

STUDIES IN ANALYTIC PHILOSOPHY

Quentin Smith, *Series Editor*

*The Ontology  
of Time*

L. Nathan  
Oaklander

*The Ontology  
of Time*

*L. Nathan Oaklander*



**Prometheus Books**

59 John Glenn Drive  
Amherst, New York 14228-2197

Published 2004 by Prometheus Books

*The Ontology of Time*. Copyright © 2004 by L. Nathan Oaklander. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, digital, electronic, mechanical, photocopying, recording, or otherwise, or conveyed via the Internet or a Web site without prior written permission of the publisher, except in the case of brief quotations embodied in critical articles and reviews.

Inquiries should be addressed to

Prometheus Books

59 John Glenn Drive

Amherst, New York 14228-2197

VOICE: 716-691-0133, ext. 207

FAX: 716-564-2711

WWW.PROMETHEUSBOOKS.COM

08 07 06 05

5 4 3 2

Library of Congress Cataloging-in-Publication Data

Oaklander, L. Nathan, 1945-.

The ontology of time / L. Nathan Oaklander.

p. cm.—(Studies in analytic philosophy)

Includes bibliographical references.

ISBN 1-59102-197-9 (pbk.: alk. paper)

1. Time. I. Title. II. Series

BD638.O16 2004

115—dc22

2004008955

Printed in the United States of America on acid-free paper

*To the memory of Gustav Bergmann*





# Contents

<b>PREFACE</b>	9
<b>ACKNOWLEDGMENTS</b>	11
<b>PART 1. THE ONTOLOGY OF A- AND B-THEORIES OF TIME</b>	
1 The Problem of Time and Change	17
2 Is There a Difference between the Metaphysics of A- and B-Time?	37
3 McTaggart's Paradox Defended	51
<b>PART 2. A CRITIQUE OF A-THEORIES OF TIME</b>	
<b><i>A. Presentism</i></b>	
4 A Note on Chisholm on Tense	67
5 Bigelow, Possible Worlds, and the Passage of Time	71
6 Craig on McTaggart's Paradox and the Problem of Temporary Intrinsic	77
7 Presentism, Ontology, and Temporal Experience	83
8 Presentism: A Critique	101
9 Dainton's <i>Time and Space</i>	117
<b><i>B. The Open Future Theory</i></b>	
10 Zeilicovici on Temporal Becoming	123

11	Yourgrau's <i>The Disappearance of Time</i>	129
12	Tooley's <i>Time, Tense, and Causation</i>	135

### ***C. The A/B Theory***

13	McTaggart, Schlesinger, and the Two-Dimensional Time Hypothesis	145
14	McTaggart's Paradox and Smith's Tensed Theory of Time	153

## **PART 3. A DEFENSE OF THE B-THEORY OF TIME**

### ***A. Temporal Reality and Experience***

15	Mellor's <i>Real Time</i>	175
16	The Russellian Theory of Time	183
17	Time and Becoming	207
18	Thank Goodness It's Over	211
19	On Our Experience of Ceasing to Exist	215
20	Jokić on the Tensed Existence of Nature	221
21	On the Experience of Tenseless Time	227
22	Craig on the Experience of Tense	235

### ***B. Temporal Semantics***

23	The New Tenseless Theory of Time	245
24	A Defense of the New Tenseless Theory of Time	251
25	Two Versions of the New B-Theory of Language	265

## **PART 4. TIME, IDENTITY, RESPONSIBILITY, AND FREEDOM**

26	Delmas Lewis on Persons and Responsibility: A Critique	295
27	Temporal Passage and Temporal Parts	303
28	Personal Identity, Responsibility, and Time	309
29	Time and Foreknowledge: A Critique of Zagzebski	331
30	Freedom and the New Theory of Time	335

<b>INDEX OF NAMES</b>	357
-----------------------	-----

<b>INDEX OF SUBJECTS</b>	361
--------------------------	-----

## Preface

The aim of this book is to put forth and defend a B-theory of time according to which the only intrinsically temporal entities necessary to account for all the temporal facts that exist are the relations of *earlier/later than* and *simultaneous with*. In part 1, I set forth what I understand to be at issue in the debate between the A- and B-theories of time and why I believe that McTaggart does indeed pose a serious challenge to those who understand time solely in terms of the A-determinations of past, present, and future. Part 2 begins my defense of the B-theory based on the principle that the best defense is a good offense, for in part 2 I endeavor to demonstrate that the myriad different versions of the A-theory are all either susceptible to McTaggart's paradox or otherwise inadequate. A half dozen essays are devoted to refuting the currently popular version of the A-theory known as "presentism," and within that group I carefully criticize the ontologically most perspicuous version of presentism, to wit, that put forth by William Lane Craig. In addition, in part 2 I criticize the open future theories of David Zeilicovici, Michael Tooley, and Pallé Yourgrau and the hybrid A/B theories of George Schlesinger and Quentin Smith.

In part 3, I continue my defense of the B-theory by further clarifying its basic tenets and responding to specific objections that have been levied against it, especially the A-theorists' argument that our experience of time and our language of time both require an A-theoretic ontology. In part 3, section A, I argue that the B-theory has the resources to explain the presence of experience, the experience of temporal becoming, and our different attitudes toward past, present, and future events. In part 3, section B, I put forth two versions of the B-theory that are methodologically, but not ontologically, different. What both versions of the new theory of time have in common is that the existence of ordinary language and thought with its irreducible and ineliminable tensed distinctions of past, present, and future does not pose a threat to the B-theory. On both the new B-theory of language and my newer B-theory of language, the only

temporal facts are B-facts whose constituents involve B-relations but no A-determinations. Where my most recent version of the new B-theory differs from my earlier version is that in essay 25, I argue that although tensed beliefs are pragmatically useful and perhaps indispensable, they are false and, given McTaggart's paradox, necessarily so since there are no, and could not possibly be any, tensed facts that would serve as their truthmakers.

The literature on the philosophy of time has blossomed over the past three decades, and undoubtedly a good part of the reason for this is that philosophers have come to recognize the importance of time to other areas of perennial philosophical interest. In part 4, I relate the debate between the A- and B-theories to the topics of personal identity, responsibility, identity, divine foreknowledge, and freedom. The concluding essay, "Freedom and the New Theory of Time," constitutes a sustained defense of the B-theory against perhaps its most challenging criticism, namely, that it entails a denial of freedom. I consider the various logical, scientific, metaphysical, and phenomenological ways in which the theory is thought to be a threat to freedom and explain the mistakes, confusions, and misinterpretations on which those charges are based.

Each of the essays in the book is self-contained, although some are responses to criticisms of earlier articles. Because the essays are each self-contained, there is some overlap of content in a few of them. Where that occurs I indicate that readers should feel free to skip a section if they have read an essay in which the material was previously discussed. These essays reflect my thinking on time and related topics over twenty-five years, and for that reason divergent views are occasionally put forth. In the search for the truth, I hope that the reader will benefit by my arguments on both sides of an issue.

My former teacher Gustav Bergmann, to whom this book is dedicated, would often remind his students that philosophers always stand on each other's shoulders. Certainly my thinking on time has benefited greatly from the careful reading of and incisive comments on my writing by many. I would particularly like to thank Quentin Smith and Hugh Mellor for their encouragement and for numerous stimulating discussions and writings on the topics considered in this book. I have greatly benefited from the comments by Heather Dyke, Ronald C. Hoy, and Robin Le Poidevin on several of the essays contained herein. I also wish to thank the Office of Research of the University of Michigan-Flint and the University of Michigan-Ann Arbor, who provided financial and technical support for the research and the preparation of the manuscript for publication. A special thanks to Laird Addis, whose seminar on time first piqued my interest on the topic. And finally, I would like to thank my wife, Linda Galang Oaklander, for her encouragement, patience, and support as always.

L. Nathan Oaklander  
Flint, Michigan  
November 2003

## Acknowledgments

The author would like to thank the following publishers (in order of appearance):

Essay 1: "The Problem of Time and Change," *Stoa* 1 (1998): 85–109. Reprinted by permission of the Center for Philosophical Education.

Essay 2: "Is There a Difference Between the Metaphysics of A- and B-Time?" *Journal of Philosophical Research* 26 (2001): 23–36. Reprinted by permission of the Philosophy Documentation Center.

Essay 3: "McTaggart's Paradox Defended," *Metaphysica: International Journal of Ontology and Metaphysics* 3, no. 1 (2002): 11–25. Reprinted by permission of *Metaphysica*.

Essay 4: "A Note on Chisholm on Tense," *Philosophical Studies* 42 (1982): 283–85. Copyright © 1982 by Kluwer Academic Publishers. Reprinted with kind permission of Kluwer Academic Publishers.

Essay 5: Originally appeared as "Bigelow, Possible Worlds and the Passage of Time," *Analysis* 54, no. 4 (October 1994): 244–48.

Essay 6: Originally appeared as "Craig on McTaggart's Paradox and the Problem of Temporary Intrinsic," *Analysis* 59, no. 4 (October 1999): 314–18.

Essay 7: "Presentism, Ontology and Temporal Experience," in *Time, Reality, and Experience*, The Royal Institute of Philosophy Supplement 50, ed. Craig Callender (Cambridge: Cambridge University Press, 2002), pp. 73–90. Copyright © 2002 by Cambridge University Press. Reprinted by permission of Cambridge University Press.

Essay 8: "Presentism: A Critique," in *Real Metaphysics: Essays in Honour of D. H. Mellor, With His Replies*, ed. Hallvard Lillehammer and G. Rodriguez Pereyra (London: Routledge, 2002), pp. 196–211. Reprinted by permission of Thomson Publishing Services.

Essay 9: "Barry Dainton's *Time and Space*," *Mind* 112 (July 2003): 509–13. Reprinted by permission of Oxford University Press.

Essay 10: "Zeilicovici on Temporal Becoming," *Philosophia: Philosophical Quarterly of Israel* 21, nos. 3–4 (April 1992): 329–34. Reprinted by permission of *Philosophia*.

Essay 11: "Pallé Yourgrau's *The Disappearance of Time: Kurt Gödel and the Idealistic Tradition*," *Philosophy and Phenomenological Research* 54, no. 3 (September 1994): 737–40. Reprinted by permission of the International Phenomenological Society.

Essay 12: "Michael Tooley's *Time, Tense, and Causation*," *Mind* 108 (April 1999): 407–13. Reprinted by permission of Oxford University Press.

Essay 13: "McTaggart, Schlesinger, and the Two-Dimensional Time Hypothesis," *Philosophical Quarterly* 33 (1983): 391–97. Reprinted by permission of Blackwell Publishers.

Essay 14: "McTaggart's Paradox and Smith's Tensed Theory of Time," *Synthese* 107 (April 1996): 205–21. Copyright © 1996 by Kluwer Academic Publishers. Reprinted with kind permission of Kluwer Academic Publishers.

Essay 15: "D. H. Mellor's *Real Time*," *Noûs* 19 (1985): 105–11. Reprinted by permission of Blackwell Publishers.

Essay 16: "The Russellian Theory of Time," *Philosophia* 12 (1983): 263–92. Reprinted by permission of *Philosophia*.

Essay 17: "Time and Becoming," in Oaklander, *Temporal Relations and Temporal Becoming: A Defense of a Russellian Theory of Time* (Lanham, MD: University Press of America, 1984).

Essay 18: "Thank Goodness It's Over," *Philosophy* 67 (1992): 256–58. Copyright © 1992 by Cambridge University Press. Reprinted by permission of Cambridge University Press.

Essay 19: "On Our Experience of Ceasing to Exist." Written for this anthology.

Essay 20: "Jokić on the Tensed Existence of Nature," *Philo* 6, no. 2 (Fall–Winter 2003): 205–10. Reprinted by permission of *Philo*.

Essay 21: "On the Experience of Tenseless Time," *Journal of Philosophical Research* 18 (1993): 159–66. Reprinted by permission of the Philosophy Documentation Center.

Essay 22: "Craig on the Experience of Tense." Written for this anthology.

Essay 23: "The New Tenseless Theory of Time," *Philosophical Studies* 58 (1990): 287–92. Copyright © 1990 by Kluwer Academic Publishers. Reprinted with kind permission of Kluwer Academic Publishers.

Essay 24: "A Defence of the New Tenseless Theory of Time," *Philosophical Quarterly* 41, no. 162 (January 1991): 26–38. Reprinted by permission of Blackwell Publishers.

Essay 25: "Two Versions of the New Theory of B-Language," in *Time, Tense and Reference*, ed. A. Jokić and Q. Smith (Cambridge, MA: MIT Press, 2003), pp. 271–303. Reprinted by permission of MIT Press.

Essay 26: "Delmas Lewis on Persons and Responsibility: A Critique," *Philosophy Research Archives* 13 (1987–88): 181–87. Reprinted by permission of the Philosophy Documentation Center.

Essay 27: "Temporal Passage and Temporal Parts," *Noûs* 26, no. 1 (1992): 79–84. Reprinted by permission of Blackwell Publishers.



Essay 28: "Personal Identity, Responsibility and Time," in *Time and Ethics: Essays at the Intersection*, ed. Heather Dyke (Dordrecht: Kluwer Academic Publishers, 2003), pp. 161–78. Copyright © 2003 by Kluwer Academic Publishers. Reprinted with kind permission of Kluwer Academic Publishers.

Essay 29: "Time and Foreknowledge: A Critique of Zagzebski," *Religious Studies* 31 (1995): 101–103. Copyright © 1995 by Cambridge University Press. Reprinted by permission of Cambridge University Press.

Essay 30: "Freedom and the New Theory of Time," in *Questions of Time and Tense*, ed. Robin Le Poidevin (Oxford: Clarendon Press, 1998), pp. 185–205. Reprinted by permission of Oxford University Press.

Linda Galang Oaklander compiled both the name and subject indexes.

# *Part 1*

## *The Ontology of A- and B-Theories of Time*



## *The Problem of Time and Change*

**T**ime has two aspects when we ordinarily talk about, think about, and experience the world. On the one hand, we conceive of time as something that flows or passes from the future to the present and from the present to the past. Thus, for example, the inauguration of the fiftieth president of the United States is in the relatively distant future, but with the passage of time it will become less and less so and eventually will become present. And then, after its spotlight in the NOW, it will recede into the more and more distant past. To speak of events as moving or flowing through time is to conceive of them as undergoing *temporal becoming*. If events in time (or moments of time) are conceived in terms of the concepts of past, present, and future, or by means of the tenses, then they form what McTaggart called the A-series (from which the name "A-theory" of time is derived).

There is, of course, another way in which we speak, experience, and conceive of time. We experience events in time as occurring in succession, one after another, and as simultaneous with other events. For example, it is natural for a parent to tell a child that "You cannot go out *before* you do your homework," or "You can watch TV only *after* you clean your room," or "You must go to bed at (i.e., simultaneous with) ten o'clock." When viewed in this way, events stand in various different temporal relations to each other, but no one event, or set of events, is singled out as having the property of being present or as occurring NOW. Indeed, from the perspective of tenseless earlier and later relations, no event is past, present, or future. When events in time (or moments of time) are ordered by means of the concepts earlier, later, and simultaneous with, they form what McTaggart called the B-series (from which the name "B-theory" of time is derived).

One of the most hotly contested issues in metaphysics today concerns the debate between those who hold the tensed or A-theory of time, those

who hold the tenseless or B-theory of time, and those who hold a hybrid A/B theory of time. The debate between these three theories concerns the question of whether the ultimate metaphysical nature of time is to be understood in terms of temporal becoming, temporal relations, or both temporal becoming and temporal relations. The primary purpose of this essay is to explain what is involved in the dispute between these three theories of time and to indicate why my sympathies lie with the B-theory. I shall proceed by first discussing the form the debate took for most of the twentieth century, and then I will turn to the present state of the controversy. In the final section, I will mention some outstanding issues that still need to be resolved by each camp if they are to gain the allegiance of supporters. A detailed consideration of these issues will form the subject matter of this book.

## I

The issue between A- and B-theorists concerns their different answers to the question: "What is there in reality that makes statements which record the facts of temporal becoming and temporal relations true?" For the greater part of the twentieth century, the debate between the two views has focused on temporal language. Proponents of the A-theory have argued that statements about temporal relations between and among events could be translated without loss of meaning by statements that record the facts of temporal becoming and that, therefore, temporal becoming is more fundamental to the metaphysical nature of time than temporal relations. Conversely, advocates of the B-theory have argued that statements about the position of events in the A-series could be translated or defined by statements about temporal relations between events and that, therefore, temporal relations are more fundamental to the metaphysical nature of time than temporal becoming.

Unfortunately, all attempts to define or translate "earlier" and "later" in terms of "past," "present," and "future," or vice versa have failed. For example, if we try to define

*"a is earlier than b"*

as

*"a is past and b is present or a is present and b is future or a is past and b is future,"*

then we run into the difficulty that such an analysis cannot account for *a* being earlier than *b* when *a* and *b* are both future or both past.

McTaggart's reduction of B-statements to A-statements fares no better:

The term *P* is earlier than the term *Q*, if it is ever past while *Q* is present, or present while *Q* is future.<sup>1</sup>

The problem with this account is that "while" is a temporal notion, and thus McTaggart's use of the term implicitly reintroduces the notion of time he sought to eliminate. For, to take the first disjunct, "*P* is past while *Q* is present" implicitly asserts that "*P* is past at  $t_1$ " and "*Q* is present at  $t_1$ " and that certainly implies that "*P* is earlier than *Q*," but "is past at  $t_1$ " and "is present at  $t_1$ " means the same as "is *earlier than*  $t_1$ " and "is *simultaneous with*  $t_1$ ," respectively. Consequently, McTaggart's analysis is implicitly circular. More recent analyses of the relation of temporal priority in terms of tensed concepts have been offered, but it appears that none succeeds in avoiding the implicit use of the concept it intended to analyze.<sup>2</sup>

The attempt at a linguistic reduction of tensed discourse and the concepts of past, present, and future in terms of tenseless discourse and the concepts of earlier, later, and simultaneous with has proved to be just as futile. The reason for this is clear. It is part of the meaning of sentences that reflect temporal becoming that they change their truth value with the passage of time. For example, a token (or instance) of the sentence type "I will be celebrating my fifty-ninth birthday in the future" is true today, on November 1, 2003, but in six months, another token of that sentence will be false. On the other hand, it is part of the meaning of tenseless sentences that express temporal relations between events that different tokens of the same tenseless sentence have the same truth value whenever they are expressed. Thus, for example, the linguistic meaning of the sentence (S) "My fifty-ninth birthday is future" cannot be captured by (V) "My fifty-ninth birthday is later than November 1, 2003," even if (S) is uttered on November 1, 2003, since (V) is always true, whereas on April 21, 2004, (S) is not.

Because of the failure of translational analyses, A- and B-theorists have come to reject the criterion of translatability as the crucial factor in determining whether the tensed or tenseless theory gives us the proper description of the nature of temporal reality. The issue that now rages between the various camps in the tensor/detensor debate concerns the truth conditions of statements that reflect temporal becoming and temporal relations.<sup>3</sup> In this context, truth conditions are truthmakers: the basis in reality for those true sentences that record facts about the transitory and temporal relational aspects of time. Thus, the tensor/detensor debate centers around the questions "What, if anything, do the tenses and our use of temporal concepts reflect about the metaphysical nature of time?" and "What is the ultimate metaphysical foundation of our experience of succession and temporal relations?" Perhaps the best way to understand the differences between the competing A- and B-theory responses to these questions is to consider three

closely connected problems that motivate them, namely, the problem of change, the direction of time, and the difference between space and time.

## II

The problem of change, like all metaphysical problems, arises out of a conflict of intuitions. On the one hand, change requires *sameness*. A thing that changes must be one and the same both before and after the change, otherwise we have two things with different properties rather than one thing that changes. Surely, there is a difference between one apple that is first green and then red and two apples, one being green, the other being red. In the first case we have change, whereas in the second we do not. On the other hand, change requires *difference*. For if change is to occur, then the same apple must be what it is not, since the apple must have a property, such as green, and then have a different and incompatible property, such as red. But how can one thing be the same and different? How can the same apple be both green and red? Clearly, in order to answer that question, we need to introduce time, but what must the metaphysical nature of time be in order to explain change without contradiction?

To begin to get a handle on some of the different answers to this question, consider three different descriptions of the fact of change.

- (1) The apple is green *before* it is red.
- (2) The apple is green at one time ( $t_1$ ) and red at another time ( $t_2$ ).
- (3) The apple is *now* green and *will be* red.

Each of these descriptions of the fact of change introduces a different category or kind of temporal element or entity to avoid the alleged contradiction that gives rise to the problem of change. It seems that we can easily avoid the problem of an apple being red and green by specifying the different *times* at which it has those incompatible properties, but what is time? For the purposes of distinguishing the absolute and relational theories of time on the one hand, and the tensed and tenseless theories of time on the other, we will distinguish the different states of affairs that (1)–(3) describe.

On the first analysis time is *relational*, that is, the only intrinsically temporal entities are the temporal *relations* of simultaneity, earlier and later, and change is reflected in the apple's being green occurring *before* the apple is red. On the second alternative time is *absolute*. There are intrinsically temporal *individuals* called "moments," and change is reflected by the apple having different and incompatible properties at (or relative to) different moments of

absolute time. On the third alternative time is *tensed*, and change is reflected by the different nonrelational temporal properties of *pastness*, *presentness*, and *futurity* that events acquire and shed. I shall return to the tensed theory below, but first a few words about the absolute-relational controversy.

On the view that time is absolute, time is a substance. That is, time has an existence in its own right, independent of the existence of anything else. On this view, time could exist even if no events are located in time. I exist in time as do you, and the event of my writing this essay exists in time as does the event of your reading it. If those events and every other earlier, later, and simultaneous event did not exist, would there still be time? According to the absolute theory of time, the answer is yes. On the relational theory, on the other hand, the answer is no. For the relationist, if there were no events (or things) standing in temporal relation to each other, then time would not exist. Indeed, time simply is the temporal relation of earlier and later between terms (events or things), and a moment of time is just a class of events existing simultaneously with an arbitrarily chosen event.

Thus, the debate over absolute and relational time is, at bottom, a debate about what categories of entity exist. According to the absolute theory, there are temporal *individuals*, whereas for the relationist there are no such entities, but there are temporal *relations*. On each of these alternatives, we appear to avoid the problem of change, since there is no incompatibility in a single thing exemplifying one property *before* or at a different *moment* from that at which it exemplifies an incompatible property. But does the introduction of temporal relations and/or moments of absolute time really suffice to preserve the fact of change? Defenders of the tensed theory have argued that without the reality of tense, temporal individuals and/or temporal relations *alone* are unable to account for the direction of time and change or the difference between space and time.

To see what is involved in these claims, consider a series of experiences in the mental life of an individual. Suppose, for example, that Rose has the experiences (or consciousness) of (A) anticipating a visit to the dentist, (B) sitting in the dentist's chair, (C) having a tooth extracted, and (D) leaving the dentist's office with a feeling of relief that the extraction is over. Clearly, these experiences reflect not only a change but one in a definite or *intrinsic direction*. The experiences occur in the sequence (A), (B), (C), (D) and not the other way around. Thus, to account for change, we must account for Rose's changing experiences taking place in the direction from earlier to later (A) to (D) and not from later to earlier (D) to (A). An adequate account of time and change must be able to account for their *intrinsic direction*.

The direction of time and change is inseparable from another feature of time that needs to be accounted for, namely, the difference between space and time. Temporal relations between events or experiences of the same



person are fundamentally asymmetric dyadic (or two-term) relations. If A is earlier than B, then B is not earlier than A, and that is so without explicit or implicit reference to some third term. In this respect, spatial relations differ from temporal relations, since the series of points in a spatial series do not have an intrinsic direction from left to right or right to left, unless a third term is specified as a reference point. That is, whether *a* is to the left of *b*, or *b* is to the left of *a*, depends on the point of view from which *a* and *b* are viewed, whereas whether  $E_1$  is earlier than  $E_2$  or vice versa does not depend on the point of view of anybody or anything.<sup>4</sup>

This difference between space and time is nicely summarized by C. D. Broad in the following passage that I shall quote at length:

In a linear spatial series there is no asymmetric dyadic relation intrinsic to the series. . . . In the temporal series of experiences, which constitutes a person's mental history, there is a genuine dyadic relation which is intrinsic to the series and involves no reference to any term outside the latter. This is the relation "earlier than." It is the fundamental relation here, and *temporal* betweenness is definable in terms of it. In the temporal series there are two intrinsically opposite directions, earlier-to-later and later-to-earlier. In the linear spatial series there is no *intrinsic* direction. If direction is to be introduced, this must be done *extrinsically*, either by reference to motion along the line (and therefore to time), or by reference to the right and left hands of an external observer, or in some other way.<sup>5</sup>

Since there is this difference between time and space, metaphysicians want to know what must temporal (and spatial) relations be like in order to account for it. To raise that question is, however, inseparable from the problem of change. The change of an apple from green to red is a change in a given or intrinsic direction because the apple is *first* green *and then* red from any point of view. To provide a metaphysical explanation of change is tantamount to accounting for a thing having a property *before* it has an incompatible property. Thus, to provide an explanation of change, we need to account for the direction of time and the difference between space and time.

What, then, is the metaphysical foundation of the difference between a temporal and a spatial series? And what is the difference between the temporal change of the color of an apple and the spatial "change" of, say, the color of a lawn from being green at one end to brown at the other? The various answers to these questions constitute the basis of the differences between the tensed and tenseless theories of time.

McTaggart and other A-theorists have maintained that whether time is absolute or relational, the B-theory cannot account for *genuine temporal change*, the direction of time, or the difference between space and time. Consider his argument against the claim that the relational theory (containing B-

series facts of the sort reflected by (1)) does not adequately represent change. He reasons that time involves change and therefore if the B-series alone is to constitute time (as the tenseless theory maintains), then it too must involve change. But, he continues, there is nothing in the B-series that changes, that is, there is nothing that remains the same while having a property and then losing it. Since sentences that describe temporal relations between events are always true, it follows, according to McTaggart, that events in the B-series always exist and so do not change by coming into existence and going out of existence. Nor do events in the B-series change their relations to each other. Consequently, if the B-series is a time-series, then its terms (events) must exemplify the temporal characteristics of pastness, presentness, and futurity and change with respect to them as time passes. In other words, time (temporal relations) and change require an A-series.

McTaggart believes the above argument holds even if we enrich our ontology with temporal individuals or moments of absolute time and describe the fact of change by sentences like (2). For even if the apple is green at  $t_1$  and red at  $t_2$ , there is still nothing about either of those facts that changes. In reference to a poker that is hot at one time and cold at another, McTaggart makes this point against tenseless absolute time and change in the following passage:

It is always a quality of that poker that it is one which is hot on that particular Monday. And it is always a quality of that poker that it is one which is not hot at any other time. Both these qualities are true of it at any time—the time when it is hot and the time when it is cold. And therefore it seems to be erroneous to say that there is any change in the poker.<sup>6</sup>

Thus, if (2) is to reflect the fact of change, then something more is needed: the apple's being green and the apple's being red (as well as the times at which those events occur) must themselves change from *being future* to *being present* to *being past*.

McTaggart's argument against absolute and relational (tenseless) time can also be expressed by claiming that a series whose terms stand in unchanging relations but do not have A-characteristics is not a *temporal* series. For if a series of terms does not have A-characteristics, then it does not have a direction, and without a direction, the series is indistinguishable from an unchanging *spatial* series. Thus, McTaggart concludes that if we remove the A-series from time, then there cannot be a series of events standing in temporal relations because it is an A-series, or, more accurately, a series of A-series, that "makes" or "generates" a B-series out of a nontemporal (C-) series. In other words, on McTaggart's view, the only transitive asymmetrical relations that exist are nontemporal, and it is the becoming of

events, that is, the changing of events from being in the future, to being in the present, to being in the past that generates *temporal* relations. In short, on McTaggart's view, there are no simple unanalyzable temporal relations. Consider the following passage where he expresses the views I have attributed to him:

The meridian of Greenwich passes through a series of degrees of latitude. And we can find two points in this series, S and S', such that the proposition "at S the meridian of Greenwich is within the United Kingdom" is true, while the proposition "at S' the meridian of Greenwich is within the United Kingdom" is false. But no one would say that this gave us change. Why should we say so in the case of the other [B-] series?

Of course there is a satisfactory answer to this question if we are correct in speaking of the other series as a time-series. For where there is time, there is change. But then the whole question is whether it is a time-series. My contention is that if we remove that A- series from the *prima facie* nature of time, we are left with a series which is not temporal, and which allows of change no more than a series of latitude does.<sup>7</sup>

For McTaggart and others who hold the tensed theory of time, an ontology that recognizes only B-relations and/or moments as intrinsically temporal existents cannot be correct. For such a view cannot account for the direction of time and change or the difference between space and time.

It is not my intention in this essay to defend the tenseless theory against McTaggart and other critics, since I and others have done so elsewhere.<sup>8</sup> Rather, my aim is to begin to clarify the metaphysical differences that separate the two theories of time, and I think I have said enough to draw the following distinction between one version of the tensed theory and the tenseless theory. I suggest that a fundamental difference between A- and B-time is that on the B-theory *there are*, whereas on the pure A-theory *there are not, primitive temporal relations*. Thus, for some B-theorists, such as Russell, the early C. D. Broad, and myself, to name just a few, temporal relations are primitive and unanalyzable relations indefinable in terms of tensed predicates and irreducible to tensed properties.<sup>9</sup> Detensers reject the moving NOW and the monadic property of presentness, but they nevertheless maintain that genuine succession exists and that the B-series alone contains the fact of change. On this version of B-time, the difference between spatial and temporal relations is an irreducible qualitative difference, and it is a mistake to suppose that if time is the mere succession of events, then the change involved is exactly like the spatial "change" in the color of the lawn one observes as one walks from the front to the back. The relation that distinguishes temporal order is just different from any spatial relation in the same sense that red and green are just different.

In his early detenser period, Broad expressed the primacy of temporal relations in the following way:

Temporal characteristics are among the most fundamental in the objects of our experience, and therefore cannot be defined. We must start by admitting that we can in certain cases judge that one experienced event is later than another, in the same immediate way as we can judge that one seen object is to the right of another. . . . On these relations of before and after, which we immediately recognize, all further knowledge of time is built.<sup>10</sup>

I should note, however, that some B-theorists do not (and perhaps need not) construe the earlier/later relations as primitive. Detensers such as Grünbaum, Mellor, and Le Poidevin maintain that temporal relations are definable in terms of causal relations and the direction of time and change is grounded in the direction of causality (so that A is earlier than B if and only if A causes B).<sup>11</sup> For these philosophers, the crucial feature of B-time is not that B-relations are primitive or irreducible but that they cannot be reduced to A-properties.

On the tenseless theory, verbal tense is not a reflection of an objective feature of reality, since the B-series of items (events, things, or moments) standing in temporal relations are necessary and sufficient to account for the direction of time and change and the difference between space and time. Although there are variations of the tenseless theory, the common theme is that facts recorded by sentences such as (1) and/or (2) are not reducible to more basic facts about events coming into and going out of existence or events exemplifying nonrelational temporal properties. Furthermore, the detenser maintains that events or things are located at the time they are with the properties they have regardless of what time it is. This does not mean that tenselessly existing events "already" exist, or exist at all times, much less that they exist outside of time. The "permanent" or eternal truth of statements that state that two events are temporally related does not imply the permanent or eternal existence of events but only that statements that express tenseless truths do not change their truth value.

For some A-theorists, on the other hand, temporal relations *are* analyzable in terms of A-properties or tensed facts so that if time is real—if there is *genuine succession*—then the ontological ground of that succession must be the nonrelational temporal properties exemplified by events and moments of time, if there are moments of time. A theory that rejects temporal relations as the foundation of the truth of B-statements and posits temporal properties or tensed facts as their ground I shall call a "pure" A-theory.

McTaggart argues, however, that if we accept the pure A-theory and claim that temporal relations are definable or analyzable in terms of the changing temporal properties of events or moments, then we are faced with

the apparent contradiction of an event having incompatible properties, and the attempt to remove that difficulty by appealing to time leads to a vicious circularity or a vicious infinite regress. The argument, known as McTaggart's paradox, may be stated simply as follows: If events move through time from the future to the present to the past, then every event in time must *be* past, present, and future. However, past, present, and future are incompatible properties; if an event is present, then it is not past or future, and if it is past, it is not present and future, and if it is future, it is not present or past. Thus, the existence of temporal becoming entails a contradiction—that every event both is and is not past, present, future—and so, assuming that real time implies temporal becoming, time is unreal.

McTaggart was well aware that the contradiction appears to have an obvious resolution if we specify the various *times* at which events have these incompatible temporal properties. Thus, instead of saying that, for example, event E is past, present, and future, we should say that E is past at time  $t_3$ , present at time  $t_2$ , and future at time  $t_1$ . But McTaggart claims that to introduce time in this way (or by saying that E is present before E is past) involves a vicious circle. It assumes time, either in the form of a B-series of moments ( $t_1$  is *earlier than*  $t_2$ ) or in the form of second-order events (E's being future is earlier than E's being present), in order to explain the possibility of an A-series and temporal passage. But, given his earlier reasoning, in order for there to be a B-series at all, we must assume the existence of an A-series.

Furthermore, the introduction of time in the form of moments or temporal relations is self-defeating, since it does away with the fact of change that the A-series and temporal becoming sought to capture. This becomes clear when we recognize that on the tensed theory of time, "Event E is in the future" expresses a proposition that changes its truth-value with the passage of time, whereas "Event E is future at  $t_1$ " has an unchanging truth-value, meaning no more and no less than "Event E is later than  $t_1$ ."

Of course, we could reintroduce time and change into reality by subjecting the times, or moments, at which events are past, present, and future to a change in their transitory temporal properties. That is, we could say that E is present at  $t_2$  and that  $t_2$  is past, present, and future; that E is past at  $t_3$  and that  $t_3$  is past, present, and future; and so on. Indeed, attributing different A-characteristics to moments is necessary, since if  $t_1$ ,  $t_2$ , and  $t_3$  are genuinely *temporal* entities, then they must be terms in a changing A-series. But unfortunately, with that move, the contradiction in temporal predication rears its ugly head once again, this time with respect to moments, not events. It is obvious, according to McTaggart, that the appeal to time to explain how moments can have incompatible temporal properties is just another step in an infinite chain that fails to remove the paradox with which we began. Thus, he concludes, whether we stop at a contradiction or at the denial of genuine (A-series) change, time and change are unreal.

McTaggart's argument for the unreality of time has been the subject of considerable debate.<sup>12</sup> B-theorists believe it is valid and use it as a *reductio ad absurdum* of the reality of tense. Defenders of the pure A-theory and the hybrid A/B theory (to be discussed below) claim that McTaggart's argument is invalid and guilty of numerous fallacies. Before considering some prominent A-theory responses to McTaggart, I want to summarize the discussion up to this point.

Recall that the problem of *ordinary* change is as follows: How can one and the same *thing* have incompatible intrinsic (that is, nonrelational) non-temporal properties such as *being straight* and *being bent*? The problem of *temporal* change (or temporal becoming) may be stated analogously: How can one and the same *event* have incompatible intrinsic temporal properties, such as *being future*, *being present*, and *being past*? Although both questions are instances of the general problem: How can one and the same *entity* have incompatible properties, there is an important connection between them that their similarity masks, namely, temporal change is claimed by (some) tenses to explain ordinary change. Thus, for (some) tenses, a persisting *thing* O changing from straight to bent is explained by claiming that the *events*, O's being straight and O's being bent, each change from being future to being present to being past.

According to McTaggart, however, this explanation of ordinary change involves a vicious circle, since precisely the same incompatible properties problem that arose with regards *things* changing their nontemporal properties rearises with regard to *events* changing their temporal properties. And clearly, the vicious circularity will only turn into a vicious infinite regress if we introduce *absolute moments*, which remain the same through a temporal change of A-properties.

William Lane Craig, a recent defender of the tensed theory, agrees with McTaggart that if we take pastness, presentness, and futurity to be nonrelational properties, then tenses are in "deep trouble."<sup>13</sup> On the other hand, Craig's version of the pure A-theory, known as "presentism," purports to avoid both the problem of change and McTaggart's paradox. According to presentism, only the present exists. Thus, it is not the case that, say, O is green and O is red. Rather, O *was* green at *t*, and O *is* red at *t*<sub>1</sub>. Of course, whether this gambit avoids tenseless facts or is anything more than a verbal solution to a metaphysical problem depends on how the presentist interprets the tenses. Before turning to that question, however, let us consider how Craig responds to the problem of temporal change and McTaggart's paradox.

Craig maintains that:

Applying this [the presentist] solution to the case of McTaggart's paradox, we realize that the A-theorist cannot understand grammatical ascriptions of pastness and futurity to events in terms of the literal inherence of proper-

ties of pastness and futurity in events. For, on a presentist ontology, such items do not exist and so possess no properties. Such ascriptions must be parsed as asserting that the item in question was or will be F. Only ascriptions of presentness may be taken literally as the possession of an A-determination by some temporal item. The presentist thus adroitly avoids McTaggart's paradox because the only intrinsic tensed properties there are are present-tensed and therefore are compatible.<sup>14</sup>

The question I want to consider is simply this: If past and future items do not exist and only ascriptions of presentness may be taken literally as the possession of an A-determination by some temporal item, then how are we to interpret ascriptions "asserting that the item in question *was* or *will be* F"? In other words, what do the tenses "was" and "will be" represent? Indeed, what is the metaphysics of presentism? Unfortunately, what Craig says in response to that issue, in the paper from which the above quote is taken, is obscure, and I shall criticize it in essay 6. It is dealt with more explicitly, but no more satisfactorily, in a recent paper by Mark Hinchliff.<sup>15</sup>

According to Hinchliff, only the present exists. Given that only the present exists, there is no incompatible properties problem. For the only properties a thing has are those it presently has. Thus, we ought not say that the apple is green and red, which is a contradiction, or that it is green at one time and red at another time, since that transforms intrinsic properties into relational ones, or that the apple is green before it is red, since that implies that nonpresent events exist. Rather, the only properties a thing has are those which are present and no thing has incompatible properties at present. It is never the case that the apple *is* green and *is* red, but rather it either *was* green and *is* red or *is* green and *will be* red. The question, however, is what do the words "was" and "will be" mean in this context? Hinchliff claims that

the presentist treats the past and future tense inflections of verbs as sentence operators, whose meanings are typically given by rules like the following:

*Past Tense* "It was the case that S" is true if and *only* if it was the case that "S" is true;

*Future Tense* "It will be the case that S" is true if and *only* if it will be the case that "S" is true.<sup>16</sup>

The problem with this understanding of "was" and "will be" in judgments about the past and future is that it is circular, for the notions of "was the case that" and "will be the case that" involve the concepts of past and future but are left unanalyzed. For that reason, the presentist solution ought not to be viewed as satisfactory.

What is common to a McTaggartian analysis of tense and the presentist analysis is that each attempts to analyze the concept of time without recog-

nizing temporal relations as basic ingredients of reality. A hybrid A/B theory, which countenances *both* monadic temporal properties *and* primitive temporal relations, has been recently put forth by Quentin Smith.<sup>17</sup> It seems, however, that it too is open to serious dialectical difficulties.

According to Smith, the basic fallacy in McTaggart's paradox and all other arguments against the temporal properties of *pastness*, *presentness*, and *futurity* is that they treat *tensed* predication as either *timeless* or *simultaneous* predication. Thus, he claims that it is never the case that an event E is (timelessly or simultaneously) past, present, and future, but rather

E will be past, is now present, and was future; or E is now past, was present, and was (still earlier) future; or E is now future, will be present, and will (still later) be past.

Smith's point is well taken, but it certainly is not the last word, since we need to understand how the tenses "is now," "was," and "will be" are to be interpreted if we are to understand how such an account is to render temporal becoming and thus ordinary change possible. It is a virtue of Smith's writings that he provides such an account. It is a weakness of his explanation that it does not invalidate McTaggart's conundrum.

Smith maintains that the reality of temporal properties as reflected in his analysis of the tenses implies an infinite regress of inferences of presentness inhering in their own inferences. That is, the correct analysis of "E is present" is "E is present, and the being present of E is present, and the being present of the being present of E is present, and so on infinitely."<sup>18</sup> He explains this by saying that

the first conjunct predicates presentness of the event E and each of the remaining conjuncts predicates presentness of a different inference of presentness; the second conjunct predicates presentness of the inference<sub>1</sub> of presentness in E, the third conjunct predicates presentness of the inference<sub>2</sub> of presentness in its inference in E, and so on.<sup>19</sup>

Similarly, the correct analysis of "E is past" and "E is future" involves the inference of presentness in an infinite number of inference relations. Thus, although there is an infinite regress of inference relations, there is no contradiction in the predication of A-properties of events or predication of A-properties of inference relations. Smith's way out of McTaggart's paradox strikes me as inelegant and phenomenologically false. We are just not acquainted with the infinite regress of inference relations Smith's theory implies. But even if we set aside these arguably subjective factors, there remain serious dialectical difficulties that mitigate against the acceptance of Smith's theory. I shall mention two.



