the fact that the self-ascription account of *de se* belief involves personally ascribing properties that there exist personal properties. Nor does it follow from the fact that the self-

ascription account of tensed belief involves tensedly self-ascribing relations that there exist tensed properties or relations.

When I self-ascribe the relation *being-simultaneous-with-the-fumigation-at*, the resulting attitude is tensed: I believe that my apartment building is being fumigated *now*. Many A-theorists have taken the existence of irreducibly tensed attitudes to provide evidence for the A-theory of time. However, it is mistaken to assume that the existence of irreducibly tensed attitudes entails the existence of tensed properties or relations. The irreducibly perspectival nature of the attitude is the result of believing something that is non-propositional. Having a property as the object of one's belief results in an attitude that is irreducibly personal; it cannot be properly described without the use of a personal indexical. Having a relation to a time as the object of one's belief results in an attitude that is irreducibly tensed; it cannot be properly described without the use of a temporal indexical. So, although adopting (SA-E) involves acknowledging that the attitude that results from self-ascribing a relation is irreducibly tensed, this fact can be explained by appealing to objects of belief that are entirely consistent with a tenseless theory of time.

4.6 Conclusion

I conclude that Craig's Argument fails to establish that the self-ascription account of tensed belief entails the A-theory. I have provided two different formulations of the self-ascription account of tensed belief, one that is compatible with the perdurantist account of persons and the other that is compatible with an endurantist account of persons. I have argued that both formulations are capable of providing a tenseless account of tensed belief. One of the interesting conclusions from this

examination is that in formulating a self-ascription account of tensed belief, the endurantist must “take tense seriously” in a way that is not required of the perdurantist. Craig’s Argument for the claim that the self-ascription theory of tensed belief entails the A-theory fails, however which premise the self-ascription theorist rejects will depend upon what she takes the subject of self-ascription to be. Taking the subjects of self-ascription to be momentary person-stages allows for an account of tensed belief that is doubly tenseless: it allows for the tenseless self-ascription of tenseless properties. Taking the subject of self-ascription to be wholly present at multiple moments within the B-series requires taking the objects of belief to be relations, rather than properties. Although taking relations as the objects of belief commits one to the conclusion that relations are *tensedly* self-ascribed, I have claimed that adopting such a notion does not commit one to the existence of irreducibly tensed properties. I conclude that the self-ascription account of tensed belief provides a plausible B-theoretic response to the problem of timely action and is worthy of further consideration.

CHAPTER 5

TEMPORAL OBJECTS OF BELIEF AND RICHARD'S OBJECTION

AGAINST TEMPORALISM¹

In this chapter I consider an argument given by Mark Richard against temporalism. Many have taken Richard's argument to pose a serious threat to temporalism, a semantic thesis about the nature of the propositions expressed by sentences. I argue that threat posed by the argument lies elsewhere. The argument does not threaten a semantic thesis about the kinds of propositions expressed by sentences. Rather it threatens the view that the objects of belief are temporal: that they are true at some times and false at other times. Since in the previous chapter I advocate a view according to which the objects of belief are temporal, I consider what implications Richard's argument has for such a view. I conclude by claiming that the real threat of Richard's argument can be avoided.

5.1 Temporalism and the Mary Argument

Suppose that in 1997 I produce a token utterance of the following sentence-type:

B Bill Clinton is president.

¹ In an earlier draft of this chapter I defended a view according to which there were two different senses in which a subject could retain a belief over time. I claimed that there were two senses of 'S at t1 has the same belief as S at t2' and one of these senses does not require maintaining the same object of belief over time. In light of discussions with Phillip Bricker, I have since become convinced that the different senses of belief retention result from the fact there are two different senses of 'belief'. The main response to Richard's argument that I present in this chapter is a result of discussions with Bricker. Any deficiencies are my own.

My utterance was clearly true in 1997. Suppose that in 2007 I produce another token utterance of B. This utterance is clearly false. This fact raises the following question: Do my 1997 utterance and my 2007 utterance express the same proposition, a proposition that was true in 1997, but is now false? Or do my utterances each express a different proposition? According to the latter option, my 1997 utterance is true in virtue of the fact that my 1997 utterance expresses an eternally true proposition and my 2007 utterance is false in virtue of the fact that it expresses a (distinct) eternally false proposition.² The eternalist and the temporalist disagree about the nature of the proposition expressed by token utterances of sentence-types such as B.

Let us say that a proposition, p, is *temporal* if and only if there exist two times, t1 and t2, such that the truth-value of p at t1 differs from the truth-value of p at t2.

Temporalism is the view that some sentences express temporal propositions.

Eternalism is the denial of temporalism. According to eternalism, all sentences express propositions that are eternally true or eternally false if true or false at all. The temporalist claims that tokens of sentence-types such as B express temporal propositions, propositions that change in truth-value over time.

In 1981 Mark Richard presented an objection against temporalism. Many today either take Richard's objection to be a decisive refutation of temporalism or, at the very least, a serious threat to the view.³ Richard considers the following argument:

² Let us say that a proposition, p, is eternally true if and only if for all times, t, p is true at t. Let us say that p is eternally false if and only if for all times, t, p is false at t.