First, consider the sentence "Event E will be past." On Smith's analysis, this means that the inherence<sub>1</sub> of pastness in E is such that futurity *now* inheres<sub>2</sub> in it. To state the same analysis somewhat differently, E exemplifies<sub>1</sub> pastness, and exemplification<sub>1</sub> exemplifies<sub>2</sub> futurity, and exemplification<sub>2</sub> exemplifies<sub>3</sub> presentness. The crucial and fatal move in Smith's analysis is the claim that the inherence<sub>2</sub> of futurity in the inherence<sub>1</sub> of pastness in E is *present*. For if the second order inherence, or exemplification<sub>2</sub>, is *now* present, then it *exists now*. If, however, exemplification<sub>2</sub> *exists now*, then the term, in this case exemplification<sub>1</sub>, that exemplifies<sub>2</sub> futurity must also *exist now*. However, if exemplification<sub>1</sub> exists now, then it must be present. Since, by hypothesis, exemplification<sub>1</sub> is future, it follows that exemplification<sub>1</sub> is both present and future, or does now exist and does not now exist, and that is a contradiction.<sup>20</sup>

Second, consider the sentence "E is past, and was present and was (still earlier) future." If E was future earlier than E was present, then on Smith's analysis that would imply that, say, being past by two hours *presently* inheres in the inherence of futurity in E is *earlier* than being past by one hour *presently* inheres in the inherence of presentness in E. That, however, implies a contradiction, since Smith maintains both that "the B-relations of earlier and later obtain between two events only if at least one of the events is *not present*,"<sup>21</sup> and that if "E was future earlier than E was present" is true, then the B-relation of *earlier than* obtains between the *present* inherence of being past by two hours *presently* inheres<sub>2</sub> in the inherence<sub>1</sub> of futurity in E, and the *present* inherence of the being past by one hour *presently* inheres<sub>2</sub> in the inherence<sub>1</sub> of presentness in E. In other words, on Smith's analysis the temporal relation of earlier than obtains between two events that are present and that is absurd.<sup>22</sup>

We have considered a pure A-theory that rejects temporal relations as primitive existents and a hybrid A/B theory that accepts temporal relations *and* temporal properties, but we have found both versions of tensed time wanting. There is one final version of the tensed theory that is worthy of consideration and differs from the versions we have considered so far. On the "open future" theory, as I shall call it, the past and present do exist, but the future does not. On this view, whose most recent exponent is Michael Tooley, there are no tensed properties and there are no primitive temporal relations.<sup>23</sup> Rather, temporal relations are generated through the coming into existence of tenseless states of affairs and their addition to the sum total of existence.

One difficulty that the open future theory must face is that it cannot give an adequate account of judgments about the future. If the future does not exist, then what are we judging when we judge, for example, that "It will rain tomorrow"? Michael Tooley has attempted to get around this difficulty by distinguishing being actual *simpliciter* and being actual as of a certain time. The future is actual *simpliciter* and is part of the sum total of what exists *sim-*

*pliciter*, but it is not actual as of a time. Thus, judgments about the future can be meaningful, even though, as of a certain moment, what they are about does not exist.

It seems to me, however, that Tooley's response to one difficulty lands him in another. On the one hand, he wants reality to consist of "the mereological union of *all* the states of affairs that are actual as of one time or another."<sup>24</sup> That is, he wants reality to be the totality of what (tenselessly) exists *simpliciter* so as to make sense of judgments about the future. On the other hand, to allow for the accretion of facts, his view presupposes that the sum total of what exists is different at different times. Unfortunately, Tooley never clearly explains how the sum total of existence can remain the same and have temporal parts that change their existential status. Tooley asserts that the problem of change motivates the debate between tensed and tenseless approaches to time,<sup>25</sup> but he does not realize that his own solution simply reraises it. He maintains that the totality exists *simpliciter* and yet new tenseless facts come into existence and are added on to the totality as time passes. But how is this possible? How can the totality exist *simpliciter* and remain the same through a change (as of different times) in the existential status of its temporal parts? I do not think that there is a consistent set of answers to these questions.<sup>26</sup>

There are numerous other versions of the tensed theory of time, several of which I shall consider below, but enough has been said to give the reader an indication of why my sympathies lie with the B-theory. In summary, the problems with the A-theory are that it is either metaphysically unenlightening (presentism) or susceptible to contradiction (pure and impure A-theory), or it does not avoid or resolve the problem of change (the open future theory). If A-theorists are to justify their position, they must provide adequate responses to these difficulties. Of course, the B-theory has issues that it needs to address as well. I shall conclude by mentioning a few of them.

### III

First and foremost, an issue that the detenser must address is the problem that we have been dealing with throughout, namely, the problem of change. From McTaggart's time until the present, A-theorists have accused detensers of being unable to account for the fact of change. The argument typically involves two steps. First, tensors argue that a detenser must construe a thing not as an *enduring* entity or continuant that persists through time and change but as a *perduring* entity or a series or succession of temporal parts with qualitative differences and similarities. Second, tensors then argue that on the

view that things persist by perduring, it follows that *nothing really changes*, since nothing remains the same while first having a property and then losing it. Each of these steps needs to be confronted by the detenser. Does the tenseless view imply that things are wholes composed of temporal parts, or is the B-theory compatible with (some version of) the view that a thing is a continuant that remains literally the same through time and change? And second, if, on the tenseless theory, a thing must be analyzed in terms of a succession of temporal parts or *events*, which themselves do not change, does it follow that *no thing changes*?

There is another range of issues that the B-theorist must address, and they concern what may be called the "phenomenology of time," the way time is given to us in thought and experience. We can see how some of these issues readily come to light by considering a passage from Russell's "Mysticism and Logic"<sup>27</sup> where he discusses the proper attitude toward time in a world without temporal becoming and the flow of time:

The arguments for the contention that time is unreal and that the world of sense is illusory must, I think, be regarded as fallacious. Nevertheless there is some sense—easier to feel than to state—in which time is an unimportant and superficial characteristic of reality. Past and future must be acknowledged to be as real as the present, and a certain emancipation from slavery to time is essential to philosophic thought. The importance of time is rather practical than theoretical, rather in relation to our desires than in relation to truth.

That this is the case may be seen at once by asking ourselves why our feelings towards the past are so different from our feelings towards the future. The reason for this difference is wholly practical: our wishes can affect the future but not the past, the future is to some extent subject to our power, while the past is unalterably fixed. But every future will someday be past: if we see the past truly, now it must, when it was still future, have been just what we now see it to be, and what is now future must be just what we shall see it to be when it has become past. The felt difference of quality between past and future, therefore, is not an intrinsic difference, but only a difference in relation to us: to impartial contemplation, it ceases to exist. . . . Whoever wishes to see the world truly, to rise in thought above the tyranny of practical desires, must learn to overcome the difference of attitude towards past and future, and to survey the whole stream of time in one comprehensive vision.<sup>28</sup>

If, as Russell puts it, the tensed distinctions of past, present, and future are not intrinsic features or properties of events in time, and all events are real from the point of view of "one comprehensive vision," then tenses will argue that the tenseless theory implies a phenomenological threat to freedom. We

experience the future as being an open realm of possibilities, but for the detenser, all events are equally real, there being, as Pallé Yourgrau has recently put it, "a symmetry of past, present and future with respect to *facticity*."<sup>29</sup> However, if the future is as real as the present, and so already exists or already is a fact, then how can the detenser account for our experience of the role we play in creating the (not yet existing) future?

Furthermore, how is the detenser to account for the difference in our cognitive attitudes toward events in the A-series? For example, an unpleasant event that is future is thought of with anxiety or dread, whereas the same event that is past is thought of with relief. On the detenser's view, where being future and being past are, in reality, nothing more than being later or being earlier than a given event or time, how can the special attitude we have toward past and future events be explained? Indeed, when upon seeing a clock read twelve o'clock I come to believe that NOW is the time to go to lunch, this belief seems to make sense only on an A-theoretic ontology. If all I believe at twelve o'clock is the tenseless proposition that, say, "The clock striking twelve o'clock is simultaneous with the time I should go to lunch," it is not clear why I would go to lunch NOW, since that proposition, if it is true at all, is true at all times (including those other than twelve o'clock). Thus, to explain timely action I must also believe, on the basis of perception, that the clock is NOW striking twelve o'clock; a belief that purportedly implies the reality of tense. There have been important detenser responses to this argument, but recent work on the issue indicates that further work needs to be done.<sup>30</sup>

Finally, I want to mention a predicament that George Schlesinger claims the detenser must resolve if the tenseless view is to coincide with our deepest feelings about time. The following long quote is in no need of explanation, although it is certainly in need of a reply:

Most detensers agree with Nathan Oaklander that "it is an impression deeply felt by all of us"<sup>31</sup> that time has dynamic, transient or A-properties. However, in reality the passage of time is a myth. How then are we to reconcile appearance with reality? Many detensers readily admit that we don't. Some of them may not go as far as Brian Garrett who claims that our psychological illusion about transience may be "so deep and so fundamental that it is rational even though it does not admit of justification."<sup>32</sup> Still, whether rational or not, for whatever reason, we were made to feel it in our bones. It is, of course not the only instance where the facts are different from the way we strongly feel. However, unlike in other cases where appearance and reality are in conflict, the position of those who claim a conflict in the temporal context is inexplicable. Consider, for instance, individuals are afflicted by some psychological maladjustments like claustrophobia, agoraphobia, and the like. In my admittedly limited experience, sufferers with a

modicum of intelligence, who fully grasp that in fact their fears have no basis in reality, are prepared to subject themselves to a variety of therapeutical regimens to get rid of their irrational compulsive behavior. The majority of such people succeed partially at least in shaking off their deviant behavior.

Now if detensers are right, and the transient view of time is replete with fallacies and cannot be reconciled with correct reasoning, and if philosophers who are on the whole very smart in their dealings with the world around them claim to realize that the "impression deeply felt by all of us" that "time's winged chariot hurrying near" may be good poetry, but an utterly false reflection of reality, don't they try to rid themselves of this "affliction"? It seems inexplicable, that—unlike those who are suffering from different delusions—even the most fanatic detensers have never been known to have lifted a finger to wean themselves from "thanking goodness when the headache is over," or from being any less nostalgic than others about the passing of the good old times. And in general, why is it that none of them are known to have ever done anything to cure themselves of this particular debilitating psychological maladjustment?<sup>33</sup>

Clearly, Schlesinger raises important questions that the detenser needs to address, and in later essays, I will address them.

In this essay, I have intended to provide the reader with knowledge of the contemporary state of the tensor/detenser debate via a discussion of the problem of change. The tensor/detenser debate is not only interesting in its own right; it also is connected with a range of other issues in metaphysics, the philosophy of language, the philosophy of religion, the philosophy of mind, and other areas in philosophy.<sup>34</sup> Continued work on temporal becoming and temporal relations will undoubtedly contribute to the advancement of philosophical research in these other areas of philosophy, and for that reason, among others, it is well worth pursuing.

## NOTES

1. John M. E. McTaggart, *The Nature of Existence*, ed. C. D. Broad (Cambridge: Cambridge University Press, 1927), p. 271.

2. See, for example, George Schlesinger, *Aspects of Time* (Indianapolis: Hackett, 1980); Richard Gale, *The Language of Time* (London: Routledge and Kegan Paul, 1968); Wilfred Sellars, "Time and the World Order," in *Minnesota Studies in the Philosophy of Science*, vol. 3, *Scientific Explanation, Space and Time*, ed. Herbert Feigl and George Maxwell (Minneapolis: University of Minnesota Press, 1962), pp. 527–616; and Arthur N. Prior, *Time and Tense* (Oxford: Oxford University Press, 1968). For criticisms of these attempts, see Michael Tooley, *Time, Tense and Causation* (Oxford: Clarendon Press, 1997), pp. 159–74.

3. For articles that discuss the transition from the old to the new tenseless theory of time, see L. Nathan Oaklander and Quentin Smith, eds., *The New Theory of Time* (New Haven, CT: Yale University Press, 1994), part 1; Laurie A. Paul, "The Truth Conditions of Tensed Sentence Types," *Synthese* 111 (1997): 53–71; and essay 25 in this volume.

4. One might claim that since the advent of the special theory of relativity this difference between space and time has evaporated, since the temporal relations between events are relative to the frame of reference from which they are viewed. I have two comments on that argument. First, I am dealing with temporal relations between events in a single frame of reference. Second, the *experiences* of a single person through time have an intrinsic direction that is not subject to the relativity of simultaneity.

5. C. D. Broad, *Examination of McTaggart's Philosophy*, vol. 2 (Cambridge: Cambridge University Press, 1938; repr., New York: Octagon Books, 1976), part 1, pp. 268–69, my emphasis.

6. McTaggart, *Nature of Existence*, p. 15.

7. *Ibid.*

8. L. Nathan Oaklander, *Temporal Relations and Temporal Becoming: A Defense of a Russellian Theory of Time* (Lanham, MD: University Press of America, 1984), and the essays in this book; Hugh Mellor, *Real Time II* (London and New York: Routledge, 1998).

9. Bertrand Russell, "On the Experience of Time," *Monist* 25 (1915): 212–33; C. D. Broad, "Time," in *Encyclopedia of Religion and Ethics*, ed. J. Hastings (New York: Scribner, 1921), pp. 334–45; Oaklander, *Temporal Relations and Temporal Becoming*.

10. Broad, "Time," p. 334.

11. Adolf Grünbaum, *Philosophical Problems of Space and Time* (1st ed., New York: Alfred Knopf, 1965; 2d ed., Dordrecht: D. Reidel, 1973); Mellor, *Real Time II*; Robin Le Poidevin, *Change, Cause and Contradiction: A Defense of a Tenseless Theory of Time* (New York: St. Martin's Press, 1992).

12. For a useful collection of articles on McTaggart's paradox, see Oaklander and Smith, *New Theory of Time*, part 2.

13. William Lane Craig, "Is Presentness a Property?" *American Philosophical Quarterly* 34 (1997): 6.

14. *Ibid.*, p. 5.

15. Mark Hinchliff, "The Puzzle of Change," in *Metaphysics Philosophical Perspectives*, ed. James Tomberlin (Cambridge, MA: Blackwell, 1996), pp. 119–36.

16. *Ibid.*, pp. 125–26.

17. Quentin Smith, *Language and Time* (New York: Oxford University Press, 1993), and "Absolute Simultaneity and the Infinity of Time," in *Questions of Time and Tense*, ed. Robin Le Poidevin (Oxford: Clarendon Press, 1998), pp. 135–83.

18. Smith, "Absolute Simultaneity and the Infinity of Time," p. 171.

19. Smith, "McTaggart's Paradox and the Infinite Regress of Temporal Attributions," p. 187.

20. My criticism of Smith is developed in greater detail in essay 14. Smith replies to that criticism in "Time and Degrees of Existence: A Theory of 'Degree Presentism,'" in *Time, Reality and Experience*, ed. Craig Callender (New York: Cambridge University Press, 2002), pp. 119–36.

21. Smith, *Language and Time*, p. 197, my emphasis.

22. A fuller treatment of Smith's views are found in essay 14.

23. Tooley, *Time, Tense, and Causation*.

24. *Ibid.*, p. 153, my emphasis.

25. *Ibid.*, p. 13.

26. For further criticisms of Tooley's view, see essay 12 and L. Nathan Oaklander, "Tooley on Time and Tense," in *The Importance of Time*, ed. Oaklander (Dordrecht: Kluwer Academic, 2001), pp. 1–12.

27. Bertrand Russell, "Mysticism and Logic," *Hibbert Journal* (1914), repr. in *Mysticism and Logic* (New York: Anchor Books, 1957).

28. *Ibid.*, pp. 20–21.

29. Pallé Yourgrau, *The Disappearance of Time* (New York: Cambridge University Press, 1992).

30. See Oaklander and Smith, *New Theory of Time*, part 3, and William Lane Craig, "The B-Theory's *Tu Quoque* Argument," *Synthese* 107 (1996): 249–69. I discuss these issues in essays 16–22.

31. Oaklander, essay 16. I should add, however, that in that essay, I never say that we all believe that time has dynamic, transient A-properties. What I do say in essay 16 is the belief that "time moves," while something that we all believe, is open to different ontological interpretations, none of which can be inferred from the common-sense belief itself.

32. Brian Garrett, "'Thank Goodness That's Over' Revisited," in *New Theory of Time*, p. 320.

33. George Schlesinger, "The Detenser's Predicament" (paper presented at the Philosophy of Time Society Meetings in Chicago, April 1998), pp. 5–6.

34. For a discussion of these connections, see Smith's "Introduction," in *New Theory of Time*, pp. 1–14, and essays 26–30.

## *Is There a Difference between the Metaphysics of A- and B-Time?*

In a recent and provocative paper, "The Metaphysics of A- and B- Time," Clifford Williams has posed a challenge to those who hold either an A-theory or a B-theory of time.<sup>1</sup> The challenge is to explain just how these two theories differ, for, according to Williams, once the misinterpretations of the theories are cleared away, there is no longer any coherent way of stating what differentiates them. Although there is much that is valuable in Williams's indistinguishability argument, he is mistaken when he claims that the traditional issue between A- and B-theories is a pseudoproblem. What I think he should have claimed, and to some extent has shown, is that there really is only one kind of time, namely, B-time, since when the B-theory is correctly understood, it will be seen to be adequate to our experience of the passage of time, self-consistent, and true. The overall purpose of this essay, however, is not merely to demonstrate a difference between A- and B-time but to further clarify what B-time is and is not.

Clearly, any full defense of B-time lies outside of the scope of this essay.<sup>2</sup> My aims, therefore, are much more limited. I shall attempt to show, contrary to Williams's main thesis, that there is, or rather *are*, coherent ways of stating what differentiates the two theories. I shall proceed by first pointing out a strong *prima facie* ground for believing that a distinction between the two theories exists. Then, after discussing Williams's reasons for claiming that there is no difference between A- and B-time, I shall explain what I take to be the differences between the two theories. Finally, I shall briefly consider reasons for suggesting that Williams's views are supportive of the B-theory.

My first argument against Williams is that if we accept his thesis that A- and B-theories are indistinguishable, then seemingly absurd consequences follow. To see why, note that Williams treats A-theorists as a relatively mono-



lithic group, even though there are a variety of different versions of A-time. Traditionally, defenders of A-time have maintained that in addition to temporal (B-) relations of *earlier*, *later*, and *simultaneity*, events exemplify the monadic temporal (A-) properties of *pastness*, *presentness*, and *futurity*.<sup>3</sup> There are other tenses who accept A-properties as primitive but maintain that B-relations are eliminable from an adequate ontology of time, since they can be analyzed in terms of A-properties and the passage of time. I interpret McTaggart's positive theory of time to be of this ilk.<sup>4</sup> Still other defenders of the A-theory reject tensed properties and temporal relations and countenance only (present) tensed facts.<sup>5</sup>

Further variations of the A-theory emerge when its proponents attempt to avoid McTaggart's paradox. Thus John Bigelow has recently attempted to avoid McTaggart's apparent inconsistency in attributing to an event incompatible A-properties by relativizing tensed properties not to times but to possible worlds.<sup>6</sup> At one point in his musings about time, George Schlesinger sought to avoid McTaggart's conundrum by appealing to a second time dimension;<sup>7</sup> and Smith's way out implies an allegedly nonvicious infinite regress of presentness inhering in its own inferences.<sup>8</sup> There are other versions of the A-theory, some of which reject the moving NOW, as well as both tensed properties and Prior-type theories.<sup>9</sup>

On the face of it, therefore, we have a variety of different versions of temporal passage. But if Williams's thesis were correct, and A-time were indistinguishable from B-time, then all these different versions of A-time would be metaphysically indistinguishable from B-time and so metaphysically indistinguishable from each other. Since these consequences are absurd, we can infer that Williams's main thesis, from which they follow, is mistaken.

Having made this argument, I must confess that I do not regard it as constituting a decisive objection to Williams's thesis. For in reply, Williams might very well claim that he regards my seemingly absurd consequence (that the different A-theories are indistinct) more as a statement of his thesis than as an objection to it. Thus more needs to be done to undermine Williams's position. Specifically, I must explain what are the metaphysical differences between the two positions. I think the best way to do that is by asking why Williams thinks that there are no metaphysical differences between A- and B-time.

Williams argues that there are two ambiguities in the way in which the debate between the A- and B-theories has usually been couched, and once these ambiguities are cleared away only one conception of time will remain. First, it is claimed that whereas a defender of A-time believes in objective temporal passage, or temporal becoming, defenders of B-time deny it. However, Williams argues that this way of understanding the dispute is ambiguous and leads to a misconstrual of B-time. A-theorists take the B-theorist denial of pas-

sage to be tantamount to a denial that "time contains any transition or succession or 'movement' from time to time."<sup>10</sup> Thus A-theorists who believe that time contains succession reject the B-theory. To interpret the B-theorist denial of passage in this way is, according to Williams, to fall prey to the misinterpretation of the B-series as a simultaneous whole, or *totem simul*, in which all of the parts of a four-dimensional space-time exist at once. On the other hand, if B-time *does* contain succession or "movement" from time to time, then the question arises: "How can we differentiate it from passage in A-time?"<sup>11</sup>

Williams is correct in saying that it is a misinterpretation to claim that the terms of the B-series exist all at once. Where he goes wrong, and thereby perpetuates his own belief that there is no difference between A- and B-time, is in maintaining that in order for there to be time there must be "passage," "transition," or "movement from time to time." For here he is assuming that the preanalytic language we use to talk about time and the beliefs we have about time are tantamount to a metaphysical analysis of time itself. In order to talk and communicate about time there must be tensed expressions that reflect time's passing, but, according to the B-theorist, it does not follow that the correct ontology of time must contain transition, temporal passage, or flow.<sup>12</sup> The rock-bottom feature of time that must be accepted on all sides is that there is *change*, and the different views concerning the nature of change constitute the difference between A- and B-theories of time. To assert that for time to be real there must be succession (i.e., temporal relations), *or* (as if they are equivalent) movement or transition from time to time, already assumes that there is no difference between A- and B-time. For, as we shall see below, on some versions of the metaphysics of A-time (for example, presentism), temporal relations do not exist, and on all versions of the metaphysics of B-theory, there is no movement, transition, or temporal passage understood as something beyond that to be found in B-relations.

A-theorists' misunderstanding of the B-theory is further suggested by the second way of drawing the distinction between the two theories. It is often claimed that whereas A-time holds that only the present exists or is real, in B-time all events are ontologically on a par, being equally real. Williams says that this way of drawing the distinction is ambiguous, since it suggests that the B-theory must deny that events cease to exist or come into existence and so deny that there is any transition in time. Once again, he says that to misconstrue B-time in this way is to attribute to the B-theory the view that "all of time exists 'simultaneously' as a sort of four-dimensional solid in the space-time continuum."<sup>13</sup> However, once these ways of distinguishing the two theories are separated from their misconstruals, the difference between A- and B-time must be that there are two different kinds of transition: A-transition and B-transition. In that case, Williams says that "it is no longer apparent how the two theories differ."<sup>14</sup>

It appears, however, that once again it is Williams who has confused our ordinary way of speaking about time with the various metaphysical analyses that are claimed to underlie them. We may admit, as assuredly is the case, that all events in B-time do not exist simultaneously. But it does not follow from that, nor do defenders believe, that in order for there to be time, there must be some basic unanalyzable concept of coming into existence and ceasing to exist. On the B-theory, expressions that assert the coming into existence and ceasing to exist of events are eliminable in terms of expressions that state their truth conditions. In short, an ontologically adequate representation of time will not contain expressions that reflect the coming into existence and ceasing to exist of events over and above their tenseless location at different dates. Nevertheless, in ordinary language and thought, sentences that assert that events do not yet exist, or have come into existence or have ceased to exist, are meaningful, necessary for practical purposes, and often true.<sup>15</sup>

According to Williams, not only have A-theorists misunderstood B-time, but B-theorists have misunderstood A-time. The way in which B-theorists have misunderstood A-time is by thinking of temporal passage as something extra, added to, and over and above succession in B-time. That is, B-theorists have construed the A-theory to be holding that time consists of the property of *presentness* moving along an ordered B-series of moments or events. Williams claims that this misinterpretation of A-time by B-theorists leads them to reject the A-theory because it renders A-time "incomprehensible," "absurd," and "contradictory because it is the movement of time in time."<sup>16</sup> Williams goes on to claim that although A-theorists "sometimes convey the idea that time consists of some literal unexplainable motion, what they *really want* to convey is that the passage involved in A-time is different from the transition involved in B-time."<sup>17</sup>

It seems to me, however, that it is Williams who misinterprets the A-theory and reveals his B-theorist bias when he claims that A-theorists do not *really* want to claim that "presentness is a property of events over and above their occurrence at particular clock times, a property that events gain and lose."<sup>18</sup> There obviously are leading A-theorists who maintain, and argue vigorously for, precisely the view Williams claims is incoherent and unintelligible. Consider, for example, the following passages from Quentin Smith:

Time is neither causation, motion, physicality, mentality, or anything else. Time is time. Time is a series of items related by *primitive* and *irreducible* relations of earlier, later and simultaneous and possessing monadic properties of futurity, presentness or pastness.<sup>19</sup> The tensor acknowledges that events are B-related and that A-sentences imply facts about their B-relations. . . . The thesis the tensor wants to establish is that A-sentences *also* convey information about the A-properties of events.<sup>20</sup>

Ned Markosian also understands the passage of time in a way that no B-theorist would accept:

There is a . . . process by which times and events *successively* possess different A-properties. January 1st, 2000 is currently future, but it is becoming less and less remotely future all the time, and there is nothing that anyone can do to halt or even to slow this process. . . . In what follows, I will refer to the process by which times and events successively possess different A-properties as *the pure passage of time*. . . . As I see it, the A-property thesis and the pure passage of time thesis together constitute the *metaphysical* core of the view that time passes.<sup>21</sup>

Since on Markosian's view events or moments successively possess different A-properties, the pure passage of time involves something more than the time relations found in B-time. Thus, the notion that time consists of *both* temporal relations and transitory temporal properties is a theory that many A-theorists *really want* to maintain, and it reflects a metaphysical difference between what kinds of temporal entities exist in A- and B-time.

Williams shows his B-theory bias by taking for granted that McTaggart, D. C. Williams, Grünbaum, Smart, and others have effectively demonstrated the "myth" of passage as something extra, over and above B-relations (a point I shall return to below). However, since Markosian, Schlesinger, Smith, and other A-theorists have presented arguments that directly respond to the various dialectical challenges to A-time, Williams cannot simply assume that the traditional way of drawing the distinction between A- and B-time is absurd.<sup>22</sup>

Nevertheless, Williams may object that the traditional way of distinguishing A- and B-time does not mark a real metaphysical difference because "it is not evident how the shift of presentness from event to event in A-time differs from the transition from occurrence to occurrence in B-time."<sup>23</sup> By further exploring how A-passage and B-succession might differ, we shall come to understand a further metaphysical difference between the two theories.

We can begin to see how A- and B-time can be distinguished by considering what motivates the two theories, namely, the problem of change.<sup>24</sup> Although it is debatable whether or not time involves change, it is surely not debatable that change involves time. For if we are to understand how a single thing can have incompatible properties, and thus satisfy one essential ingredient of change, we must in some way specify the different *times* at which it possesses those properties. For example, if a leaf changes its color *from* green *to* brown, it must *first* be green *and then* be brown, that is, it must be green at a time *earlier than* the time it is brown. Thus to explain the reality of change is to explain how a single thing can have incompatible properties *successively*, or one *before* the other. What, then, is succession and the

relations of *earlier* and *later*? Alternatively, how can we account for the difference between the *temporal* change of the color of a leaf and the *spatial* "change" of, say, the color of a lawn from being green at one end and brown at the other? By turning to those questions, we shall be able to better understand the metaphysical differences between A-time and B-time. First, however, a brief discussion of relations in general will be useful.

With few exceptions, and until the discussions by Bradley and Russell around the turn of the century, relations were not recognized as constituting a category in their own right. Rather, the ontological ground of relations was believed to be in the nonrelational properties of the terms said to be related.<sup>25</sup> Thus, for example, consider the relational statement that

1. *a* is R to *b*.

On the traditional or monadistic account (to use Russell's phrase), *a* is R to *b* does not contain the relation R as a constituent. Rather, the objective facts represented by (1) are nonrelational.

2. *a* is  $r_1$  and *b* is  $r_2$ .

On this account of relations, the *nonrelational properties*  $r_1$  and  $r_2$  are the foundation or ontological ground of the relation. For example, if Socrates is *taller than* Simmias, then he is so in virtue of the height that Socrates and Simmias each possess. In other words, on the reductionist view, relations do not have ontological status; they do not form a category of their own. For Russell, on the other hand, relations cannot be reduced to monadic properties of their terms. In particular, temporal relations are such that their terms can be related, that is, *a* can be earlier than *b*, even though neither *a* nor *b* exemplify any A-properties.

To connect this brief discussion of relations with the issue at hand, I suggest that a further fundamental difference between A- and B-time is that on the B-theory *there are*, whereas on some versions of the A-theory *there are not*, *primitive temporal relations* indefinable in terms of tensed predicates and irreducible to tensed properties.<sup>26</sup> For some B-theorists, temporal relations are external in just this sense: They are primitive and unanalyzable relations indefinable in terms of tensed predicates and irreducible to tensed properties. On this version of B-time, the difference between spatial and temporal relations is an irreducible qualitative difference, and the relation that distinguishes temporal order is just different from any spatial relation in the same sense that red and green are just different.<sup>27</sup>

For some A-theorists, on the other hand, temporal relations are analyzable in terms of A-properties, and they must be if there is to be *genuine suc-*

*cession* and *temporal change*. Thus, for example, McTaggart attempted to define "earlier than" in terms of the notions of "past," "present," and "future," and in his other positive reflections on time, he maintains that the direction of time and change (i.e., B-relations) depend upon the application of the A-series to the ordered, but nontemporal, C-series.<sup>28</sup> Both of these claims support the idea that he did not countenance primitive temporal relations in his ontology even before he rejected the reality of time.

More recently, John Bigelow has attempted to vindicate McTaggart's positive view by arguing that in order to make sense of the belief that time passes, we must take "as the more primitive notions those of the passage of time, of past, present and future, and not those of earlier and later, before and after. . . . And I will try, in fact, to define earlier and later in terms of the passage of time, rather than the other way around."<sup>29</sup> Then, after providing a reductive analysis of the earlier/later relation, Bigelow asserts:

[W]e thus have a way of meeting McTaggart's challenge. We can explain what makes the earlier/later ordering of events a *temporal* ordering, by showing that it derives from the prior, specifically temporal properties of pastness, presentness and futurity.<sup>30</sup>

Clearly, by "prior" Bigelow does not mean temporally prior but *ontologically* prior, and so the *primitive* temporal existents in his ontology are the *intrinsic*, nonrelational properties of *pastness*, *presentness*, and *futurity*, which, together with the hypothesis of possible worlds "make the earlier/later relation a temporal one."<sup>31</sup> Thus, contrary to Williams's avowals, there is a fundamental difference between A-passage and B-succession, and it concerns what *categories* of temporal entities exist. According to A-time (at least on one version), temporal relations are reducible to temporal properties (and the C-series or possible worlds). According to B-time, on the other hand, there are no nonrelational temporal properties; the only intrinsically temporal entities are relations.

This difference between the A- and B-theories of transition and succession can also be understood by considering yet another version of the A-theory, namely, "presentism." To understand the motivation for presentism and how it is metaphysically distinct from the B-theory, we need to consider an apparent peculiarity of temporal relations. On the one hand, temporal relations, like virtually all relations, involve existents as terms.<sup>32</sup> In order for a relation to relate, there must *be* relata. Thus if John is taller than Paul, then both John and Paul must exist. Of course, there may be relations that relate a thing to itself, such as identity, but even here, in order for the relation of identity to hold between a thing and itself, the entity in question must exist. On the other hand, it appears that in order for the earlier/later relation to obtain, at least one of the terms must either no longer or not yet exist. For

example, the 1992 Olympic Games are earlier than my writing this sentence, and for that reason have, *in some sense*, ceased to exist, and the 2000 Olympic Games are later than my writing this sentence, and for that reason in some sense do not yet exist. Thus the temporal relations of *earlier* and *later* both require and forbid existing terms. One way of understanding the problem of time, and the difference between the A- and B-time, is by considering how A- and B-theories attempt to deal with this *prima facie* paradox that concerns temporal relations.

On the presentist version of the A-theory, "only the present exists." Thus, in response to the dilemma concerning temporal relations, the presentist maintains events that now exist are not in any way *related* to earlier or later events, since earlier or later events either no longer or do not yet exist; they are not around to stand in relation to anything.<sup>33</sup> In other words, presentists avoid paradox by rejecting temporal relations as primitive existents and countenancing only facts about the present.

For the B-theorist, all events exist at the time they do; that is, they are located at the time they are, with the properties that they have, regardless of what time it is. Nevertheless, B-theorists can give an explanation of an event's coming to be and ceasing to be. On their reading, a headache's ceasing to exist over the interval  $t_n - t_n + 1$  is its being located up to  $t_n$  and thus making the present-tense belief "My headache exists (now)" true up to  $t_n$ , and false at  $t_n + 1$  (and later). Similarly, a headache's beginning to exist at  $t$  is nothing more than its being located at  $t$  and not earlier, thus making the present-tense belief "My headache exists (now)" true at  $t$  and false earlier.<sup>34</sup>

The issue is not whether A- or B-theories succeed in resolving a dilemma that concerns time relations, although I clearly prefer the latter. The point I am emphasizing is that there is a fundamental difference between A-passage and B-succession, since they offer different accounts of the ontological categories needed to explain the relational aspect of time. The presentist appeals to (nonrelational) present-tensed facts and *denies* primitive temporal relations, whereas the B-theorist accepts primitive temporal relations and rejects all tensed properties and facts.

At the beginning of this essay, I claimed that what Williams should have said, and to some extent has shown, is that there is only one true conception of time, namely, B-time. I want to conclude my essay by briefly explaining my rationale for that claim. Recall that there are basically two different ways in which A-time has been understood. Either the A-theory maintains that (1) succession is analyzable in terms of tensed facts and/or tensed properties or that (2) there are A-properties that temporal items acquire and shed, and in addition there are unanalyzable temporal relations. Whichever interpretation one adopts, Williams's writings tend to support the B-theory. Let me explain.

In "A Bergsonian Response to McTaggart's Paradox," Williams says:

Now clearly there is only one kind of time: A-time if the A-theorists are correct or B-time if the B-theorists are correct. So when we employ Bergsonian intuition, we are immersing ourselves in only one kind of time. But suppose we try to imagine ourselves being immersed in some different kind of time. We find that we cannot do so. I should say, I cannot do so. I draw a blank. All I get is an intuition of the kind of time that actually exists. If I imagine that the A-theory is true and that I am intuiting A-time, I cannot also imagine what it would be like to intuit B-time. And if I imagine that the B-theory is true and that I am intuiting B-time, I cannot also imagine what it would be like to intuit A-time. I cannot, in short, imagine intuiting a different kind of passage.<sup>35</sup>

Suppose Williams is correct, and we can immerse ourselves in only one kind of time. What follows from that? Clearly, it is invalid for Williams to argue that since he has no intuition of *two* kinds of time, the distinction between A- and B-time is spurious. Just because we cannot intuit time in both of these ways, it does not follow that there is no metaphysical distinction between the two theories any more than it follows that there is no metaphysical difference between the realist and the resemblance theories of the recurrence of qualities merely because we cannot intuit the difference between qualities as universals and qualities as particulars.

A more plausible argument is that since we experience time as involving primitive B-relations and not primitive A-properties, the B-theory is correct. Interestingly, this phenomenological argument is one that Williams himself has made. In an earlier account of our experience of time he has said that we only experience B-time. Thus Williams has claimed that "contrary to A-theorists . . . a correct account of our experience of time confirms the B-theory and not the A-theory. We do not experience the mind-independent A-properties that the A-theory says that events possess."<sup>36</sup> I take it that Williams would agree with his previous remarks concerning the phenomenology of A-properties and B-relations even if he would disagree that there is a metaphysical difference between the two theories. Indeed, assuming that we should take the world as we experience it unless there are strong dialectical reasons to do otherwise, Williams should have said that the metaphysics of B-time is thereby the way the world is. More importantly, the fact, if it is a fact, that we only experience B-relations does not render the dispute between A- and B-time a pseudoproblem.

Suppose we adopt the second interpretation of A-time and think of time as involving both temporal properties and temporal relations. For various reasons that he only hints at, Williams believes that the traditional A-theory "borders on the absurd":



[I]f A-time is thought of as being added to B-time, then it will be thought of as a mysterious kind of movement against the backdrop of B-time, somewhat analogous to the movement of things in space. It will seem to B-theorists to be both unneeded, because there already is transition, namely, B-time, and contradictory, because it is the movement of time in time.<sup>37</sup>

Now, if Williams is right in his criticism of the traditional A-theory, and I think he is, then what follows is that we are left with only one kind of time, namely, B-time. For if we take away the moving *now* from the second interpretation of A-time, then we are left with primitive temporal relations. Furthermore, Williams has pointed out important misinterpretations that have motivated A-theorists' rejection of the B-theory. Once these misconstruals are unmasked, the dialectical difficulties with the A-theory spelled out, and the phenomenology of time understood to be relational, the B-theory can be judged to be adequate to the reality, and our experience, of time.

But is Williams's B-theory bias justified? Is there something unbelievable about A-time containing both the time relations of B-time and the modalities of past, present, and future? It is not my intention to pursue that question in this essay, but I will do so extensively in essays 4 through 15. Nevertheless, I think I have demonstrated that there are important metaphysical differences between alternative versions of the A-theory and the B-theory, and I have given some reason to think that Williams is implicitly sympathetic with the B-theory. That some distinction between the two theories really exists is further suggested by the fact that the differences I have explained seem to connect with other important issues in metaphysics. For example, William Lane Craig has argued that the A-theory implies "the reality of the transcendental ego, or self. Just as there is an objective present, so there *must* also be a substantial self."<sup>38</sup> Furthermore, William Carter, Scott Hestevold, Robin Le Poidevin, and Trenton Merricks have argued that the tensed theory implies an endurance (or continuant) view of identity through time, and the tenseless theory implies a perdurance (or temporal parts) view.<sup>39</sup> Moreover, if the B-theory is correct and there are no tensed properties, then the tensor-detensor debate has clear implications for those working in the philosophy of language who argue that the semantics of temporal indexicals imply that there are A-properties. If the two theories do have these and other implications, then philosophical progress on fundamental topics in metaphysics and the philosophy of language (as well as other areas) can be made by continuing the debate between A- and B-time.<sup>40</sup> Whether the A- and B-theories do in fact have all the different implications that they appear to have is a question that lies beyond the scope of this paper. Be that as it may, I think I have shown, in answer to the question of this paper, that yes, there are indeed metaphysical differences between A- and B-time.

## NOTES

1. Clifford Williams, "The Metaphysics of A- and B-Time," *Philosophical Quarterly* 46 (1996): 471–81.

2. For recent attempts to defend the B-theory, see Robin Le Poidevin, *Change, Cause and Contradiction: A Defense of the Tenseless Theory of Time* (New York: St. Martin's Press, 1992); Hugh Mellor, *Real Time II* (New York: Routledge, 1998), and "Transcendental Tense I," *Aristotelian Society Supplement* 72 (1998); L. Nathan Oaklander, *Temporal Relations and Temporal Becoming: A Defense of a Russellian Theory of Time* (Lanham, MD: University Press of America, 1984); J. J. C. Smart, "The Reality of the Future," *Philosophia* 10 (1981): 141–50; and the essays by MacBeath, Mellor, Oaklander, and Williams in *The New Theory of Time*, ed. L. Nathan Oaklander and Quentin Smith (New Haven, CT: Yale University Press, 1994).

3. Richard Gale, *The Language of Time* (New York: Humanities Press, 1968); Quentin Smith, *Language and Time* (New York: Oxford University Press, 1993).

4. For a defense of this interpretation of McTaggart's positive conception of time, see essay 3. For a criticism of it and an alternative interpretation, see David J. Farmer, *Being in Time* (New York: University Press of America, 1990).

5. Arthur N. Prior, *Time and Tense* (Oxford: Oxford University Press, 1968).

6. John Bigelow, "Worlds Enough for Time," *Noûs* 45 (1991): 1–20.

7. George Schlesinger, *Aspects of Time* (Indianapolis: Hackett, 1980).

8. Smith, *Language and Time*.

9. David Zeilicovici, "Temporal Becoming Minus the Moving Now," in *New Theory of Time*, pp. 234–51; Michael Tooley, *Time, Tense and Causation* (Oxford: Clarendon Press, 1997); E. J. Lowe, "Tense and Persistence," in *Questions of Time and Tense*, ed. Robin Le Poidevin (Oxford: Clarendon Press, 1998), pp. 43–59.

10. Clifford Williams, "The Phenomenology of B-Time," in *New Theory of Time*, p. 372.

11. Ibid.

12. For objections to the B-theorist position about the relation between ordinary language and thought, and metaphysical analysis, see William Lane Craig, "The B-Theory's *Tu Quoque* Argument," *Synthese* 107 (1996): 249–69, and "Tense and the New B-Theory of Language," *Philosophy* 71 (1996): 5–26; and Smith, *Language and Time*.

13. Williams, "Phenomenology of B-Time," p. 373. This quote comes from William Hasker, *God, Time and Knowledge* (Ithaca, NY: Cornell University Press, 1989). Unfortunately, some of the things that Williams says about the B-theory are themselves ambiguous and may lead to just those misinterpretations of B-time that Williams sought to avoid. For example, he says that "B-time does not just consist of *permanent* facts [i.e., facts expressed by B-statements such as "Kirsten and Lee *marry* (tenseless) on 27 February 1993"]; it consists also of transition between the events that make up the facts, and this transition makes B-time 'dynamic'" ("Metaphysics of A- and B-Time," p. 379). The notion of "permanent" facts suggests that the fact expressed by "Kirsten and Lee *marry* (tenseless) on 27 February 1993" *always* exists. Of course, B-facts are not permanent in that sense, since they do not exist *at every*

time. As I have argued elsewhere (*Temporal Relations and Temporal Becoming* and essays 16 and 30), B-facts do not exist in time at all, although all tokens of a B-sentence-type have a permanent truth-value in that they are always true or always false.

14. Williams, "Metaphysics of A- and B-Time," p. 375.

15. For a B-theoretic account of coming to be and ceasing to be, see essays 18, 19, and 30.

16. Williams, "Metaphysics of A- and B-Time," p. 376.

17. Ibid., my emphasis.

18. Ibid.

19. This passage is from a draft of Quentin Smith, "Absolute Simultaneity and the Infinity of Time," *Questions of Time and Tense*, pp. 135–83, and in private correspondence, Smith expressed his full endorsement of it.

20. Smith, *Language and Time*, p. 10.

21. Ibid., pp. 835–36, my emphasis.

22. George Schlesinger, "Temporal Becoming," in *New Theory of Time*, pp. 214–20; Smith, *Language and Time*, passim.

23. Williams, "Metaphysics of A- and B-Time," p. 380.

24. For a fuller treatment of the problem of change, see C. D. Broad, *Scientific Thought* (London: Routledge and Kegan Paul, 1923; repr., Paterson, NJ: Littlefield, Adams & Co., 1959), chap. 2; Le Poidevin, *Change, Cause and Contradiction*, pp. 13–23; Quentin Smith and L. Nathan Oaklander, *Time, Change and Freedom: An Introduction to Metaphysics* (New York and London: Routledge, 1995), pp. 57–65; and essays 1, 3, and 15 in this volume.

25. For a penetrating discussion of this reductionist gambit, see Fred Wilson, "Burgerskijck, Bradley, Russell, Bergmann: Four Philosophers on the Ontology of Relations," *Modern Schoolman* 74, no. 4 (1995): 283–310. The classic critique of the monadistic account is found in Bertrand Russell, *The Principles of Mathematics*, 2d ed. (New York: W. W. Norton, 1938), chap. 26.

26. Bertrand Russell, "On the Experience of Time," *Monist* 24 (1915): 212–33; C. D. Broad, "Time," *Encyclopedia of Religion and Ethics*, ed. J. Hastings (New York: Scribner, 1921), pp. 334–45; Williams, "Phenomenology of B-Time," pp. 360–72; Oaklander, *Temporal Relations and Temporal Becoming*.

27. As I have indicated in essay 1, some B-theorists do not construe the earlier/later relations as primitive but attempt to define them in terms of causal relations.

28. McTaggart's definition of "earlier than" in terms of A-properties is: "The term P is earlier than the term Q, if it is ever past while Q is present, or present while Q is future" (*The Nature of Existence*, ed. C. D. Broad, vol. 2 [Cambridge: Cambridge University Press, 1927], p. 271). For a critical discussion of McTaggart's definition, see Gale, *The Language of Time*, pp. 90–91, and essay 1. I give a detailed argument for this interpretation of McTaggart's positive view of time in essay 3.

29. Bigelow, "Worlds Enough for Time," p. 3.

30. For a criticism of Bigelow's response to McTaggart, see essay 5. It should be noted that Bigelow has changed his views on time and now adopts a variant of presentism. See John Bigelow, "Presentism and Properties," in *Philosophical Perspectives*, vol. 10, *Metaphysics*, ed. James Tomberlin (Cambridge, MA: Blackwell, 1996), pp.

35–52. For criticism, see essay 7.

31. Bigelow, "Worlds Enough for Time," p. 3.

32. Some philosophers maintain that intentionality is an "abnormal" relation between a mental act and its object, since it can connect an existent with what does not exist. See, for example, Reinhardt Grossmann, *The Categorical Structure of the World* (Bloomington: Indiana University Press, 1983), pp. 89–101.

33. Dean Zimmerman, "Reply to Clifford Williams' 'The Metaphysics of A- and B-Time'" (paper presented at the Philosophy of Time Society meetings in Chicago, April 27, 1996).

34. To this it might be objected that since the knowledge of my headache ceasing to exist requires that the *tensed beliefs* "My headache exists (now)" and "My headache did exist" are both true (at different times), there must be *tensed facts* to account for their truth. The inference, however, is fallacious. For if a belief or judgment is indexical, as it is if it is tensed, then its truth conditions are token-reflexive. So all it takes to make a token of the tensed belief "My headache exists (now)" true is that the headache occurs simultaneously with the belief. And all it takes to make a token of the tensed belief "My headache did exist" true is that the headache ended before I had the belief (or that the belief is held after the end of the headache).

35. Williams, "Bergsonian Response to McTaggart's Paradox," pp. 1–2.

36. Williams, "Phenomenology of B-Time," p. 360.

37. *Ibid.*, pp. 360–72.

38. Craig, "B-Theory's *Tu Quoque* Argument," and "Tense and the New B-Theory," pp. 5–26.

39. Trenton Merricks, "On the Incompatibility of Enduring and Perduring Entities," *Mind* 104, no. 415 (1995): 523–31; Le Poidevin, *Change, Cause and Contradiction*.

40. For a discussion of ways in which the debate connects with issues in the philosophy of religion, the philosophy of logic, the philosophy of language, and the philosophy of science, see Quentin Smith, "Introduction," in *New Theory of Time*, pp. 1–14. The connection between time and identity is explored in essays 26–28 and between time and freedom in essays 29 and 30.



## *McTaggart's Paradox Defended*

No argument has done as much to stimulate debate in the philosophy of time as McTaggart's argument for the unreality of time.<sup>1</sup> On the one side are A-theorists, who believe McTaggart's positive thesis that time involves the A-series and temporal passage but deny his negative thesis that the A-series and temporal passage are contradictory.<sup>2</sup> On the other side are B-theorists, who believe that McTaggart's positive conception of time is mistaken but that his negative thesis is true.<sup>3</sup> At least part of the reason why McTaggart's paradox has failed to convince defenders of passage is because they fail to appreciate his positive thesis and thereby misunderstand the rationale behind his negative thesis. The purpose of this paper is to prove that point. I shall proceed by first explicating what I take McTaggart's positive and negative theses to be. I shall then show how and why one recent response to McTaggart's paradox, which is representative of many, is unsuccessful because it misunderstands it. And finally, I will explain how a subsidiary benefit of my account of McTaggart's paradox is that it can provide a clear criterion for distinguishing passage from nonpassage views of time.

According to McTaggart, we ordinarily (or commonsensically) conceive of time as involving the notions of past, present, and future (A-determinations) and earlier than/later than and simultaneous with (B-relations). Although McTaggart claims that the A-series (defined in terms of A-determinations) and the B-series (defined in terms of B-relations) are both essential to our *ordinary* concept of time, he believes that A-determinations and the A-series are more fundamental, more ultimate, and more essential to the *ontological* nature of time than B-relations and the B-series. In fact, his view is that the B-series depends on the A-series, not only because there would be no B-relations unless there were A-determinations, but, more fundamentally, because the B-series is ontologically reducible to the A-series and the non-

temporal C-series. The C-series gives the B-series its permanent *order*, and since the C-series contains a genuine (nontemporal) relation, when it is conjoined with the A-series the two series together give time a *direction* by providing a metaphysical basis for the temporal B-series.<sup>4</sup> In other words, the A-series and the C-series are jointly necessary and sufficient for, and thereby the ontological ground of, B-relations.

The evidence that McTaggart does in fact hold the positive view of time that I attribute to him is both textual and structural. That is, on the one hand, he basically says what I say he does, and on the other, by interpreting him as I do, we can make sense of his argument that the A-series is contradictory and that therefore, time is unreal. I shall consider the textual evidence first. McTaggart says that the A-series and the C-series are jointly *sufficient* to constitute the B-series:

We can now see that the A-series, together with the C-series, *is sufficient to give us time*. . . . Thus to our previous conclusion that there can be no time unless the A-series is true of reality, we can add the further conclusion that *no other elements are required to constitute a time-series except an A-series and a C-series*.<sup>5</sup>

Furthermore, the C-series and the A-series are jointly *necessary* for the B-series.

The C-series, however, is as ultimate as the A-series. And this—the B-series—cannot be got out of the A-series alone. It is *only when* the A-series, which gives change and direction, is combined with the C-series, which gives permanence that the B-series can arise.<sup>6</sup>

The words “only when” signify that the A-series and the C-series are necessary for the B-series, and his claim from the previous quote that “no other elements are required to constitute a time series except an A-series and a C-series”<sup>7</sup> implies that they are sufficient for the B-series as well.

Finally, McTaggart claims that while the A-series and the C-series are each ultimate,

The B-series, on the other hand, is not ultimate. For given a C-series of permanent relations of terms, which is not in itself temporal and therefore is not a B-series, and given the further fact that the terms of this C-series also form an A-series, and it results that the terms of the C-series become a B-series, those which are placed first, in the direction from past to future, being earlier than those whose places are farther in the direction of the future.<sup>8</sup>

I think that these passages make it clear that for McTaggart there are no ontologically primitive or simple temporal relations. Metaphysically, time is

entirely constituted by the A-series, and it together with the nontemporal but ordered C-series ground the commonsense view of time as involving *both* A-determinations and B-relations.

My interpretation is not only textually sound, but it also enables us to clearly bring into view the central issue in McTaggart's paradox, namely, the ontological status of *succession*, the B-relations of *earlier/later than* and *simultaneity*, and the *direction of time and change*. What, then, is the ontological basis for the direction of time and change, that is, for the *succession* of one event/thing/time coming *after* another? Giving the A-theory answer to that question leads us directly to McTaggart's paradox.

On the A-theory, according to McTaggart, the direction of time is grounded in the application of the A-series to the C-series. That is, if there is a C-series in which A is related to B is related to C in that order, and if A is past, B is present, and C is future, then we have a temporal series with an intrinsic direction: A is earlier than B is earlier than C from any point of view. The direction of time is from A to B to C and not the other way around. It is important to emphasize that McTaggart does *not* begin by assuming that every event is (timelessly or simultaneously) past, present, and future, but rather he denies it. Thus, the common critique of McTaggart that he errs at the first step by *assuming* every event is past, present, and future is a non sequitur. On the contrary, McTaggart begins by *insisting* that an event or moment in time can have *one and only one* A-determination.

Consider, for example, the following passages:

And we *must* say that a series is an *A-series* when each of its terms has, to an entity *X* outside the series, *one, and only one*, of three indefinable relations, pastness, presentness, and futurity.<sup>9</sup>

And again in "The Unreality of Time," he says,

Past, present, and future are incompatible determinations. *Every event must be one or the other, but no event can be more than one.* . . . And, if it were not so, the A-series would be insufficient to give us, in combination with the C-series, the result of [B-] time.<sup>10</sup>

Unfortunately, the story cannot end here. For if the terms of the A-series and C-series have *one and only one* A-determination, then nothing changes, since no term has an A-determination and then loses it, and without change there is no time (or B-relations), and a fortiori no direction to time and change.

Thus, in order for there to be change and change in a given direction, something more has to be added to a single A-series whose terms are related by nontemporal C-relations: The A-series and its terms must undergo *tem-*



*poral becoming*. For only by undergoing temporal becoming can we have change in a given direction. McTaggart puts this point as follows:

Therefore, besides the C-series and the fact of change there must be given—in order to get time—the fact that the change is in one direction and not in the other. We can now see that the A-series, together with the C-series, is sufficient to give us time. For in order to get change and change in a given direction, it is sufficient that one position in the C-series should be Present, to the exclusion of all others, and that *this characteristic of presentness should pass along the series* in such a way that all positions on the one side of the Present have been present, and all positions on the other side of it will be present. That which has been present is Past, that which will be present is Future.<sup>11</sup>

Temporal becoming is thus the passage of *presentness* along the nontemporal C-series, thus generating the direction of succession in the B-series. Thus, the further claim that every event/thing/moment has all three A-determinations is not assumed but is implied by the view—endorsed by A-theorists—that change requires temporal becoming.

We can already begin to see, in outline, the obstacles facing the reality of A-time. In order for B-relations to exist, the terms of a single A- and C-series must have *one and only one* A-determination. (Whether an A-determination is construed as an A-property or an A-relation to some term outside the A-series makes no difference.) However, if the terms of the A-series form a B-series by having one and only one A-determination, then there is no change (because there is no temporal becoming) and hence there are no B-relations. Thus, the first contradiction with the A-series is that it together with the C-series implies that there are B-relations, and yet the A-series together with the C-series implies that there are no B-relations. From that it follows that the B-series does not exist, and thus no temporal item can have incompatible properties *successively*, that is, change is impossible. On the other hand, if there is change, because there is temporal becoming in the form of the moving present or moving NOW, then a contradiction still ensues because every term will have every A-determination, and for that reason the A-theorist cannot account for the direction of time and change. Thus, with or without temporal becoming, the A-theorist cannot account for succession in time and the direction of change.

The problem then is this: if we have the A-series of past, present, and future temporal items superimposed on the C-series, then we presumably have a B-series with an intrinsic direction. However, the resulting series is not really a B-series because B-time requires change, and there is nothing in a single A-series superimposed on a C-series that changes. There is nothing that has a property and then loses it. Thus, to account for change and change in a given direction, we must introduce temporal becoming, or the move-

ment or passage of time along the A- and C-series. However, there is no way that can be consistently done.

If temporal becoming is explained by positing a term outside of the temporal series that moves along the terms of a *single* A- and C-series, then each of the terms in the A-series and C-series have incompatible A-relations to the moving NOW or incompatible nonrelational A-properties. Clearly, this account of temporal becoming is *contradictory*, since it is logically impossible for each term of the A-series to have incompatible A-determinations, as it must if temporal becoming involves a NOW literally moving along a single A-series. Furthermore, temporal becoming *destroys the fact of change*, since if all the terms of a single A- and C-series have all three relations to the NOW (or all three monadic A-properties), then nothing has a property and then loses it. And finally this account of temporal becoming is *self-defeating* because it undermines the *raison d'être* for temporal becoming, namely, to account for the direction of time. For if each term in a single A-series has each A-determination, then there is no basis or ground for the terms of the A- and C-series occurring in succession, one after the other.

Perhaps an A-theorist could construe temporal becoming as involving a second series whose terms are each an  $A_1$ -series (of the first level). On this view, each  $A_1$ -series has terms that have one and only one A-determination. Therefore, if time (or temporal becoming) is the totality of  $A_1$ -series ( $A_{1a}$ ,  $A_{1b}$ ,  $A_{1c} \dots A_{1n}$ ), we have a *single term* having one A-determination in one  $A_{1a}$ -series and the same term having a different A-determination in a different  $A_{1b}$ -series, and so on, and presumably that is sufficient for real change; a single thing having a property and then losing it.

However, before we accept that gambit we must ask, what is the relation between each  $A_1$ -series? If the relation is *nontemporal*, so that each  $A_1$  series does not exist before or after the other in a temporal relation, then it is always true that each term of each  $A_1$ -series has all its A-determinations timelessly, and that is contradictory and destroys the fact of change. On the other hand, if the relation between the series of  $A_1$ -series is a B-relation so that the different  $A_1$ -series occur in *succession*, then the account is viciously circular. Given that B-relations are reducible to the A- plus C-series, if the series of  $A_1$ -series constitute a temporal series, then there must be an  $A_2$ -series superimposed on a  $C_2$ -series. In that case, however, the problem we originally faced still exists, only this time at the level of the  $A_2$ -series. Each term of the  $A_2$ -series has one and only one A-determination and so does not change, and without change, the relation uniting the series of  $A_1$ -series ( $A_{1a}$ ,  $A_{1b}$ ,  $A_{1c} \dots A_{1n}$ ) cannot be a B-relation. And if we introduce temporal becoming in the form of the NOW moving along a single  $A_2$ -series, then we have a contradiction. Clearly, the appeal to another series, namely, that composed of an A-series of  $A_2$ -series will neither remove the contradiction from the A-series nor give a direction to time and change.

Finally, if we treat temporal becoming as an  $A_2$ -series of  $A_1$ -series whose terms have different A-determinations at different *moments* of absolute time, then the A-theorist must face the following difficulty. The moments of time at which each different  $A_1$ -series exists must be occurring one after another in a B-series to avoid the contradiction of each of the terms in the  $A_2$ -series having incompatible A-determinations timelessly or simultaneously. However, if they are moments of time, then we need some account of the direction of those moments to account for the direction of change in the terms of the  $A_2$ -series. But then this account is viciously circular. To say that a term in the  $A_2$ -series has different and incompatible A-determinations at different times presupposes and does not establish that the times at which it has those properties occur in succession one after the other in a given direction. For times were introduced precisely to account for the succession and direction of A-change.

So McTaggart's point is that the A-series and the C-series are necessary and sufficient for the existence of B-time but that they are not sufficient for A-time or B-time, which is contradictory. For time requires change, and the A- and C-series cannot account for change without introducing some metaphysical correlate of temporal becoming. However, there is no consistent, noncircular way to give an A-theoretic interpretation of temporal becoming so that change is not contradictory. Since, for the A-theorist, B-time requires temporal becoming and temporal becoming is contradictory, it follows that there is no B-time, and without B-time there is no time at all.

With this background we are ready to turn to one recent defense of passage against McTaggart's attack, namely, Steven Savitt's in his recent article, "A Limited Defense of Passage."<sup>12</sup> Savitt gets off on the wrong foot immediately, since he assumes at the outset that for McTaggart B-relations are ontologically on a par with A-properties, both being equally real. Savitt claims that "all instantaneous events belong to equivalence classes determined by the binary relation 'is simultaneous with' and completely ordered by the binary relation 'is earlier than' (or by its converse 'is later than')."<sup>13</sup> Savitt clearly does assume the existence of temporal relations and assumes that McTaggart does so as well, since he interprets McTaggart to be claiming that there are A-properties "*in addition to the B-series and its unchanging relations.*"<sup>14</sup> This assumption misunderstands what is at issue with regard to the dispute between A- and B-theories of time, and it begs the question against McTaggart's claim that time is unreal. As I have indicated through a judicious selection of quotes, at the level of ontology, McTaggart clearly does not believe that there are B-relations in addition to the A- and C-series, and this is so even before his complete rejection of time. To see why the assumption that there are B-relations vitiates Savitt's arguments against McTaggart, let us turn to them.

The heart of McTaggart's argument rests on the premises that the past, present, and future are incompatible properties (or incompatible relations)

and that every event has all three of them. We can symbolize these two premises as follows:

(5)  $Pe \supset \sim Ne$ ;  $Ne \supset \sim Fe$ ;  $Fe \supset \sim Pe$ ; etc.,

(6)  $Pe \ \& \ Ne \ \& \ Fe$ .<sup>15</sup>

Savitt claims that the copula involved in these sentences is the ordinary tensed copula, and in that sense of the copula there is no reason for the A-theorist to accept (6). In other words, if the copula in (5) has the ordinary tensed sense, then (5) is true, but (6) is false, for

No A-theorist ever intended to assert that any event is (in the ordinary, tensed sense of the copula) currently present and past and future. No reason has been given to suppose that the A-theory is willy-nilly committed to holding that some event  $e$  is (again in the ordinary, tensed sense of the copula) future, present, and past. But if the A-theory is not committed to (6), . . . McTaggart's argument fails at its *first* step.<sup>16</sup>

The problem with this well-worn response to McTaggart is that it attacks the argument at the second step and overlooks the first step. Once the first step is taken, however, the second step that every event is (in the ordinary tensed sense of the copula) past, present, and future does follow.

The first step in McTaggart's argument for the unreality of time is that temporal relations are not ontologically primitive but grounded in the application of the A-series to the C-series. Once that step is taken, paradox is not far behind. Thus, although Savitt believes (6) is obviously false if we adopt the ordinary tensed sense of the copula, he is mistaken. Savitt also believes that (6), or what he refers to as (6'), is false if we construe the copula as tenseless, but here matters are more complicated.

Savitt claims that if the copula in the key premises of McTaggart's argument is tenseless, in the sense that "Seven BE prime" is a tenseless copula, there is no reason to suppose that A-theorists are committed to

(6')  $e \text{ BE past} \ \& \ e \text{ BE present} \ \text{and} \ e \text{ BE future}$ .<sup>17</sup>

I demur. There is reason to believe that the A-theorist is committed to the truth of (6') and given the truth of

(5')  $e \text{ BE past} \supset \sim (e \text{ BE present})$ ;  $e \text{ BE future} \supset \sim (e \text{ BE past})$ ; etc.<sup>18</sup>

in the same sense of the copula, a contradiction does indeed follow. Recall that if there is to be change, and change in a given direction, temporal pas-

sage must be added to the application of the A-series to the C-series. To avoid the contradiction of having passage added to a single  $A_1$ -series, we can postulate a series of  $A_1$ -series each of whose terms has one and only one A-determination. Admittedly, if what is added is a *series* of  $A_1$ -series, then *prima facie* we have change: a single thing that has a property and then loses it. However, if the relation between the series of  $A_1$ -series is a *nontemporal relation*, then the terms of each A-series exemplify their A-determinations timelessly. Thus, given the same tenseless copula in (5') and (6'), it does follow that every event is timelessly past, present, and future, and, since, given (5'), that is impossible, it follows that passage yields a bona fide contradiction.

Of course, the A-theorist can maintain that the relation between the series of  $A_1$ -series is a temporal relation. In "A Limited Defense of Passage," Savitt does not consider that option, but in his "Critical Notice of Paul Horwich's *Asymmetries in Time*,"<sup>19</sup> he does. There he basically agrees with Broad<sup>20</sup> that there are no problems with temporal passage, since events have different A-determinations *successively*, which in this context implies that the relation between the series of  $A_1$ -series is a B-relation. But then Savitt (and Broad) must face a dilemma: either there is no change or there is a vicious infinite regress. Given McTaggart's ontological assay of B-relations, the existence of a temporal relation between the series of  $A_1$ -series implies the existence of an  $A_2$ -series superimposed on a C-series. In that case, however, nothing changes, since none of the terms of the  $A_2$ -series (i.e., the series of  $A_1$ -series) has a property and then loses it. If we introduce change into the  $A_2$ -series by postulating the NOW tenselessly moving along each  $A_{1i}$ -series so that each term of the second  $A_2$ -series BE past, present, and future, then we have a contradiction unless we introduce a third series. However, to introduce a third A-series whose terms are the series of  $A_2$ -series does not avoid any of the problems of the previous level, since the fact of B-time and A-change is either left unaccounted for or is contradictory.

Savitt considers two other interpretations of the tenseless copula that he believes avoids the existence of any genuine contradiction. According to the first, the copula is tenseless, and time is introduced in an existentially quantified sense, or as I would rather put it, by time-indexing the predication of A-determinations. On this interpretation of the detensed copula, "*e* BE present' means (for example) there is a time at which *e* is present and '*e* BE past' means that there is a time when *e* is past."<sup>21</sup> If that is done then (6') is true, but (5') is false. For if the tenseless copula BE is read so that  $e \text{ BE } \phi \equiv e \text{ BE } \phi \text{ at } t$ , then (6') can be true since there is no incompatibility in *e* tenselessly BEING past, present, and future, since *e* has those A-determinations *at different times*. Given that interpretation of the copula, Savitt maintains the inferences in (5') no longer obtain. For example, if *e* BE past at  $t_1$  is true, it does not follow that it is not true that *e* BE present at  $t_2$ ; and if *e* BE future

at  $t_1$  is true, it does not follow that it is not true that  $e$  BE past at  $t_3$ ; etc. As Savitt puts it,

The point of this argument is that, for those tenseless senses of "BE" in which the A-theory is committed to (6'), it is no longer clear that the A-theory entails

(5')  $e$  BE past  $\supset \sim (e$  BE present);  $e$  BE future  $\supset \sim (e$  BE future); etc. where "BE" is the same tenseless copula used in (6').<sup>22</sup>

His thesis is that "If any such copula is detensed enough that (6') can be made plausible, . . . (5') will not be plausible."<sup>23</sup>

Admittedly, given the introduction of times (understood as equivalence classes determined by the relation of simultaneity), there is no contradiction in (6'), because then A-determinations are temporally qualified. But the problem with this way out is that the appeal to " $t$ " is gratuitous and unwarranted. In order for this tenseless interpretation of the copula in (6') to be true, " $t_1$ " and " $t_2$ " must refer to different *times*, that is, different members of a temporal sequence, and according to McTaggart, this cannot be done unless the "times" are members of a C-series and have one and only one A-determination. However, if the terms of the A- plus C-series have only one A-determination, then there is no change, no B-relations, and no A-time or temporal passage. In other words, the introduction of time to render (6') plausible just gets us back to the original problem that we began with before we introduced time: An A-series without passage cannot ground a temporal B-series, and an A-series with temporal becoming, in this case in the form of "moments" at which events have A-determinations, cannot ground a temporal B-series because it is contradictory.

Savitt suggests a second interpretation of the tenseless copula so that (6') is true, but (5') turns out to be false. Instead of introducing time in the form of moments, relational or otherwise, he exploits a gambit originally put forth by Sellars and introduces time in the form of tense.<sup>24</sup> If we adopt the Sellarsian interpretation of the tenseless copula, we get:

(17)  $e$  BE  $\phi \equiv e$  is  $\phi$  or  $e$  was  $\phi$  or  $e$  will be  $\phi$ .<sup>25</sup>

In this sense, (6') is true, but the analogue of (5') clearly fails, and no contradiction has been restored. One can agree that the appeal to the ordinary tensed copula to explain how different A-determinations can be exemplified by the same event/moment/thing provides a *linguistic* resolution to an apparent contradiction, but it can hardly defend the A-theoretic *ontology* against McTaggart's critique of passage.

Savitt states at the outset "it does seem as if there is a deep *metaphysical* difference between the [passage and nonpassage] views, however difficult it is to distill, and the following discussion will proceed on the assumption that *there is such a difference*."<sup>26</sup> Given that assumption some account of what the tenses stand for or represent is absolutely necessary if Sellars's explication of the the tenseless copula is to be metaphysically enlightening. To shirk the responsibility of giving such an account is to contradict the assumption that there is a metaphysical difference between the passage and nonpassage views. On the other hand, to give an account of the ontological significance of the past, present, and future tenses within an A-theoretical framework has proven to be elusive, if not downright impossible (contradictory). For if McTaggart's positive A-view of time is correct, and B-relations are ontologically reducible to A-determinations and the C-series, then the introduction of ordinary tensed copulas, as in the definiens of (17), cannot account for B-time or A-change, since their introduction leads to a vicious infinite regress. As McTaggart puts it:

The attribution of the characteristics past, present, and future to the terms of any series leads to a contradiction unless it is specified that they have them *successively*. This means, as we have seen, that they have them in relation to terms specified as past, present and future. These again to avoid a like contradiction must in turn be specified as past, present and future. And, since this continues infinitely, the first set of terms never escapes from contradiction at all.<sup>27</sup>

In short, the attempt to analyze B-relations in terms of A-determinations is fruitless because the existence of A-determinations *and* the fact of change, that is, temporal becoming or passage, are contradictory unless one reintroduces the B-relations that one is attempting to analyze. To do so, however, gives rise to a regress in which the contradiction involved in the existence of A-determinations and passage is never removed.

Savitt maintains that "[o]ne need not become embroiled in the dialectical complexities surrounding this regress if one denies that there is a genuine contradiction at the first or basic level."<sup>28</sup> We have seen, however, that the first or basic level of McTaggart's argument is not the claim that every event is (either timelessly or simultaneously) past, present, and future, as he and so many other critics of McTaggart maintain. Rather, the first level of McTaggart's negative attack on passage is his positive A-theoretic ontology of time as involving only A-determinations and not B-relations. Given that basic gambit, the unreality of time (or passage) follows. I conclude that McTaggart is not guilty of equivocating on different meanings of the copula in the crucial premises and that Savitt's defense of passage, like others of its ilk, is unsuccessful.

I shall conclude by mentioning a subsidiary benefit of my interpretation of McTaggart and his argument for the unreality of time. By recounting the difference between the view Savitt defends and the one McTaggart attacks, we can make substantial headway in delineating the deep metaphysical difference between the A-passage and B-nonpassage theories of time.<sup>29</sup> On the pure A-theory, there are no B-relations. Statements asserting that one event is temporally related to another are commonsensically believed to be true, and in some sense they certainly are, and must be, if time is real, but the ontological ground of those statements does not involve a temporal *relation* between items *both* of which exist. On the pure A-theory, the ground of B-relations must be in present-tense facts.<sup>30</sup> On the hybrid A/B passage theory, there are B-relations but there is, and there must be, something more if time is real. What more has been debated by hybrid A/B theorists. The something more may be A-properties, or A-relations, or tenseless facts that are actual as of a time. There are several such gambits, but what they all have in common is the view that in one way or other, there is something more to time than B-relations, namely, "temporal passage," however that vague term is to be understood. For the nonpassage or B-theorist the ontological inventory is simpler and more parsimonious. There are only temporal relations, and whether they are primitive or analyzable in terms of causal relations, they are the only intrinsically temporal entities that exist. There are no A-determinations, there are no A-relations, and there is no temporal becoming or passage, however those notions are to be understood by a pure or hybrid A-theorist. Unless the A-theorist can make sense of temporal passage in a sense that goes beyond simply attributing A-determinations to events (since that does not yet give change in the sense A-theorists require it), the supposition that there are A-determinations is otiose, and rational belief in A-time cannot be sustained.

## NOTES

1. John M. E. McTaggart, "Time," in *The Nature of Existence*, vol. 2, ed. C. D. Broad (Cambridge: Cambridge University Press, 1927; repr., Grosse Pointe, MI: Scholarly Press, 1968), pp. 9–31. All page references will be to the 1968 edition. John M. E. McTaggart, "The Unreality of Time," *Mind* 18 (1908): 457–74, repr. in *Philosophical Studies*, ed. S. J. Keeling (London: Edward & Arnold, 1934), pp. 110–34. All page references will be to *Philosophical Studies*.

2. See, for example, Quentin Smith, *Language and Time* (New York: Oxford University Press, 1993); William Lane Craig, *The Tensed Theory of Time: A Critical Examination* (Dordrecht: Kluwer Academic, 2000); Craig, *The Tenseless Theory of Time: A Critical Examination* (Dordrecht: Kluwer Academic, 2000); and Michael Tooley, *Time, Tense, and Causation* (Oxford: Clarendon Press, 1997).



3. See, for example, Robin Le Poidevin, *Time, Cause and Contradiction: A Defense of the Tenseless Theory of Time* (Basingstoke, UK: Macmillan, 1991); Hugh Mellor, *Real Time II* (London: Routledge, 1998); and L. Nathan Oaklander, *Temporal Relations and Temporal Becoming: A Defense of a Russellian Theory of Time* (Lanham, MD: University Press of America, 1984).

4. McTaggart offered the following definition of "earlier than": "The term *P* is earlier than the time *Q*, if it is ever past while *Q* is present, or present while *Q* is future" ("Time," p. 271).

5. McTaggart, "Unreality of Time," p. 118, my emphasis.

6. Ibid.

7. Ibid.

8. Ibid.

9. McTaggart, "Time," p. 20, my emphasis.

10. McTaggart, "Unreality of Time," p. 123, my emphasis.

11. Ibid., pp. 117–18.

12. Steven F. Savitt, "A Limited Defense of Passage," *American Philosophical Quarterly* 38, no. 3 (July 2001): 261–70.

13. Ibid., p. 261.

14. Ibid., my emphasis.

15. Ibid., pp. 262–63.

16. Ibid., p. 263. This standard response is also made by Smith, *Language and Time*, p. 174; Craig, *Tenseless Theory of Time*, pp. 203–205; and C. D. Broad, *Examination of McTaggart's Philosophy*, vol. 2 (Cambridge: Cambridge University Press, 1938; repr., New York: Octagon Books, 1976), p. 313; and virtually every other A-theorist who discusses McTaggart's Paradox.

17. Savitt, "Limited Defense of Passage," p. 264.

18. Ibid., p. 262.

19. Steven F. Savitt, "Critical Notice of Paul Horwich's *Asymmetries in Time*," *Canadian Journal of Philosophy* 21, no. 3 (September 1991): 399–417.

20. Broad, *McTaggart's Philosophy*, p. 313.

21. Savitt, "Limited Defense of Passage," p. 264.

22. Ibid., p. 266.

23. Ibid.

24. Wilfred Sellars, "Time and the World Order," in *Minnesota Studies in the Philosophy of Science*, vol. 3, ed. Herbert Feigl and Grover Maxwell (Minneapolis: University of Minnesota Press, 1962), pp. 527–616.

25. Savitt, "Limited Defense of Passage," p. 265.

26. Ibid., p. 261, my emphasis.

27. McTaggart, "Unreality of Time," p. 22, my emphasis.

28. Savitt, "Limited Defense of Passage," p. 266.

29. That there is a difference has recently been questioned by Clifford Williams in "The Metaphysics of A- and B-Time," *Philosophical Quarterly* 46 (1996): 371–81. For two responses to Williams's article, see essay 2 and Josh Parsons, "A-Theory for B-Theorists," *Philosophical Quarterly* 52, no. 206 (2002): 1–20.

30. In essays 7 and 8, I argue that presentism fails because it cannot give an adequate ontological assay of temporal relations in terms of present-tense facts.

## *Part 2*

# *A Critique of A-Theories of Time*



## A. Presentism



## *A Note on Chisholm on Tense*

**R**oderick Chisholm has claimed that the philosophical arguments designed to show that “tense is illusory” are “very easy to refute, and . . . not worthy of . . . consideration.”<sup>1</sup> In this note I would like to show that (1) given Chisholm’s view on temporal relations in *The First Person*, there is an argument against tense that is by no means easy to refute and that (2) if Chisholm modifies his analysis of temporal relations so as to avoid the objection to tense, then we will be better able to understand one motivation behind those who claim that tense (*not* time) is unreal.

According to Chisholm, if we take tense seriously, then tensed sentences such as “Socrates is now sitting” and “The apple was green” express or refer to states of affairs that may obtain, *then* cease to obtain, *and then* obtain again. In addition to recurring tensed states of affairs, Chisholm’s ontology of time includes temporal relations. Chisholm characterizes the relations *later than* as follows:

For example, the past-tensed “*p* obtained later than *q* did” would be “*p* was such that it obtains, *q* does not obtain, and *q* did obtain.”<sup>2</sup>

Is Chisholm’s view of temporal relations expressed in this passage compatible with his tensed theory of time? I think not, and I shall attempt to explain why.

Given that tensed states of affairs may recur, it may be true that:

(A) “Socrates is sitting obtained later than Socrates is sitting.”

But given Chisholm’s views on temporal relations, (A) becomes:

(B) "Socrates is sitting was such that: (i) it obtains, (ii) Socrates is sitting does not obtain, and (iii) Socrates is sitting did obtain."

Since (i) and (ii) are incompatible, the state of affairs expressed by (B) is impossible and therefore (A) is impossible, too. Consequently, given Chisholm's characterization of the relations of *earlier* and *later*, tensed states of affairs cannot recur, and tense is unreal.

The way out of this argument is to give a different analysis of temporal relations, and in a recent letter Chisholm did just that:

I had written in *The First Person* (p. 128): "For example, the past-tensed '*p* obtained later than *q* did' would be '*p* was such that it obtains, *q* does not obtain, and *q* did obtain'." I was thinking of *later* as being asymmetric and nonreflexive, so that nothing could be said to be later than itself. But if a state of affairs obtains, then ceases to obtain, and then obtains again, then, I suppose, it *does* obtain later than itself. (Since I arrived in the seminar room yesterday and also arrived there the day before yesterday, did I arrive there later than I arrived there? I suppose so. In any case, I arrived there *after* I arrived there.) What if we analyze "*p* obtained later than *q* did" this way: *p* was such that: it obtains after *q* obtains?<sup>3</sup>

Chisholm's revised analysis of *later* takes both tense and temporal relations seriously, but Russellians might claim that it does not take temporal relations seriously enough. Let me explain.

In the above letter, Chisholm claims that when he gave this analysis of "*p* obtained later than *q*" in *The First Person*, he was "thinking of *later* as being asymmetric and nonreflexive, so that nothing could be said to be later than itself."<sup>4</sup> Many philosophers and nonphilosophers alike would say that Chisholm's earlier thinking about *later* was not whimsical or based on any momentary loss of good sense but rather that Chisholm's thought struck at the essence of time. In other words, Russellians would claim that if one is really going to take temporal relations seriously, then one must provide an account of them that preserves their being asymmetrical and nonreflexive. Unfortunately, Chisholm's new analysis of "*p* obtained later than *q*" does not do this, since "*p*" and "*q*" may stand for the same state of affairs, say, *Socrates is sitting* and that state of affairs was such that it obtains after it obtains. Thus, Chisholm gives up his initial thought that *later* is asymmetric in order to preserve the reality of tense. For the Russellians, however, giving up the logical properties of temporal relations is too big a price to pay for tense, and rather than pay it they deny that there are recurring tensed states of affairs.

We see, then, that one motive for claiming that tense is unreal stems from the desire to preserve the logical properties of temporal relations. Of course, to offer a motive for a view is not to give a justification of it. Yet it has

been argued by Russell and others that if the time-series is to be constituted, succession must be an asymmetrical transitive relation.<sup>5</sup> To pursue Russell's claim would, however, take us far beyond the scope of this note.

## NOTES

1. Roderick M. Chisholm, *The First Person* (Minneapolis: University of Minnesota Press, 1981), p. 125.

2. *Ibid.*, p. 128.

3. *Ibid.*; the second quote is from Roderick M. Chisholm, personal correspondence, August 1981.

4. *Ibid.*

5. Compare Bertrand Russell, "On the Experience of Time," *Monist* 25 (1915): 212-33, and "Is Position in Time and Space Absolute or Relative?" *Mind* 10 (July 1901): 293-317.





## *Bigelow, Possible Worlds, and the Passage of Time*

In his celebrated argument, McTaggart claimed that time is unreal because it involves temporal passage—the movement of the NOW along a series of moments and events—and temporal passage is contradictory.<sup>1</sup> Detensers such as Robin Le Poidevin, Hugh Mellor, and myself find McTaggart's argument against temporal passage convincing, but they reject his conclusion that time is unreal.<sup>2</sup> According to these philosophers, an ontology that recognizes temporal or B-relations (i.e., *earlier than*, *later than*, and *simultaneity*) is sufficient to account for the reality that underlies our vague talk of the passage of time. Tensers such as J. R. Lucas, George Schlesinger, and Quentin Smith believe that the tenseless view leaves out what is essential to our experience and the reality of time.<sup>3</sup>

In a recent essay, John Bigelow attempts to defend the tensed theory of time by arguing that McTaggart's paradox can be avoided without resorting to what he considers the barren solution of eliminating A-characteristics (i.e., *pastness*, *presentness*, and *futurity*) in favor of B-relations.<sup>4</sup> McTaggart's problem is that there is an apparent inconsistency in attributing to an event the incompatible properties of past, present, and future. The inconsistency is removed by relativizing the tensed properties to times: *e* is present at *t*, past at *t'*, and so on, but only at the cost of making the truth conditions of tensed utterances tenseless and hence denying the passage of time. Bigelow proposes to deal with McTaggart's contradiction by relativizing tensed properties not to times but to possible worlds. By appealing to possible worlds, he also hopes to demonstrate that B-relations can be derived from A-properties and temporal passage rather than the other way around. This latter point is repeatedly emphasized, as a few passages make plain:

[W]hat, we may ask, makes the earlier/later relation a distinctively temporal ordering? It is precisely the passage of time which is required to make the earlier/later relation a temporal one. In other words, in order for the earlier/later relation to be a temporal relation it must be defined in such a way as to ensure that *when* what is earlier is present then what is later is still future, and *when* what is later is present then what is earlier will be past—that is, the earlier/later relation is a temporal one only if it concerns something which *passes* . . . [T]his entails that earlier and later must be analyzed in terms of the passage of time, not the other way around. And therefore, the passage of time, in turn must be analyzed and shown to be consistent, without presupposing the ordering of events under the relation of earlier to later.<sup>5</sup>

I shall argue that Bigelow's attempt to define the earlier/later relation in terms of the notions of past, present, and future is unsuccessful. We can begin to see that this is so by noting that in Bigelow's analysis the italicized word "when" indicates the *time* at which what is earlier is present and what is later is *still* future. Of course, more needs to be said, and in what follows I shall demonstrate that Bigelow's appeal to possible worlds to explicate the passage of time either presupposes primitive temporal relations or falls prey to McTaggart's paradox.