³ In *Understanding Truth* (1999), Scott Soames refers to Richard's argument in defense of his assumption that sentence tokens express eternal propositions. In *Conceptions of Truth* (2003) Wolfgang Kühne marshals Richard's 1981 argument to demonstrate why temporalism is false. Brogaard (2007) and Recanati (2007) both take Richard's

The Mary Argument

- (1) Mary believed that Nixon was president.⁴
- (2) Mary still believes everything she once believed.
- (3) Therefore, Mary believes that Nixon is president

Richard claims that obviously the above argument is not a valid argument in English. However, Richard argues that the temporalist is committed to the validity of the argument. He also claims that the eternalist is not committed to the validity of the argument and so he concludes that, “eternalism is to be preferred to temporalism” (Richard, 6).

Why is the temporalist committed to the validity of the Mary Argument?⁵

Richard claims that the temporalist is committed to the validity of the above argument just in case the truth-conditions that the temporalist assigns for premises (1) and (2) entail his truth-conditions for (3). Richard argues that the temporalist truth-conditions for (1), (2) and (3) result in a valid argument. The temporalist truth-conditions that Richard assigns to (1), (2) and (3) involve certain assumptions about the truth-

argument to pose a serious threat to temporalism. Chris Tillman (unpublished) states that temporalism’s “current unpopularity is due chiefly to objections raised in Richard (1981) and Richard (2004)” (Tillman, 20).

⁴ This sentence is ambiguous. It can be understood as claiming that in the past Mary believed what she would then express by saying “Nixon was President”. It can also be understood as claiming that in the past Mary believed what she would then express by saying “Nixon is president.” It is clear from the truth-conditions that Richard assigns to premise 1 that he intends the latter disambiguation and I assume the latter disambiguation throughout the chapter.

⁵ Here and throughout the rest of the chapter, I take ‘the Mary Argument’ to refer to the collection of sentences presented above, not to a collection of propositions. As I shall argue below, what propositions are expressed by the sentences that comprise the Mary Argument is a matter of considerable contention.

conditions for sentences that attribute belief. He supposes that both the temporalist and the eternalist accept the following truth-conditions for belief attribution:

(BA-R for 'Belief-Attribution – Richard') Let α be a singular term which is neither a demonstrative nor an indexical (and does not contain such); let ϕ be a sentence containing neither demonstratives nor indexicals. Then ' α believes that ϕ ' is true at a time t iff the denotatum of α (at t) believes the proposition expressed by ϕ (at t) (Richard, 3).

Let us follow Richard in adopting the convention of naming the proposition expressed by a sentence S by bracketing S . Let us also follow Richard's naming convention by referring to the sentence 'Nixon is president' as ' P_n '. Richard claims that the temporalist truth-conditions for a sentence such as

(4) Mary believes that Nixon is president.

at time t can be given as follows (where 'B' denotes the three-place relation of a subject believing a proposition at a time and 'm' is a constant denoting Mary):

(4') $(\exists p)(p=[P_n] \ \& \ Bmpt)$

So, at time t , Mary believes that Nixon is president just in case Mary believes the proposition expressed by P_n at t . (4') provides temporalist truth-conditions for a sentence involving present-tense belief attribution. However premise (1) of the Mary Argument involves a past-tense belief-attribution. Richard claims that the temporalist truth-conditions for the following past tense belief attribution:

(1) Mary believed that Nixon was president

at time t can be given as follows (where t' ranges over times and '>' denotes the *is-later-than* relation):

(1') $(\exists t')(\exists p)(t>t' \ \& \ p=[P_n] \ \& \ Bmpt')$

In other words, there is some time in the past at which Mary believed the temporal proposition that was then expressed by the sentence ‘Nixon is president’.

Richard takes premise (2) of the Mary Argument to involve universal quantification over propositions. He assigns the following truth-conditions to premise (2) at a time t:

$$(2') (p)((\exists t')(t > t' \ \& \ Bmpt') \rightarrow Bmpt)$$

In other words, for all propositions, p, if there is a time in the past when Mary believed p, then Mary believes p at t.

Since the conclusion of the Mary Argument involves a present tense belief attribution, its truth conditions at time t can be given as:

$$(3') (\exists p)(p = [Pn] \ \& \ Bmpt)$$

(3') clearly follows from (1') and (2') so Richard concludes that the temporalist is committed to the validity of the Mary Argument.

Richard claims that the eternalist truth-conditions do not commit the eternalist to the validity of the Mary Argument. Richard identifies eternalist propositions with the set of worlds in which they are true. He claims that the eternalist can identify the proposition expressed by the sentence ‘Nixon is president’ at time t with the proposition p such that (where ‘T’ refers to the predicate *is-true*)

$$(5) \square (Tp \equiv Pnt)^6$$

⁶ I am confused by Richard’s notation here. He states earlier in the paper that ‘Pn’ denotes the *sentence* ‘Nixon is president’. If this is the case, then what does ‘Pnt’ denote? I think what Richard means is that the proposition expressed by the sentence ‘Nixon is president’ at time t is identified with the proposition, p, that is true at all and only those worlds in which Nixon is president at t.

Since premise (1) involves past-tense belief attribution, Richard claims that the eternalist will assign to it the following truth-conditions:

$$(1'') (\exists t')(\exists p)(t > t' \ \& \ \Box (Tp \equiv Pnt) \ \& \ Bmpt')$$

In other words, there is some time in the past at which Mary believed the eternal proposition that was then expressed by a token of 'Nixon is president'.