Bigelow claims that in order to consistently explain temporal passage,

There will be a series of worlds, each containing the same things, and differing only in which of those things are past, which are present, and which are future. . . . These worlds may be represented by sequences like the following:

**abc**defghij**K***lmnopqrstuvw*xyz  
**abc**defghij**k***Lmnopqrstuvw*xyz  
**abc**defghij**kl***Mnopqrstuvw*xyz<sup>6</sup>

where the boldface type represents those events with the property of pastness, the capital letters represents those events with the property of presentness, and those with italics represent those events that possess the property of futurity.

Given these worlds, Bigelow maintains that we can define the earlier/later relation by using the properties of pastness, presentness, and futurity. The first step in his analysis is to define "currently" earlier than "a thing *a* in a world *w* is 'currently' earlier than another thing, *b*, just when either *a* is past and *b* is present or future in *w*, or else *a* is present and *b* is future in *w*."<sup>7</sup> He then goes on to define a general earlier/later relation: "In any world *w*, a thing *a* is earlier than a thing *b* just when *a* is currently earlier than *b*, either in *w* itself, or else in some world in *w*'s past or future."<sup>8</sup>

Why does Bigelow first define "currently earlier/than"? Perhaps he realized that he needs to specify one world as actual or current and then define the earlier/later relation in that world. For if all worlds are actual, then paradox is unavoidable. To see why, let us turn to Bigelow's account of the passage of time.

Bigelow attempts to explain the passage of time, that is, the idea that *What is present will be past and was future*. On his analysis, what is present, say, event  $a$ , has the property of presentness in world  $w$ ; has the property of pastness in a world  $x$  in  $w$ 's future; and has the property of futurity in a world  $v$ , in  $w$ 's past. If, however, all worlds are current or actual, then his analysis of temporal becoming is contradictory: what is present, event  $a$ , is also future and past, what is past is also present and future, what is future is also present and past.

Thus, only one world can be actual (current). However, if only one world is actual, then, given Bigelow's possible worlds interpretation of tenses, there is no tensed time and change. To clarify these points, consider the following passage:

if there is to be time of any sort at all in a world  $w$ , then certain conditions must be met. I will assume, for instance that if a thing  $a$  is present in world  $w$ , then *there is* a world in  $w$ 's past for which  $a$  is future, and *there is* a world in  $w$ 's future for which  $a$  is past.<sup>9</sup>

There are two crucial questions that must be asked concerning Bigelow's account of the tenses: (1) Is "there is" in the above passage tensed or tenseless? and (2) Are the worlds in  $w$ 's past and future possible or actual?

Taking the second question first, it seems that each of the worlds in  $w$ 's past and future must be actual. For if they are just possible, then there is no passage because the selfsame event does not actually change its temporal properties. Compare an apple that is green at  $t_1$  in the actual world and red at  $t_2$  in a possible world. The existence of these worlds does not constitute change in the apple unless the possible world becomes actual later than the "currently" actual world. Yet, as shall be argued shortly, the view that possible worlds become actual can hardly suffice to render change intelligible or avoid McTaggart's paradox. Thus, the existence of a series of possible worlds can account for change only if each possible world is actual. However, as we have seen, if each world is actual (current), we arrive at McTaggart's contradiction that every event is (currently) past, present, and future.

It is not open to Bigelow to avoid the contradiction by maintaining that different worlds are actual at different B-series times, or in succession, since he insists that temporal passage must explicate temporal relations and not the other way around.

Thus, Bigelow is faced, in terms of possible worlds, with precisely that dilemma McTaggart posed for the defender of tense: if all worlds are actual, then a contradiction results, and if only one world is actual, then there is no tensed time and change.

Turning to the first question: When Bigelow says "there is a world in  $w$ 's past for which  $a$  is future," is the "is" tenseless or tensed? If actual worlds exist tenselessly, then there is a world  $u$ , for which  $a$  is present and  $e$  is future and a world  $v$  in  $u$ 's future where  $a$  is past and  $e$  is present. If both worlds simply are (tenselessly) actual, then there is no world picked out as NOW. No world or moment is privileged, alive, or exists with a capital E, and this implies a contradiction, since  $a$  and  $e$  (and all other events) have incompatible A-characteristics tenselessly. The situation is not improved if "there is" (tenselessly) only one actual world, for then there is no tensed change, since events always (tenselessly) have the A-characteristics they ever have.

Suppose, then, that "there is" is construed as tensed. In that case, either all possible worlds are actual NOW or only one world is actual NOW. Clearly, if all worlds are now actual, then all events are simultaneously past, present, and future, and that is absurd. If there is (NOW) one actual world, then in order to account for the passage of time, each possible world would have to become NOW or actual at some B-series time or at some A-series time. In the first instance, Bigelow's attempt to define the earlier/later relation in terms of temporal passage rather than the other way around would fail. On the other hand, if in order to account for temporal passage, possible worlds themselves must undergo temporal becoming, then a meta-series of possible worlds (a series of possible worlds each term containing a series of possible worlds) must exist. In this series, possible worlds such as  $v$ ,  $w$ , and  $x$  can change from being possible (future) to actual (NOW) to possible (past). Unfortunately, even if this larger A-series is intelligible (and I doubt it), McTaggart's difficulties would recur, that is, either all terms in this new series are actual or current and contradiction ensues, or only one world is actual and there is no A-change.

I conclude, therefore, that Bigelow's possible worlds gambit does not elude the paradox that McTaggart claimed to uncover in temporal passage.

## NOTES

1. John M. E. McTaggart, "The Unreality of Time," *Mind* 18 (1908): 457-74, "Time," *The Nature of Existence*, vol. 2, ed. C. D. Broad (Cambridge: Cambridge University Press, 1927), pp. 9-31.

2. Robin Le Poidevin, *Change, Cause and Contradiction: A Defense of the Tenseless Theory of Time* (Basingstoke, UK: Macmillan, 1991); Hugh Mellor, *Real Time* (Cam-

bridge: Cambridge University Press, 1981); L. Nathan Oaklander, *Temporal Relations and Temporal Becoming: A Defense of a Russellian Theory of Time* (Lanham, MD: University Press of America, 1984); L. Nathan Oaklander, "McTaggart's Paradox and the Infinite Regress of Temporal Attributions: A Reply to Smith," *Southern Journal of Philosophy* 25 (1987): 425–31, repr. in *The New Theory of Time*, ed. L. Nathan Oaklander and Quentin Smith (London: Yale University Press, 1994), pp. 195–201.

3. J. R. Lucas, *The Future: An Essay in God, Temporality, and Truth* (New York: Blackwell, 1989); George Schlesinger, "The Stream of Time," in *Timely Topics* (Basingstoke, UK: MacMillan, 1994), repr. in *New Theory of Time*, pp. 257–85; Quentin Smith, *Language and Time* (Oxford: Oxford University Press, 1993).

4. John Bigelow, "Worlds Enough for Time," *Noûs* 45 (1991): 1–20.

5. *Ibid.*, pp. 3, 4–5; some emphasis added.

6. *Ibid.*, pp. 11, 14.

7. *Ibid.*, p. 12.

8. *Ibid.*

9. *Ibid.*, p. 13.



## *Craig on McTaggart's Paradox and the Problem of Temporary Intrinsics*

In his recent paper, William Lane Craig purports to establish the following four theses: (1) McTaggart's paradox is a peculiar instance of the Problem of Temporary Intrinsics, that is, the problem of change.<sup>1</sup> (2) If one adopts a hybrid A/B-theory that countenances both B-relations and non-relational A-properties, then McTaggart's paradox is unavoidable. (3) On the other hand, if one adopts a pure A-theory of time, that is, the ontology of presentism, then the problem of temporary intrinsics and McTaggart's paradox are adroitly dissolved. He concludes, therefore, that (4) "the debate over McTaggart's paradox needs to be re-focused on the tenability of the metaphysic of presentism."<sup>2</sup> Although I will have something to say about each of Craig's theses, I shall concentrate on the third and argue that Craig's presentist ontology does not avoid the problems for which it was introduced. First, some preliminaries.<sup>3</sup>

The problem of *ordinary* change may be stated succinctly as follows: How can one and the same *thing* have incompatible intrinsic (that is, non-relational) nontemporal properties, such as *being straight* and *being bent*? The problem of *temporal* change (or temporal becoming) may be stated analogously: How can one and the same *event* have incompatible intrinsic temporal properties, such as *being future*, *being present*, and *being past*? Although both questions are instances of the general problem—how can one and the same *entity* have incompatible properties?—there is an important connection between them that their similarity masks, namely, temporal change is claimed by (some) tenses to explain ordinary change. Thus, for (some) tenses, a persisting *thing* O changing from straight to bent is explained by claiming that the *events*, O's being straight and O's being bent, each change from being future to being present to being past.

According to McTaggart, however, this explanation of ordinary change



(or temporary intrinsics) involves a vicious circle, since precisely the same incompatible properties problem that arose with regard to *things* changing their nontemporal properties rears its head with regard to *events* changing their temporal properties. And clearly, the vicious circularity will only turn into a vicious infinite regress if we introduce *absolute moments*, which remain the same through a temporal change of A-properties.

Although Craig does not present McTaggart's paradox in the way I do, I doubt he would disagree with it, since he readily admits that if *pastness* and *futurity* are nonrelational properties, then tensors are in "deep trouble."<sup>4</sup> On the other hand, according to Craig, presentism or a pure A-theory easily avoids both the problem of temporary intrinsics and McTaggart's paradox. What, then, is the presentist solution to the problem of change? According to presentism, only the present exists. Thus, it is not the case that, say, *O* is bent and *O* is straight. Rather, as Craig puts it, *O was* bent at *t*, and *O is* straight at *t\**. Of course, whether this gambit avoids tenseless facts or is anything more than a verbal solution to a metaphysical problem depends on how Craig interprets time and tense. Before turning to those issues, however, consider his response to the problem of temporal change and McTaggart's paradox:

Applying this [the presentist] solution to the case of McTaggart's Paradox, we realize that the A-theorist cannot understand grammatical ascriptions of pastness and futurity to events in terms of the literal inherence of properties of pastness and futurity in events. For on a presentist ontology such items do not exist and so possess no properties. Such ascriptions must be parsed as asserting that the item in question *was* or *will be* F. Only ascriptions of presentness may be taken literally as the possession of an A-determination by some temporal item. The presentist thus adroitly avoids McTaggart's paradox because the only intrinsic tensed properties there are are present-tensed and therefore compatible.<sup>5</sup>

The question I want to consider is simply this: If only ascriptions of presentness may be taken literally as the possession of an A-determination by some temporal item, then how are we to interpret ascriptions "asserting that the item in question *was* or *will be* F"? In other words, what do the tenses "was" and "will be" represent?

The same question arises in Craig's response to David Lewis's criticism that on a presentist ontology persons have no past or future, for he says that "[B]ut surely on presentism I have a past in the sense that I existed at and lived through times which *once were present*, and I have a future in that I shall exist and live through times which *will be present*."<sup>6</sup> However, Craig's reply cannot possibly stand on its own without an account of the ontological correlates of "once were [i.e., was] present" and "will be present," since if one countenances A-properties at all, such phrases imply the full range of A-

properties and not only presentness but pastness and futurity as well. What, then, is the Craig's metaphysics of presentism?

Craig is rather ambiguous on this point. He claims that McTaggart's paradox constitutes a refutation of hybrid A/B theorists, which couples a B-theoretic ontology with objective nonrelational A-properties, "whereas it is in fact ineffectual against pure A-theorists like Broad, Prior, Christensen, Levison, and others," but his account differs from Prior and others in several crucial respects.<sup>7</sup>

For example, Prior, Levison, and Christensen reject an ontology that includes events; they reject the property of presentness that events acquire and shed; and most importantly, they reject the notion that there is a genuine change that an event, or anything else, undergoes as it becomes present and recedes into the past. There are only individual things and the present-tensed facts that such individuals or substances enter into. As Prior puts it,

What I am suggesting is that what looks like talk about events is really at bottom talk about things, and that what looks like talk about changes in events is really just slightly more complicated talk about changes in things. . . . The flow of time, we would then say, is merely metaphorical, not only because what is meant by it isn't a genuine movement, but further because what is meant by it *isn't a genuine change*.<sup>8</sup>

For Prior, McTaggart's paradox does not arise because temporal becoming is not a species of change at all, and that is so because the subject of such changes (events or moments of time) and the monadic temporal A-properties that such events are supposed to acquire and shed do not exist. Since Craig countenances events or moments and the tensed property of presentness, Craig is not a pure A-theorist in the sense in which Prior and his followers are. Thus we must ask, once again, what then is Craig's account of presentism? Unless we are told, we cannot tell. Unfortunately, in the main body of his text Craig does not say, but in a footnote he does.

Craig's own explication of presentism begins with an appeal to the serious actualist's conception of possible worlds as states of affairs that exist as abstract objects but that are not instantiated. He then claims that

we can characterize presentism by allowing *tensed states of affairs to be constituents of possible worlds*. A tensed possible world is then a maximal possible state of affairs at some time *t*. Tensed possible worlds which did, do or will obtain are tensed actual worlds. The tensed actual world at *t* will be the tensed actual world which obtains when *t's being present obtains*, or when *t* is present. . . . The tensed actual world *v* is the maximal state of affairs that obtains (present tense). Were some other tensed possible world actual, then *v* would not obtain, but *it would still exist as a tensed possible state of affairs*.<sup>9</sup>

The appeal to tensed possible worlds that *did*, *do*, or *will* obtain can hardly provide a metaphysical explanation of what the tenses stand for in propositions reflecting ordinary and temporal change. Furthermore, the appeal to tensed possible worlds that *change from existing to obtaining* as they become present, that is, as presentness moves along the series of possible worlds, reintroduces the myth of passage that Craig found problematic. For his presentist ontology seems to entail a series of tensed possible worlds each *existing* (tenselessly) at the time they do, composed of the states of affairs they have, and changing with respect to actuality. How, then, can one and the same possible world (which exists whether or not it is present) have the incompatible properties of not obtaining and obtaining or of not being actual and being actual?

If Craig replies that there is really no issue or contradiction to begin with, since "It *will* be the case that a possible world *v* obtains" or "It *was* the case that a possible world *v* obtains," but it *is* never the case that *v* both obtains and does not obtain, then he is arguing in a *vicious circle*, since the appeal to possible worlds was introduced to explicate the past and future tenses.

The problem with Craig's version of presentism can be stated in the form of a *vicious infinite regress*. Craig asserts that "A tensed actual world at *t*, is the world which obtains when *t*'s *being present obtains*,"<sup>10</sup> but *when* does *t*'s being present obtain? Judging from his comments, it appears that *t*'s being present obtains *before* *t*'\*s being present obtains (for any later *t*\*), since Craig maintains that "[t]he tensed history of any possible world *W* will be all the tensed possible worlds constituted by the states of affairs entailed by *W* and each successive *t*'s being present in *W*."<sup>11</sup>

Thus, to explain *when* possible worlds obtain he appeals to succession, but since the appeal to succession implies the reality of B-relations, Craig's presentist ontology is not a pure A-theory but a hybrid A/B theory that is, by his own lights, susceptible to McTaggart's paradox. In other words, the appeal to succession posits possible worlds existing at different times in a B-series and as presentness moves along each possible world takes its place in the spotlight of actuality and then falls out of it. This is the moving present theory of time that the metaphysic of presentism sought to avoid. I conclude, therefore, that if, as Craig says, "hybrid A-B theorists, like McCall, Schlesinger, and Smith are, it seems, in deep trouble,"<sup>12</sup> then the same may be said of Craig's version of presentism as well.

## NOTES

1. William Lane Craig, "McTaggart's Paradox and the Problem of Temporary Intrinsic," *Analysis* 58 (1998): 122–27. Craig claims that that the connection between

McTaggart's paradox and the problem of identity and change "has gone unnoticed in the philosophical literature," but he is mistaken, since I raised it in *Temporal Relations and Temporal Becoming: A Defense of a Russellian Theory of Time* (Lanham, MD: University Press of America, 1984). Indeed, my extensive critique of numerous versions of the A-theory, including Prior's version of presentism, was based on the thesis that they all failed to avoid McTaggart's paradox, since in one form or another they all gave rise to the problem of change.

2. Craig, "McTaggart's Paradox and Temporary Intrinsics," p. 126.

3. For readers of essay 1, the following four paragraphs may be skipped.

4. Ibid., p. 126.

5. Ibid., pp. 125–26, my emphasis.

6. Ibid., p. 127, my emphasis; p. 126.

7. I should add that Craig's argument against the hybrid A/B theory does not consider Quentin Smith's theory, since it fails to consider Smith's view that the infinite regress of tensed predication does not involve an appeal to moments (but rather to tensed exemplifications) and is not vicious (Smith, "McTaggart's Paradox and the Infinite Regress of Temporal Attributions," in *The New Theory of Time*, ed. L. Nathan Oaklander and Quentin Smith (London: Yale University Press, 1994), pp. 195–201). Moreover, and contrary to what Craig says, Smith would claim that a version of the second solution can resolve McTaggart's paradox, since a momentary event can have temporal properties at times at which it does not exist. For an extended critique of Smith's response to McTaggart, see L. Nathan Oaklander, "McTaggart's Paradox and Smith's Tensed Theory of Time," *Synthese* 107 (1996): 205–21.

8. Arthur N. Prior, "Changes in Events and Changes in Things," *Time and Tense* (Oxford: Clarendon Press, 1968), pp. 10–11, my emphasis.

9. Craig, "McTaggart and Temporary Intrinsics," p. 126.

10. Ibid., p. 126.

11. Ibid., my emphasis.

12. Ibid., p. 127.



## *Presentism, Ontology, and Temporal Experience*

In a recent article, "Tensed Time and Our Differential Experience of the Past and Future," William Lane Craig attempts to resuscitate A. N. Prior's "Thank Goodness" argument against the B-theory by combining it with Plantinga's views about basic beliefs.<sup>1</sup> In essence Craig's view is that since there is a universal experience and belief in the objectivity of tense and the reality of becoming (that he identifies with "the presentist metaphysic"), "this belief constitutes an intrinsic defeater-defeater which overwhelms the objections brought against it."<sup>2</sup> An intrinsic defeater-defeater is a belief that enjoys such warrant for us that it simply overwhelms the defeaters brought against it without specifically rebutting or undercutting them. Thus, Craig claims that an effete philosophical argument like McTaggart's paradox is nothing more than "an engaging and recalcitrant brain teaser whose conclusion nobody really takes seriously."<sup>3</sup> It is difficult to reconcile this statement with Craig's own writings elsewhere. For Craig has vigorously argued in at least two other articles that "hybrid A-B theorists like McCall, Schlesinger, and Smith [who give ontological status to both A-properties and B-relations] are in deep trouble,"<sup>4</sup> since they are all effectively refuted by McTaggart's paradox. It is not Craig's inconsistency regarding the significance of McTaggart's conundrum that I want to draw attention to, however. Rather, I wish to raise a different issue.

Presentists such as Prior and Craig (and A-theorists generally) maintain that one motivation, and for some the primary motivation, for adopting presentism is "the desire to do justice to the feeling that what's in the past is over and done with, and that what's in the future only matters because it will *eventually* be present."<sup>5</sup> As Craig puts it, "[O]nly on the A-theory; with its ontological distinctions between past, present, and future can differential attitudes toward events . . . be rationally justified."<sup>6</sup> He claims that one is ration-

ally justified in feeling relief concerning the cessation of a painful experience because "on a presentist metaphysic the experience was *once* real and now no longer is. . . . (Analogously, dread about some future painful event is appropriate because, although not yet real, it soon will be, . . .)." <sup>7</sup>

In these passages the phrases "*eventually* will be present," "once real," and "it soon will be" seem to imply the existence of temporal relations. For "once" in this context means "at some *earlier* time," "soon" means "at a relatively short time *later*," and "eventually" means "at a relatively distant *later* time." Thus, to explain our differing attitudes of dread and relief it would appear that in addition to the existence of the present time (and present experiences), earlier and later times (and earlier and later experiences) must be real, too. As Craig himself says, "When I feel relief, what I am relieved about can be analysed as a *complex fact* that it is now and that the relevant event is *earlier than now*."<sup>8</sup>

With this background, the main question I wish to explore in this paper can be stated as follows: Can an ontological analysis that specifies the constituents of the complex fact that it is *now* and the *relevant event* is *earlier* or *later than now* be given that is consistent with presentism? Prima facie the answer to this question is "no" because in order for there to be a temporal relation between two events, there must be the two events that stand in that relation. Indeed, this is a truism that is even accepted by some presentists. Consider, for example, the following statement by John Bigelow, whose views I discuss in detail below:

It is, I maintain, an a priori truth that a two-place relation can only be manifested when it holds between two things, and in order for this to be so there must be two things which stand in the relation. And in saying "there must be" two things which stand in the relation, one is really asserting that "there must exist" two things—one is committed to the existence of those things. The principle of the existence entailment of relations is an a priori truth.<sup>9</sup>

Since relief involves a temporal relation between a present belief or feeling and something else that is not present (what I believe or am relieved about), it follows that some things/events/times exist that are not present. To avoid this conclusion, presentists must provide an ontological reduction of temporal relations, but it is not clear that they have the resources available to accomplish that task. Thus, we are led to ask, what is the truthmaker or, to use Robin Le Poidevin's turn of phrase, "that bit of reality"<sup>10</sup> that is the ontological ground of the complex fact that one event (or time) is earlier or later than the present event or time? If presentists cannot give an adequate answer to that question, then far from rationally justifying our different attitudes toward earlier and later events, they render those attitudes mysterious.

The importance of giving an adequate ontological assay of temporal relations is highlighted by another concern. Presentism has been claimed to border on the trivial or the absurd. It is trivial if it is taken to assert, "The only things that exist now (i.e., at present) are those that exist at present."<sup>11</sup> And it is absurd if it is taken to mean what David Lewis takes it to mean, namely, that for the presentist nothing changes because it rejects persistence altogether by maintaining that there are no past or future times but only this present moment.<sup>12</sup> In response to the triviality objection, presentists may claim that their view does not assert the tautology that only the present exists at present but that only the present exists *simpliciter* or just plain exists. To exist *simpliciter* does not mean to exist now, or to exist at time *t*, but simply to exist (or to happen) without temporal qualification.<sup>13</sup> But if only the present moment exists without qualification, then in order to generate change, the presentist must introduce tensed propositions that change their truth value at different *times* depending on what exists *simpliciter* at those times as time passes. Of course, if a tensed proposition changes its truth-value at different times, then there must be those times at which the proposition changes, and in order to be genuine *times* they must be members of temporal series whose generating relation is earlier/later than. But if there exists only *one* time, the present time, then how can any time be earlier or later than another and how can a proposition or anything else *change from one time to another*?

How, in other words, can it be true, as it obviously in some sense is, that

(PC) There are (at least) two different times, one at which I am bent, another at which I am straight?

In response to this question, a presentist may offer a paraphrase that captures what is meant by (PC) but does not involve direct reference to nonpresent times. Thus, for example, Dean Zimmerman says that (PC) can be taken as a tenseless statement expressing a disjunction of tensed propositions:

Either I was bent and would become or *had previously been* straight, or I was straight and *would become* or had previously been bent, or I will be bent and will have been or be *about to become* straight, or I will be straight and will have been or be about to become bent. Surely this tensed disjunction is true if (PC) is true; furthermore, it contains no mention of anything like a non-present time. So given the presentist's desire to avoid ontological commitment to non-present times, this tensed statement provides a perfectly sensible paraphrase of my conviction that I can persist through change of shape.<sup>14</sup>

I shall avoid the question of whether Zimmerman's paraphrase captures what is meant by (PC)<sup>15</sup> and concentrate on the question, Does it avoid ontolog-



ical commitment to nonpresent times? It certainly does not avoid commitment to temporal relations, and, on the face of it, temporal relations presuppose the existence of earlier and later (i.e., nonpresent) times. Included in his analysis of (PC) are the phrases "had *previously* been straight" and "about to become bent." The former phrase has the sense of "was at some *earlier time* straight" and the latter means "at a short *time later* becomes (or will become) bent." Furthermore, the concept of *temporal* becoming, if it is to be the ground of *temporal* change, that is, change in a given direction, must account for my becoming straight *before* becoming bent or vice versa. Thus, the presentist must provide an account of temporal relations, and to provide such an account is to specify what there is in the world, independent of minds, that is the truthmaker of judgments asserting that two entities stand in a temporal relation. If an adequate account is not forthcoming, then not only are our different attitudes toward earlier and later events left unexplained, but Lewis's objection that for the presentist nothing changes is vindicated. In what follows, I shall consider several recent versions of presentism that attempt to respond to the challenge of providing an adequate ontological ground of temporal relations and argue that none of them is successful.

Each of the philosophers I shall discuss, William Lane Craig, John Bigelow, and Peter Ludlow, all avowed presentists, acknowledge their debt to Prior but for one reason or another find his particular explication of presentism wanting. Prior's views have also recently received extensive critical discussion by other A-theorists such as Craig, Smith, and Tooley, as well as by B-theorists such as Le Poidevin, Mellor, and Oaklander.<sup>16</sup> For that reason there will be only an incidental discussion of Prior's views on time in this essay.

Let me then first consider Craig's various versions of presentism to see if any of them can provide a sufficient ontological ground for events standing in temporal relations. According to Craig,

The A-theorist denies the very reality of past and future events, but he does not deny that some events are objectively past or others future—he just parses such statements to mean that "It was the case that  $e_1$  exists" and "It will be the case that  $e_2$  exists" are true.<sup>17</sup>

On the face of it, to deny the reality of past and future events and to affirm that some events *are* objectively past and future is an explicit contradiction. Thus, to avoid that contradiction we need to ask of Craig's paraphrase of statements about past and future events, what is it that makes them true? To that he responds:

Corresponding to past/future-tense propositions are tensed facts or states of affairs that presently obtain, e.g., its being the case that  $e$  will occur [or it

being the case that  $e$  did occur]. But  $e$  itself is not presently existent or real. Though equally unreal, past and future events are properly regarded differentially by us due to the direction of time. . . . On the A-theory the impossibility of backward becoming entails the propriety of differential attitudes toward earlier and later events.<sup>18</sup>

One problem with this analysis is that if neither  $e_1$  or  $e_2$  nor the properties of pastness and futurity exist, then what could be the foundation of the difference between the tensed facts that  $e_2$  *will occur* and  $e_1$  *did occur*? And what could be the truthmaker for the state of affairs that  $e_1$  is earlier than  $e_2$ ?

Perhaps Craig would attempt to specify a tensed fact by appealing to the properties or a description that one associates with the purportedly past or future event. He could then claim that the difference between a past- and future-tensed fact is that in one case the defining properties of  $e_2$  *will be exemplified* presently obtains, whereas in the other case the defining properties of  $e_1$  *once was exemplified* presently obtains. However, I don't think this gambit works. For unless one explains (or specifies) the ontological correlate of "will be exemplified" and "was exemplified," there really is no basis for the difference in the temporal location of either of these facts. In other words, if there is no grounding of the past and future tenses in the complex fact that  $e_2$  will be exemplified and  $e_1$  was exemplified, then there is no basis for determining whether  $e_1$  is exemplified *before*  $e_2$  is exemplified or vice versa.

Furthermore, I do not see how, as Craig says, the direction of time can be the basis of the difference between past- and future-tense states of affairs. On the A-theory, the direction of time is based on the changing truth of past- and future-tense propositions. That is, on the A-theory the direction of time is grounded in the fact that an event is *first* future *and then* present *and then* past rather than the other way around. As Prior puts it,

We all know what it is to wait for something. . . . What we're waiting for begins by being *future*; it *hasn't* yet come to pass. Then *a time* comes when it does come to pass—when it's *present*, and we're aware of its presentness, and there's no mistaking it. *And then* it's *past*.<sup>19</sup>

In other words, on the A-theory the direction of time is grounded in an event/thing/time being future *before* it is present and being present *before* it is past.<sup>20</sup> Thus, the difference between past and future events (or times), and the temporal relations that hold between them, cannot be based on the direction of time because the direction of time is based on the distinction between past- and future-tensed facts and their temporal relations to the present. Furthermore, Craig's claim that "on the A-theory the impossibility of backward becoming entails the propriety of differential attitudes toward earlier and

later events"<sup>21</sup> is question-begging. Without a prior account of the ontological difference between past- and future-tensed facts, and a grounding of temporal relations, Craig is not entitled to assume that backward becoming is impossible.

Nor can Craig appeal to causation to ground the direction of time and the impossibility of backward becoming, since the A-theorist has just as much problem with causal *relations* as he or she does with temporal relations because some present events are caused by nonpresent events. After all, why believe, for example, that my presently having lines around my eyes, or my presently having relatively little hair on the top of my head, is evidence that I have aged over the past twenty years, unless present evidence is causally related to the past, which thereby must exist? In other words, if only the present exists how could the past be causally related to it?

In his article "Is Presentness a Property?" Craig realizes that the presentist needs to somehow ground the relational aspect of time:

[O]n a presentist ontology past and future events/things/times are not real or existent and, hence, do not exemplify properties like pastness and futurity. . . . The A-theorist thus agrees with the B-theorist that pastness and futurity are relational predicates, but he will differ in *anchoring these relations in what is non-relationally present*. The construal of pastness and futurity as relational predicates should not be taken to mean that these are relational properties inhering in events. Rather such ascriptions should be parsed as asserting that the entity in question *did* or *will* exist.<sup>22</sup>

Again, this move seems to me unavailing. To assert that  $e_1$  did exist and  $e_2$  will exist says nothing more than that  $e_1$  is past and  $e_2$  is future. Since, however, "is past" and "is future" do not name temporal monadic properties or relational properties of events or times, Craig's paraphrase tells us nothing about the ontological difference between past- and future-tensed facts or about how temporal relations are to be "anchored" in what is nonrelationally present.

In adopting a presentist metaphysics, Craig expresses his sympathy with Prior's view that to be present is simply to exist. He recognizes, however, that the treatment of "was" and "will be" and the past and future tenses as "tensed operators" analogous to the sentential operator of negation, or the modal operator of possibility "raises a host of questions for ontology. [And it] makes one suspicious that the ontological questions concerning tense ascriptions cannot be so neatly circumvented as Prior hoped."<sup>23</sup> This seems to me to be quite true. Even if "It was the case that" and "It will be the case that" are tensed operators analogous to sentential operators like negation, there remains the ontological question concerning whether or not there are past- and future-tensed facts.<sup>24</sup> Although Russell allegedly caused a riot at Harvard when he lectured about negative facts, Russell believed and argued that neg-

active facts exist. He is not alone; Gustav Bergmann, Reinhardt Grossmann, Herbert Hochberg, and others have agreed and argued that there are conjunctive and general facts as well.<sup>25</sup> Hence, while treating the past and future tenses as operators does not imply that there are future and past tensed properties or facts, it does not rule them out either. Nor can treating the past and future tenses as *primitive* operators eo ipso avoid ontological commitment to past and future individuals and A-properties. Since even if the tenses are conceptually primitive, one can still ask what entities do those primitives stand for? I shall return to this point in my discussion of Peter Ludlow.

As I discussed in essay 5, Craig attempts to explicate the ontology of presentism "by allowing tensed states of affairs to be constituents of possible worlds. . . . Tensed possible worlds which did, do or will obtain are tensed actual worlds. . . . A tensed actual world at *t* is the world which obtains when *t*'s being present obtains,"<sup>26</sup> but *when* does *t*'s being present obtain? Judging from his comments, it appears that *t*'s being present obtains *before* *t*'s being present obtains (for any later *t*\*): "The tensed history of any possible world *W* will be all the tensed possible worlds constituted by the states of affairs entailed by '*W* and each successive *t*'s being present in *W*.'"<sup>27</sup>

Thus, to explain *when* possible worlds obtain, he appeals to *succession*, but since the appeal to succession implies the reality of B-relations one of whose terms is nonpresent, this particular explication does not answer the question of how a presentist ontology can consistently account for the relational aspect of time. It simply assumes that it can.

In his reply to my critique, Craig claims that his characterization of presentism in terms of possible worlds did not mean to "*found* [or ground] the objectivity of temporal becoming, but simply to provide a language in which to formulate such notions."<sup>28</sup> If, however, the appeal to possible worlds being actual at times that are present is not intended to explicate what makes relational temporal statements true, then it does not address the fundamental problem with the ontology of presentism. For it does not provide an ontological explanation of how there can *be* objectively earlier and later times if all that exists is present.

Finally, in another publication on time, "The Extent of the Present," Craig maintains that the present is neither instantaneous nor atomic but is a premetrical notion that denotes some arbitrarily selected finite interval. He continues,

Any temporal interval which is contextually taken to be the present interval is susceptible of being conceptually divided into shorter temporal phases which will be past, present, and future, respectively. . . . The present minute can thus be analyzed into a past phase composed of seconds *earlier than* the present second, a present phase which is the present second, and a future phase composed of the *later* seconds remaining in the minute.<sup>29</sup>

Thus, to avoid Augustine's problem of a durationless present, Craig claims that an interval can be present as a whole even if it is composed of parts some of which are past and some of which are future.

It does seem to me that one advantage of this account is that it looks like it has a chance of grounding the existence of past- and future-tensed facts, as well as temporal relations between past, present, and future individuals in terms of what "presently" exists.<sup>30</sup> The disadvantage is that Craig's latest account is not compatible with presentism, as his comments on the "present" make clear:

[A]n interval may be present *simpliciter* even though we can divide it into sub-intervals which are not every one present. Thus, the present minute is *qua* minute present *simpliciter*; but if we divide it into seconds, then only one second is *qua* second present *simpliciter*. If any sub-interval of an interval is present, then the whole interval is as such present.<sup>31</sup>

If the present exists *simpliciter*, it would seem to be composed of phases some of which exist *simpliciter*. And if past and future phases *are temporally related* to the subinterval that is present, and the entire interval exists because it is *as such present*, then it seems to me that we have a tenselessly existing series whose subintervals successively become present as time flows. This is the A/B ontology that Craig claims is "incoherent."<sup>32</sup> Whether it is coherent or not, it is certainly not presentism.

For these reasons I do not think that Craig's various explications of presentism have met the challenge to give an adequate ontological assay of the complex fact that, say, an unpleasant visit to the dentist is *earlier than* a present memory of it, that is consistent with presentism. It should be noted, however, that Craig has several forthcoming articles and books on time in which he refines and defends presentism. Perhaps in one of those writings a more plausible version of presentism is to be found.<sup>33</sup> I shall return to Craig's most recent defense of presentism in essay 8, which is devoted entirely to it.

I shall turn next to two other recent attempts (the first by John Bigelow and the second by Peter Ludlow) to deal with the challenge to presentism of what Bigelow aptly calls "the argument from relations." Bigelow attempts to ground truths about past and future individuals and the temporal relations between them by means of properties that *are presently exemplified*. He says that in order to meet the argument from relations,

[W]e do not need to suppose the existence of any past or future things, only the possession by present things of properties and accidents expressed using the past and future tenses. . . . Present things have present properties and these are the ontological ground of the past, the future and the passage of time.<sup>34</sup> These properties may include things like the property of being bur-

dened with a certain sort of past, or (as Leibniz put it) being pregnant with a certain sort of future.<sup>34</sup>

On Bigelow's view, presently instantiated properties are the ground of the difference between the past and the future and of temporal relations. No temporal relation ever in fact holds between things that exist at different times, since at any given time the ground of temporal relations are properties that are presently exemplified by the world as a whole at that time. Thus, Bigelow says,

[O]ne of the things that exist is the whole world, the totality of things that exist. The world can have properties and accidents, just as its parts may have. It is a present property of the world that it is a world in which Helen was abducted, and the Trojans were conquered.<sup>35</sup>

And in discussing causal relations that, like temporal relations, purport to connect present events with events that are not present, he says:

[T]he causal relation does *not*, in fact, ever hold between things that exist at different times. At any given time the causal relation holds between properties, perhaps between world properties, each of which is present and is presently instantiated.<sup>36</sup>

But can presently exemplified world properties of the sort Bigelow introduces account for the difference between the past and the future without introducing past and future individuals? Can they account for the relational aspect of time? And is the positing of such properties consistent with presentism? I do not think any of these questions can be answered affirmatively.

Bigelow says that there are presently exemplified properties expressed by the past and future tenses, but he never makes clear what it is exactly that makes these properties *tensed*. To bring the issue into sharper focus, suppose at any given time both Helen was abducted and Helen will be abducted are presently exemplified. (That is, suppose that Helen was abducted, rescued, and will be abducted again.) What is the difference in these presently exemplified properties expressed by the past and future tenses? How does the fact that the world exemplifies the one differ from the fact that the world exemplifies the other? And finally, how do those properties or facts provide an ontological ground of temporal relations and the passage of time? Unfortunately, Bigelow does not directly answer these questions, and it does not seem to me that he can unless he countenances the nonrelational temporal properties of *pastness* and *futurity*. However, positing the existence of pastness and futurity as constituents of past- and present-tensed world properties is

problematic. For if there is a full range of tensed properties, then presumably there are past and future individuals as well. To see why, note that if the world presently exemplifies the property of being such that the birth of my first grandchild will be past, then that event exists in the future when it exemplifies pastness. And if the world exemplifies the property of being such that the birth of my first child was future, then that event exists in the past when it exemplifies futurity. Thus, if some events did exemplify futurity and others will exemplify pastness, then *there are* nonpresent, that is, past and future, times/events/things that exemplify those properties. For that reason, if Bigelow posits the existence of pastness and futurity to account for what is expressed by the past and future tenses, then he must jettison presentism.

On the other hand, if tensed properties don't exist, then the difference between what is expressed by past- and future-tensed propositions remains mysterious, and there is no basis for the passage of time. For, if I understand Bigelow's position correctly, the passage of time requires that a future-tensed proposition is true (and thus that a future-tensed property is presently exemplified) *before* a past-tensed proposition is true (and thus that a past-tensed property is presently exemplified). If, however, pastness and futurity are not constituents of the propositions expressed by the past and future tense, then there is no difference between past- and future-tensed facts, and for that reason, there can be no basis for the passage of time and the direction of becoming.

There is a further problem closely connected with the previous one. It is not clear how Bigelow would handle the problem of ordering events (or things) that are both past or both future. In other words, since Lincoln's assassination is past and Kennedy's assassination is past, then on Bigelow's view, the world presently exemplifies the properties of Kennedy was assassinated and Lincoln was assassinated. What, then, is the ground of the fact that Kennedy was assassinated *after* Lincoln was assassinated? The typical move of introducing degrees of pastness or futurity is not open to a presentist, who rejects the properties of pastness and futurity. Moreover, introducing properties such as being past by a certain degree would not be sufficient to order the properties, and hence the terms that exemplify those properties, unless there was a temporal relation between the properties, or unless the property itself was a complex that included a relation. That is, if we order the events by means of the world property that, say, Lincoln's assassination was more past than Kennedy's assassination, we are clearly reintroducing temporal relations as basic entities back into the ontological analysis of temporal facts. Finally, the attempt to order past events by appealing to a property, such as Kennedy was assassinated 27 years ago whereas Lincoln was assassinated 135 years ago, is questionable, since, once again, it is not at all clear that different temporal intervals from the present can be accounted for in this manner without presupposing either temporal relations or temporal properties such as pastness and futurity.<sup>37</sup>

I have one final point concerning Bigelow's world properties gambit. If one accepts the full range of A-properties, as I believe Bigelow is committed to doing by introducing tensed properties such as *Helen was abducted* and *Bush will be elected*, then, as I suggested above, he must accept past and future events/things/times in addition to the present events/things/times. Bigelow says things that drive him perilously close to explicitly espousing such a view. Consider the following passages:

The past no longer exists; yet there is a sense in which the past can never be lost: the world will always be one with the property of having once been thus and so. Likewise the future does not exist yet; yet there is a sense in which the future will be what it will be: the world has always been one with the property of being a world which is going to be thus and so. At any given time, you can grasp truths which transcend your present and describe the world *sub specie aeternitatis*, from the standpoint of eternity.<sup>38</sup>

And again,

From the standpoint of presentism the rival theory, four-dimensionalism, is just a partial picture of reality. It only acknowledges the eternal truths about what was, is or will be. The things it acknowledges to be true are indeed true as far as they go, but they are all accommodated as an abstracted, logical consequence of what is real according to the presentist.<sup>39</sup>

Bigelow is correct in saying that his view implies that four-dimensionalism is a *partial* picture of reality. It is, however, not an abstracted logical consequence but a metaphysical commitment resulting from his acceptance of past- and future-tensed properties. If we add to this partial picture of reality the view that Bigelow also wishes to endorse, namely, that "the true Present, the world, is not identical with eternity. The world is rather a changing ground for unchanging truths,"<sup>40</sup> then we get a version of the moving NOW A-theory that, whether immune to dialectical difficulties or not, is certainly incompatible with presentism.

I want to conclude my critique of presentism with a brief discussion of Peter Ludlow's version of that doctrine as found in his recent book, *Semantics, Tense and Time: An Essay in the Metaphysics of Natural Language*.<sup>41</sup> Like virtually all contemporary presentists, Ludlow's work takes its cue from Prior's writings on time and tries to answer two difficulties that Prior's logical analysis of tense sought to resolve. The first is McTaggart's paradox, and the second is the problem of temporal anaphora. The elegance of Ludlow's own view of time is that it allegedly provides a common solution to both problems. The weakness, I submit, is that it fails in both attempts.

The problem of temporal anaphora is that of specifying, within a presen-



tist framework, the semantic value of implicit or explicit temporal anaphors such as “then” that seem to refer to nonpresent times and events. For example, “Sam addressed Bill. Bill didn’t respond then.” McTaggart’s problem or paradox rests on the claim that every event is past, present, and future, which is absurd. Of course, it has seemed to many that this absurdity need not trouble us because we can say either that

- (1) Every event is past at one *time*, present at *another time* and future at a still *different time*.

Or that

- (2) Every event is future *before* it is present and present *before* it is past.

Or, as Prior has said, that

Every event either is future and will be present and past, or has been future and is present and will be past, or has been future and present and is past.<sup>42</sup>

Each of these ways of avoiding the original absurdity results in a statement that removes any explicit contradiction in temporal attributions, but whether they involve anything more than a verbal solution to an ontological problem is debatable. Since the first alternative presupposes the existence of *past* and *future* times and the second presupposes the existence of *temporal relations*, both are anathema to the presentist. Thus, the third option is clearly the one a presentist must take, but it gives rise to the following question: How is one to analyze the tenses? More specifically, what are the truthmakers of each of the conjuncts in each disjunct? Is there some analysis of the tenses that avoids collapsing the third alternative into a variation of one of the first two? For example, can one analyze “event *e* has been present” in such a way that it avoids an ontological commitment to either a past *time* at which *e* is present or to *e*’s occurring *earlier* than a present moment?

Ludlow thinks that the A-theory has presentist resources available to answer these questions, since he believes that we can

treat the standard B-theory predicates “before” and “after” as composed out of more basic A-series relations. The idea here would be that a sentence like [I ate before I left the house] would have a logical form in which “before” is treated as composed of a past-tense morpheme and a simple when-clause.<sup>43</sup>

I do not need to go into details here. The overall point is that we can eliminate reference to times and temporal relations between them by giving the

semantics for “before” and “after” in terms of the predicates “past,” “present,” “future” and the relational predicate “when.” If this can be done, then McTaggart’s paradox cannot get off the ground. To quote Ludlow,

To illustrate, take a proposition like  $\square (\exists e) e$  is the dying of Queen Anne]

That proposition was future and is now past, but we can’t overlook the temporal anaphora. There is an implicit when-clause, so that what we actually have is that the proposition was future (say, when Queen Anne was born) and it is past (say, as I write these words). There is not even the illusion of a contradiction if we remember to include the temporal anaphora.<sup>44</sup>

The question I have concerning Ludlow’s response to McTaggart’s argument is this: What is the ontological significance of the tenses and the “when” clause?

Ludlow notes that

[i]f this gambit is to work, “when” cannot mean “at the same time”; it must be taken as a kind of primitive, just as PAST, PRES, and FUT morphemes are. That is, “when” must be understood as being more fundamental than the B-series conception of simultaneity.<sup>45</sup>

What does “primitive” mean in this context? One would think that in doing the metaphysics of time, to take something as primitive is not only an epistemological notion but an ontological notion as well. When one is attempting to reduce temporal relations to some ontologically more basic entity or entities, to take something as primitive should imply ontological commitment to what is referred to by that primitive term. A primitive is thus what is unanalyzable in terms of simpler constituents. However, for Ludlow primitives do not name simple constituents of complex facts, since he says, “[M]y A-theory of tense will regard tenses as being *predicates* of proposition like objects.”<sup>46</sup> And he claims that predicates, including, I would surmise, relational predicates such as “when,” are nonreferring expressions that do not denote nonrelational or relational properties construed either as Platonic entities or as extensions (i.e., sets of objects). Indeed, he maintains that properties are “very poor candidates for our ontology.”<sup>47</sup> If, however, there are no A-properties referred to by the tenses, and there are no temporal relations referred to by the language that expresses them, then what exactly is Ludlow’s ontology of *time*? What is the ground, in the sense of the truth-makers, for the world being *temporal*? Ludlow says that we can avoid taking “times” as being points in the sense of B-series metaphysics by treating “times as sets of when-clauses”<sup>48</sup> that he claims are temporal conjunctions. But he never explains what that bit of reality is that makes a “when” clause a *temporal* conjunction.<sup>49</sup>

Although Ludlow clearly seems to be partial to desert landscapes, he is, he says, "still after a theory that delivers language-to-world connections. The point here is that properties and extensions (sets of objects) don't have to be part of that picture."<sup>50</sup> Perhaps not, but if properties and presumably relations are not to be included in reality, then I fail to see how the rest of his very sophisticated semantical theory can specify what there is in the world that is the truthmaker of judgments asserting that two entities stand in a *temporal* relation. For that reason, the question "Can an ontological analysis that specifies the constituents of the complex fact that *it is now and the relevant event is earlier or later than now* be given that is consistent with presentism?" has yet to be given an affirmative answer. Without an affirmative answer to that question, our differential attitudes toward earlier and later events remain a mystery on presentist metaphysics, and the existence of change remains without an adequate foundation.

## NOTES

1. William Lane Craig, "Tensed Time and Our Differential Experience of the Past and Future," *Southern Journal of Philosophy* 37, no. 4 (1999): 515–37; Arthur Prior, "Thank Goodness That's Over," *Philosophy* 34 (1959): 12–17; Alvin Plantinga, "Reason and Belief," *Faith and Philosophy* (1983): 39–63.

2. Craig, "Tensed Time and Our Differential Experience," p. 519.

3. *Ibid.*, p. 532.

4. William Lane Craig, "Is Presentness a Property?" *American Philosophical Quarterly* 34 (1997): 27.

5. Dean Zimmerman, "Temporary Intrinsics and Presentism," in *Metaphysics, The Big Questions*, ed. Peter van Inwagen and Dean Zimmerman (Oxford: Blackwell, 1998), p. 212, my emphasis.

6. Craig, "Tensed Time and Our Differential Experience," p. 530.

7. *Ibid.*, pp. 521–22.

8. *Ibid.*, p. 523, my emphasis.

9. John Bigelow, "Presentism and Properties," in *Philosophical Perspectives*, vol. 10, *Metaphysics*, ed. James Tomberlin (Cambridge, MA: Blackwell, 1996), p. 39.

10. Robin Le Poidevin, "Can Beliefs Be Caused by Their Truth-Makers?" *Analysis* 59, no. 3 (1999): 146–56.

11. Zimmerman, "Temporary Intrinsics and Presentism," p. 209.

12. David Lewis, *On the Plurality of Worlds* (Oxford: Blackwell, 1986), pp. 202–203.

13. It seems, therefore, that the presentist is committed to distinction between what is *actual simpliciter* and what is *actual as of a time*. For if what exists *simpliciter* is all that exists, and if only the present moment exists *simpliciter*, then Lewis is right and we have no past or future. For a defense of this distinction, see Michael Tooley, *Time, Tense and Causation* (Oxford: Clarendon Press, 1997). For a critique of the conjunc-

tion of the notions of *actual simpliciter* and *actual as of a time*, see Robin Le Poidevin, "Review of Michael Tooley's *Time, Tense, and Causation*," *British Journal for the Philosophy of Science* 49 (1998): 365–69; Le Poidevin, "Reply To Smith and Tooley," in *The Importance of Time*, ed. L. Nathan Oaklander (Dordrecht: Kluwer Academic, 2001), pp. 285–91; Quentin Smith, "Review of Michael Tooley's *Time, Tense and Causation*," *Philosophical Review* 108 (1999): 123–27; Hugh Mellor, *Real Time II* (London and New York: Routledge, 1998); and essay 12 in this volume.

14. Zimmerman, "Temporary Intrinsics and Presentism," p. 215, my emphasis.

15. And I shall also avoid diagnosing why Zimmerman characterizes his paraphrase of (PC) as both a "tenseless statement" and a "tensed statement."

16. William Lane Craig, "Is Presentness a Property?" *American Philosophical Quarterly* 34 (1997): 27–40; Quentin Smith, "The Infinite Regress of Temporal Attributions," *Southern Journal of Philosophy* 24 (1986): 383–96; Smith, *Language and Time* (New York: Oxford University Press, 1993), p. 123–27; Smith, "The 'Sentence-Type Version' of the Tenseless Theory of Time," *Synthese* 119 (1999): 233–51; Smith, "Reference to the Past and Future," in *Time, Tense and Reference*, ed. Alexandar Jokić and Smith (Cambridge, MA: MIT Press, 2003), pp. 357–90; Tooley, *Time, Tense and Causation*, p. 165–70, 232–38; Robin Le Poidevin, *Change, Cause and Contradiction: A Defense of the Tenseless Theory of Time* (London: Macmillan, 1991), pp. 36–57; Mellor, *Real Time II* (New York: Routledge, 1998), pp. 70–81; L. Nathan Oaklander, *Temporal Relations and Temporal Becoming: A Defense of a Russellian Theory of Time* (Lanham, MD: University Press of America, 1984), pp. 90–104.

17. Craig, "Tensed Time and Our Differential Experience," p. 534.

18. Ibid.

19. Arthur N. Prior, "Some Free Thinking about Time," in *Logic and Reality, Essays on the Legacy of Arthur Prior*, ed. B. J. Copeland (Oxford: Clarendon Press, 1996), p. 50, my emphasis.

20. Prior seems to be making essentially the same point when he says: "I believe that what we see as a progress of events is a progress of events, *a coming* to pass of one thing *after* another, and not just a timeless tapestry with everything stuck there for good and all" ("Thinking about Time," p. 104). I should note, parenthetically, that Prior's claim that what we see as a progress of events (one thing occurring after another) is, on the B-theory, "just a timeless tapestry with everything stuck there for good and all" is a common mischaracterization that depends on viewing time from a godlike third-person point of view and not the subjective first-person temporal point of view that B-theorists believe in.

21. Craig, "Tensed Time and Our Differential Experience," p. 534.

22. Craig, "Is Presentness a Property?" p. 29, my emphasis.

23. Ibid., p. 31.

24. Mark Hinchliff, "The Puzzle of Change," in *Metaphysics: Philosophical Perspectives*, ed. James Tomberlin (Cambridge, MA: Blackwell, 1996), pp. 119–36.

25. Bertrand Russell, "The Philosophy of Logical Atomism," in *Logic and Knowledge: Essays 1901–1950*, ed. Robert Charles Marsh (London: George Allen & Unwin, 1964), pp. 177–281; Gustav Bergmann, "Generality and Existence," *Logic and Reality* (Madison: University of Wisconsin Press, 1964), pp. 64–84; Reinhardt Grossmann, *The Existence of the World: An Introduction to Ontology* (New York: Routledge,

1992); and Herbert Hochberg, "Negation and Generality," *Notis* 3 (1969): 325–43. For an argument against negative facts that is also a precursor of one version of the new tenseless theory of time, see L. Nathan Oaklander and Silvano Miracchi, "Russell, Negative Facts, and Ontology," *Philosophy of Science* 47 (1980): 434–55.

26. Craig, "McTaggart's Paradox and the Problem of Temporary Intrinsics," p. 126.

27. *Ibid.*, my emphasis.

28. William Lane Craig, "Oaklander on McTaggart and Intrinsic Change," *Analysis* 59 (1999): 320.

29. William Lane Craig, "The Extent of the Present," *International Studies in the Philosophy of Sciences* 14, no. 2 (2000): 165–85.

30. I say that Craig's view looks like it has a chance to succeed, but it cannot in fact succeed even if he countenances the full range of A-properties and B-relations, for the most elaborate and carefully crafted A/B ontology of tensed time is to be found in Smith, *Language and Time*. However, in essay 14, I argue that Smith's version of the A-theory cannot account for events having their A-properties successively. Smith's view also receives a trenchant criticism in Graham Nerlich, "Time As Space-time," in *Questions of Time and Tense*, ed. Robin Le Poidevin (Oxford: Clarendon Press, 1998), pp. 119–34. I should note, however, that in a recent paper, Quentin Smith, "Time and Degrees of Existence: A Theory of 'Degree Presentism,'" in *Time, Reality and Experience*, ed. Craig Callender (Cambridge: Cambridge University Press, 2002), pp. 119–36, has modified his views in the light of criticism.

31. Craig, "Extent of the Present," p. 184.

32. *Ibid.*, p. 165.

33. William Lane Craig, *The Tensed Theory of Time: A Critical Examination* (Dordrecht: Kluwer Academic, 2000); Craig, *The Tenseless Theory of Time: A Critical Examination* (Dordrecht: Kluwer Academic, 2000); Craig, *Time and the Metaphysics of Relativity* (Dordrecht: Kluwer Academic, 2001). I criticize Craig's developed version of presentism in essay 8.

34. Bigelow, "Presentism and Properties," pp. 46–47.

35. *Ibid.*, p. 46.

36. *Ibid.*

37. Robin Le Poidevin, "Egocentric and Objective Time," *Proceedings of the Aristotelian Society*, New Series 99 (1999): 30–35. Tooley, *Time, Tense and Causation*, pp. 166–70.

38. Bigelow, "Presentism and Properties," p. 47.

39. *Ibid.*, p. 48.

40. *Ibid.*

41. Peter Ludlow, *Semantics, Tense, and Time: An Essay in the Metaphysics of Natural Language* (Cambridge, MA: MIT Press, 1999).

42. Arthur N. Prior, *Past, Present and Future* (Oxford: Clarendon Press, 1967), pp. 5–6.

43. Ludlow, *Semantics, Tense and Time*, p. 126.

44. *Ibid.*, p. 134.

45. *Ibid.*, p. 112, my emphasis.

46. *Ibid.*

47. Ibid., p. 46.

48. Ibid., p. 128.

49. Ibid., p. 141. Ludlow believes that evidence for his view is gleaned from some psychological studies that "have noted that a particular sense of 'when' emerges before the child has a notion of temporal order and simultaneity" (Ludlow, *Semantics, Tense and Time*, p. 141). He mentions "Cromer's fascinating conclusion that perhaps the ability to 'date' an event by a *contemporaneous event* is more 'primitive' than the notion of serial ordering" (ibid.), but by appealing to a *contemporaneous event*, that is, one occurring at the same time, the study has not eliminated the B-relation of simultaneity but has presupposed it.

50. Ludlow, *Semantics, Tense, and Time*, p. 46.



## *Presentism: A Critique*

**T**he problems of time and change are inextricably connected for change involves time, and, Shoemaker notwithstanding, time involves change, or so McTaggart has argued.<sup>1</sup> That they are related is not in doubt; how they are related is. For McTaggart, they are related in such a way that if there is to be time and change, then there must be an A-series, and temporal becoming, but what is the A-series? And what is temporal becoming? These are not easy questions to answer, because there are many different versions of A-time and temporal becoming, and I do not intend to discuss them all. Rather, my aim will be to focus on one version of A-time, the presentist version, and argue that contrary to its recent proponents, it does succumb to McTaggart's paradox.<sup>2</sup> Even within the limited scope of this essay, the task of refuting presentism is complicated by there being several different versions of it. One would not think that this is so because all presentists maintain that only the present exists, whereas the past and the future do not exist. Nevertheless, there are different presentist versions of the A-theory, and, although I believe that in one way or another they are *all* susceptible to McTaggart's paradox, there is only one version that I shall endeavor to refute, namely, that propounded by William Lane Craig in his recent trilogy on time.<sup>3</sup>

I chose Craig's defense of presentism for two reasons. First, A-theorists who follow Prior in adopting a presentist "metaphysic" are often criticized for lacking an ontology.<sup>4</sup> To say that the tenses do not refer to B-relations and do not ascribe A-properties is one thing; to say what then are the ontological correlates of the tenses is quite another. It is the latter task that Prior and his followers are commonly accused of shirking. Craig is an exception. He is sensitive to the "lack of ontology" criticism of Prior-based theories,<sup>5</sup> and he attempts to "found" or provide an ontological ground for both B-relations and



A-determinations in the A-series, "tensed facts," and temporal becoming. For that reason, he provides his readers with a metaphysical theory to be evaluated.

I have a second reason for choosing to discuss Craig's version of presentism. Presentists typically explain, promote, and defend their view as being the temporal analogue of the serious actualist position with respect to possible worlds according to which only the actual world is real. By examining Craig's presentist metaphysic, we can evaluate just how successful the marriage between presentism and actualism is. Since my ultimate goal is to argue that presentism, or at least Craig's version of it, is not immune from McTaggart's conundrum, I shall begin my discussion of Craig with his response to McTaggart and then turn to his exposition of the metaphysics of presentism.<sup>6</sup>

Craig has basically two responses to McTaggart. The first is to claim that McTaggart mistakenly treats temporal becoming "as a sort of qualitative change insofar as he attempts to combine a B-theoretic ontology with A-theoretic becoming."<sup>7</sup> On the pure A-theory that Craig adopts, "past and future events/things/times are not real or existent and, hence, do not exemplify properties like pastness or futurity. Rather, entities come to be and pass away absolutely, so that the only temporal entities that there are are the present ones."<sup>8</sup> Craig's first response gives rise to three central questions:

- (1) If temporal becoming is not to be understood as a species of qualitative change, then how is it to be understood?
- (2) If McTaggart mistakenly combines a B-theoretic ontology with the A-theory, how then does Craig attempt to analyze temporal relations between and among items existing in the B-series?
- (3) If the past and the future do not exist, then what are the truthmakers of past- and future-tense statements?

This last question becomes particularly important given his second response to McTaggart's paradox.

Craig's second objection is that McTaggart's model of treating temporal becoming as the donning and doffing of the nonrelational temporal properties of *pastness* and *futurity* is erroneous, because there are no such properties. To say that an event "is past" or "is future" is not to attribute a property to the event. "Rather such ascriptions should be parsed as asserting that the entity in question did or will exist."<sup>9</sup> Of course, to parse attributions of pastness and futurity in terms of statements about what *did* or *will* exist, or in terms of what *was* or *will be* the case, does not answer the question of how we are to understand grammatical ascriptions of pastness and futurity but just raises it once again. For that reason, the account of the truthmakers of past- and future-tense statements in terms of "what is nonrelationally present" is an ever-pressing concern.

It should be clear, therefore, that Craig's critique of Mellor's version of

McTaggart's problem is ineffectual.<sup>10</sup> Craig repeats the familiar point against McTaggart, Mellor, and others, that no event has all three A-determinations timelessly or simultaneously but successively, and he reflects this by saying that no matter at what level we start, we get a consistent set of propositions.<sup>11</sup> Suppose we start with

3. *FPe* & *Ne* & *PFe*.<sup>12</sup>

This is read as "*e* will be past" and "*e* is present" and "*e* was future." Craig claims there is no contradiction in 3. Perhaps not, but we are still left with the question: What are the truthmakers for the first and last conjunct? More specifically, what is the ontological difference between *FPe* and *PFe*, given that neither "F" nor "P" is a predicate that ascribes properties to *e*? Unless we are told, we cannot tell.<sup>13</sup> Without such an account, however, the appeal to grammatically consistent tensed statements is a vacuous response to McTaggart's paradox or Mellor's formulation of it.

The need for an account of the passage of time or temporal becoming is also urgent and for basically the same reason. To see why, consider the following passage:

In his "McTaggart's Paradox Revisted," *Mind* 101 (1992): 323–326, Lowe synthesizes the A-theorist's position by saying that every event is such that it is or was or will be truly describable as past, and is or was or will be truly describable as present, and is or was or will be truly describable as future, which he symbolizes as

6\*\*. (NT 'Np' ∨ PT 'Np' ∨ FT 'Np') & (NT 'Pp' ∨ FT 'Pp' ∨ FT 'Pp') & (NT 'Fp' ∨ PT 'Fp' ∨ FT 'Fp').

... surely (6\*\*) does represent the passage of time, since the same tense operator in each conjunct cannot operate on the true disjunct, on pain of contradiction, so that differently tensed statements will be true in each conjunct. *This difference in tense does represent the flow of time.*<sup>14</sup>

The appeal to truth predicates does not avoid the need to specify the grounds of truth. The fact that differently tensed statements will be true in each conjunct cannot adequately reflect the passage of time unless we have some account of the direction of becoming. More specifically, if NT "Np" & PT "Fp" & FT "Pp," then we want to know, given that the past and the future do not exist, what is the difference between PT "Fp" & FT "Pp"? What is the basis, in the metaphysics of presentism, for *p* being first future and then present and then past rather than the other way around? To answer that question, we need some model upon which to understand temporal becoming.

For Craig, temporal becoming is modeled on the different members of the A-series coming into existence successively, as successive times become present. He says, "the doctrine of objective becoming, . . . could be graphically displayed as the *successive actualization of the history of the actual world*. It is this model of a *successively instantiated*, rather than tenselessly existing, actual world that precludes the existence of a 'totality of facts.'"<sup>15</sup> The appeal to succession implies the existence of temporal relations, and the appeal to possible worlds that *did* or *will* obtain implies the existence of past- and future-tense facts. Craig's *prima facie* commitment to B-relations and primitive past- and future-tense facts renders his version of "presentism" subject to McTaggart's paradox unless he can provide an ontological reduction of temporal relations and past- and future-tense facts to what is presently real. Thus, we are led once again to the question: What, then, on a presentist metaphysics, are temporal relations, and what are the past- and future-tense facts that are the truthmakers of past- and future-tense statements?

Craig does attempt to answer these questions, and in so doing he diverges in many ways from temporal solipsism, "an idiosyncratic doctrine associated with the views of A. N. Prior and not logically connected with the A-Theory of time."<sup>16</sup> One of the main ways in which Craig deviates from Prior's version of presentism is in his holding that there are past- and future-tense facts that are the truthmakers for past- and future-tense statements. I will let Craig speak for himself:

On the presentist semantics given here, a future-tense statement is true iff there exists some tensed actual world at *t* in which the present-tense version of the statement is true, where *t* has not elapsed by the present moment. A past-tense statement is true iff there exists some tensed actual world at *t* in which the present-tense version of the statement is true, where *t* has elapsed by the present moment. Those are the truth-conditions of past- and future-tense statements; but they are not what make the statements true. Ultimately what makes the statements true is that reality *was* or *will be* as the statements describe; when the time comes, for example, a sea battle is going on, and therefore the statement made the day before, "There will be a sea battle tomorrow," was true. There are tensed facts corresponding to what tensed statements assert, but past- and future-tense facts exist because of the present-tense facts that *did* or *will* exist.<sup>17</sup>

For Craig, there are past- and future-tense facts, but they exist because purely present-tense facts, for example, *a battle is being fought at Waterloo*, *did* or *will* obtain. Alternatively, a fact is a future-tense fact if the time *t* at which it is present *has not elapsed by the present moment* (that is, *t* is later than the present moment), and a fact is a past-tense fact if the time *t* at which it is present *has elapsed by the present moment* (that is, *t* is earlier than the present

moment). Thus, Craig's account either presupposes the existence of irreducibly past- and future-tense facts, or it assumes the existence of B-relations, or it leaves the tenses unanalyzed and so is guilty of the "lack of ontology" objection that he and others have raised against Prior and his followers.

Look at it this way. On the one hand, Craig wants there to presently exist truthmakers for past- and future-tense statements. If a statement is *true now*, then it must be true in virtue of some fact that *exists now*. On the other hand, he does not want to countenance past and future existents. He attempts to avoid the contradiction that a conjunction of those two views entails by claiming that past- and future-tense facts exist at present, but they are not ultimate. However, his attempt to show that past- and future-tense facts are not ultimate is either unsuccessful or it succeeds only at a cost of reintroducing a B-theoretic ontology that he sought to avoid, thus undermining presentism and making his A-theory susceptible to McTaggart's paradox.

We can begin to see why this is so by noting that Craig claims that if a past-tense statement is now true, then there is a present-tense fact that *did* obtain, or there is a present-tense fact that exists at a time *t* that has elapsed by the present time. What, then, is involved in *t*'s having elapsed by the present moment, or a present tense fact having obtained? I can think of several possibilities:

- (1) The present moment is moving across the A-series of presently existing things/events/moments, and a present-tense fact *did exist* when the moving NOW has passed it by. So what exists now is the fact that the NOW (as a relation to a term outside the series or as a monadic property) has already passed (or has already been exemplified) by a given instantiated state of affairs, and that fact is the ground of the past-tense fact that *X was F*.
- (2) To say that a present-tense fact *did* or *will* obtain at a time that has or has not elapsed by the present moment is to countenance the existence of presently obtaining primitive past- and future-tensed facts, *X was F* and *X will be F*.
- (3) If a past-tense statement is true, then there presently obtains the fact that a present-tense state of affairs exists at a time *t earlier than* the present moment *t\**. Similarly, if a future-tense statement is true, then there presently obtains the fact that a present-tense state of affairs exists at a time *t later than* the present moment *t\**.
- (4) Finally, one can eschew ontology altogether and claim that the tenses are logical operators, or that the tenses and temporal becoming are conceptually primitive and have no ontological significance whatsoever.

Clearly, the first two alternatives are unacceptable. The first involves a view of temporal becoming that McTaggart and many others, including Craig, have found reasons to reject.<sup>18</sup> The second is inconsistent with Craig's presentism, since if there are ultimate past- and future-tense facts, then temporal objects must exemplify the properties of *pastness* and *futurity* and therefore must, in some sense, exist. The last alternative (4) is also explicitly rejected by Craig, who construes his version of presentism as providing an "ontological foundation" for temporal relations and the direction of time.

There remains the third interpretation, although it too raises questions. If only the present exists, then how can there presently obtain a temporal *earlier than* or *later than* relation between two temporal objects at least one of which does not exist? Nevertheless, there is reason to believe that Craig adopts the alternative (3), which analyzes past- and future-tense facts in terms of what is *earlier* or *later than* the present moment, since he expresses sympathy with such a view about the ontological status of the past and future put forth by Alfred Freddoso.<sup>19</sup> Freddoso maintains that "the proposition 'Socrates drank hemlock' is now temporally necessary, since 'Socrates drinks hemlock' is a member of a past submoment which obtains *prior* to the present in any world sharing the same history *prior* to the present with our world."<sup>20</sup> And referring to future-tense propositions, Freddoso says, "a proposition *p* is necessary *per accidens* at *t* in world *w* just in case *p* is true at *t* and at every moment *after t* in every possible world which shares the same history . . . with *w* at *t*."<sup>21</sup> The appeal to "prior" times implies a temporal relation between a past event or time and the present, and the statement "every moment *after t*" implies a temporal relation between a later event or time and the present moment. If, however, Craig appeals to *unanalyzable* temporal relations to account for the truthmaker of past- and future-tense facts, then Craig contradicts himself, since he claims that a B-theoretic ontology coupled with A-theoretical becoming renders McTaggart's paradox inescapable. It is not surprising, then, that he attempts to provide an ontological reduction of B-relations in terms of A-determinations, the A-series, and temporal becoming.<sup>22</sup> In the final part of this chapter, I shall critically examine Craig's attempt.

In *The Tenseless Theory of Time: A Critical Examination*, Craig agrees with McTaggart's positive view of time that "on the A-Theory of time, the obtaining of the temporal relations *earlier than/later than* among temporal particulars can be derived from the objectivity of A-determinations and the A-series."<sup>23</sup> Paradoxically, Craig interprets Mellor as also maintaining that "the very temporal relations which lie at the heart of the B-theory are derivable from the A-series [and A-determinations]."<sup>24</sup> It is true that Mellor offers various possible reductions of the B-series to the A-series, but there are two important facts to note about his "definitions." First, they presuppose the existence of McTaggart's A-series and A-determinations. More specifically,

on Mellor's interpretation of the A-theory, and temporal becoming, "Futurity, temporal presence, and pastness are all supposed to be real non-relational properties that everything in time successively possesses, changing objectively as it exchanges each of properties for the next."<sup>25</sup> Craig explicitly rejects this interpretation of the A-theory, arguing, as does Mellor, that it leads inevitably to McTaggart's paradox.

Second, Mellor has argued that McTaggart has shown that A-change is contradictory, and thus the A-theory of temporal becoming is absurd. As he puts it, "What disproves all A-theories is a contradiction inherent in their concept of change."<sup>26</sup> Thus, although Mellor would agree that *if* the A-theory is true, then B-relations could be defined in terms of the A-series, the point is moot, since the A-theory is false. Clearly, Mellor does not believe that B-relations can be defined in terms of A-determinations. Craig, on the other hand, claims to be defending an ontological reduction of temporal relations that "goes all the way back to McTaggart,"<sup>27</sup> but the analyses that McTaggart and Mellor propose imply that A-determinations are either properties of events/moments/things or relations to some term outside the temporal series. Thus, his appeal to Mellor's definitions to support an ontological reduction of B-relations to A-determinations is inconsistent with his presentist metaphysic according to which there are no such properties. Furthermore, I shall argue that in adopting the A-account of B-relations endorsed by McTaggart and spelled out by Mellor, Craig's analysis of temporal relations does not avoid the difficulties McTaggart raises, since he is committed to a theory that is contradictory, circular, or vacuous.

Craig's first ontological reduction of *earlier than/later than* relations is as follows:

$$D_1': e \text{ is earlier than } e^* \equiv e \text{ is more past or less future than } e^*.$$

$$e \text{ is later than } e^* \equiv e \text{ is more future or less past than } e^*.$$
<sup>28</sup>

According to Craig, *more past/future than* are A-relations and not monadic properties. They are relations that presently obtain between terms that occupy different positions in the A-series.

Thus, for example, if *e* is earlier than *e\** and it happens that *e* is present, then *e* is less future than *e\**. Similarly, in the case that one of the events is past and the other future, we should think of each one as having none of the A-determinations of its *relatum*. Thus, for example, if *e* is past and *e\** is future, then *e* is earlier than *e\** just because *e* is more past than *e\**.<sup>29</sup>

Craig maintains that *more past* and *more future* are primitive concepts.<sup>30</sup> What, then, are its relata? And if the *relatum* of an A-relation are *e* is past and

*e* is future, then what is the ontological status of those relata? Clearly, if *being future* and *being past* are nonrelational properties of past and future events, then his view is inconsistent with presentism and, by his own lights, susceptible to McTaggart's paradox.<sup>31</sup> On the other hand, if past and future events have no ontological status, so that neither *e*'s *being past* nor *e*'s *being future* exists, then we have an A-relation without relata, which is absurd. Finally, if Craig attempts to analyze *e* is *past* and *e* is *future* in accordance with the possible-worlds analysis he offered previously,<sup>32</sup> then the truthmaker for, say, "It was raining" is that the present-tense fact *It is raining* obtains at a moment of time *t* that has elapsed by the present moment. In that case, however, his ontological reduction of so-called B-relations is obviously circular, since, as we have seen, there is no acceptable account of "time *t* has elapsed by the present moment," other than that time *t* is *earlier than* the present moment.

Furthermore, his account of relations, sketchy as it is, raises serious problems concerning his notion of A-relations. He says:

[R]elations are abstract objects which plausibly do not exist in time at all. Non-contemporaries stand in a relation at their respective times and the timelessly existing relation reaches across time, to relate the two individuals. As for the individuals themselves, we could ascribe to them relational properties: Socrates, at the time he existed, had the property of *going to be referred to by William Craig* or the property of *being referred to by William Craig at t*. He no longer has that property, but I now have the property of *referring to Socrates*. The relation between us can be analyzed in terms of such relational properties or said to exist timelessly in virtue of such properties.<sup>33</sup>

The first problem with this account of relations is that it is incompatible with his account of A-relations, and his presentist ontology. Craig claims that "the A-theorist is at liberty to stipulate that the above concepts [*more past* and *less future*] are among his theoretical primitives."<sup>34</sup> Perhaps so, but if A-relations are theoretical primitives, then they cannot be analyzed in terms of relational properties or be said to exist in virtue of such properties. On the other hand, if A-relations are analyzable in terms of *relational* properties, then what else could they be if not parasitic on the B-relations that he is attempting to analyze? Finally, the very notion that we could treat *being past* and *being future* as *relational properties* of the terms of A-relations contradicts his previous claim that "[t]he construal of pastness and futurity as relational predicates *should not be taken to mean that these are relational properties inhering in events*."<sup>35</sup> Given the inconsistency between Craig's accounts of relations in general and temporal A-relations in particular, it is debatable whether or not there are any terms of A-relations or, indeed, whether there are any A-relations at all.

To see what is involved in this last point, note that Craig claims that "[i]f the relations *earlier than/later than* can be truly and tenselessly ascribed, it is

because and only because the A-relations *more past/future than* and *less past/future than* can be truly and presently ascribed."<sup>36</sup> My question is this: What is the ground of the truth of statements that assert the existence of an A-relation between events/things/moments, and what are A-relations presently ascribed to? What presently exemplifies those relations? I do not think that Craig has a consistent set of answers to these questions. Since past and future things/events/moments do not exist, they cannot be the terms of A-relations, nor can A-relations ascribe a tense to *them*. For the presentist, what does not presently exist cannot presently exemplify properties, including tensed properties. But then, since for Craig A-relations, like all relations, are timeless, there is nothing that presently exists that could provide an ontological foundation for affirming the existence of the (tenseless) temporal relations of *earlier than/later than*. To put the difficulty otherwise, Craig is faced with a dilemma. If past and future temporal objects do not exist, then there is nothing for A-relations to presently ascribe objective tense to. If past and future temporal objects do exist, then presentism is false. Thus, given Craig's version of the A-theory, whether there are past and future temporal objects or not, there are no A-relations, there are no B-relations, and there is no time. For these reasons, his first reductive analysis of B-relations is unsuccessful.

Craig's second definition or reduction of B-relations to A-determinations is also unsuccessful. His second definition is as follows:

$D_2$ : *e* is earlier than  $e^*$  =<sub>df</sub> There is some time *t* such that at *t* it is an objective fact that *e* has presentness and  $e^*$  is future.<sup>37</sup>

*e* is later than  $e^*$  =<sub>df</sub> There is some time *t* such that at *t* it is an objective fact that *e* has presentness and  $e^*$  is past.<sup>38</sup>

Richard Gale has claimed that to relativize A-determinations to times in this way is circular because "The predicates '*\_\_\_ is past at \_\_\_*' and '*\_\_\_ is future at \_\_\_*' . . . express a timelessly true or false statement about a B-relation between two events, i.e. they make B-statements."<sup>39</sup> Craig dismisses Gale's claim on the grounds that (1) a tenselessly true statement such as the definiens of  $D_2$ , can refer to an A-determination, and (2) being "at a time" does not "illicitly smuggle in the so-called B-relation of *simultaneous with* . . . [since] being "at a time" is foundational to the notion of simultaneity, rather than the other way around."<sup>40</sup> Craig concludes that the "*definiens* thus should not be construed in terms of the ascription of any so-called B-relations."<sup>41</sup>

There are two problems with Craig's second definition and his response to the objections. First, Craig never specifies what are the ontological correlates of " $e^*$  is past" and " $e^*$  is future" in the two definiens of  $D_2$ . He does say



that "according to ( $D_2$ "), at  $t$   $e$  has the premier A-determination of presentness, and the definiens in each case refers to an objective tensed fact . . . [and] therefore refers to an A-determination,"<sup>42</sup> but what are the objective tensed facts in this case? If " $e^*$  is past" and " $e^*$  is future" attribute A-determinations (properties) to  $e^*$ , then the past and future must exist in order to exemplify those properties, and that is incompatible with his professed presentism. On the other hand, if the past and the future do not exist so that past- and future-tense facts are not ultimate but analyzable in terms of present-tense facts that have or have not yet elapsed, then his analysis is circular, since there is no analysis of "time  $t$  has elapsed by the present moment" that is both consistent and does not reintroduce B-relations, and this leads to another problem with his second reductive analysis of B-relations.

Craig misses the main point of Gale's charge of circularity. The introduction of time and, in Craig's case, absolute time or moments is crucial if we are to avoid a contradiction.<sup>43</sup> For if the definiens are, as Craig says, tenselessly true statements, then, in order to avoid a contradiction, time must be included in what the definiens of  $D_2$  express. Otherwise we would get

$e$  is earlier than  $e^* =_{df}$  It is an objective fact that  $e$  has presentness and  $e^*$  is future.

and

$e$  is later than  $e^* =_{df}$  It is an objective fact that  $e$  has presentness and  $e^*$  is past.

Obviously, those two objective facts contradict each other and fail to account for whether the direction of time is from  $e$  to  $e^*$  or from  $e^*$  to  $e$ . The introduction of some time  $t$  and  $t^*$  at which the objective facts mentioned in the definiens are at provide such an account *if and only if*  $t$  and  $t^*$  are members of a *temporal* sequence, that is, a sequence with an intrinsic direction. Thus, even if the predicates "is past at," "is present at," and "is future at" do not presuppose the existence of B-relations, Craig's analysis is still circular because the existence of "at time  $t$ " in his analysis does presuppose the existence of B-relations.

Finally, let us turn to Craig's third attempt to ground the existence of B-relations on the reality of tensed facts.

$D_3$ :  $e$  is later than  $e^* \equiv e$  becomes present first and  $e^*$  becomes present second.

$e$  is earlier than  $e^* \equiv e^*$  becomes present first and  $e$  becomes present second.<sup>44</sup>

Craig considers one objection to this account and his reply is telling.

Oaklander objects that the use of "first" and "second" conceal so-called B-relations (Oaklander 1996: 211); but a moment's reflection shows that this is not the case. There are ordinal numbers that are wholly atemporal and can characterize spatial or abstract objects as well as temporal particulars. Given the order of their temporal becoming, the temporal ordering of the two events in question necessarily follows.<sup>45</sup>

Admittedly, *spatial* or *abstract objects* can be characterized as "first" and "second" without presupposing temporal relations, but it does not follow that "first" and "second" can characterize *temporal objects* without presupposing temporal relations. Indeed, temporal relations between and among particulars are intrinsically different from all other instances of one-dimensional order, such as that of points on a line and numbers in order of magnitude, in that only a temporal series has an intrinsic direction. The terms "first," "second," "third," and so on can give a spatial series an *order*, but they cannot give spatial objects a *direction*. For that reason, to say that  $e$  becomes present *first* and  $e^*$  becomes present *second* is either irrelevant to determining their B-relation to one another or assumes that  $e$  and  $e^*$  become present in a given direction; it does not account for it. Thus, Craig's third account of B-relations is circular unless we eliminate the "first" and "second" from it. In that case, however, Craig's analysis is inadequate, since from  $e$  becomes present and  $e^*$  becomes present we cannot infer that  $e$  is earlier than  $e^*$  or vice versa.

One last related criticism. Suppose that  $e$  becomes present first,  $e^*$  becomes present second,  $e^{**}$  becomes present third,  $e^{***}$  becomes present fourth, and so on. Since this conjunction is tenselessly true, the definiens in  $D_3$  leaves out the information about which event is present NOW. Indeed, what could be the ground of the definiens being true now, unless there is the further fact that  $e^*$  is present NOW. However, since to become present is an act of a temporal being, it follows that all of the terms in the A-series obtain (present tense) at some time. But what accounts for their direction? Which events become present before the others? Unless the NOW moves *successively* along the series of events that obtain (present tense) at some time or other, there is no change, and without change there is no time. Unfortunately, the notion of the successive actualization of the terms of the A-series presupposes precisely what Craig is attempting to analyze, namely, B-relations. For that reason, Craig's analysis is viciously circular, and the circularity cannot be avoided by positing another A-series of events or times at

which the terms of the first series undergo becoming on pain of a vicious infinite regress.

According to Craig, "the A-theorist can account for the existence of so-called B-relations by *founding them on the reality of tensed facts*; thus far, *McTaggart's argument seems to be vindicated*."<sup>46</sup> The problem is twofold: first, McTaggart's view on B-relations implies the existence of the A-series either as a series of terms that have an A-relation to a term outside the series or as a series of terms that have the A-properties of *pastness*, *presentness*, and *futurity*. Thus, insofar as McTaggart's view is vindicated, Craig's presentist metaphysics is refuted, since the two are incompatible, and if his reductive analysis of temporal relations depends on McTaggart's positive view of time being vindicated, then his analysis is refuted once again. Second, if Craig rejects McTaggart's view of the A-series and temporal becoming, then it is unclear how he has accounted for the existence of B-relations by founding or ontologically grounding them on the reality of tensed facts because it is not clear what tensed facts exist on a presentist metaphysics. If the only tensed facts there are present-tense facts—those that exist NOW—then there are no present-tense facts that could ground the truth of statements about what is earlier or later than now or about what is past or future. Clearly, the appeal to present-tense facts that *did* obtain, or *will* obtain, or to present-tense facts that obtain at a time that *has or has not elapsed by the present moment* is either to eschew ontological commitment altogether or to appeal to precisely those past- and future-tense facts or B-relations that Craig sought to avoid. In any case, on Craig's presentist version of the A-theory, time is unreal.

Craig claims to "have an ontological foundation in [his] metaphysic of time for affirming the existence of the (tenseless) temporal relations *earlier than/later than*."<sup>47</sup> On the basis of my critique of Craig's metaphysics of presentism, it would appear that he has not provided an ontological foundation for temporal relations. I conclude that Craig's A-theoretical account of time, change, and becoming is subject to McTaggart's paradox and must therefore be rejected.

## NOTES

1. Sydney Shoemaker, "Time without Change," *Journal of Philosophy* 66 (1969): 363–81; John M. E. McTaggart, "The Unreality of Time," *Mind* 18 (1908): 457–74, repr. in *Philosophical Studies*, ed. S. V. Keeling (London: Edward & Arnold, 1934); McTaggart, "Time," in *The Nature of Existence*, vol. 2, ed. C. D. Broad (Cambridge: Cambridge University Press, 1938; repr., Grosse Point, MI: Scholarly Press, 1968).