Richard claims that the eternalist will provide the same truth-conditions (2') for premise (2) as the temporalist. Given (1'') and (2'), the eternalist is not committed to the validity of the Mary Argument. (1'') and (2') entail the following at time t:

$$(4) (\exists t')(\exists p)(t > t' \ \& \ \Box (Tp \equiv Pnt') \ \& \ Bmpt')$$

From (1'') and (2') it does not follow that Mary believes at t that Nixon is president. Rather it follows that Mary believes at t what was expressed by 'Nixon is president' when Mary originally held the belief. Since the temporalist is committed to the validity of the Mary Argument and the eternalist is not so committed, Richard concludes that eternalism is to be preferred to temporalism.

5.2 The Mary Argument and Belief Attribution

As is clear from the above, the temporalist's commitment to the validity of the Mary Argument depends to a large extent on the proper truth-conditions for sentences involving belief attribution. In this section I will raise some questions concerning Richard's account of the truth-conditions for sentences involving belief attribution: (BA-R). I will argue that, as stated, (BA-R) is false: there are cases in which ' α believes that ϕ ' is true at a time t even though it is not the case that α believes the proposition expressed by ϕ . I will then argue that a more careful statement of the truth-conditions

for statements that make belief attributions involves distinguishing between two different ways of characterizing belief: narrow characterization and wide characterization. I will argue that given these considerations, it is neither the case that the temporalist is committed to accepting the Mary Argument as valid nor the case that the eternalist is committed to accepting the Mary Argument as invalid. So the Mary Argument provides no reason to prefer eternalism over temporalism. Finally, I argue that the real threat that the Mary Argument poses is to the view that objects that characterize belief are temporal, and this is a view that can be consistently held by either a temporalist or an eternalist.

The falsity of (BA-R) can be seen by considering Saul Kripke's "A Puzzle about Belief" and, in particular, David Lewis' response to the puzzle. Consider the following example borrowed from Kripke:⁷

Suppose Pierre is a normal French speaker who lives in France and speaks not a word of English or of any other language except French. Of course he has heard of that famous distant city, London (which he of course calls 'Londres') though he himself has never left France. On the basis of what he has heard of London, he is inclined to think that it is pretty. So he says, in French, 'Londres est jolie'. On the basis of his sincere French utterance, we will conclude:

(6) Pierre believes that London is pretty.

Later Pierre, through fortunate and unfortunate vicissitudes, moves to England, in fact to London itself, though to an unattractive part of the city with fairly uneducated inhabitants. He like most of his neighbors, rarely ever leaves this part of the city. None of his neighbors knows any French, so he must learn English by 'direct method'; by talking and mixing with people he eventually begins to pick up English. In particular, everyone speaks of the city, 'London', where they all live. Pierre learns from them everything they know about London but there is little overlap with what he heard before. He learns, of course, to call

⁷ I have quoted the passage from Lewis (1981). The original passage appears in Kripke (1979).

the city he lives in 'London'. Pierre's surroundings are unattractive, and he is unimpressed with most of the rest of what he happens to see. So he is inclined to assent to the English sentence: 'London is not pretty'. Of course he does not for a moment withdraw his assent from 'Londres est Jolie'; he merely takes it for granted that the ugly city in which he is now stuck is distinct from the enchanting city he heard about in France. After Pierre lived in London for some time, he did not differ from his neighbors either in his knowledge of English or in his command of the relevant facts of local geography. Now Pierre's neighbours would surely be said to use 'London' as a name for London and to speak English. Since, as an English speaker he does not differ at all from them, we should say the same of him. But then, on the basis of his sincere assent to 'London is not pretty', we should conclude:

(7) Pierre believes that London is not pretty.

So now it seems that we must respect both Pierre's French utterances and their English counterparts. So we must say that Pierre has contradictory beliefs. But there seem to be insuperable difficulties. We may suppose that Pierre is a leading philosopher and logician. He would never let contradictory beliefs pass. And surely anyone is in principle in a position to notice and correct contradictory beliefs if he has them. But it is clear that Pierre, as long as he is unaware that the cities he calls 'London' and 'Londres' are one and the same, is in no position to see, by logic alone, that at least one of his beliefs must be false. He lacks information, not logical acumen.

(8) He cannot be convicted of inconsistency; to do so would be incorrect.

The puzzle arises from the fact that it seems clear that we should accept (6), (7) and (8), however, it is difficult to see how we could accept all three. To solve the puzzle would be to successfully explain how we can consistently accept (6), (7) and (8). David Lewis has responded to Pierre's puzzle by denying a principle very much like (BA-R). Lewis claims that we "clearly must" accept (6), (7) and (8). His explanation for how we can consistently accept (6), (7) and (8) involves rejecting the following principle:

(9) 'Pierre believes that F(A)', where A is an ordinary proper name and F is an easily understood predicate, ascribes to Pierre a belief whose object is the proposition (actually) expressed by 'F(A)' (Lewis, 284).

Lewis denies the above principle. He holds that (6) is true even though Pierre fails to have the proposition expressed by 'London is pretty' as the object of his belief. Lewis

takes the proposition expressed by 'London is pretty' to be the set of possible worlds in which London is pretty.⁸ This set of worlds, Lewis argues, is not identical to the set of worlds that properly characterize Pierre's belief. There is a possible world that perfectly fits what Pierre believes, yet the proposition (actually) expressed by 'London is pretty' is false at this world. Lewis has in mind a world (call it 'w') that is very much like our own except for the fact that it differs in some recent historical details. W is just like the actual world except for the fact that at some point in the recent past of w, the town of Bristol undergoes a beautification program and is renamed 'Londres'. It is this city that Pierre hears about while still in France. Meanwhile the city of London undergoes a period of urban decay. The slums spread until the entire city is ugly. Pierre's experiences in w are just like his experiences in the actual world: while in France he hears talk of the beautiful city known as 'Londres' and he moves to the same ugly portion of London. W is a world in which the proposition (actually) expressed by 'London is pretty' is false since at w it is false that London is pretty. But w fits what Pierre believes perfectly: for all Pierre knows, he might inhabit w. So, although w is among the set of worlds that characterize Pierre's beliefs, it is not among the set of worlds that is identified with the proposition (actually) expressed by 'London is pretty'.