2. For defenses of presentism, see Arthur N. Prior, *Time and Tense* (New York: Oxford University Press, 1968); Roderick M. Chisholm, *The First Person* (Min-

neapolis: University of Minnesota Press, 1981); John Bigelow, "Worlds Enough for Time," *Noûs* 45 (1991): 1–10; John Bigelow, "Presentism and Properties," in *Philosophical Perspectives*, vol. 10, *Metaphysics*, ed. James Tomberlin (Cambridge, MA: Blackwell, 1996), pp. 35–52; Mark Hinchliff, "The Puzzle of Change," in *Philosophical Perspectives*, vol. 10, pp. 119–36; William Lane Craig, "McTaggart's Paradox and the Problem of Temporary Intrinsics," *Analysis* 58 (1998): 122–27; David Zimmerman, "Temporary Intrinsics and Presentism," in *Metaphysics: The Big Questions*, ed. Dean W. Zimmerman and Peter van Inwagen (Cambridge, MA: Blackwell, 1998), pp. 206–19; Peter Ludlow, *Semantics, Time and Tense: An Essay in the Metaphysics of Natural Language* (Cambridge, MA: MIT Press, 1999); Phillip Percival, "Mellor On Time," in *Time, Reality, and Experience*, ed. Craig Callender (Cambridge: Cambridge University Press, 2002), pp. 91–118. For criticisms, L. Nathan Oaklander, *Temporal Relations and Temporal Becoming: A Defense of a Russellian Theory of Time* (Lanham, MD: University Press of America, 1984); essays 5–7 and 9; Robin Le Poidevin, *Time, Cause and Contradiction: A Defense of the Tenseless Theory of Time* (Basingstoke, UK: Macmillan, 1991); Le Poidevin, "Egocentric and Objective Time," *Proceedings of the Aristotelian Society* 99 (1999): 19–36; Quentin Smith, *Language and Time* (New York: Oxford University Press, 1993); Smith, "The 'Sentence-type Version' of the Tenseless Theory of Time," *Synthese* 119 (1999): 233–51; Smith, "Reference to the Past and Future," in *Time, Tense and Reference*, ed. Alexandar Jokić and Quentin Smith (Cambridge, MA: MIT Press 2003), pp. 257–90; Michael Tooley, *Time, Tense and Causation* (Oxford: Clarendon Press, 1997), pp. 357–90; Hugh Mellor, *Real Time II* (London: Routledge, 1998); Mellor, "Real Time II: Replies to Hinchliff, Paul and Perry," in *The Importance of Time*, ed. L. Nathan Oaklander (Dordrecht: Kluwer Academic, 2001): 95–102.

3. William Lane Craig, *The Tensed Theory of Time: A Critical Examination* (Dordrecht: Kluwer Academic, 2000); Craig, *The Tenseless Theory of Time: A Critical Examination* (Dordrecht: Kluwer Academic, 2000); Craig, *Time and the Metaphysics of Relativity* (Dordrecht: Kluwer Academic, 2001).

4. See, for example, Oaklander, *Temporal Relations and Temporal Becoming*, pp. 90–92; Smith, *Language and Time*, pp. 158–69; "The Infinite Regress of Temporal Attributions," in *The New Theory of Time*, ed. L. Nathan Oaklander and Quentin Smith (New Haven, CT: Yale University Press, 1994), pp. 180–94; Smith, "Sentence-Type Version," particularly pp. 248–49; Smith, "Reference to the Past and Future"; and Tooley, *Time, Tense and Causation*, pp. 165–70, 232–38.

5. Craig, *Tensed Theory of Time*, pp. 192–94.

6. For a detailed account of McTaggart's positive and negative views on time, see essay 3.

7. Craig, *Tensed Theory of Time*, p. 179.

8. Ibid.

9. Ibid., p. 190. Craig also argues that presentness is not a property: "Since presentness is identical with temporal existence (or occurrence) and existence is not a property, *neither is presentness a property*. Presentness is the act of temporal being" (ibid., p. 202, my emphasis; compare with pp. 191–201). Note, however, that Craig is not consistent on this matter, since he also claims that "one need not use tensed statements alone to talk about tense; for example, 'The A-determination *presentness* is an

absolute property, not a mere relation' is tenselessly true (or false), but refers to an objective A-determination" (ibid., p. 156; compare with p. 222).

10. Mellor, *Real Time II*, pp. 70–78.

11. As I argued in essay 3, this common critique misses the mark because McTaggart does *not* start off by *assuming* that every event is past, present, and future. On the contrary, McTaggart begins by *insisting* that an event or moment in time can have *one and only one* A-determination. Thus: "And we *must* say that a series is *an A* series when each of its terms has, to an entity *X* outside the series, *one, and only one*, of three indefinable relations, pastness, presentness, and futurity" (McTaggart, "Time," p. 20, my emphasis.)

And again in "The Unreality of Time": "Past, present, and future are incompatible determinations. *Every event must be one or the other, but no event can be more than one.* . . . And, if it were not so, the A series would be insufficient to give us, in combination with the C series, the result of [B-]time" ("Unreality of Time," p. 123, my emphasis).

The further claim that every event/thing/moment has all three A-determinations is not assumed but is implied by the view—endorsed by A-theorists—that change requires temporal becoming.

12. Craig, *Tensed Theory of Time*, p. 203.

13. For the most carefully worked out A-theoretical account of the ontological significance of the tenses, see Smith, *Language and Time*, "The Infinite Regress of Temporal Attributions," and "The Logical Structure of the Debate about McTaggart's Paradox," in *The New Theory of Time*, pp. 202–10. For a critique of Smith, see essay 14. Smith has recently modified his views in "Time and Degrees of Existence," in *Time, Reality, and Experience*, ed. Craig Callender (Cambridge: Cambridge University Press, 2002), pp. 119–36.

14. Craig, *Tensed Theory of Time*, p. 205, my emphasis.

15. Ibid., p. 207, my emphasis.

16. Ibid., p. 214.

17. Ibid., pp. 213–14, my emphasis.

18. For my criticism of this model of becoming, see *Temporal Relations and Temporal Becoming*, chaps. 2 and 3, and essays in *New Theory of Time*, part 2. For criticisms of other nonpresentist accounts of becoming, see essays 10–14; Hugh Mellor, "McTaggart, Fixity and Coming True," in *Reduction, Time and Reality*, ed. Richard Healey (Cambridge: Cambridge University Press, 1981), pp. 79–97; and Mellor, *Real Time II*.

19. A. J. Freddoso, "Accidental Necessity and Logical Determinism," *Journal of Philosophy* 80 (1983): 257–83.

20. William Lane Craig, *Divine Foreknowledge and Human Freedom: The Coherence of Theism: Omniscience* (New York: E. J. Brill, 1991), p. 180, my emphasis; see also Craig, *Tensed Theory of Time*, p. 214, fn. 140.

21. Freddoso, "Accidental Necessity and Logical Determinism," p. 266, my emphasis; quoted in Craig, *Divine Foreknowledge and Human Freedom*, p. 180.

22. Craig, *Tenseless Theory of Time*, pp. 149–58.

23. Ibid., p. 150.

24. Ibid., p. 151.

25. Hugh Mellor, *Real Time* (Cambridge: Cambridge University Press, 1981), pp. 89–90.
26. Mellor, *Real Time II*, p. 70.
27. Craig, *Tenseless Theory of Time*, p. 150.
28. Ibid., p. 153.
29. Ibid.
30. Ibid., p. 154.
31. See William Lane Craig, “McTaggart’s Paradox and the Problem of Temporary Intrinsic,” *Analysis* 58 (1998): 122–27.
32. Craig, *Tensed Theory of Time*.
33. Ibid., p. 212; first and last emphases added.
34. Ibid., p. 154.
35. Ibid., p. 190, my emphasis.
36. Ibid., p. 152.
37. Craig, *Tenseless Theory of Time*, p. 156.
38. Ibid.
39. Richard M. Gale, *The Language of Time* (New York: Humanities Press, 1968), pp. 90–91; quoted in Craig, *Tenseless Theory of Time*, p. 155.
40. Craig, *Tenseless Theory of Time*, p. 156, fn. 22.
41. Ibid., pp. 156–57.
42. Ibid., p. 156.
43. In William Lane Craig, *Time and the Metaphysics of Relativity* (Dordrecht: Kluwer Academic, 2001), Craig argues for absolute time.
44. Craig, *Tenseless Theory of Time*, p. 157.
45. Ibid., Craig’s reference (in the quotation) is to essay 15, p. 159.
46. Ibid., my emphasis.
47. Ibid., my emphasis.



## Dainton's *Time and Space*

*Time and Space* by Barry Dainton<sup>1</sup> is intended to introduce the reader to the contemporary debate in the philosophy of time over the status of temporal becoming and the historical and contemporary debate in the philosophy of space between substantival and relational theories. Dainton's aim is not to settle either of these issues (the latter he believes must wait for a more definitive physical theory) but to reveal interconnections between different doctrines. After a preliminary examination of the issues to be considered, Dainton turns, in chapters 2–8, to those topics most closely connected with time, such as McTaggart's argument for the unreality of time, the B-theory (primarily Mellor's) account of time and change, the various asymmetries within time (including an extended discussion of Horwich's fork asymmetry), and various A-theoretic models of passage. There is also an extended discussion of the phenomenology of time—how time is manifest in our streams of consciousness—and of the possibility (or otherwise) of time travel. In chapters 9–11, Dainton turns to the classical debate between the substantival and the relational views of space, first distinguishing both views from that of the void that he rejects, and then tracing the controversy through the writings of Galileo, Descartes, and especially Newton and Leibniz. In chapters 12–14, the debate over the ontological status of space takes a step further by the transition to neo-Newtonian space-time, the development of non-Euclidean geometries, and Poincaré's conventionalism. In chapter 15, Dainton diverges from the realist alternatives concerning space and examines Foster's argument for spatial antirealism. The final chapters (16–20) of the book are devoted entirely to contemporary scientific theories and their interpretation. After his exposition of special relativity, Dainton considers Stein's, Hinchliff's, and Tooley's attempts to either reconcile the dynamic view with STR or, in Tooley's case, modify STR so it entails



that events stand in relations of absolute simultaneity and allows for a universe-wide division between what is real and what is not real. The basic elements of Einstein's general theory are expounded in chapter 18, and its metaphysical implications (mainly concerning substantivalism) are discussed in chapter 19. Dainton concludes by briefly considering some of the more speculative developments in recent physics, including string theory.

The main issue that Dainton considers in discussing temporal becoming or the passage of time is metaphysical: "what is there in reality that corresponds to this talk"<sup>2</sup> of events moving from the future through the present and into the past? He agrees with those A- and B-theorists who believe that McTaggart has demonstrated that the interpretation of passage in terms of time or events in time acquiring and shedding the nonrelational temporal properties of *pastness*, *presentness*, and *futurity* is absurd. However, Dainton appears to be sympathetic with at least one version of the A-theory, presentism, that he believes is immune to McTaggart's argument. For, if only the present exists, then nothing can have incompatible A-properties, since there are no past or future temporal items to exemplify them. Nevertheless, Dainton recognizes that the presentist must face what Bigelow has called "the problem of relations." If, as Bigelow asserts, and as surely is the case, in order for two things to stand in a relation there must be those two things, and if, as the presentist maintains, reality consists of a *succession* of presents, then there must be a temporal *relation* between those presents, and that is impossible. For if only the present exists, then there are no past or future individuals for the present to be temporally related to. Thus, the presentist is faced with a dilemma: "Either there are no genuine relations between successive presents," which is absurd because succession *is* a genuine relation, "or there *are* genuine relations between different presents, and since genuine relations are existence-entailing, dynamic presentism collapses into the static block view."<sup>3</sup>

Dainton develops his own response to the problem of relations, a view that he calls "compound presentism." According to compound presentism, "the sum total of reality consists of at least two *coexisting* very brief reality-slices. . . . Suppose A and B are two such, and that A exists at  $t_1$  and B at  $t_2$ . One of these slices, A, is annihilated and a new slice of reality, C, comes into existence, and with it a new time,  $t_3$ . Slice B is annihilated and D is created, along with  $t_4$  and so on."<sup>4</sup> Dainton thinks this view is immune to the argument from relations, but I think he is mistaken. For if, as Dainton claims, two reality slices A and B coexist, then their ontological status is "precisely the same as in the static block model,"<sup>5</sup> but then the notion that either A or B did or will undergo either absolute becoming or absolute annihilation is unintelligible. For on the B-theory, A and B exist (tenselessly or *simpliciter*) at the time they do regardless of what time it is, and that is incompatible with

A and B undergoing absolute becoming or annihilation. Nor can the distinction recently expounded by Tooley<sup>6</sup> between actual *simpliciter* and actual *as of time* save the compound presentist or the growing block theorist from paradox.<sup>7</sup> If I am right about this point and Dainton is right in rejecting other versions of presentism and the dynamic view, then his claim that "there may well be alternatives to the static block model of time,"<sup>8</sup> may be premature.

Generally, Dainton's characterization of the B-theory is accurate and useful, but he, like others, misleads the reader by using pejorative language to label the B-view. For example, he characterizes the B-theory (the view that the only intrinsically temporal entities are the B-relations of *earlier/later than* and *simultaneous with*) as the *static* or *block* view of time. This suggests (as does his illustrations of the view) that everything that ever happens is "already laid down" and fixed in stone (or a block) in advance. It does not help when he claims that "B-facts not only obtain now, they obtain at other times; they will never cease to obtain,"<sup>9</sup> since that characterization of B-facts is potentially misleading and inaccurate. B-facts that assert the date of events, or their temporal relations to other events, do not *always* obtain or obtain sempiternally, since if they did, then the entire history of the world would exist at every moment, and the specter of temporal becoming in the form of a moving now, or transitory temporal properties, would rear its ugly head in order to give rise to time and change. Dainton instills and reinforces these fears when he claims, "others find the static view more repellent than absurd,"<sup>10</sup> since that, in turn, suggests that the B-theory is incompatible with human freedom. However, when correctly understood the B-theory does not deny the fact of change, and can respond to all arguments that view it as a threat to human freedom.<sup>11</sup>

Another alleged problem for the B-theory that Dainton discusses is Prior's "Thank Goodness" argument. According to Prior, when we express relief over some dreadful event being past, what we are thanking goodness for cannot be the B-fact that, for example, the dreaded event is earlier than the relief, but must be the A-fact that the event in question *is past*. Dainton accepts Garrett's response to this objection which is "to agree with Prior that the fact that you are thanking goodness for is indeed a tensed rather than a tenseless fact, but also to hold that the relevant tensed fact is identical to (or refers to the same state of affairs as) a tenseless fact."<sup>12</sup> A B-theorist should not accept Garrett's way out of Prior's problem, for while the B-theorist can accept tensed *representations*, for example, tensed sentences or tensed beliefs (and perhaps even tensed propositions), he or she cannot accept tensed *facts*. For *if there are* tensed facts, then how can *true* tensed representations be about tenseless facts that these tensed facts are allegedly identical to?

One of the virtues of Dainton's book is that he is sensitive to the ontological issues involved in the debate concerning passage. Nowhere is this

more evident than in his discussion of E. J. Lowe in chapter 5. Dainton agrees with Lowe (in response to McTaggart and others who argue for the unreality of tense) that “we can *talk* in tensed terms without fear of talking nonsense. . . . But what does Lowe’s tensed theory of time actually amount to? What on his view is the metaphysical difference between past, present and future?”<sup>13</sup> That is an excellent question, and after examining Lowe’s view, Dainton concludes “it turns out that the only difference between being past, present and future is that events can legitimately be *called* ‘past’ after they have occurred, ‘present’ when they are occurring, and ‘future’ before they occur. Since tensed predicates do not denote genuine properties, it is hard not to feel that the difference between past, present and future is merely verbal. Is this all this difference boils down to? It is hard not to feel that there is something more to be said.”<sup>14</sup> I agree and I laud Dainton for not following those tensers who think otherwise.

Dainton’s book is chock-full of arguments. It is much more than an introduction to the issues it concentrates on. It strikes a good balance between metaphysics and physics and fulfills the purpose for which it was written.

## NOTES

1. Barry Dainton, *Time and Space* (Chesham, UK: Acumen, 2001).
2. *Ibid.*, p. 7.
3. *Ibid.*, p. 87.
4. *Ibid.*, my emphasis.
5. *Ibid.*, p. 89.
6. Michael Tooley, *Time, Tense and Causation* (Oxford: Oxford University Press, 1997).
7. See essay 12.
8. See Dainton, *Time and Space*, pp. 67–87, 91.
9. *Ibid.*, p. 11.
10. *Ibid.*, p. 9.
11. See essay 30.
12. Dainton, *Time and Space*, p. 36.
13. *Ibid.*, p. 66, my emphasis.
14. *Ibid.*

## B. The Open Future Theory



*Zeilicovici on  
Temporal Becoming*

**T**he aim of David Zeilicovici's article "Temporal Becoming Minus the Moving Now" is clear and admirable.<sup>1</sup> He wants to develop a theory of temporal becoming that (1) gives full ontological status to B-relations, (2) gives full ontological status to the transitory aspect of time, and (3) avoids commitment to the moving NOW and the subsequent (McTaggart's) paradox. But it does not seem to me that he succeeds in accomplishing these difficult undertakings, and in what follows I shall attempt to explain why.

A useful place to begin is by briefly considering the theory that he wants to avoid. On the *traditional* tensed or A-theory of time, the NOW is a particular or property that moves along an ordered, but as yet nontemporal, C-series. The terms of the C-series exist (tenselessly) in unchanging relations to each other, and these unchanging relations become temporal relations as the NOW moves across them so that one term, *E*, is NOW *when* another term, *E'*, is future, *and then, when* the NOW "hits" *E'*—that is, *when E'* is present—*E* is past. The problem is that this account of time presupposes time. As the words "*and then*" and "*when*" indicate, in order for there to be temporal relations among terms in the C-series, there have to be temporal relations among the "events" of *E's being NOW* and *E's not being NOW*, otherwise we have a contradiction. But given the traditional view, in order for there to be temporal relations between terms, there must be a NOW moving across them. Thus, we are caught in either a vicious circle (of trying to define temporal relations in terms of the moving NOW and the moving NOW in terms of temporal relations) or a vicious infinite regress (where the contradiction of every term being past, present, and future, or NOW and not NOW, is passed on from one series of terms to another).

At this point, Zeilicovici offers a theory that attempts to avoid the pitfalls of the traditional view by maintaining both that (1) *at any present moment*

*future time does not exist* and that (2) the B-series is a *single time-series*. On this view, temporal becoming involves a *change of time*, and such a change involves the creation of a "*new entity* [an instantaneous A-series] which did not exist (not even as an incomplete series) before that which makes the new A-determination true (that is, the addition) is there."<sup>2</sup>

Thus, change of time consists in the "replacement" of an old A-series by a new A-series. What is crucial to note about "replacement" is that "the increase in the sum total of existence" is not an increase in a *previously existing* A-series, for if it was, then we would have a change *in* time and not a change *of* time. Rather, as moments are created, a totally new A-series comes into existence, and the old A-series ceases to exist, that is, is replaced.

Zeilicovici's view is intriguing, but we must clarify certain points in it before we can detect its strengths and weaknesses. For example, what does he mean by "moments" of the "B-series" and the "A-series"? Zeilicovici's official view of "moments" is relational. He says that "time is the ordered set of moments, and moments are defined as equivalence sets of events under the relation of simultaneity,"<sup>3</sup> and his response to Melvin Schuster's argument against the creationist view of time seems to imply a commitment to the relational theory.<sup>4</sup> For on the event-creationist view, events come into being "*at already existing moments*" (so this view is vulnerable to the moving NOW critique), but on the moment-creationist view that Zeilicovici adopts, "future moments are not a priori existent delivery rooms in which events are to be born"<sup>5</sup> (and so, allegedly, this view is not open to Schuster's criticism). Thus, on Zeilicovici's official view, there do not exist (tenselessly) absolute moments when events come into existence (or are created), but rather, what come into existence are moments relationally understood, that is, sets of simultaneous events.<sup>6</sup>

Nonetheless, other remarks that Zeilicovici makes suggest a commitment to absolute time. He claims that A-theorists, no less than B-theorists, can maintain that the B-series (by itself) is a time series. After all, he exclaims: "Why are we not free to grant that *earlier than* is 'an analyzable temporal relation' . . . just because it ranges over the unanalyzable temporal particulars known as moments?"<sup>7</sup>

Soon we shall see why an A-theorist is not free to grant this, but at present we should note that no relationalist would countenance "unanalyzable temporal particulars known as moments." One might say that Zeilicovici just misspoke here, but then what are we to make of his claim that "if  $t < t'$ , t-tokens of such statements as ' $t$  exists at  $t$ ' are not always as uninformative as they look. For, if  $t$  happens to be the present,  $t'$  *may remain forever just an empty placeholder on the time axis*, while the above t-token conveys the informative prediction that this is not the case."<sup>8</sup>

What can he mean by saying that " $t'$  can remain an empty placeholder on the time axis" if not that  $t'$  may exist as a term in the B-series even if no

event (or substance) comes to occupy it? And that is to be committed to absolute time. The ambiguity reflected in his talk about "moments" has an analogue in his account of the B-series.

The B-series, according to Zeilicovici, is a genuinely *temporal* series whose generating relation is *being later than*. Furthermore, the B-series is static, or unchanging, in that neither the relations between the terms in the series nor the series as a whole change any of its properties. More importantly, there is *one and only one B-series*. Zeilicovici's reasoning for this thesis is important and worth quoting at length.

The single B-series differs from any of the many A-series just in failing to distinguish between existing moments and predicted moments and by being, as a consequence, unbounded. B-sentences *report* B-relations between existing temporal particulars and *predict* them for nonexistent ones without registering any ontological difference between the two kinds of particulars or any epistemological difference between the two kinds of acts.

The addition of a new moment to existing time fails to create a new B-series, because *the new moment appears in the old B-series anyway* [my emphasis]. Thus the two series are indistinguishable from each other and so must, a fortiori, be counted as one and the same series. It is true of course, that what appears in the new series is a "real," existing moment, while what figures in the old series is a mere predicted shadow of a moment. But such a feature cannot be used as a springboard for making a distinction between two B-series because *being later than*, the generating relation of any B-series, signally fails to mark any such distinction between the two kinds of moments.<sup>9</sup>

His position seems to be this: that all the terms that are ever in the B-series are always in the B-series. There is a single B-series composed of *the same terms* at every (present) moment, and that is so even though at every present moment some terms of the B-series exist and some terms of the B-series (those that are predicted) *do not exist*; that is, they are terms beyond the upper bound. But what does it mean to say that an existing moment in the "new" B-series "figures in the old series [as] a mere *predicted shadow* of a moment"?<sup>10</sup>

Either the predicted shadow is a member of the B-series or it is not. If it is *not* a member of the B-series, then the new B-series is not the same as the old B-series. On the other hand, if the predicted shadow *is* a member of the B-series, then it would appear that it is nothing other than a "placeholder" on the (absolute) time axis "waiting" to be filled by newly created events. In the first case, he must abandon his claim to be treating the B-series (by itself) as a temporal series independently of the phenomenon of temporal becoming as represented by the A-series. In the second case, he must abandon his claim to be analyzing temporal becoming *minus* the moving NOW.

To connect this point with the previous one about the ambiguity con-



cerning "moments," note that if moments are understood relationally, then the "predicted shadow" cannot exist as part of a *single* B-series. For if the predicted moments are sets of simultaneous events, then at any present moment there are an infinite, or at least an indefinite, number of (future) sets of simultaneous events. After all, on this view the *future is open*. But to say that the future is open is just to say that there are many possible events that will follow the present moment. Each possibility constitutes a different B-series. Admittedly, there is only one *actual* B-series, but the *actual* B-series, the single B-series, is composed entirely of terms that *exist*. Thus, if he adopts a relational view of moments, and if he maintains that the future does not exist but is only predicted or conjectured, Zeilicovici cannot speak of a *single* B-series; that is, he cannot say that the old B-series is the same as the "new" B-series. Indeed, he cannot say that the B-series is a time-series independent of temporal becoming at all, because it turns out that the B-series simply is the A-series. If, however, moments are understood as absolute, that is, as intrinsically temporal particulars, then predicted moments are part of a *single* B-series, and the becoming of events, or the transitory aspect of time, must reintroduce the moving NOW. By playing on the ambiguity of "moments," Zeilicovici is able to think that a *change of time* preserves a *single* B-series (where moments are absolute) within which there exists the creation of different (new) A-series (where moments are construed relationally). Perhaps we can understand this last point more clearly by considering his conception of the A-series.

Simply stated, the A-series is that part of the B-series that exists. As he puts it:

A present-at-*t* event [is] any event occurring at the upper bound of *until-t* existing time. If some predictions are fulfilled, there will be a next moment; *t* will lose the frontier characteristic, and our event will lose presentness while retaining intact all its ordinary properties and all its temporal order B-relations to its previous partners. But, because it is now related to new members, this event (and all others) will belong to different time series, the series which includes the previous one but whose "membership is increased."<sup>11</sup>

Hence, the passage of time is the creation of new A-series, each containing more members than the previous one that it has replaced. Thus, he thinks that he has a single B-series and within that single B-series, a multitude of A-series. In this way, there exists a *change of time* (A-series) without a *change in time*, that is, without any single thing (like the NOW) moving along the B- (or C-) series. But given Zeilicovici's problems with the B-series, his attempt to distinguish a *change of time* from a *change in time* fails.

If the B-series is composed of absolute moments "waiting" to be occu-

pied, then the creation of each new A-series at a certain time is itself an *event* that must take place in time and so must undergo temporal becoming. On the other hand, if the B-series is composed of moments construed as sets of simultaneous events, and future moments *do not exist* as members of the B-series, then we cannot speak of a single B-series or of an "old" B-series being the same as a "new" B-series. Rather, as each moment is created, we get a different A-series that itself is a B-series, and that is precisely the part of the traditional A-theory that Zeilicovici so strenuously wants to avoid. Finally, if he maintains the relational view of moments and insists that there is only one B-series (which I have argued all of whose terms must exist), then obviously Broad's idea that "the sum total of existence is always increasing" must be abandoned. Indeed, it would appear that the only way to reintroduce transience at this point is by appealing to the moving NOW. On the hopelessness of that way of trying to make sense of temporal becoming, both Zeilicovici and I agree.

## NOTES

1. David Zeilicovici, "Temporal Becoming Minus the Moving Now," *Noûs* 23 (1989): 505–24.
2. *Ibid.*, p. 246, my emphasis.
3. *Ibid.*, p. 237, my emphasis.
4. Melvin Schuster, "On the Denial of Past and Future Existence," *Review of Metaphysics* 21 (1968): 447–67.
5. Zeilicovici, "Temporal Becoming Minus the Moving Now," p. 239.
6. Note that Zeilicovici does emphasize that each A-series is instantaneous, but this is troublesome because each A-series, in order to have its membership increased, must contain *past* as well as present members. However, if a newly created A-series contains members that are both past and present, then how can what is created be a moment—a set of *simultaneous* events?
7. Zeilicovici, "Temporal Becoming Minus the Moving Now," p. 242.
8. *Ibid.*, p. 238, my emphasis.
9. *Ibid.*, pp. 239–40.
10. *Ibid.*, my emphasis.
11. *Ibid.*, p. 239.



## Yourgrau's *The Disappearance of Time*

In his contribution to the Schilpp volume on *Albert Einstein: Philosopher and Scientist*, titled "A Remark about the Relationship between Relativity Theory and Idealistic Philosophy," Kurt Gödel argues, in the tradition of McTaggart, Parmenides, and Kant, that time is ideal, an illusion that represents nothing in objective reality. But what is time? As Gödel conceives of it, time involves an objective lapse or flow. "The existence of an objective lapse of time [whose essence is that only the present really exists], however, means (or, at least, is equivalent to the fact) that reality consists of an infinity of layers of the 'now' which come into existence successively."<sup>1</sup> Thus, if (A-theoretic) time is real, then there must be temporal becoming, "that successive time that unfolds into an open future," which itself implies, as Richard Jeffrey puts it, that "[r]eality *grows* by accretion of facts."<sup>2</sup> Yet there appear to be numerous difficulties with the A-theoretic conception of time.

First, there is Gödel's argument from *physics*: Change implies A-time. If, however, Einstein's theory of relativity is true (and it is), and by implication, Gödel's R-universes with time travel are possible (and they are), then the A-theoretic conception of time is false, not only in the theoretically possible world in which time travel is possible but in our world as well. Therefore, A-time and change are an illusion and unreal.

Second, there is the argument from *metaphysics*, an argument that originated with Parmenides: Reality is the changeless totality of *all* that is (tenselessly) the case. If, however, time is real, then the sum total of reality must change; it must *increase* (with the accretion of facts) as the nonexistent future becomes present. Thus, time is unreal. Then there is the argument from *semantics*, according to which the meaning of a sentence in which "now" occurs is compatible with its truth conditions being entirely tenseless. And finally, there is an argument from *logic* that purports to demonstrate that no

formalism of tensed time, even the most sophisticated, such as R. Thomason's "Indeterminist Time and Truth-Value Gaps,"<sup>3</sup> is adequate to represent A-time.

In this relatively short book, Pallé Yourgrau attempts to tackle *all* of these difficulties and point the way to a solution to some of them. In the course of doing so, he has many provocative and valuable points to make concerning such issues as the correct interpretation of Gödel's idealism (chaps. 1–2), time travel and the Gödel universe (chap. 3), whether or not A-theoretic time is compatible with relativity theory (chap. 4),<sup>4</sup> Frege's semantics (chap. 5); and the relations between time and potential and actual infinity and time and the understanding of human existence (chap. 6).

Throughout *The Disappearance of Time*, Yourgrau attempts to defend two main theses: (1) Gödel has shown that since objective "time" has a B-theoretic (tenseless) structure, *time is not real*. (2) Since our temporal intuitions and experiences imply time has an A-theoretic (tensed) structure, *time is real*. Yourgrau sums up these two themes when he says, "time seems at once to demand and to resist a reconciliation between its subjective, intuitive, manifestations and its appearance in the best models that have been offered to date to incorporate its peculiar being into the fabric of the objective world."<sup>5</sup> Within the confines of a brief review, I cannot do justice to the many arguments Yourgrau uses in support of these important theses. Since, however, I do not believe he has established either of them, I want to indicate the directions I would develop to defend my assessment.

The B-theoretic view of time holds that all past, present, and future events exist tenselessly in the network of *earlier*, *later*, and *simultaneity* relations. According to Yourgrau and Gödel, this view *spatializes time* by eliminating genuine succession from the temporal. For if something's location in "time" has no effect on its existence, then the series of events in "time" is like a "platonic object whose members do not come into existence successively" or a spatial object all of whose parts *already exist* laid out "in bloc." In either case, the "temporal mode of being" in which to exist is to be present is lost.<sup>6</sup>

The possibility of time travel in Gödel's R-universes allegedly supports this criticism of the B-theory, for "[I]n such worlds one can in effect 'travel' in time in the same way we can now travel in space and, in particular though always heading into our causal future we eventually arrive at our past or present."<sup>7</sup> If by traveling into our causal future we arrive at the past, a temporal loop or circle is formed in which one and the same event, for example, traveling in a time machine, may be later and earlier than the event of entering the time machine. However, if the terms of a series stand in symmetric relations, then we no longer have a *temporal* series with an intrinsic direction from earlier to later.<sup>8</sup>

There are two assumptions underlying this argument. The first is that

temporal relations are definable in terms of causal relations, that the order of causality is the order of time. The second is that temporal loops are possible because causal loops are possible, that is, an effect can precede its cause. Surprisingly, neither of these assumptions is examined in Yourgrau's discussion of time travel. D. H. Mellor, who accepts a version of the causal theory of (tenseless) time, rejects the possibility of backward causation (and hence time travel), but Yourgrau does not consider Mellor's arguments.<sup>9</sup> Moreover, a B-theoretician can admit all terms on the B-series are ontologically on a par, having tenseless existence at the particular clock times they do, and yet reject the view that temporal relations are definable in terms of causal relations or are definable at all. As Yourgrau himself says, in the context of defending a Platonic view of the self, "[P]hysics is not ontology."<sup>10</sup>

Russell, (the early) C. D. Broad, myself, and others have maintained that temporal relations are primitive and unanalyzable relations, and the difference between spatial and temporal relations is an irreducible qualitative difference.<sup>11</sup> On this view, we directly experience temporal relations between tenseless existents whenever, for example, we hear a tune in which one note precedes another. As Broad has said, "On these relations of before and after which we immediately recognize in certain objects of our experience all further knowledge of time is built."<sup>12</sup> In short, a B-theorist can say of temporal relations what Yourgrau says of temporal becoming, namely, "the notion of *nuns fluens*, [if it is] to be made sense of at all, must be regarded as primitive, as *sui generis*."<sup>13</sup>

The B-theoretic structure of time does imply that all terms in the B-series exist tenselessly, there being no special property possessed by events that are present. However, the B-theory neither spatializes time nor takes away "genuine possibilities" and free will, unless one assumes A-theoretic conceptions of succession and the open future.<sup>14</sup> What reasons are there, then, to believe time has an A-theoretic structure? Conversely, why does Yourgrau claim "[I]f, with Gödel, we maintain the ideality of time that successive time that unfolds into an open future we abandon not only our overtly temporal intuitions . . . , but also certain otherwise clear, natural, and intuitive distinctions of a mathematical, as well as of a more general human significance?"<sup>15</sup>

Yourgrau appeals to our "direct experience" of time, "the phenomenon of lived time . . . and the human significance of the present moment" in order to support that A-theoretic view.<sup>16</sup> Thus, he claims, following Prior and others, that B-time cannot provide a plausible explanation of the presence of experience and our different attitudes toward past, present, and future events, especially the fear of death.<sup>17</sup> Though these objections to B-time need to be answered, recent discussions of the issues (some of which Yourgrau can be faulted for not considering) have gone a long way toward answering them.<sup>18</sup> I shall return to these issues in essays 17 through 22.

Yourgrau maintains that the mathematical distinction between the potential and the actual infinite implies time is A-theoretic: "[A] quantity is potentially infinite if it increases without limit or if it goes on forever. With the latter formulation we see time enter the picture, and it must clearly be successive forever incomplete A-theoretic time."<sup>19</sup> Maybe a potentially infinite series must be incomplete but surprisingly (and paradoxically) it does not necessarily follow that A-time must be "forever incomplete." After all, it is only the contingent part of the future, that is, chance events and human actions open to deliberation that are open and not yet determinate. On the standard model of A-theoretic time, facts about the future that have determining causes are closed being founded upon what already exists. Thus, if the physical universe is causally closed and human beings (and actions open to deliberation) eventually cease to exist, then A-time would be closed and complete. (And even if the universe is always partially indeterminate, there is still the puzzling question of how the partially open future can come into existence simultaneously with the partially closed future.)

Yourgrau aligns himself with Plato and Gödel, who "view our embodied existence in this world as at best a confused and cloudy preparation for something more meaningful in our postnatal nonexistence (i.e., nonexistence after death in this world)."<sup>20</sup> Furthermore, if the selfsame being *changes* from the state of existence to nonexistence (or the reverse), then, according to Yourgrau, A-theoretic time must be real.<sup>21</sup> Although Yourgrau gives arguments to support this essentially Platonic view of the self, I remain skeptical.

Yourgrau's honest attempt to deal with the difficulties facing the A-theory is laudable. Nevertheless, when he suggests we pay too high a price if we adopt an idealist conception of time and abandon the A-theory, I demur. Indeed, I would suggest the price we have to pay to abandon the A-theory is well worth it.

## NOTES

1. Pallé Yourgrau, *The Disappearance of Time: Time Travel in the Gödel Universe* (New York: Cambridge University Press, 1992), pp. 23–24.

2. *Ibid.*, pp. 128, 23.

3. Richard Thomason, "Indeterminist Time and Truth-Value Gaps," *Theoria* 36 (1970): 264–81.

4. For recent discussions of this issue, see Howard Stein, "On Relativity Theory and Openness of the Future," *Philosophy of Science* 58, no. 2 (1991): 147–67; and Quentin Smith, *Language and Time* (New York: Oxford University Press, 1993), chap. 7.

5. *Ibid.*, p. 176.

6. *Ibid.*, pp. 11, 72.

7. Ibid., p. 20.
8. Ibid., pp. 42–53.
9. See Hugh Mellor, *Real Time* (New York: Cambridge University Press, 1981), pp. 161–87.
10. Ibid., p. 148.
11. See Bertrand Russell, "On the Experience of Time," *Monist* 25 (1915): 212–33; C. D. Broad, "Time," in *Encyclopedia of Religion and Ethics*, vol. 12, ed. J. Hastings (New York: Scribner, 1955), pp. 334–45; L. Nathan Oaklander, *Temporal Relations and Temporal Becoming* (Lanham, MD: University Press of America, 1984); J. M. Shorter, "The Reality of Time," *Philosophia* 14, nos. 1–2 (1984): 321–39.
12. C. D. Broad, "Time," p. 334.
13. Yourgrau, *Disappearance of Time*, p. 29.
14. Ibid., p. 46.
15. Ibid., p. 128.
16. Ibid., p. 127.
17. Ibid., pp. 126–27, 150–51.
18. Murray MacBeath, "Mellor's Emeritus Headache," in *The New Theory of Time*, eds. L. Nathan Oaklander and Quentin Smith (New Haven, CT: Yale University Press, 1994), pp. 305–11; Hugh Mellor, "MacBeath's Soluble Aspirin," *Ratio* 25, no. 1 (1983): 89–92; Clifford Williams, "The Phenomenology of B-Time," in *New Theory of Time*, pp. 360–72.
19. Ibid., p. 129.
20. Ibid., p. 153.
21. Ibid., pp. 151–52.





## Tooley's *Time, Tense, and Causation*

Since the publication of Richard Gale's anthology *The Philosophy of Time*, and his original work, *The Language of Time*, and especially since D. H. Mellor's *Real Time*, the literature on the philosophy of time has flourished.<sup>1</sup> Part of the reason for this renewed interest in the philosophy of time concerns its connection with many other issues in the philosophy of religion, the philosophy of language, the philosophy of science, and metaphysics. In Michael Tooley's case, it was his research on the nature of causation that led him to a consideration of the nature of time and the debate between the dynamic (or tensed) and the static (or tenseless) views of time. In his book *Causation: A Realist Approach*, Tooley argued for a causal analysis of the direction of time, and in *Time, Tense, and Causation*, he argues that a full account of the relation between causation and time is even deeper, since events can be causally related only in a dynamic world—a world in which the past and present are real, but the future is not.<sup>2</sup> The version of the "nonexistent future" theory of time that Tooley endorses is original and in various ways quite unlike more traditional tensed theories. He espouses some theses that have hitherto been rejected by tenses, for example, "that tenseless concepts and facts are more basic than tensed ones,"<sup>3</sup> but he argues for them very carefully.

This is an important book that makes a valiant effort to synthesize the insights of both tenses and detenses. In it Tooley has many interesting things to say on a wide variety of topics, such as backward causation, indeterminism, counterfactuals, truth-functionality and the logical connectives, the analysis of tensed statements, McTaggart's paradox, absolute and relational theories of space and time (or space-time), the Special Theory of Relativity, and Storrs McCall's model of a dynamic world, to name just a few. In the confines of a limited review, I cannot possibly do justice to the richness and sophistication of the numerous arguments in this book. Rather, I shall limit

myself to summarizing the main argument for his version of the dynamic view as it unfolds throughout the book and indicating what I believe are the most serious difficulties facing it.

In part 1, "Causation, Time and Ontology," Tooley states his basic ontological position and gives his central argument—the argument from causation—in support of it. Tooley's basic position may be summarized as follows. Traditionally, the dispute between tenses and detenses has centered around two issues. First, is the world static or dynamic? That is, does change involve an object (or the world as a whole) having different properties at different times, as the tenseless theory contends, or is there change in an object (or the world) if and only if "the totality of temporal facts, or states of affairs, [constituting an object or the world as a whole] is different at different times,"<sup>4</sup> as the tensed theory maintains? On the static conception, what states of affairs are actual does not depend upon what time it is, whereas on the dynamic view it does. The second issue is whether tensed or tenseless facts are basic. As Tooley puts it, are tensed facts logically supervenient on tenseless facts, as the B-theorist believes, or are tenseless facts logically supervenient on tensed facts, as traditional A-theorists assert? Tooley's novel thesis is that an adequate theory of time requires a dynamic world in which the *basic* facts are *tenseless*. His theory, therefore, combines what he takes to be the essential core of both the A- and B-theories; the flow of time implies the coming into existence at a time of basic tenseless facts. Time passes as new tenseless states of affairs are added to the sum total of what exists (tenselessly) as of a specified time.