Lewis accepts the claim that Pierre believes that London is pretty, however he denies the claim that Pierre has the proposition (actually) expressed by 'London is pretty' as the object of his belief. So, Lewis concludes that sentences of the form 'Pierre believes that F(A)' do not ascribe to Pierre the belief whose object is the proposition

⁸ For Lewis the proposition expressed by an (actual) utterance of 'London is pretty' will be a set of worlds in which the counterparts of London are pretty. Here and in what

expressed by 'F(A)'. Once we deny that sentences of the form 'Pierre believes that F(A)' ascribe to Pierre a belief whose object is the proposition expressed by 'F(A)', we can accept (6) and (7) without ascribing contradictory objects of belief to Pierre and we can thereby solve Kripke's puzzle about belief.

If we adopt Lewis's response to Kripke's puzzle about belief, then we should likewise reject (BA-R). The case of Pierre demonstrates that sentences of the form ' α believes that φ ' may be true without it being the case that α believes the proposition expressed by φ . So, (BA-R) provides the wrong truth-conditions for sentences that attribute belief.

However some points of clarification are needed. Firstly, Lewis argues that sentences of the form ' α believes that φ ' do not ascribe to α a belief whose object is the proposition expressed by φ . However, (BA-R) does not state that sentences of the form ' α believes that φ ' ascribe to α a belief whose object is the proposition expressed by φ . Rather it states that sentences of the form ' α believes that φ ' are true just in case α *believes the proposition expressed by φ* . Perhaps for α to believe the proposition expressed by φ is not the same as α having a belief whose object is expressed by φ . If this were the case then we might reject (9) without thereby rejecting (BA-R). This seems unlikely however. The truth-conditions that Richard assigns to premise (1) and the conclusion of the Mary Argument involve Mary standing in the belief relation to a proposition. Premise (2) takes belief retention to involve quantification over propositions that the subject stands in the belief relation to at various times. These truth-conditions demonstrate that Richard is taking the locution 'believes the

follows, I speak loosely by ignoring talk of counterparts.

proposition expressed by' to be equivalent to the expression 'has a belief whose object is expressed by'.

A further point of clarification involves whether the content of belief that is being characterized in (BA-R) is characterized *narrowly* or characterized *widely*. In order to make this distinction clear, consider the following case:⁹ An amnesiac named Lingens pushes his shopping cart around the supermarket not realizing that his bag of sugar is leaking onto the floor. An employee of the supermarket who recognizes the amnesiac as Lingens observes the leaking cart and goes on the loudspeaker announcing, "Lingens, you are making a mess". Lingens formulates the belief that Lingens is making a mess, but since he has forgotten that he is Lingens, he continues to push the cart through the aisles. However, finally, Lingens looks down and sees the sugar spilling out of his cart and exclaims "I am making a mess!" He quickly adjusts the bag of sugar to avoid any further spillage.

Suppose we wish to characterize the content of Lingens' beliefs throughout the ordeal by assigning objects of belief. There are two ways in which we might go about this. One way is by considering only what goes on inside Lingens' head. On this way of characterizing the content of his beliefs, we are interested in the causal role of Lingens' belief-states: how can we explain Lingens' change in behavior after he sees that sugar is spilling from his cart? On this way of characterizing belief, differences in behavior are explained by appealing to different objects of belief. Since Lingens' behavior changes when he goes from hearing the loudspeaker announcement to seeing the sugar spill from his cart, we assign different objects to the belief that Lingens has

after hearing the loudspeaker announcement and the belief that Lingens has after seeing the spilling sugar. On the account I favor, the object of Lingens' belief immediately after hearing the loudspeaker announcement is a proposition that is true in all and only those worlds in which Lingens is making a mess. However, the object of Lingens' belief after observing the sugar spilling from his cart is a property, the property of *being-an-x-such-that-x-is-making-a-mess*. Let us call the individuation of beliefs in terms of the causal role of belief states *narrow individuation*. Let us say that when we assign objects of belief according to narrow individuation we *narrowly* characterize belief.

The other way in which we might characterize Lingens' beliefs is by considering the truth-conditions of Lingens' beliefs.¹⁰ The belief that Lingens has immediately after hearing the loudspeaker announcement is true if and only if Lingens is making a mess. Similarly, the belief that Lingens has after observing the sugar spilling from his cart is true if and only if Lingens is making a mess. In this case, we characterize belief by considering not only what goes on inside Lingens' head, but also those features of the world that make Lingens' belief true or false. Since Lingens' belief immediately after hearing the loudspeaker announcement is true if and only if Lingens is making a mess and Lingens' belief after observing the sugar spilling from his cart is true if and only if Lingens is making a mess, we can assign to both beliefs the same object, viz. the proposition that is true in all and only those worlds in which Lingens makes a mess. Let us call the individuation of beliefs according to differences in truth-conditions *wide*

⁹ The example is a modified version of an example presented by Perry (1979).

¹⁰ The term 'truth-condition' lacks a univocal meaning. See Chapter 1 for some of the ways in which the term may be disambiguated. Here I take it to mean what I call 'p-truth-conditions' in Chapter 1.

individuation. Let us say that when we assign objects of belief according to wide individuation we *widely* characterize belief.

In rejecting (9) Lewis assumes a narrow characterization of belief. This is clear when we look at the world, *w*, that Lewis considers. If we widely characterize the belief that Pierre has when he believes that London is pretty, then *w* would not be among the set of worlds that characterize Pierre's belief. If we individuate Pierre's beliefs according to what makes the belief true, then the set of worlds that characterize the belief attributed to Pierre by (6) contains all and only those worlds in which London is pretty. Rather, Lewis is characterizing Pierre's beliefs narrowly: *w* is a world that is consistent with what goes on only inside Pierre's head: for all Pierre believes, he may inhabit *w*.

What relevance does all this have to the Mary Argument and Richard's argument against temporalism? The case of Pierre and the distinction between characterizing beliefs widely and narrowly demonstrate that the truth-conditions that Richard provides for premise (1) and the conclusion of the Mary Argument make a number of weighty assumptions. The case of Pierre has demonstrated that sentences involving a belief attribution of the form ' α believes that ϕ ' may be true even though, when characterized narrowly, α fails to believe the proposition expressed by ϕ . Consider again the eternalist truth-conditions Richard assigns to premise (1) of the Mary Argument:

$$(1'') (\exists t') (\exists p) (t > t' \ \& \ \Box (Tp \equiv Pnt') \ \& \ Bmpt')$$

If we characterize Mary's beliefs narrowly, it may be the case that premise (1) of the Mary Argument is true (it is true that Mary believed that Nixon was president) even though the truth-conditions given by (1'') fail to obtain. Suppose we are watching a

videotape in which Mary is attending her test for U.S. citizenship. The date on which the citizenship test takes place is June 3rd, 1972. Let us also suppose that on the day of her citizenship test Mary was confused about what day it was; she believed that it was June 2nd, 1972 rather than June 3rd, 1972. On the videotape Mary is asked by an immigration officer who the current president is. Mary sincerely replies “Nixon is president”. On the basis of this observation (and other facts that we know about Mary, such as that she is a fluent speaker of English, etc.) we conclude after watching the videotape that:

(1) Mary believed that Nixon was president

It seems plausible that (1) is true even though, when we characterize her beliefs narrowly, Mary fails to have a belief whose object is the proposition expressed by a June 3rd, 1972 utterance of ‘Nixon is president’. The eternalist will take the proposition expressed by a June 3rd, 1972 utterance of ‘Nixon is president’ to be a proposition that is true in all and only those worlds in which Nixon is president on June 3rd, 1972.

However, if we characterize Mary’s beliefs narrowly at the time of the citizenship test, it is not the case that Mary has a belief whose object is the proposition expressed by a June 3rd, 1972 utterance of ‘Nixon is president’. Consider a world, *w*, that is just like the actual world except for the fact that Mary’s citizenship test takes place on June 2nd, 1972 and Nixon is assassinated at 11:59 PM on June 2nd, 1972. *W* is a world that fits Mary’s beliefs at the time of her citizenship test perfectly: for all she believes then, *w* is the world she inhabits. However, the proposition expressed by a June 3rd, 1972 utterance of ‘Nixon is president’ is false at *w*: it is false at *w* that Nixon is president on

June 3rd. So, if we characterize beliefs narrowly, (1'') provides the wrong truth-conditions for premise (1) of the Mary argument.

What truth-conditions we give for premise (1) of the Mary Argument will depend upon whether we are characterizing Mary's beliefs widely or narrowly. Noting this fact exposes what little bearing the Mary Argument has on the debate between temporalism and eternalism. Temporalism and eternalism are both semantic theses: theses about what kind of propositions are expressed by token sentences. If we reject (BA-R), as I have argued we should, then it is no longer the case that the temporalist is committed to the truth-conditions Richard attributes to him nor is it the case that the eternalist is committed to the truth-conditions Richard attributes to him. A temporalist might hold that some sentence tokens express temporal propositions, yet deny that sentences involving belief attributions such as premise (1) have the truth-conditions that Richard claims they do. The temporalist might hold that some sentences express temporal propositions, but deny that premise (1) is true just in case there is a time in the past at which Mary had a belief whose object was the proposition expressed by a token utterance of 'Nixon is president'. Furthermore, an eternalist might hold that all token sentences express eternal propositions, yet deny that sentences such as premise (1) have the truth-conditions that Richard claims they do. The eternalist might hold that all token sentences express eternal propositions, yet might deny that premise (1) is true just in case Mary had a belief whose object was the proposition expressed by a token utterance of 'Nixon is president' produced at the time of her belief.