In order to support this dynamic theory, Tooley accepts as primitive the notions of actual at a time (and the corresponding notion of truth at a time) and actual *simpliciter* (and the corresponding notion of truth *simpliciter*). He needs the former notion to account for the change over time in what states of affairs exist, and he needs the latter to account for (inter alia) the meaning of statements that are about or involve the future.<sup>5</sup>

Given this machinery, Tooley's argument for the dynamic view has the following structure. Tooley's conclusion is that the proper analysis of the nature of causation implies that the world is a dynamic one in which the past and present are real, but the future is not. He supports that conclusion by first arguing against reductionist approaches to causation. Next, he claims that the concept of causation cannot be analytically basic, since causation is not given in immediate experience. As reductionist accounts have been ruled out, "the only possibility, then, is to treat causation as a theoretical relation."<sup>6</sup> Furthermore, since Tooley argues for a singularist conception of causation,<sup>7</sup> he cannot characterize the relation of causation by reference to causal laws. Thus, he formulates a theory of causation according to which "[C]ausation is that unique relation between events or states of affairs such that, if there are

laws involving that relation, those laws must satisfy postulates  $(C_1)$  to  $(C_4)$ .<sup>8</sup> These postulates concern the relation between posterior probabilities and prior probabilities, and they assert that the relation is different for causes and for effects. The idea is that if a law satisfies these postulates, then it is a causal law, and if it is causal law, then it involves a causal relation.

Tooley then argues that causality implies the dynamic view: the existence of causal laws must satisfy certain postulates concerning the transmission of probabilities. In particular they must satisfy the postulates  $(C_4)$  and  $(C_1)$  that imply "the posterior probability of an effect depends upon the prior probability of the cause, . . . whereas, . . . the posterior probability of a cause does not depend upon the prior probability of its effect."<sup>9</sup> On the static view, or on a dynamic view according to which past, present, and future are all equally real or in which only the present exists, there will be no way to capture the asymmetry involved in causation. On the other hand, if there is a deep ontological asymmetry in the world, where the past and present do exist and the future does not, then the causal asymmetry expressed by the key postulates can be explained. As Tooley puts it, "the asymmetry that is expressed, by postulates  $(C_1)$  and  $(C_4)$  will be captured and explained" only if "causal laws, in conjunction with what is actual as of a given time, determine what states of affairs will be added to what is already actual, and, thereby, what *will ultimately exist*, in a *tenseless sense*."<sup>10</sup>

Before we can accept this argument for Tooley's version of the dynamic view, we need to understand what the view actually holds. In particular, what does it mean to say that a state of affairs "will exist (tenselessly)." For something to exist tenselessly does not mean that it did, does, or will exist, since Tooley takes the existential quantifier to be tenseless.<sup>11</sup> Thus, if an event  $E$  or state of affairs exists *tenselessly*, then it exists *simpliciter*, without regard to what time it is, or the concepts of past, present, or future. What analysis, then, can be given of the statement "Event  $E$  will exist (tenselessly)?" If  $E$  exists tenselessly, then it exists *simpliciter*, but if it is future, then on Tooley's view, it does not exist as of the present moment. It seems to me that either this view reduces to the tenseless theory, or it involves a contradiction.

Tooley claims that "the fundamental thing that separates tensed and tenseless accounts of the nature of time is, . . . the acceptance or rejection, of a dynamic conception of the world."<sup>12</sup> However, his interpretation of the dynamic aspect of time makes it difficult to understand how his view differs from the B-theory or, if it does, how it avoids the alleged pitfalls of the traditional tensed theory. Tooley says that the key feature of the dynamic view is that "while the past and present are real, the future is not." As of the present moment the future is nothing, a nonentity, but as time passes, "the world changes [or grows] through the addition of new *tenseless* facts."<sup>13</sup> Thus, "[I]n order for the world to be a dynamic one all that is required is that the facts

that are actual as of one time differ from the facts that are actual as of some other time."<sup>14</sup> However, this last statement is ambiguous. It may mean that the tenseless states of affairs located (tenselessly or *simpliciter*) at one time are different from the tenseless states of affairs located at some earlier or later time, a thesis that is compatible with the tenseless theory of time. Or it could mean what I believe Tooley intends, namely, that the sum total of existence at one time differs from the sum total of existence at another time. That is, the totality of reality contains more at a later time  $t_2$  than it does at an earlier time  $t_1$ , a thesis compatible with the tensed theory. In either case, the crucial question is: How can Tooley believe *both* that there is a totality of tenseless states of affairs, that neither did, do, or will exist but exist *simpliciter*, and that tenseless facts that are not actual as of one time can become actual as of a later time? Although Tooley does offer an analysis of ordinary tensed sentences, he never really avoids this basic dilemma.

In part 2, "Semantical Issues," Tooley argues that his theory requires two concepts of truth: truth at a time and truth *simpliciter*. Since what tenseless facts there are changes with the passage of time, there must be the idea of truth at a time, and since no tensed account can be satisfactory unless it incorporates the idea of the totality of existence, there must be the concept of truth *simpliciter* that in the case of tenseless propositions can be "recursively defined [as] correspondence between propositions, and the sum total of what exists."<sup>15</sup> In recognizing two kinds of truth, truth at a time and truth *simpliciter*, and in recognizing two kinds of existence, existence at a time and existence *simpliciter*, Tooley wants to have his cake and eat it, too. On the one hand, he wants reality to consist of "the mereological union of *all* the states of affairs that are actual as of one time or another."<sup>16</sup> That is, he wants reality to be the totality of what (tenselessly) exists *simpliciter*. On the other hand, to allow for the accretion of facts, his view presupposes that the sum total of what exists (tenselessly) is different at different times. Unfortunately, Tooley never clearly explains how the sum total of existence can remain the same and have temporal parts that change their existential status. Tooley asserts that the problem of change motivates the debate between tensed and tenseless approaches to time,<sup>17</sup> but he does not realize that his own solution simply reraises it. He maintains that the totality exists *simpliciter*, and yet new tenseless facts come into existence and are added on to the totality as time passes. But how is this possible? How can the totality exist *simpliciter* and remain the same through a change (as of different times) in the existential status of its temporal parts?

In part 3, "Tensed Facts," Tooley is concerned with the meaning of tensed language. First, he argues that although the concept of temporal relations is not analytically basic, the various accounts by tensors to analyze tenseless temporal concepts in terms of tensed ones are all unsuccessful.

Then, he argues that while ordinary tensed statements, for example, "It will rain," do involve indexicals and thus express different propositions at different times, there are more basic tensed statements, for example, "Event *E* lies in the future at time *t*," that do not contain indexicals. Thus, for example, "Event *E* lies in the future at time *t*" is more basic than an ordinary tensed statement because the meaning, in the sense of truth conditions, of a nonindexical tensed statement can be used to give the meaning of an ordinary tensed sentence. On his analysis, "Event *E* is future at time *t*" means:

Event *E* is later than time *t*, and *t* is an instantaneous state of affairs, *t* is actual as of time *t*, and no state of affairs that is later than *t* is actual as of time *t*.<sup>18</sup>

The problem with this analysis is this: If Event *E* is later than time *t*, and temporal priority is a tenseless concept, then *E* is later than time *t* is a state of affairs that (tenselessly) exists *simpliciter*. But then how can it be the case that "no state of affairs that is later than *t* is actual as of time *t*," unless Tooley simply means that no state of affairs later than *t* is located at *t*? And if that is what he means, then his theory is compatible with the *tenseless* conception of time.

Chapter 8 contains criticisms of alternative tensed accounts of time and a defense of the most common objections to the tenseless theory. (He takes the argument from causation to be a decisive refutation of tenseless time.) Tooley considers those views that hold that events have one or more intrinsic nonrelational tensed properties, and he argues that they fail since, among other things, they cannot explain how an *instantaneous* event can have an *A-property* at one time and then lose it at *another* time. On the other hand, if the future is not real, then according to Tooley, tensed properties can be viewed as relational properties of events and the difficulty is avoided since "an instantaneous event may, therefore, possess the relational property of pastness at one time, and the relational property of presentness at another time."<sup>19</sup> Tooley also offers some penetrating criticisms of (two versions of) presentism and of Storrs McCall's version of the dynamic view.

In part 4, "Temporal Relations," Tooley puts forth and defends a novel version of the causal theory of time. According to Tooley, qualitative tenseless temporal relations and the direction of time are necessarily identical with causal relations, whereas a modification has to be made for quantitative temporal relations. Before turning to those accounts, Tooley attempts to disarm a potential difficulty with the causal theory. He notes that if one is concerned with making sense of our ordinary notion of time, which is absolute, then it would seem that one cannot hold a causal theory of time. For if temporal relations are analyzable in terms of causal relations between states of affairs, then it would seem that in a world devoid of events and objects causal rela-

tions cannot exist. This, Tooley argues, is not the case, since there is no a priori reason for denying that spatiotemporal regions can enter into causal relations, and there appear to be good reasons for accepting a substantialist view of space-time.<sup>20</sup> He then proceeds with his analysis of the qualitative temporal relations of simultaneity and priority, which he gives in terms of actual causal relations plus spatial relations. He then analyzes quantitative temporal relations, that is, relations that are a matter of the temporal distance between events, and argues that temporal distance can be defined as that unique relation among events and/or space-time points "whose involvement in causal laws is required if the laws are to entail the existence of potential correlations between relevant causal processes."<sup>21</sup> Tooley concludes this chapter with a consideration of objections to causal theories. Since the objections are typically based on a relational theory of time, his version of the causal theory is immune to them. The second sort of objections are to absolute space and time. Tooley argues that these objections are either based on a discredited verificationism or the assumption of a Humean supervenience thesis, which he rejects.

In part 5, "Objections," Tooley considers both philosophical and scientific objections to his version of the dynamic view. One serious philosophical argument is that put forth by McTaggart. Tooley thinks that it is a nonstarter, since he holds that (a) temporal relations are not analyzable in terms of tensed properties and that (b) the alleged incompatible properties problem is avoided by maintaining that events are past, present, and future, neither simultaneously nor timelessly, but at different tenseless times. Thus, Event *E* is future at time *t*, and this is compatible with Event *E* being present at time *t*<sub>1</sub> and Event *E* being past at *t*<sub>2</sub>. However, I don't think that McTaggart's paradox can be dealt with so easily. Tooley maintains that statements about the future, though not true at the present moment, may be true *simpliciter*.<sup>22</sup> However, if, for example, "Clinton will leave office in the year 2000" is true *simpliciter*, then, given his commitment to the correspondence theory of truth, there must be some corresponding state of affairs that is actual *simpliciter*. If there is such a state of affairs, then it would appear to be none other than the state of affairs that comes into existence as of the year 2000. However, if that state of affairs exists *simpliciter* and also comes into existence at a certain time, then one and the same state of affairs both exists and does not exist. To avoid the contradiction by asserting that these are two different primitive notions of existence strikes me as obfuscating.

Tooley devotes chapter 11 to the scientific objection to the dynamic view based upon the Special Theory of Relativity. Put simply the objection is that on the Special Theory, all simultaneous events are such relative to a frame of reference. On the dynamic theory, where the (nonexistent) future is later than the present, there must be some absolute, frame-independent relation

of simultaneity such that no event that is future relative to one frame is present relative to another. Tooley does not follow Stein's<sup>23</sup> gambit or any of the other recent responses to this difficulty. Rather, he carefully defends a new strategy, which is to modify the Special Theory of Relativity so that it does not entail that the one-way speed of light is a constant in all directions in all inertial frames but does allow for a definition of absolute simultaneity. He then offers three reasons for believing that the modified theory is preferable to the Special Theory. First, its predictive and explanatory power is greater. Second, there is no empirical evidence in support of the one-way principle. And finally, results in quantum mechanics, specifically the collapse of the wave packet, support the view that simultaneity is absolute.

Part 6, "Summing Up," contains a very useful overview of the central features of Tooley's approach to time. What is clear, in this chapter and throughout the book, is that Tooley wants to follow an intermediate path between tenseless approaches to the nature of time and traditional tensed accounts.

In my opinion, Tooley's view does not succeed in combining the tenseless and tensed approach but collapses into either a purely tenseless theory or a tensed theory that is, in spite of his assertions to the contrary, susceptible to the dialectical difficulties of the traditional version. Nevertheless, my criticisms should not belie the fact that Tooley's provocative book makes an extremely valuable contribution to the literature on the philosophy of time and is mandatory reading for anyone working in the area.

## NOTES

1. Richard Gale, *The Philosophy of Time* (Garden City, NY: Anchor Books, 1967), and *The Language of Time* (New York: Humanities Press, 1968); Hugh Mellor, *Real Time* (New York: Cambridge University Press, 1981).

2. Michael Tooley, *Causation: A Realist Approach* (Oxford: Clarendon Press, 1987), and *Time, Tense, and Causation* (Oxford: Clarendon Press, 1997).

3. Tooley, *Time, Tense, and Causation*, p. 29.

4. *Ibid.*, p. 14.

5. *Ibid.*, pp. 40–41, 158–62.

6. *Ibid.*, p. 99.

7. *Ibid.*, p. 258.

8. *Ibid.*, p. 103.

9. *Ibid.*, p. 107–108.

10. *Ibid.*, p. 111, my emphasis.

11. *Ibid.*, p. 175.

12. *Ibid.*, p. 16.

13. *Ibid.*, p. 153, my emphasis.



14. Ibid., p. 19.
15. Ibid., p. 153.
16. Ibid., my emphasis.
17. Ibid., p. 13.
18. Ibid., p. 196.
19. Ibid., p. 229.
20. Ibid., p. 261.
21. Ibid., p. 279.
22. Ibid., p. 303.
23. Howard Stein, "On Relativity Theory and the Openness of the Future," *Philosophy of Science* 58 (1991): 147–67.

## C. The A/B Theory



## *McTaggart, Schlesinger, and the Two-Dimensional Time Hypothesis*

In "The Unreality of Time," and *The Nature of Existence*, McTaggart offers a positive conception of time and then provides arguments that purport to establish that such a concept is contradictory and therefore cannot be applied to reality.<sup>1</sup> Although there are few, if any, philosophers who agree with McTaggart's conclusion that time is unreal, there are many who accept the general position that time involves passage or tense.<sup>2</sup> George Schlesinger is one philosopher sympathetic with McTaggart's positive views on time, and in his recent book, *Aspects of Time*, he attempts to defend McTaggart's account of the passage of time by resuscitating a gambit suggested some time ago by C. D. Broad, namely, the notion that time has two dimensions.<sup>3</sup> The purpose of this paper is to argue that Schlesinger does not vindicate McTaggart's positive conception of time, since the two-dimensional time hypothesis that it allegedly requires is as beset with difficulties as the conception of temporal becoming it is supposed to render intelligible.

It will be useful for us to begin by stating the main elements of Schlesinger's interpretation of McTaggart's positive account of time, since it is the view that he (hesitantly) intends to defend. According to McTaggart, the NOW is something that moves relative to the series of points that constitute time. Schlesinger continues:

Temporal points from the future, together with the events that occur at those points, keep approaching the NOW and after momentarily coinciding with it they recede further and further into the past. The NOW is, of course, not conceived as some sort of object but rather as the point in time at which any individual who is temporally extended is alive, real or Exists with a capital E. . . . A typical event, on this view, to begin with is in the distant future; then it becomes situated in the less distant future; it keeps approaching us until it becomes an event occurring in the present. As soon

as this happens the event loses its presentness and acquires the property of being in the near past.<sup>4</sup>

Schlesinger also mentions with approval Gale's characterization of the NOW as a moving spotlight that successively illuminates different moments along the series of time.<sup>5</sup> Several major objections have been made to this way of conceiving of the moving NOW, but Schlesinger believes that they can be answered.

One such objection derives from J. J. C. Smart, who argues that if we think of time as a river, or some kind of particular thing that moves, then it must make sense to ask, How fast is it moving? Yet the question "How fast did time flow yesterday?" seems to be a senseless question. Smart says, "We do not know how we ought to set about answering it. What sort of measurements ought we to make? We do not even know the sort of units in which our answer should be expressed."<sup>6</sup> Since we cannot measure the speed of the NOW, there is reason to suppose that it does not exist.

A second and stronger argument derives from Broad.<sup>7</sup> Suppose that the NOW moves along a series of events. When the NOW "hits" a given event  $e_1$ , that event acquires the property of presentness and then loses it without delay. Although the acquisition and subsequent loss of presentness is itself an *event*, *that* event, that is,  $e_1$ 's acquirement of presentness, cannot be a member of the very set that constitutes the first series of events. Thus, Broad concludes that if we accept the moving NOW, then we must postulate a second time-dimension in which events of the first time-dimension acquire and lose presentness. As Broad puts it,

If there is any sense in talking of presentness moving along a series of events, related by the relation of earlier-and-later, we must postulate a *second* time dimension in addition to that in which the series is spread out. An event which has zero duration, and therefore no history, in the first time-dimension, will yet have an indefinitely long duration and a history in the second time-dimension.<sup>8</sup>

If one finds the notion of a second time-dimension unintelligible, then one will reject the conception of the moving NOW that leads to it.

Schlesinger claims that this objection to the moving NOW is virtually identical with McTaggart's main argument for the unreality of time. The difficulty arose because in a world of absolute becoming, one and the same instantaneous event has the incompatible characteristics of pastness, presentness, and futurity. This, however, is impossible because incompatible properties can only be possessed by the same entity if it has them at different times. Yet events do not have any temporal scope during which they could accommodate incompatible properties. The "way out" of this difficulty, and

of the preceding one, is to postulate a second higher order series of metamoments in which literally instantaneous events have an indefinite duration. Schlesinger calls this idea "fanciful," but he does seriously consider it as a way of defending McTaggart's conception of the transient aspect of time and resolving McTaggart's paradox.

According to Schlesinger, McTaggart's conception of time can be made intelligible and its difficulties overcome if we agree to postulate a higher order series of moments. He answers Smart's objection:

The movement of the NOW in the standard series of time may be explicated by explaining that the NOW is at  $t_1$  in the ordinary series when it is at  $T_1$  in the super-series, and at  $t_2$ , in the ordinary series when it is at  $T_2$  in the super-series. We may even assign a value to the speed of the NOW: it moves from  $t_1$  to  $t_2$  at the average speed of

$$\frac{t_1 - t_2}{T_1 - T_2}$$

Concerning Broad's objection, Schlesinger says that "the event of the NOW reaching  $t_1$  may if we like be looked on as taking place in super-time."<sup>10</sup> He is quite naturally reluctant to postulate a whole new series of temporal points, but he is comforted by his belief that we need not continually postulate a new time-series to help us make sense of temporal becoming in the preceding one.

For just as the second series could be instrumental in helping to make sense of temporal becoming in the first series, in the same manner the first series could serve as the extra series through the use of which temporal becoming in the second series could make sense. For example, it might be said that the NOW in the second series is at  $T'_1$  when it is at  $t'_1$  in the first series, and at  $T'_2$ , when it is at  $t'_2$ , leading to the claim that the average speed of the NOW in the second series from

$$T'_1 \text{ to } T'_2 \text{ is } \frac{T'_1 - T'_2}{t'_1 - t'_2}$$

Finally, Schlesinger uses a second-order time-series to resolve McTaggart's difficulty concerning A-characteristics. On the two-dimensional time hypothesis,

All the moments of our regular time series co-exist together at each moment in super-time, and the position of the NOW in regular time varies from moment to moment in super-time.  $M_1$  and every other moment in regular time can assume different properties at different moments in super-time. . . . Thus, the problem of the extensionlessness of the moments in the

continuum of which they form a part is resolved with the introduction of a higher order time continuum in which they have unlimited duration.<sup>12</sup>

Can this account of the movement of time be accepted as a way of avoiding paradox and resolving traditional philosophical perplexities concerning time? Let us see.

Schlesinger offers a challenge to those who would attempt to refute McTaggart's claim that the NOW is a particular that shifts its position relative to the series of events in the direction of the future:

First, it would have to be shown that McTaggart cannot make sense of the changes going on in ordinary time unless he postulates a meta-time of equal richness. That is, a meta-time that admitted B-relations only would not be capable of performing its required function. Secondly, it would have to be shown that in order to explicate the movement of the NOW in meta-time, we could not employ standard time in the same manner we employed meta-time to explicate the movement of the NOW in standard time and therefore we would be forced to introduce a third temporal series. Lastly, it would have to be shown why the regress thus resulting would have to be regarded as vicious.<sup>13</sup>

It seems to me that three things that would have to be shown in order to refute McTaggart's conception of the transient aspect of time can indeed be shown, and in what follows I shall attempt to explain why.

Turning to the first issue: Is it possible for the terms of the original series to undergo genuine change, in McTaggart's sense, if the terms of metatime form a series that have B-relations (*earlier* and *later*) but do not have A-determinations (*pastness*, *presentness*, and *futurity*)? The answer to this question is emphatically *no*.<sup>14</sup> McTaggart is very explicit in his belief that the B-series has no independent and separate reality but is entirely dependent and inseparable from the application of the A-series to the nontemporal C-series. According to McTaggart, you cannot have B-relations between events unless those events have A-determinations and change with respect to them. As further evidence consider the following passage:

If there is any change, it must be looked for in the A-series. . . . If there is no real A-series, there is no real change. The B-series, therefore, is not by itself sufficient to constitute time, since time involves change. The B-series, however, cannot exist except as temporal since earlier and later, which are the relations which connect its terms, are clearly time-relations. So it follows that there can be no B-series when there is no A-series, since without an A-series there is no time.<sup>15</sup>

If it were possible for there to be genuinely temporal relations between terms without those terms having A-determinations, then it would be possible for there to be succession (a genuinely temporal series) without becoming. Clearly, McTaggart would not accept that conclusion, and since Schlesinger claims to be in complete agreement with McTaggart's positive conception of time and change, he could not accept it either.

Thus, a second series that admitted B-relations only would not be capable of performing its required function because it would not be a temporal series at all. Consequently, an event could not possibly endure indefinitely in the second series. Indeed, it could not endure at all since endurance requires time, and in a B-series without an A-series, there is no time. To put the point still differently, since a B-series without an A-series is not a temporal series, the second series without becoming does not enable the first series to avoid the incompatible properties problem. Thus, it would appear that McTaggart cannot make sense of the changes going on in ordinary time unless he postulates a meta-time of equal richness.

Turning to the second issue, the pertinent question is as follows: Can the movement of the NOW in meta-time be explained by reference to standard time in the same manner in which reference to meta-time is employed to explicate the movement of the NOW in standard time? Again, it seems to me that the answer is no, and to see why, let us first note that the movement of the NOW in standard time is never made clear. According to Schlesinger, the moving NOW in the first series is explicated by saying that "the NOW is at  $t_1$  in the ordinary series when it is at  $T_1$  in the super-series, and at  $t_2$  in the ordinary series when it is at  $T_2$  in the super-series."<sup>16</sup> There are, however, serious problems with this first step. Since Schlesinger maintains that the events that are at the point in time at which the NOW is situated are those that are real and alive, or Exist with a capital E, and since he also maintains that when the NOW is situated at  $t_1$  it is also situated at  $T_1$ , it follows that when the NOW is at  $t_1$ , not only do the events at  $t_1$  Exist with a capital E, but also the events that are at  $T_1$  Exist with a capital E. Furthermore, since Schlesinger claims that "all the moments of our regular time series co-exist together at each moment in super-time," it follows that when the events at  $t_1$  are NOW, the events at  $T_1$ , that is, the events at  $t_1, t_2, \dots, t_n$ , are also NOW, and that is absurd. For if the events in the original series are all NOW at  $T_1$  in the second series, then they exist *simultaneously* and not successively. In other words, this account of the moving NOW does not make sense of time and change in the first series. It eliminates it!

My objection to Schlesinger's account of the moving NOW in the first series can be approached from a different direction. When the NOW is at  $t_1$  in the original series, neither the past events at  $t_{1-n}$  nor the future ones at  $t_{1+n}$  exist. For events of the past do not exist *now* but only in the past, and



"the future has no reality by means of which to reach out toward us and make an impact on the present."<sup>17</sup> On the other hand, when the NOW is at  $t_1$ , it is also at  $T_1$ , and when it is at  $T_1$ , all the moments and events in the first time series coexist. If, however, they all coexist, then they cannot be distinguished as past, present, and future, but they must all be present, and that is unacceptable because: (1) it entails that past and future moments both do not exist (at the first level) and do exist (at the second level); (2) Since past and future events are NOW, they exist simultaneously with those that are present, and hence there is no ground for the original series being temporal; (3) Since the moments that are NOW at  $T_1$  cannot have different A-determinations—some being past, others present, and still others future—and then change those determinations when the NOW is at  $T_2$ , the appeal to a second time-dimension does not, despite initial appearances, help resolve McTaggart's difficulties.

Having said so much, we can deal briefly with the question of whether or not we can understand the moving NOW in the second series by employing standard time. Recall that meta-time consists of a temporal series of moments the contents of which are the whole series of moments of original time. If the second series is to be a *genuinely temporal* series, then its terms must change with respect to their A-determinations, and the question arises as to how this is possible. Could it be that each term  $T_i$  that has a momentary existence in the second series has an indefinite history in the first series and thus changes properties at different  $t_j$ s in the first series? This would make no sense whatsoever, for if it were true, then each  $t_i$  would contain the contents of every term in the second series. Consequently, all events in the first series would exist at each  $t_i$ , and that contradicts the original presupposition that the terms of standard time do not all exist at the same  $t_i$ . Furthermore, if *all* the terms in the second series coexist in each moment of the first, and if we say, as Schlesinger does, that the NOW is at  $T_1$  when it is at  $t_1$ , then it would follow that if one of the terms of the second series is NOW, then all of the terms of the second series are NOW. But then, the second series, like the first, no longer deserves to be called temporal. It would appear, then, that the movement of the NOW in the second time-dimension cannot be understood in terms of the movement of the NOW in the original time-dimension but would require the postulation of a third time series, a fourth, and so on.

We are thus led to the third and final question: Does the resulting regress have to be regarded as vicious? Here I think that the answer is yes, for at no stage along the regress of time series can we stop and say that the questions and problems for which they were introduced have been answered or solved. In other words, the infinite regress of time dimensions is vicious because the notion that we are attempting to understand by an appeal to a higher order time series arises in exactly the same form in that higher order series, and con-

sequently, regardless of how many time dimensions we introduce, we never manage to answer the problem for which they were introduced. More specifically, the problem of time and change centers around the following question: How are we to understand the commonsense belief that an apple is green at one time and red at a later time, or equivalently, an apple is green before it is red? What must time be in order for it to be possible for a single entity to have a property and then lose it? Presumably, the account of time developed by Schlesinger and McTaggart is intended to answer that question. Their answer involves the notion of the NOW moving along a series of events such that it is at the point ( $t_1$ ) at which the green temporal slice of the apple exists at one time ( $T_1$ ) and it is at the point ( $t_2$ ) at which the red temporal slice of the apple exists at another time ( $T_1$ ). Alternatively, they could say that the NOW is simultaneous with the green slice *before* it is simultaneous with the red slice of the apple. As Schlesinger says, it is useful to think of the NOW as a moving spotlight that illuminates *successively* different moments along the series of time. Unfortunately, this account does not help us to understand the nature of time and change because it presupposes it. For Schlesinger is treating the NOW as a substance that has a property at one time, then loses it at another time (it is *first* simultaneous with the green section, and *then* it is later than the green section), and we want to know how this is possible. Thus, the moving NOW involves precisely the same notion that we hoped to make intelligible, thereby falling into a vicious circle.

The circularity of Schlesinger's solution to the problem of time can be seen in still a different way. For Schlesinger, the account of an ordinary substance changing from green to red is explicated in terms of qualitatively different temporal cross-sections of events (e.g., the green section and the red section), which comprise that substance changing from future to present to past. Such change, he claims, is unintelligible unless temporal slices of substances have an indefinite duration in a second time-dimension and exemplify different properties at different points in that second series. But then we are faced with the original question at the second level: How can a single thing (say, the red section) of an indefinitely long duration have a property (say, futurity) at one time and then not have it at another time? By parity of reasoning, Schlesinger must admit that change in the red section of the second series is to be understood in terms of temporal slices (e.g., the red section's being present, the red section's being past, etc.) that undergo becoming. Thus, to "solve" the problem of change in the second series, we must appeal to a third time-dimension in which an instantaneous event in the second series, say, the red section's being present, has an unlimited duration and exemplifies different A-properties at different times. It should by now be evident, however, that, and why, such a move is futile. Thus, the infinite regress of time dimensions is a vicious one because at each level the concept that was introduced to comprehend remains incomprehensible.

The three things that Schlesinger claims would have to be done in order to refute McTaggart's account of the moving NOW in terms of a metatime can be done, as I have shown. Thus, the hypothesis that there exists a second time-dimension neither aids our understanding of the passage of time nor resolves McTaggart's difficulties concerning that notion. I conclude, therefore, that Schlesinger has not provided an adequate defense of McTaggart's positive conception of time.

## NOTES

1. John M. E. McTaggart, "The Unreality of Time," *Mind* 18 (1908): 457-84, and *The Nature of Existence*, vol. 2, ed. C. D. Broad (Cambridge: Cambridge University Press, 1927).

2. Cf. C. D. Broad, *Examination of McTaggart's Philosophy*, vol. 2, part 1 (Cambridge University Press, Cambridge, 1938; New York: Octagon Books, 1978); Roderick M. Chisholm, *The First Person* (Minneapolis: University of Minnesota Press, 1981); Richard Gale, *The Language of Time* (New York: Humanities Press, 1968); Arthur N. Prior, *Past, Present and Future* (Oxford: Oxford University Press, 1967); Prior, *Papers on Time and Tense* (Oxford: Oxford University Press, 1968).

3. George Schlesinger, *Aspects of Time* (Indianapolis: Hackett, 1980), pp. 30-33; C. D. Broad, "The Philosophical Implications of Foreknowledge," *Aristotelian Society Supplement* 16 (1937): 177-209; Broad, "A Reply to My Critics," *The Philosophy of C. D. Broad*, ed. Paul A. Schilpp (New York: Open Court Publishing, 1959), pp. 711-830; cf. H. H. Price, "The Philosophical Implications of Precognition," *Aristotelian Society Supplement* 16 (1937): 211-28.

4. Schlesinger, *Aspects of Time*, p. 23. For other recent interpretations of McTaggart on time, see Ferrell Christensen, "McTaggart's Paradox and the Nature of Time," *Philosophical Quarterly* 24 (1974): 289-99; Kenneth Rankin, "McTaggart's Paradox: Two Parodies," *Philosophy* 56 (1981): 333-48.

5. Schlesinger, *Aspects of Time*, p. 132.

6. J. J. C. Smart, "The River of Time," *Mind* 58 (1949): 485.

7. Broad, *McTaggart's Philosophy*, pp. 277-80.

8. *Ibid.*, p. 278.

9. Schlesinger, *Aspects of Time*, p. 32.

10. *Ibid.*

11. *Ibid.*

12. *Ibid.*, pp. 140-41.

13. *Ibid.*, pp. 32-33.

14. For a fuller defense of this claim, see essay 3.

15. McTaggart, *Nature of Existence*, vol. 2, p. 13, my emphasis.

16. Schlesinger, *Aspects of Time*, p. 32.

17. *Ibid.*, p. 60.

## *McTaggart's Paradox and Smith's Tensed Theory of Time*

McTaggart's paradox has fascinated philosophers since it was originally presented. In his famous essay "The Unreality of Time," McTaggart argues that since the essence of time is temporal passage—the change events undergo when they move from the future through the present and into the past—and since temporal passage is contradictory, time is contradictory and therefore unreal.<sup>1</sup> There are two basic steps in his argument: (1) temporal passage is the essence of time, and (2) temporal passage is contradictory. Nowadays, few, if any, philosophers accept McTaggart's argument, and their rejection of it is based upon a denial of one of the two basic steps. Detensers (like myself) deny (1) and accept (2), whereas tensers accept (1) and deny (2). Although I will have something to say about McTaggart's reasoning in support of step (1), the main concern of this paper will be step (2), the thesis that temporal passage is contradictory. There have been several recent versions of the tensed theory of time that have attempted to avoid McTaggart's conclusion, but the most sophisticated is that put forth by Quentin Smith.<sup>2</sup> Thus, after explaining McTaggart's positive conception of time, and his argument for its unreality, I shall consider Smith's recent attempt to avoid McTaggart's conundrum and argue that it is inadequate.

### 1. MCTAGGART'S POSITIVE VIEW OF TIME<sup>3</sup>

Though it is debatable whether or not time involves change, it is surely not debatable that change involves time. For if we are to understand how a single thing can have incompatible properties, and thus satisfy one essential ingredient of change, we must in some way specify the different times at which it possesses those properties. What, then, is time? McTaggart's thesis is that we

must understand time in terms of temporal passage, and we must understand temporal passage in terms of the property of presentness moving across an ordered but nontemporal C-series.

To see what is involved in this point, consider three different descriptions of the fact of change.

- (1) The apple is green *before* it is red.
- (2) The apple is green at  $t_1$  and red at  $t_2$ .
- (3) The apple *is now* green and *will be* red.

For the purposes of distinguishing three different ontological assays of time, we will distinguish the different states of affairs that (1), (2), and (3) describe. On the first analysis, time is *relational*, that is, the only intrinsically temporal entities are the B-relations of simultaneity, earlier and later, and change is reflected in the apple's being green occurring *before* the apple is red. On the second alternative, time is *absolute*. There are intrinsically temporal individuals called "moments," and change is reflected by the apple having different and incompatible properties at (or relative to) different moments of absolute time. On the third account, time is tensed, and change is reflected in the different nonrelational temporal qualities of presentness, pastness, and futurity that events in the A-series acquire and shed.

According to McTaggart, the ontologically most perspicuous description of time and change is reflected in statements such as (3), for apart from the A-series, with its distinctions of past, present, and future, (1) and (2) do not reflect the fact of genuine *temporal change*. As we shall see, however, his reasoning is not very convincing, since it is based on the assumption that he is trying to prove, namely, that without the A-series, all that really exists is a nontemporal C-series.

Consider his argument against the claim that the B-series (containing facts of the sort reflected by (1)) does not adequately represent change. He reasons that time involves change, and therefore if the B-series alone is to constitute time (as the detenser maintains), then it too must involve change. But, he continues, there is nothing in the B-series that changes. Since sentences that describe temporal relations between events are always true, it follows, according to McTaggart, that events in the B-series always exist and so do not change by coming into existence and going out of existence. Nor do events in the B-series change their relations to each other. Consequently, if the B-series is to be a time-series, then its terms (events) must exemplify the temporal characteristics of pastness, presentness, and futurity and change with respect to them as time passes. In other words, time (temporal relations) and change require an A-series and temporal becoming.

McTaggart states this conclusion in *The Nature of Existence*:

[T]he series of earlier and later is a time series. We cannot have time without change, and the only possible change is from future to present, and from present to past. Thus, until the terms are taken as passing from future to present, and from present to past, they cannot be taken as in time, or as earlier or later, and not only the conception of presentness, but those of pastness and futurity must be reached before the conceptions of earlier and later and not *vice versa*.<sup>4</sup>

Thus, the first and essential point concerning McTaggart's positive conception of time is that while both the A-series and the B-series are essential to our ordinary thought and experience of time, the A-series and temporal becoming is more fundamental to the real metaphysical nature of time, since temporal or B-relations are dependent upon temporal becoming (or A-properties). To put the same point otherwise, on McTaggart's positive conception of time, B-relations are not there from the outset but are generated by the moving of the NOW along a nontemporal, but ordered, C-series.

McTaggart believes that the above argument holds even if we enrich our ontology with temporal individuals or moments of absolute time and describe the fact of change by sentences like (2). For even if the apple is green at  $t_1$  and red at  $t_2$ , there is still nothing about either of those facts that changes. As McTaggart puts it, "it is always a fact about the poker [or apple] that it is cold at one point in time and hot at another."<sup>5</sup> Thus, if (2) is to reflect the fact of change, then something more is needed: the apple's being green and the apple's being red (as well as the times at which those events occur) must themselves change from *being future* to *being present* to *being past*.

McTaggart's argument against absolute and relational time can also be expressed by claiming that a series whose terms stand in unchanging relations, but do not have A-characteristics, is not a *temporal* series. For if a series of terms do not have changing A-characteristics, then they do not have a direction, and without a direction, the series is indistinguishable from an unchanging *spatial* series.

C. D. Broad once expressed the difference between time and space by saying that whereas a series of points in space have an intrinsic order, the peculiarity of a series of events in time is that it not only has an intrinsic *order* but also an intrinsic *sense* or *direction*:

Three points on a line have an intrinsic order, i.e., B is between A and C, or C is between B and A, or A is between C and B. This order is independent of any tacit reference to something traversing the line in a certain direction. By a difference in sense I mean the sort of difference which there is between say, ABC and CBA. Now points on a straight line do not have an intrinsic sense.<sup>6</sup>

The point Broad is getting at may be clarified by noting that the change of an apple from green to red is a change in a given or intrinsic direction because the apple is *first* green *and then* red, or synonymously, it is green *before* it is red from any point of view. In this respect, time differs from space, since a spatial series has a direction only in reference to something external to the series. Thus, in order to account for (temporal) change, that is, how one and the same thing can first have a property and then lose it, we must be able to account for the direction of time and the difference between the temporal change of the color of an apple and spatial "change" of, say, the color of a lawn from being green at one end and brown at the other.

McTaggart concurs that there must be something more to temporal change than an ordered series of qualitatively different terms:

More is wanted, however, for the genesis of a B-series and time than simply the C-series and the fact of change. For *change must be in a particular direction*. And the C-series, while it determines the order, does not determine the direction. If the C-series runs M, N, O, P, then the B-series . . . can run either M, N, O, P (so that M is earliest and P latest) or else P, O, N, M (so that P is earliest and M latest). And there is nothing either in the C-series or in the fact of change to determine which it will be.<sup>7</sup>

Clearly, then, for McTaggart, something more is essential to time and change than the C-series, but what more? Alternatively, how are we to account for the direction of time and its difference from space?

We should not be surprised to read that McTaggart's account of the direction of time and change depends upon the A-series:

We can now see that the A-series, together with the C-series, is sufficient to give us time. For in order to get change, and change in a given direction, it is sufficient that one position in the C-series should be Present, to the exclusion of all others, and that this characteristic of presentness should pass along the series in such a way that all positions on the one side of the Present have been present, and all positions on the other side of it will be present. . . . [N]o other elements are required to constitute a time-series except an A-series and a C-series. . . . It is only when the A-series, which gives change and direction, is combined with the C-series, which gives permanence, that the B-series can arise.<sup>8</sup>

This passage further supports my interpretation of McTaggart's positive views on time according to which a concept of time involving a temporal A-series and a nontemporal C-series is necessary and sufficient to account for the transitory and the relational aspects of our common notion of time. Thus, on McTaggart's positive tensed theory of time, the fact of change and

the direction of time can be accounted for without presupposing unanalyzable temporal relations. On his theory, temporal relations are not ultimate but are analyzable in terms of the moving NOW.

There is much that is objectionable in McTaggart's positive conception of time and in his criticism of the view that time consists solely of B-relations. The weakness I want to focus on concerns an ambiguity in his conception and use of the C-series. On the one hand, *before* McTaggart proves that time is unreal, he introduces the C-series as a permanent, nontemporal, ordered series of terms that, together with the A-series, is the ontological ground of the B-series. On the other hand, *after* he has allegedly disproved the reality of time, McTaggart introduces the C-series in order to explain how it is that we misperceive the B-series as a time series. This ambiguity presents a problem for McTaggart. The existence of the C-series as an ordered, but nontemporal, series whose terms are in one-to-one correspondence with the terms of the B-series is a theoretical posit introduced to explain how it is that we seem to experience events in time as forming a B-series. Thus, his use of the C-series is justified only *after* he has disproved the reality of time. Yet his argument against the B-series as well as his positive conception of time assume that the existence of the C-series is logically *prior* to that of the B-series (since they assume that a B-series without an A-series is a spacelike C-series), and so they assume what needs to be proved.

The issue between the tenseless and the (predominant) tensed theory of time can now be put clearly into focus. McTaggart claims that if time is real—if there is *genuine succession*—then the ontological ground of that succession must be the nonrelational temporal properties exemplified by events and moments of time, if there are moments of time. Detensers reject the moving NOW and the monadic property of *presentness* but nevertheless maintain that genuine succession exists and that the B-series alone contains the fact of change. Russell, Broad, Shorter, Oaklander, Williams, and others have maintained that temporal relations are primitive and unanalyzable relations, and the difference between spatial and temporal relations is an irreducible qualitative difference.<sup>9</sup> From this perspective, it is a mistake to suppose that if time is the mere succession of events, then the change involved is exactly like the spatial "change" in the color of the lawn one observes as one walks from the front to the back. On this view, the relation that distinguishes temporal order is just different from any spatial relation in the same sense that red and green are just different. Other detensers, such as Grünbaum, Mellor, and Le Poidevin, have maintained that temporal relations are definable in terms of causal relations, and the direction of time is grounded in the direction of causality.<sup>10</sup> Whether temporal relations are definable or not, detensers have rejected the tensed theorist's claim that temporal relations depend upon either tensed properties, tensed facts, or the passage of time.



Having clarified McTaggart's positive conception of time, we can turn to the second step in McTaggart's argument, where he attempts to demonstrate that time is contradictory and therefore unreal.