In order to demonstrate the irrelevancy of the Mary Argument to the temporalism-eternalism debate, let us consider how an eternalist might respond to the

example in which Mary attends her test for U.S. citizenship on June 3rd, 1972. The eternalist will hold that Mary's token utterance on June 3rd, 1972 of 'Nixon is president' expresses a proposition that is eternally true. The proposition expressed by Mary's utterance is true at all and only those worlds in which Nixon is president on June 3rd, 1972. However according to the example given above, the proposition that is true at all and only those worlds in which Nixon is president on June 3rd fails to narrowly characterize Mary's beliefs at the time of her citizenship test. Rather the eternalist might hold that premise (1) of the Mary Argument is true in virtue of the fact that Mary has a belief whose object is something other than the proposition expressed by a June 3rd, 1972 utterance of 'Nixon is president'. In the previous chapter I outline and defend the view according to which the (narrowly characterized) objects of tensed beliefs are properties. The eternalist might claim that premise (1) is true in virtue of the fact that on June 3rd, 1972 Mary self-ascribes the property of *being-simultaneous-with-the-presidency-of-Nixon*. However if (1) is true in virtue of the fact that on June 3rd, 1972 Mary had a belief such that, when it is characterized narrowly, it has as its object the property of *being-simultaneous-with-the-presidency-of-Nixon*, and we take premise (2) to involve quantification over narrowly characterized objects of belief, then it follows from premises (1) and (2) that Mary now has a belief such that, when it is characterized narrowly, it has as its object the property of *being-simultaneous-with-the-presidency-of-Nixon*. For Mary now to have a belief such that, when it is characterized narrowly, it has as its object the property of *being-simultaneous-with-the-presidency-of-Nixon* is for Mary to believe that Nixon is now president. So, once we reject (BA-R), it is no longer the case that the eternalist is committed to the invalidity of the Mary Argument.

The above example illustrates that what is at issue when it comes to the Mary Argument is not eternalism or temporalism. Rather what is at issue is the kind of objects of belief that are attributed by premise (1). Let us say that an object of belief, *o*, is temporal if and only if there exist two times, *t*₁ and *t*₂, such that the truth-value of *o* at *t*₁ differs from the truth-value of *o* at *t*₂. The Mary Argument poses a *prima facie* threat to the view that premise (1) of the Mary Argument attributes to Mary temporal objects of belief. As the terms ‘temporalist’ and ‘eternalist’ are used throughout the temporalist-eternalist debate (which is to refer to a semantic thesis about the nature of the propositions expressed by token sentences), the eternalist may embrace temporal objects of belief just as the temporalist may. Similarly, I see no reason why the temporalist couldn’t reject the existence of temporal objects of belief while maintaining the belief that sentence-tokens sometimes express temporal propositions. As seen in the example above, the eternalist who (a) claims that premise (1) is true in virtue of the fact that Mary has a belief such that, when characterized narrowly, has as its object an entity that is temporal and (b) takes premise (2) to involve quantification over narrowly characterized objects of belief, is as much committed to the conclusion of the argument as the temporalist who adopts the truth-conditions Richard attributes to him. And so Richard’s argument provides no reason in favor of eternalism over temporalism.

5.3 A Reason to Reject Temporal Objects of Belief?

Now that we have figured out what the true target of Richard’s argument is (*viz.* the existence of temporal objects of belief), I will turn to evaluating this threat. Does the Mary Argument demonstrate that the objects of belief cannot be temporal? I will

argue that it does not. Rather I will claim that the Mary Argument is ambiguous between two versions: one which adopts a wide characterization of belief and one which adopts a narrow characterization of belief. Some contexts favor the version of the argument according to which beliefs are characterized widely and other contexts favor a version of the argument according to which beliefs are characterized narrowly. In those contexts that favor a wide characterization of belief, the Mary Argument expresses an invalid argument. In those contexts that favor a narrow characterization of belief, the Mary Argument expresses a valid argument. Those contexts in which the Mary Argument expresses a valid argument are contexts in which the quantification over objects of belief in premise (2) of the Mary Argument most plausibly involves quantification over temporal objects. I argue that in such contexts it is quite plausible that the Mary Argument expresses a valid argument and the fact that it does, does not provide any reason to reject the existence of temporal objects of belief.

In what follows I will consider a view according to which the objects of widely characterized beliefs are eternal propositions. As mentioned above, in widely characterizing beliefs we individuate beliefs according to their truth-conditions. Eternal propositions are sufficient for characterizing belief in this manner. However when we narrowly characterize belief, eternal propositions are not enough. The Lingens example demonstrates that beliefs with the same object when widely characterized may result in differences in behavior. In order to explain Lingens' change in behavior after observing the spilling sugar, we cannot appeal to objects that are true or false at worlds. I follow Chisholm (1980) and Lewis (1979) in taking the objects that narrowly characterize Lingens' beliefs to be properties. The belief that Lingens forms after observing the

sugar spilling from his cart is such that, when it is characterized narrowly, it has as its object the property of *being-an-x-such-that-x-is-making a mess*. For Lingens to have this property as the object of his belief is for him to self-ascribe it. Consider the belief that Mary has when she utters 'Nixon is president' on June 3rd, 1972. This belief is such that, when it is characterized narrowly, it has as its object the property of *being-an-x-such-that-x-is-simultaneous-with-Nixon's-presidency*. When this belief is characterized widely, it has as its object the eternally true proposition that Nixon is president on June 3rd, 1972.

Consider once again the first premise of the Mary Argument:

(1) Mary believed that Nixon was president.

I think that either of the following is a plausible statement of the truth-conditions for premise (1) at time t :

(1W) There exists a time, t' , such that t' is earlier than t and Mary has a belief at t' such that, when it is characterized widely, it has as its object the proposition that Nixon is president at t' .

and

(1N) There exists a time, t' such that t' is earlier than t and Mary has a belief at t' such that, when it is characterized narrowly, it has as its object the property of *being-an-x-such-that-x-is-simultaneous-with-Nixon's-presidency*.

What the case of Pierre and also the example above involving Mary's citizenship test demonstrate is that the following does *not* follow from premise (1):

(1N') There exists a time, t' such that t' is earlier than t and Mary has a belief at t' such that, when it is characterized narrowly, it has as its object the proposition that Nixon is president at t' .

It is possible that premise (1) is true even though there fails to exist a time, t' , such that the proposition that Nixon is president at t' narrowly characterizes Mary's belief.

Consider the second premise of the Mary Argument:

(2) Mary still believes everything she once believed.

As Richard suggests, this premise most plausibly involves quantification over objects of belief. Given that there are two ways in which we might characterize the objects of belief, there are two disambiguations of (2) depending upon whether we are quantifying over objects of widely characterized beliefs or objects of narrowly characterized beliefs.

These two disambiguations may be paraphrased as follows at time t :

(2W) For all objects, o , if there exists a time, t' such that t' is earlier than t and Mary has a belief at t' such that, when it is characterized widely, it has as its object o , then Mary has a belief at t such that, when it is characterized widely, it has as its object o .

and

(2N) For all objects, o , if there exists a time, t' such that t' is earlier than t and Mary has a belief at t' such that, when it is characterized narrowly, it has as its object o , then Mary has a belief at t such that, when it is characterized narrowly, it has as its object o .

Whether or not the conclusion of the Mary Argument follows from premises (1) and (2) depends upon whether we adopt (2W) or (2N) as a disambiguation of premise (2). If we adopt (2W) as a disambiguation of premise (2), then from premise (1) and premise (2W) it will follow that Mary has a belief at t such that, when it is characterized widely, it has as its object the eternally true proposition that Nixon is president at t' . From this fact it does not follow that Mary believes at t that Nixon is president and, so, if adopt (2W) as a disambiguation of (2), then the resulting argument is invalid. If we

adopt (2N) as a disambiguation of premise (2), then from premise (1) and premise (2N) it will follow that Mary has a belief at *t*, such that, when it is characterized narrowly, it has as its object the property of *being-an-x-such-that-x-is-simultaneous-with-Nixon's-presidency*. From this fact it does follow that Mary believes at *t* that Nixon is president, and, so, if we adopt (2N) as a disambiguation of (2), then the resulting argument is valid.

I have claimed that there is a disambiguation of the Mary Argument that results in a valid argument. The disambiguation that results in a valid argument is one that involves the quantification over temporal objects of belief. Does the Mary Argument therefore demonstrate that we should reject the existence of temporal objects of belief? If we understand premise (2) as involving quantification over objects of narrowly characterized beliefs and we take the objects of narrowly characterized belief to include temporal objects, then the result is a disambiguation of the Mary Argument that is valid. However, Richard claims that the Mary Argument is obviously invalid. If there are no contexts in which the Mary Argument expresses a valid argument, then we must either reject the claim that the objects of narrowly characterized belief include temporal objects, or we must reject the claim that (2N) is an admissible disambiguation of premise (2).

However, I think that there *are* some contexts that favor the narrow disambiguation of the Mary Argument. Furthermore, in such contexts, it is perfectly natural to say that the Mary Argument expresses a valid argument. I think Richard's conviction that the Mary Argument is obviously invalid stems from the fact that most contexts seem to favor the wide disambiguation of the Mary Argument. When we talk

of retaining beliefs over a period of several years, it is most natural to understand the retention of belief in terms of retaining the same widely characterized object of belief. However in certain contexts, it is most natural to understand the retention of belief in terms of retaining the same narrowly characterized object of belief. It is in these contexts in which the Mary Argument most naturally expresses a valid argument.

Consider the following case:

COMA

In 1972, Mary suffers an accident which places her in a coma for 35 years. Mary wakes up in 2007 not realizing how much time has passed; for all she knows, it has been merely an hour since she lost consciousness. She looks over at a newspaper lying on her nightstand which is the very same newspaper that she was reading on the day the accident occurred. Mistaking it for a current newspaper, Mary forms the belief that it is 1972 and she has been unconscious for a few hours rather than for a decade. A doctor and a nurse who have been observing Mary throughout her ordeal walk in to Mary's room and Mary looks up from the newspaper and says, "President Nixon is up to no good in the White House." The doctor whispers to the nurse, "Astonishing! Mary still believes everything that she once believed". The nurse whispers back to the doctor, "You mean, she believes that Nixon is president"?

The nurse's reply in COMA seems perfectly reasonable. Presenting the Mary Argument after reading COMA results in an argument that is intuitively valid. Suppose the Mary Argument is presented by the doctor in COMA after his exchange with the nurse. It strikes me that the nurse would be inclined to claim that the Mary Argument expresses a valid argument. The reason that the Mary Argument seems valid in this context is because the context favors a narrow disambiguation. When the doctor claims that Mary still believes everything that she once believed, his claim is most naturally taken to involve quantification over narrowly characterized objects of belief. In the coma case the doctor and the nurse are most plausibly interested in how things appear to Mary;

only what is going on inside her head, not also those features of the world that make her beliefs true or false. This is why it is most natural to understand the Mary Argument in this context as involving quantification over narrowly characterized objects of belief. The fact that the Mary Argument most naturally expresses a valid argument when presented within the context of COMA, but most naturally expresses an invalid argument in other contexts, lends credence to the fact that the Mary Argument is ambiguous between a wide and a narrow reading.

I conclude that the Mary Argument provides no threat to the existence of temporal objects of belief. The theorist who claims that temporal objects of belief are necessary for narrowly characterizing a subject's beliefs should claim that the Mary Argument is ambiguous between a wide reading and a narrow reading. Most contexts favor the wide reading according to which the objects that widely characterize Mary's beliefs are not temporal objects but rather eternal propositions. In such contexts the Mary Argument expresses an invalid argument and so such contexts pose no threat whatsoever to the existence of temporal objects as the objects of belief. Some contexts, such as COMA favor the narrow reading according to which the objects that narrowly characterize Mary's beliefs include temporal objects. In such contexts the Mary Argument expresses a valid argument. This fact, however, does not raise difficulties for the existence of temporal objects as the objects of belief because, as I have argued, in such contexts it is most natural to take the Mary Argument as expressing a valid argument.

5.4 Brogaard, Self-Ascription and Richard's Argument

In (2007) Berit Brogaard considers how the self-ascription theorist might respond to the Mary Argument. She argues that the self-ascription theory fails to provide a solution to the problem that the Mary Argument poses for temporalism. She claims that, “the eternalism/temporalism debate does not go away by making the problematic contents the constituents of properties” (Brogaard, 63). In this section I wish to first present Brogaard's argument for the conclusion that adopting a self-ascription theory does not manage to avoid the threat that the Mary Argument poses to temporalism. I will then argue that Brogaard's evaluation of the self-ascription response to Richard's argument wrongly assumes that the type of object of belief required for the truth of premise (1) depends upon whether one adopts temporalism or eternalism. Instead, I will claim that there is no reason to think that the temporalist self-ascription theorist is any more committed to the validity of the Mary Argument than the eternalist self-ascription theorist is.¹¹

Brogaard claims that at first “the problems Richard and Fitch set forth for temporalism would seem to go away” by adopting a self-ascription theory (62). She states the following:

¹¹ Brogaard provides a response to Richard's argument against temporalism that is very different from the one I provide above. In this section I do not address Brogaard's response to Richard's argument. Doing so adequately would require going well beyond the scope of this dissertation. Rather, I reply to her assessment of the self-ascription response to Richard's argument. Since this dissertation defends a self-ascription account of tensed belief and Brogaard claims that a self-ascription account of tensed belief makes no progress against Richard's argument, I focus only on this portion of Brogaard's response.

Temporalism is a metaphysical thesis about propositions, not about properties. So the temporalist could take the first premise to be true at a context *c* iff there is some past time *t* such that at *t* Mary self-ascribes the property of *inhabiting a world where Nixon is president at t*. The second premise is true at *c* iff Mary self-ascribes every property she once self-ascribed. From these premises the conclusion does not follow. [The Mary Argument] is invalid, which is as it should be (62).

However, Brogaard claims that she finds this strategy “inadequate” (62). She claims that it would be “rather strange” for the temporalist who claims that the semantic value of ‘Nixon is president’ is a temporal proposition to take Mary to have:

...self-ascribed the time-indexed property of *inhabiting a world where Nixon is president at t*. It is more natural to take her to have self-ascribed the property of *being located at the time at which Nixon is president*. If there is such a property, it can only be had temporarily (63).

Brogaard claims, however, that if premise (1) of the Mary Argument takes Mary to self-ascribe the property of *being located at a time at which Nixon is president*, then the Mary Argument is valid. Brogaard paraphrases the resulting argument as follows:

(B1) At some past time *t*, Mary self-ascribes the property of *being located at a time at which Nixon is president*.

(B2) If at some past time *t* Mary self-ascribes a property *P*, then at *t** Mary self-ascribes *P*.

(B3) At *t** Mary self-ascribes the property of *being located at a time at which Nixon is president* (63).

Brogaard concludes that the self-ascription account fails to avoid the threat that the Mary Argument poses to temporalism since the conclusion is equivalent to the claim that Mary believes at *t** that Nixon is president.

Brogaard’s evaluation of the threat that the Mary Argument poses to temporalism given a self-ascription account suffers from the same confusions inherent

in Richard's original argument. Brogaard's statement of the views of eternalism and temporalism is very much like Richard's original statement of the views. Brogaard states temporalism as the view that, "some sentences express, relative to a context of use, temporal propositions" where temporal propositions are propositions that "have different truth-values at different times" (2-3). She states eternalism as the view that "all sentences, if they express anything relative to a given context of use, express eternal propositions" (2). However, there is nothing about temporalism, so stated, that commits the temporalist to taking the property self-ascribed to be the property of *being located at the time at which Nixon is president*. Nor is there anything about eternalism, so stated, that commits the eternalist to denying that premise (1) is true in virtue of the fact that Mary self-ascribes the property of *being located at a time at which Nixon is president*. Why would Brogaard think that the temporalist is any more committed than the eternalist is to taking this property to be the object of Mary's belief? Holding that (1) is true just in case Mary self-ascribes the property of *being located at a time at which Nixon is president* is just as compatible with the eternalist position as it is with the temporalist position. Whether the object of Mary's belief is the property of *being located at a time at which Nixon is president* or the property of *inhabiting a world in which Nixon is president at t* has nothing to do with temporalism versus eternalism, both of which are semantic theses about what kinds of propositions are expressed by sentence-tokens. As far as the self-ascription theory is concerned, the eternalist who adopts a narrow characterization of Mary's beliefs is also committed to Brogaard's paraphrase of the Mary Argument and so is also committed to a valid formulation of the argument. Taking the objects of Mary's belief to be properties that are true at some

times and false at others (viz. temporal objects) commits one to the validity of the Mary Argument. However, there is no reason to think that the temporalist self-ascription theorist is any more committed to doing so than the eternalist self-ascription theorist is.

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