## 2. McTAGGART'S ARGUMENT FOR THE UNREALITY OF TIME<sup>11</sup>

The main argument by which McTaggart attempts to prove that time is unreal may be stated as follows:

- (1) If the application of a concept to reality implies contradiction, then that concept cannot be true of reality.
- (2) Time involves (stands or falls) with the A-series and temporal becoming; that is, if the A-series involves a contradiction, then time involves a contradiction.
- (3) The application of the A-series and temporal becoming to reality involves a contradiction.
- (4) Therefore, neither the A-series nor temporal becoming can be true of reality; thus time is unreal.

In support of step (3), McTaggart argues simply that if events move through time from the future to the present to the past (or if presentness moves across the C-series), then every item in time must be past, present, and future. However, past, present, and future are incompatible properties. Thus, the existence of the moving NOW entails a contradiction—every event both is and is not past, present, and future—and time is unreal.

McTaggart was aware that the contradiction appears to have an obvious resolution if we specify the various *times* or *when* events have incompatible temporal properties. He went on to argue, however, that the appeal to time, that is, *succession*, to avoid the original contradiction contained in temporal attributions involves either a vicious circle or a vicious infinite regress. Appealing to succession involves a vicious circle because

it assumes the existence of time in order to account for the way in which moments are past, present, and future. Time then must be presupposed to account for the A-series. But we have already seen that the A-series has to be assumed in order to account for time. Accordingly, the A-series has to be presupposed in order to account for the A-series. And this is clearly a vicious circle.<sup>12</sup>

In short, in order to account for something having incompatible temporal properties, the defender of passage must assume that the term in question has those properties in succession, but in order for a term to be first future, then present, and then past, we must assume that it has incompatible temporal properties. Thus, one cannot appeal to succession in order to explain how time and change are possible without falling into a vicious circle.

To develop this last point further, recall that an account of time must provide an account of, say, an apple's *first* being green and *then* being red, or synonymously, its being green *before* it is red. McTaggart's account of change involves the claim that every event in the apple's history changes with respect to the properties of pastness, presentness, and futurity. However, A-changes in events can account for time and avoid the incompatibilities problem only if events gain and lose A-properties *successively*. Unfortunately, given McTaggart's positive conception of time that can only mean that *first* the apple's being green is present and the apple's being red is future, and *then* the apple's being green is past and the apple's being red is present, or, more simply, that the green apple is present *before* the red apple is present. As the italicized words indicate, however, time, or, more specifically, the temporal relation of *earlier than*, must be assumed in order to account for A-changes in events, that is, for events having incompatible A-characteristics. But as McTaggart says, "we have already seen that the A-series has to be assumed in order to account for time" (since the B-series is defined in terms of the application of the A-series to the C-series).<sup>13</sup> In other words, given the existence of a contradiction in the original A-series, we cannot avoid it by appealing to the relation of succession because the A-series has to be assumed to account for the succession, and therefore, since the A-series is involved in paradox, succession is, too.

McTaggart's difficulty with temporal predication can be put differently, in which the fallacy will exhibit itself as a vicious infinite regress rather than as a vicious circle. If we avoid the contradiction by claiming that E is future at  $t_1$ , present at  $t_2$ , and past at  $t_3$ , then  $t_1$ ,  $t_2$ , and  $t_3$  must refer to different moments of *time*. For if the events do not have their A-characteristics at different times, then they are either timelessly or simultaneously past, present, and future, and a contradiction ensues. What, then, is the basis of  $t_1$  *being earlier than*  $t_2$  and  $t_2$  *being earlier than*  $t_3$ ? Given McTaggart's analysis, it can only be that presentness moves along the series of moments in such a way that each moment is past, present, and future. But then, the contradiction in the (first) level of events arises again at the (second) level of moments at which the preceding level can have its temporal properties. For this new series is genuinely temporal only if its terms occur in a given direction, but the direction of a series is generated by temporal attributions, which has not yet been freed from contradiction. Thus, McTaggart concludes, whether we stop at a contradiction, or at the denial of genuine (A-series) change, time is unreal.

There is another way to understand McTaggart's argument. McTaggart claims that in order to distinguish a temporal from a spatial series, one must ground the direction of time. In order to give time a direction, however, the different terms must have *one and only one* nonrelational temporal characteristic. For if *a* is past, *b* is present, and *c* is future, then we can read off the change in the direction of *a* is earlier than *c*, rather than *c* is earlier than *a*. However, unless *a*, *b*, and *c* change their temporal characteristics, there is no genuine change. Hence, each of the terms must have the other two temporal characteristics as well, but then we can no longer determine the direction of the change, whether from *a* to *c* or *c* to *a*.

Critics of McTaggart, such as Broad, Levison, Lowe, Prior, Smith, and others, have been quick to point out that since there is no contradiction to be avoided in the first place, as no event ever is (nonsuccessively) past, present, and future (or present and not present), there is no need to set off on an infinite regress in order to avoid it.<sup>14</sup> As Broad puts it:

I cannot myself see that there is any contradiction to be avoided. When it is said that pastness, presentness, and futurity are incompatible predicates, this is true only in the sense that no one term could have two of them *simultaneously* or *timelessly*. Now no term ever appears to have any of them simultaneously. What appears to be the case is that certain terms have them *successively*. Thus, there is nothing in the temporal appearance to suggest that there is a contradiction to be avoided.<sup>15</sup>

Of course, whether that response is adequate depends on how one unpacks the notion of *succession*. According to tenses, if we take tense seriously, then E is past, present, and future is never true. What is true is that

E is present, was future and *will* be past, or E is past, and was present and (still earlier) was *past* or E is future, will be present and *will* be (still later) past.

The dominant issue surrounding recent discussions of McTaggart's paradox is whether the appeal to tense can be given an interpretation that will resolve the difficulties with temporal passage.

According to defenders of the tenseless theory of time, none of the solutions to McTaggart's paradox and related problems are successful, and so they conclude we must give up the idea that events form a real A-series and change with respect to their temporal location in it. For detensors, "past," "present," and "future" are indexical expressions whose referent cannot be separated from the time of utterance or from the utterance itself. Thus, for example, on the token-reflexive account that Mellor propounds,

the temporal relation between the date at which one says, thinks, or writes down a tensed sentence and the event or thing that it is about provides an objective basis for the truth-value of any tensed sentence. A present-tense sentence token is true if and only if it occurs (exists tenselessly) at (roughly) the same time as the event it is about; a past-tense token is true if and only if it occurs at a time later than the event it refers to, and so on.<sup>16</sup> Thus, on the token-reflexive account, the facts in virtue of which tensed sentence tokens are true are tenseless. Tensers, however, cannot accept this way out of McTaggart's paradox, since to do so is to leave out something essential to time, namely, temporal passage. They are obliged, therefore, to make sense of the tensed theory of time while also avoiding McTaggart's paradox. In what follows, I shall critically discuss Quentin Smith's recent attempt to accomplish that task.

### 3. SMITH'S RESPONSE TO McTAGGART'S PARADOX

In his recent writings, Quentin Smith has argued that "the idea that presentness, pastness and futurity are properties does indeed entail an infinite regress, but that this regress is neither vicious nor constituted of tenseless [or simultaneous] predications."<sup>17</sup> In the remainder of this paper, I want to explain why I do not believe that Smith's interpretation of the tenses succeeds in avoiding the vicious infinite regress of temporal attributions that McTaggart claimed to uncover in his paradox.

Let us begin with the three statements "E is now present" and "E is now past" and "E is now future." These are mutually contradictory unless it is specified that E has these incompatible properties *successively*. "In tensed language," Smith writes, "this means that the event *is* present, *will be* past and *has been* future or that it *is* past, and *has been* future and present, or that it *is* future and *will be* present and past."<sup>18</sup> According to Smith, the reality of temporal attributes as reflected in his analysis of the tenses implies an infinite regress of inferences of presentness inhering in their own inferences. That is, the correct analysis of "E is present" is "E is present, and the being present of E is present, and the being present of the being present of E is present, and so on infinitely."<sup>19</sup> He explains this by saying that

the first conjunct predicates presentness of the event E and each of the remaining conjuncts predicates presentness of a *different* inherence of presentness; the second conjunct predicates presentness of the inherence<sub>1</sub> of presentness in E, the third conjunct predicates presentness of the inherence<sub>2</sub> of presentness in its inherence in E, and so on.<sup>20</sup>

This passage makes it clear that for Smith, inherence exemplifies the temporal attribute of presentness.

Similarly, the correct analysis of "E is past" and "E is future" involves the inherence of presentness in an infinite number of inherence relations. Thus, Smith says, "[T]he correct explication of 'E is past' is E is past, and the being past of E is present, and the being present of the being past of E is present, and so on infinitely. An analogous complete explication is given to 'E is future.'"<sup>21</sup>

In an earlier article, I argued that Smith's account of the tenses does not escape McTaggart's paradox since to avoid an event's having incompatible A-properties simultaneously, he is forced to maintain that inherence relations have incompatible A-properties simultaneously.<sup>22</sup> Smith objected that my argument *assumes* that events or inherence relations have their tensed properties nonsuccessively. He continues,

But *Oaklander gives no justification for this assumption*. Like McTaggart he simply asserts that whatever possesses the three temporal properties must possess them simultaneously. By importing this unjustified and foreign assumption into the tensed theory of time, Oaklander, like McTaggart, proceeds to deduce the incoherence of the tensed theory. But this assumption is not a part of the tenses theory of time. According to this theory, something [e.g., an event or an inherence relation] possesses the three incompatible properties only successively.<sup>23</sup>

In what follows, I shall argue that Smith cannot account for an event or an inherence relation having incompatible properties successively and so cannot avoid a McTaggartian-type critique of his tensed theory of time.

To see what is involved, recall that Smith attempts to remove the appearance of a contradiction in the statement "E is past, present, and future" by interpreting it to mean that

- (1) E is present, *will be* past, and *has been* future, or  
     E is past and *has been* future and present, or  
     E is future and *will be* present and past.

But this move does not avoid a contradiction. For consider the second disjunct in (1), namely,

- (2) E is past and *has been* future and present.

The second and third conjuncts in (2) still harbor a contradiction. For the attribution of futurity and presentness to E in the past is just as contra-

dictory as their attribution to E in the present, unless it is specified that E has them *successively* (or at *different times*) in the past. However, Smith cannot account for E having had the properties of futurity and presentness in succession. For, on his analysis, if E has been future, then futurity inheres<sub>1</sub> in E, and *pastness now inheres*<sub>2</sub> in the inherence<sub>1</sub> of futurity in E. And if E has been present, then presentness inheres<sub>1</sub> in E, and *pastness now inheres*<sub>2</sub> in the inherence<sub>1</sub> of presentness in E. There is, however, nothing in either of these two tensed facts that provides a ground for futurity having inhered<sub>1</sub> in E *earlier than* presentness inhered<sub>1</sub> in E, and thus there is nothing to account for E's having had the properties of futurity and presentness successively. Yet without such an account, the attribution of presentness and futurity to E in the past is contradictory.

A similar difficulty arises regarding the third disjunct in (1):

(3) E is future and *will be present and past*

since it, too, contains a contradiction, unless it is specified that E will be past *after* E will be present. But on Smith's theory, there is no basis for E being *first* present and *then* past in the future. For if E will be present, then presentness inheres<sub>1</sub> in E, and *futurity now inheres*<sub>2</sub> in the inherence of presentness in E, and if E will be past, then pastness inheres<sub>1</sub> in E, and *futurity now inheres*<sub>2</sub> in the inherence<sub>1</sub> of presentness in E. Unfortunately, nothing in either of those two tensed facts entail that E will exemplify pastness *after* it exemplifies presentness, and without a ground for succession, the contradiction involved in presentness and pastness inhering in E (in the future) remains.

Smith cannot avoid these arguments by distinguishing different degrees of pastness or futurity, for example, being past by two hours or being future by two hours. For if E was future earlier than E was present, then on Smith's analysis that would imply that, say, being past by two hours *presently* inheres<sub>2</sub> in the inherence<sub>1</sub> of futurity in E *is earlier than* being past by one hour *presently* inheres<sub>2</sub> in the inherence<sub>1</sub> of presentness in E. That, however, implies a contradiction, since Smith maintains *both* that "the B-relations of earlier and later obtain between two events only if at least one of the events is *not present*," and that if "E was future earlier than E was present" is true, then the B-relation of *earlier than* obtains between the *present* inherence of being past by two hours . . . in E, and the *present* inherence of the being past by one hour . . . in E. In other words, on Smith's analysis, the temporal relation of *earlier than* obtains between two events that are present, and that is absurd.<sup>24</sup>

There remains the first disjunct in (1) namely,

(4) E is now present, *will be* past, and *was* future.

In order to avoid McTaggart's paradox and account for an event having its A-properties successively, Smith must show that (4) is consistent and adequately reflects the passage of time and the direction of change. In what follows, I will attempt to demonstrate that he is unable to do so.

Consider the sentence "Event E will be past." On Smith's analysis, this means that the inherence of pastness in E is such that futurity now inheres in it. To state the same analysis somewhat differently, E exemplifies<sub>1</sub> pastness, and exemplification<sub>1</sub> exemplifies<sub>2</sub> futurity, and exemplification<sub>2</sub> exemplifies<sub>3</sub> presentness. As Smith himself puts it:

If E is now present, then it will be past. This latter clause means that futurity inheres in the pastness of E. But when does futurity inhere in the pastness of E? . . . Futurity now inheres in the pastness of E. . . . In terms of property-inherences, *this means that presentness inheres in the inherence of futurity in the inherence of pastness in E.*<sup>25</sup>

What I wish to argue is that on Smith's analysis of "E will be past," either a vicious infinite regress ensues, since it implies a contradiction that cannot be resolved by appealing an infinite regress of inherence relations, or he cannot account for the direction of time.

The crucial and fatal move in Smith's analysis is the claim that the inherence<sub>2</sub> of futurity in the inherence<sub>1</sub> of pastness in E *is present*. For if the second-order inherence, or exemplification<sub>2</sub>, *is now present*, then it *exists* now. If, however, exemplification<sub>2</sub> *exists* now, then the term, in this case exemplification<sub>1</sub>, that exemplifies<sub>2</sub> futurity must also *exist* now. (I am [for the moment] assuming that if an inherence or exemplification "relation" [of any level *i*] *exists* now, then there must also *exist* now a term that exemplifies a property.) Consequently, if the "tie" (exemplification<sub>2</sub>) between exemplification<sub>1</sub> and futurity exists now, then it must be the case that exemplification<sub>1</sub> exists now. However, if exemplification<sub>1</sub> exists now, then it must be present. Since, by hypothesis, exemplification<sub>1</sub> is future, it follows that exemplification<sub>1</sub> is both present and future, or does now exist and does not now exist, and that is a contradiction.

It is no use trying to avoid this contradiction by claiming that (a) exemplification<sub>1</sub> is future and will be present, or (b) exemplification<sub>1</sub> is present and was future, or (c) exemplification<sub>1</sub> is past and was present and (still earlier) future. In the first place, (a) contradicts the original assumption that E *is now present*, and (b) contradicts the assumption that E *will be past*. For if exemplification<sub>1</sub> is future, then it cannot exemplify<sub>2</sub> presentness as it must if E is now present. On the other hand, if we suppose that exemplification<sub>1</sub> is now present, meaning that exemplification<sub>1</sub> exemplifies<sub>2</sub> presentness, and exemplification<sub>2</sub> exemplifies<sub>3</sub> presentness, then exemplification<sub>1</sub> cannot now

exemplify<sub>2</sub> the property of futurity, and that contradicts the assumption that E will be past. Finally, (c) contradicts the assumption that E was future. For if exemplification<sub>1</sub> is past, then exemplification<sub>1</sub> exemplifies<sub>2</sub> pastness and exemplification<sub>2</sub> exemplifies<sub>3</sub> presentness. However, if exemplification<sub>2</sub> exemplifies<sub>3</sub> presentness, then not only exemplification<sub>2</sub> but also exemplification<sub>1</sub> must exist now. That, however, contradicts the assumption that E was future, that exemplification<sub>1</sub> is past. For if exemplification<sub>1</sub> now exists, then it must exemplify<sub>2</sub> presentness.

Thus, Smith's account of tensed exemplification does not explain how an event (or the inherence of an A-property in an event) can have the properties of pastness, presentness, and futurity *successively*. However, if an event or inherence relation must have its monadic temporal properties *nonsuccessively*, then the contradiction and ensuing vicious infinite regress contains reasonable grounds for inferring, as McTaggart did, that A-properties do not exist.

Of course, it is open to Smith to reject what I have assumed to be a principle, namely, that only what exists now can now exemplify a property. In other words, he might claim that on the tensed theory, it is a fundamental principle that an event or an inherence (or exemplification) relation can exemplify a temporal property at a time at which it does not exist. However, if Smith rejects the principle in question, then he is involved in another difficulty. For if the inherence<sub>1</sub> of pastness in E does not exist when futurity inheres<sub>2</sub> in it, and E does not exist when it exemplifies<sub>1</sub> pastness, then how can pastness inhere in E? The ontological ground of pastness inhering in E would be the property of pastness and the inherence<sub>2</sub> of futurity, but it is difficult to see how that could be the ground of the truth of "E will be past." How can it be true now that the pastness of E is future, if all that exists now is the property of pastness and the exemplification of futurity? There is nothing (E) that exists that exemplifies pastness, and nothing now exists that exemplifies futurity. So Smith's analysis is faced with a dilemma. If we accept the intuitively plausible principle that an entity (in particular the relation of inherence) can exemplify a property only if it exists, it follows that first-order inherence relations have incompatible temporal properties nonsuccessively. On the other hand, if Smith rejects that principle, then, when E will be past, neither E nor the inherence of pastness in E exist. Thus, the truth of "Event E will be past" does not have a sufficient ontological ground.

The dilemma I just raised is closely connected with another. Recall that the passage of time, and its direction, is reflected in the notion that:

*What is present was future and will be past.*

This sentence implies that what was first future became present and then became past, rather than the other way around. However, Smith's analysis of



the states of affairs described by (5) E will be past, (6) E is now present, and (7) E was future is inadequate to account for the direction of time and change. For the ontological analysis of (5) does not contain E or the exemplification<sub>1</sub> of pastness by E but only a second-level exemplification relation and the properties of pastness and futurity. Analogously, (7) does not contain E or the exemplification<sub>1</sub> of futurity by E but only a second-level exemplification relation and the properties of pastness and futurity. Thus, the facts that E will be past and E was future contain the same constituents, namely, a second-level inherence or exemplification relation and the properties of pastness and futurity. What, then, could be the ontological ground of the difference between (5) and (7) and the basis for E's being first future, then present, and then past, or E's being future before being present or past? The direction of the change in E from future to present to past, rather than the other way around, seems to be left unaccounted for.<sup>26</sup>

Thus, Smith is impaled on the horns of a dilemma. Either he accepts the intuitively plausible principle that an entity can now exemplify a property only if it exists now, or he does not. If he accepts the principle, then a contradiction ensues, since the same inherence relation has incompatible temporal characteristics nonsuccessively. On the other hand, if he denies the principle, his ontological assay of facts described by sentences like (5) and (7) fail to ground the direction of time and change. The only way he could do so would be by appealing to facts of the sort described by (6) E is now present. However, before such facts can provide an account of the direction of time, Smith would need to give a direction to the multitude of facts of that form. But if the argument of this section is sound, then Smith's analysis of the tenses will be insufficient to accomplish that task. Thus, in order to avoid McTaggart's paradox and provide a ground for the direction of time, Smith must countenance tenseless temporal relations between terms that exist and are located at some time *t* without tensed properties. That is, he must abandon the tensed theory of time.

## 4. CONCLUSION

Clearly, my arguments, even if they are sound, would not tilt the balance conclusively in favor of the tenseless theory of time. There may be other more plausible attempts to avoid McTaggart's paradox, and the tenseless theory is not without its difficulties. This essay should, however, bring one central issue of the debate sharper into focus. The tenseless theorist maintains that the tensed theory is dialectically inadequate, being unable to account for or ground the reality of time, understood in terms of temporal

relations between and among events. The tensed theory insists that temporal passage must constitute the core of time because there are indisputable phenomena, such as our experience of time and temporal passage, that can be accounted for only by appealing to the NOW. If the tenseless view can account for our experience of time and change (and I believe it can)<sup>27</sup> then together with my critique of recent tensed theories of time, the weight of philosophical argument would tip the balance on the side of the tenseless theory. On the other hand, if the detenser cannot expound an adequate account of our experience of time, then the urgency to provide a consistent and illuminating version of the tensed theory will be all the more pressing.<sup>28</sup>

## NOTES

1. John M. E. McTaggart, "The Unreality of Time," *Mind* 18 (1908): 457–74, repr. in *Philosophical Studies*, ed. S. V. Keeling (London: Edward & Arnold, 1934), pp. 110–34. All page references to this article will be from *Philosophical Studies*. Cf. McTaggart, "Time," in *The Nature of Existence*, vol. 2, ed. C. D. Broad (Cambridge: Cambridge University Press, 1927; repr., Grosse Point, MI: Scholarly Press, 1968), pp. 9–31.

2. For Smith's most sustained defense of the tensed theory, see Quentin Smith, *Language and Time* (New York: Oxford University Press, 1993). Other recent tensed theories that attempt to deal with McTaggart's Paradox are found in George Schlesinger, "E Pur Si Mouve," *Philosophical Quarterly* 41 (1991): 427–41; Schlesinger, "A Short Defence of Temporal Transience," *Philosophical Quarterly* 43 (1993): 359–61; Schlesinger, "The Stream of Time," *Timely Topics* (London: MacMillan Press, 1994), pp. 63–94, repr. in *The New Theory of Time*, eds. L. Nathan Oaklander and Quentin Smith (New Haven, CT: Yale University Press, 1994), pp. 257–85; John Bigelow, "Worlds Enough for Time," *Noûs* 45 (1991): 1–20; and David Zeilicovici, "Temporal Becoming Minus the Moving Now," *Noûs* 23 (1989): 505–24. Bigelow and Schlesinger both attempt to avoid the view that temporal becoming is contradictory by appealing to the notion of possible worlds. For criticisms of Bigelow's theory, many of which also apply to Schlesinger's, see essay 5. Zeilicovici proposes the idea that we can explain temporal becoming even if we reject the idea of the moving NOW as a property that moves along the series of events. I criticize Zeilicovici in essay 10. For a criticism of Prior-type theories of tensed time, see L. Nathan Oaklander, *Temporal Relations and Temporal Becoming* (Lanham, MD: University Press of America, 1984); and Smith, *Language and Time*.

McTaggart's paradox has been recently discussed in a debate between E. J. Lowe, Hugh Mellor, and Robin Le Poidevin. Cf. Le Poidevin and Mellor, "Time, Change and the Indexical Fallacy," *Mind* 96 (1987): 534–38; Le Poidevin, *Time, Cause and Contradiction: A Defense of the Timeless Theory of Time* (Basingstoke, UK: Macmillan, 1991); Le Poidevin, "Lowe on McTaggart," *Mind* 102 (1993): 162–70; E. J. Lowe, "The Indexical Fallacy in McTaggart's Proof of the Unreality of Time," *Mind* 96

(1987): 62–70; Lowe, “Reply to Le Poidevin and Mellor,” *Mind* 96 (1987): 539–42; Lowe, “McTaggart’s Paradox Revisited,” *Mind* 101 (1992): 323–26; and Lowe, “Comment on Le Poidevin,” *Mind* 102 (1994): 171–73. Although Lowe argues against McTaggart’s negative thesis and claims to defend a tensed theory of time, his own account of the metaphysical significance of the tenses is too skeletal to be considered in this paper.

3. This section can be skipped if you read essay 1, section 2, or essay 3.

4. McTaggart, *Unreality of Time*, p. 271.

5. *Ibid.*, p. 27.

6. C. D. Broad, *Scientific Thought* (London: Routledge and Kegan Paul, 1923; repr., Paterson, NJ: Littlefield, Adams & Co., 1959), p. 57.

7. McTaggart, “Unreality of Time,” pp. 116–17, my emphasis.

8. *Ibid.*, p. 118.

9. C. D. Broad, “Time,” in *Encyclopedia of Philosophy*, ed. J. Hastings (1921; repr., New York: Scribner, 1955), pp. 334–45; J. M. Shorter, “The Reality of Time,” *Philosophia* 14 (1984): 321–39; Oaklander, *Temporal Relations and Temporal Becoming*; Clifford Williams, “The Phenomenology of B-Time,” in *New Theory of Time*, ed. Oaklander and Smith, pp. 360–72; Bertrand Russell, “On the Experience of Time,” *Monist* 25 (1915): 212–33.

10. Adolf Grünbaum, *Philosophical Problems of Space and Time*, 2d ed. (Dordrecht: D. Reidel, 1973); Hugh Mellor, *Real Time* (Cambridge: Cambridge University Press, 1981); Robin Le Poidevin, *Time, Cause and Contradiction: A Defense of the Tenseless Theory of Time* (Basingstoke, UK: Macmillan, 1991).

11. This section can be skipped if you read essay 3.

12. McTaggart, *Unreality of Time*, p. 118.

13. *Ibid.*, p. 124.

14. C. D. Broad, *Examination of McTaggart’s Philosophy*, vol. 2, part 1 (Cambridge: Cambridge University Press, 1938; New York: Octagon Books, 1976); A. B. Levison, “Events and Time’s Flow,” *Mind* 96 (1987): 131–43; E. J. Lowe, “The Indexical Fallacy in McTaggart’s Proof of the Unreality of Time,” *Mind* 96 (1987): 62–70; A. N. Prior, *Past, Present and Future* (Oxford: Oxford University Press, 1967); Prior, *Papers on Time and Tense* (Oxford: Oxford University Press, 1968); Bertrand Russell, “On the Experience of Time,” *Monist* 25 (1915): 212–33; Smith, *Language and Time*.

15. Broad, *Examination of McTaggart’s Philosophy*, p. 313.

16. Mellor, *Real Time*, pp. 5–7.

17. Quentin Smith, “McTaggart’s Paradox and the Infinite Regress of Temporal Attributions,” in *New Theory of Time*, pp. 180–94; Quentin Smith, “The Logical Structure of the Debate about McTaggart’s Paradox,” in *New Theory of Time*, pp. 202–10; Smith, *Language and Time*.

18. Smith, “McTaggart’s Paradox and the Infinite Regress,” p. 181.

19. *Ibid.*, p. 185.

20. *Ibid.*

21. *Ibid.*, p. 187.

22. L. Nathan Oaklander, “McTaggart’s Paradox and the Infinite Regress of Temporal Attributions: A Reply to Smith,” in *New Theory of Time*, ed. Oaklander and Smith, pp. 195–201.

23. Smith, *Language and Time*, p. 174.

24. Ibid., p. 197. On p. 171, he explicitly introduces *earlier* and *later* into his analysis of the tenses, since he claims that the tensed theory implies "E is present, *was* future and will *be* past, or E is future, and *was* present and (still earlier) *was* past and E is future, will *be* present and will *be* (still later) past." However, if my argument of the past few pages is correct, then these B-terms cannot perform the function for which they were introduced, namely, to provide an ontological ground for an event having incompatible A-properties successively (in the past or in the future).

25. Ibid., p. 171, my emphasis in the last sentence.

26. Smith might reply to this argument by claiming that what distinguishes the two tensed facts (5) and (7) is that one contains the inherence<sub>2</sub> of futurity and the other contains the inherence<sub>2</sub> of pastness. What, then, is the ground of the temporal relation of E's being future *before* E's being past? He cannot say that it involves a temporal relation between the inherence<sub>2</sub> of futurity and the inherence<sub>2</sub> of pastness, since both inherence relations are present, and the B-relation of *earlier than* cannot obtain between items that are both present. Indeed, it seems to me that in Smith's ontology, there are no temporal relations at all because he maintains that only what is past, present, or future exists (ibid., p. 165), and he is committed to the view that temporal relations are not past, present, or future, for, *being earlier than* is a first-order relation, and therefore, if it had any A-properties, then they would be second-order properties. But Smith says that A-properties are first-order properties. It follows that they cannot be exemplified by B-relations that, therefore, do not exist.

27. For recent tenseless accounts of time and experience, as well as criticisms of those accounts, see *New Theory of Time*, part 3.

28. Upon completing this paper, I have come across another recent defense of the tensed theory of time, Ned Markosian, "How Fast Does Time Fly?" *Philosophy and Phenomenological Research* 53 (1993): 829–44. A consideration of Markosian's views will, however, have to wait for another occasion.

I wish to thank Quentin Smith and an anonymous referee for *Synthese* for their very helpful comments on earlier versions of this paper.



## *Part 3*

### *A Defense of the B-Theory of Time*



## A. Temporal Reality and Experience





Mellor's *Real Time*

*Real Time* is an important book that must be read by those who take the problems of time and tense seriously.<sup>1</sup> In it Mellor presents a systematic defense of the tenseless theory of time, according to which time consists solely of temporal relations between and among temporal objects. Mellor realizes that the tenseless view will never gain acceptance unless the tensed alternative, according to which time consists of the successive acquisition and loss of the nonrelational A-series properties of *pastness*, *presentness*, and *futurity*, is laid to rest. He attempts to defeat the tensed view by arguing that McTaggart was right in rejecting tensed time flow as contradictory and by showing that tensed facts are useless and unnecessary to accomplish the purposes for which they are introduced. With the alternative damned, he sets himself the task of responding to the myriad objections that have been leveled against the tenseless view. As a result, Mellor has much of interest to say about what makes tensed statements true or false, the difference between space and time, the distinction between things and events, the nature of change, the untranslatability of tense, the direction of time, the presence of experience, and the question of backward causation. Mellor's treatment of these topics are all worthy of consideration, but I shall limit myself to four.

## 1. TOKEN-REFLEXIVES AND TENSELESS FACTS

Mellor believes that the world is "intrinsically tenseless: events and things are not in themselves either past, present or future."<sup>2</sup> Surely, we do make judgments about the tense of things and such judgments are sometimes true, but the truth of a tensed sentence or judgment token can be given in terms of a tenseless and not a tensed fact. On the "token-reflexive" account that Mellor

propounds, the temporal relation between the date at which a tensed sentence is uttered and the event or thing that such a judgment is about provides an objective basis for the truth value of any tensed sentence. A present-tense sentence token is true if and only if it occurs at (roughly) the same time as the event it is about; a past-tense token is true if and only if it occurs at a time later than the event it refers to and so on. Thus, on the token-reflexive account, the truth conditions of tensed sentence and judgment tokens are tenseless facts. But Mellor's notion of a "tenseless fact" is problematic.<sup>3</sup>

Suppose I say of a headache, "That's over." A token of "That's over" will be true if it is later than the headache, and for Mellor, "this tenseless fact was a fact *before* and *during* the headache as well as *after* it. It *always* was a fact that this particular token of 'That's over' occurs later than the headache it refers to."<sup>4</sup> This passage reflects a confusion between language and the world. The tenseless *sentence* "This particular token of 'That's over' occurs later than the headache it refers to" is always true, but the tenseless *fact* that makes it true does not always exist. The fact that a particular token is later than a headache does not exist before and during the headache as well as after it, for if it did, then it would be at all times and thus an enduring *thing*, not a fact. Thus, to preserve a distinction between temporal things and tenseless facts, Mellor needs to give a different account of the latter.

One such alternative account would treat tenseless facts as "eternal." On this view, the tenseless fact that, say, *A is earlier than B* contains a temporal relation between terms that are themselves in time but is not *as a whole* temporally related to anything or in any other sense in time. Thus, insofar as time consists solely of B-series *facts* about how much later or earlier events are than each other, Mellor should not say that B-series facts are in time but rather that time is in B-series facts.<sup>5</sup>

## 2. THE EXPERIENCE AND PASSAGE OF TIME

Mellor's defense and elaboration of McTaggart's argument against the reality of A-characteristics is compelling, but regardless of how many arguments Mellor and others offer against the advocates of passage, they will never convince them to abandon their view unless they can render intelligible features of experience that seem to require it. What, then, are the phenomena that are claimed to require the reality of tense? One stems from the fact that while we engage in a great number of actions throughout our lifetime, only a small subset of them are experienced *now*. So how can the tenseless view, according to which all events exist tenselessly at their respective dates, explain why my experience of writing a review of *Real Time* on May 25, 1983 ( $= t_2$ ), and not

my experience of attending an APA paper on April 28, 1983 ( $= t_1$ ), *is present*? Mellor's response would be that since as a matter of tenseless fact it is  $t_2$ , a sentence token of the type "I am presently writing a review of *Real Time* at  $t_2$ " is, by its token-reflexive truth conditions, true, whereas a sentence of the type "I am presently hearing an APA paper at  $t_1$ " is, by those same conditions, false. Consequently, my experience of writing this review is present. To my mind, the simplicity of this response should not belie its adequacy.

The expression "Thank goodness that's over" depicts an experience that allegedly provides another reason for the idea that time moves, since what we are thanking goodness for is the passage of an unpleasant event from the present into the past. Mellor demurs. His tenseless explanation is that we use the idiom to express our feeling of relief that occurs after the cessation of pain, which relief we believe is caused by the ending of the pain. Thus, to thank goodness that a pain is over, "[p]ains only need to be causes of later feelings of relief, they do not also need to be in reality at first present and then past."<sup>6</sup>

If neither pains nor anything else really moves through time, then what is the source of the myth that they do? In a nutshell, Mellor's answer is this. Timely action and communication requires tensed beliefs. If, for example, I want to hear the one o'clock news, I will turn on the radio only if I believe that it is *now* one o'clock. But in order to keep tensed beliefs true, I must change their tense from time to time. According to Mellor, the changes in our tensed beliefs is the psychological reality behind the apparent movement of events from future to the present and into the past.<sup>7</sup> Since, however, the succession of everything in time along the A-series is in reality nothing more than the succession of true tensed beliefs, I find it quite puzzling to read that tense, though unreal, is not subjective or psychological.<sup>8</sup> All the more so in the light of his claims that "tense is really just a mode of thought" and that tense belongs "in our heads."<sup>9</sup>

One final feature of temporal experience that Mellor attempts to explain is our perception of the flow of time. We have the experience of going forward in time and not backward, toward the future and away from the past. From whence does the illusion of time's movement come? Mellor says that "[t]he flow of time is relatively straightforward. It turns out to be in reality no more than an accumulation of successive memories."<sup>10</sup> Mellor's account is on the right track but fails to explain how a very old person, who might be losing memories faster than he is gaining them, nevertheless experiences the "movement" of time.<sup>11</sup> A reasonable alternative would explain the perception of time's movement by appealing to our successively having different psychological attitudes—first anticipation, then perception, and then memory—toward one and the same event.

### 3. THINGS, EVENTS, AND CHANGE

A prominent thesis in Mellor's book is that there exists a basic metaphysical distinction between things and events. Things are wholly present throughout their lifetimes and do not have temporal parts. Events, "understood as producers of immediate contiguous effects,"<sup>12</sup> are not wholly present through their existence and do have temporal parts. Mellor's first argument for the distinction between things and events is that moral and legal responsibility requires it:

Nothing and no one can be held responsible for an earlier action unless he, she or it is identical with whoever or whatever did that earlier action. . . . Now whatever identity through time may call for elsewhere, here it *evidently requires the self same entity* to be wholly present both when the deed was done and later when being held accountable for it—a condition satisfied by things, but not by events.<sup>13</sup>

Admittedly, the thesis that "responsibility implies identity through time" is in *some sense* true, but it is not nearly as evident as Mellor claims that its truth requires the existence of things without temporal parts.

Those who analyze personal identity in terms of psychological continuity could very well accept the truism that responsibility implies identity, but deny that responsibility implies the existence of things as Mellor conceives of them. For if we analyze a person as a *succession of experiences*, then we could agree that a person at  $t_2$  is responsible for the deed of a person at  $t_1$  if and only if the person at  $t_2$  is identical with the person at  $t_1$ , and then go on to say that the person at  $t_2$  is identical with the person at  $t_1$  if and only if there exists (or could exist) an experience at  $t_2$  that is or contains a memory of the experience of performing the deed at  $t_1$ . Consequently, before Mellor can use legal and moral responsibility as a basis for his belief in things without temporal parts, he would have to say something about Humean-type analyses of personal identity, and that he does not do.

Mellor's second argument for the existence of enduring things without temporal parts is that such entities are necessary for an adequate account of tenseless change. He reasons that those who claim that things have (or are successions of) temporal parts cannot account for a single thing changing because "different entities differing in their properties do not amount to change even when, as here, one is later than the other and both are parts of something else."<sup>14</sup> But why is that so? Mellor replies that such an analysis would no more constitute a change in  $a$  "than would  $a$ 's spatial parts differing in their properties—e.g. a poker being hot at one end and cold at the other."<sup>15</sup> I fail to see the force of this reasoning, for why should we hold that

what is true of space is, in this instance, true of time? Mellor himself admits that spatial relations are *observed to be different* from temporal relations, and being the "good empiricist" he claims himself to be,<sup>16</sup> it follows that temporal relations *are different* from spatial relations. Therefore, it is not clear why the fact that we do not have change when the poker is hot at one end and cold at the other has any relevance for the temporal case.<sup>17</sup>

## 4. THE DIRECTION OF TIME

The direction of time is the difference between event  $e$  being earlier than event  $e^*$  and  $e$  being later than  $e^*$ . Mellor attempts to define the difference between *earlier* and *later* in terms of the direction of causation, but the connection is not the obvious one. "Effect" does not *mean* the later of two causally connected events, nor does "later" *mean* the temporal relation an effect has to its cause.<sup>18</sup> Rather, Mellor defines precedence in terms of how precedence is directly perceived. There are two striking facts about the direct perception of precedence: First, it demands a corresponding temporal ordering of perceptions ("seeing  $e$  precede  $e^*$  *means* seeing  $e$  before seeing  $e^*$ ").<sup>19</sup> Second, it demands a corresponding causal ordering of perceptions: I can directly perceive  $e$  preceding  $e^*$  only when the right causal connection exists between my perceptions of  $e$  and  $e^*$ .<sup>20</sup> These two facts about the perception of succession are not contingently but necessarily connected, since the causal link between my perception of  $e$  and perception of  $e^*$  constitutes the temporal priority of those two perceptions. Mellor goes on to claim that since any kind of event could be a perception, it follows that any causally ordered pair of events could make up a perception of precedence and consequently, the causal order of any two events determines their temporal order.

Mellor's account of the direction of time is ingenious but is only as strong as its weakest link. Clearly, its heart is the claim that perception is a causal process so that to perceive  $e$  preceding  $e^*$  implies that the perception of  $e$  causes the perception of  $e^*$ . But as a conceptual analysis of perception, this seems to me to be false. What seeing is in itself as opposed to what physical processes are correlated with seeing needs to be distinguished. Since we can conceive of perceiving an object that does not cause us to be aware of it, as in the case of disembodied perception, and since we can conceive of the appropriate causal processes taking place and yet seeing not occur (due to some psychological disturbance, for example), it follows that our concept of perception cannot be identified with a causal process.

Furthermore, the perception of succession does not necessarily require a causal connection. On Mellor's own view, persons are self-conscious con-

tinuants. Why, then, could not the perception of  $e$  and  $e^*$ 's succession be analyzed as involving a self that perceives  $e$  then perceives  $e^*$  and is conscious of its self-identity in the two experiences? Perhaps the perception of succession requires that the memory of the earlier perception of  $e$  be somehow incorporated in the later perception of  $e^*$ , but while memory may require a consciousness of our identity with our past self, it does not *necessarily* require a causal relation.<sup>21</sup> Since the causal order between perceptions is not necessary for the perception of succession, whereas the temporal order is, I conclude that it is conceivable that the perceptions of  $e$  and  $e^*$  are temporally, but not causally, related. Therefore, contrary to what Mellor would have us believe, the temporal order is *more fundamental* than the causal order.<sup>22</sup>

One final critical remark. Mellor claims "that the difference between  $e$  preceding  $e^*$  and  $e^*$  preceding  $e$  lies in the *relata*, and *not in the relation*."<sup>23</sup> It is, however, difficult to square this with his view that the order of the causal *relation* between our perceptions of  $e$  and  $e^*$  determines their temporal order. Does he mean that causality is an internal relation grounded in the nature of its terms? Since we are not told, we cannot tell, and this points out a shortcoming of Mellor's book: it inadequately attends to some of the most fundamental metaphysical issues it raises.<sup>24</sup> Nevertheless, *Real Time* is a welcome addition to the literature on the philosophy of time, and my overall evaluation is decidedly positive.

## NOTES

1. Hugh Mellor, *Real Time* (Cambridge: Cambridge University Press, 1981). It should be noted that there are two important differences in the views expressed in *Real Time* and those expressed in *Real Time II* (London: Routledge, 1998). First, Mellor no longer holds the token-reflexive account of tensed statements and instead defends the so-called date-analysis according to which the truth condition of a tensed sentence-token is a function of the time at which it is thought or spoken and the temporal relation of that time to what the sentence is about. Second, Mellor no longer holds that ordinary properties are relations to times. He now believes that enduring continuants have monadic properties at times.

2. Ibid., p. 29.

3. In *Real Time II*, Mellor rejects the token-reflexive account in favor of a date-analysis. For further discussion of these two accounts, see essays 23–25.

4. Mellor, *Real Time II*, p. 48, my emphasis.

5. Compare L. Nathan Oaklander, *Temporal Relations and Temporal Becoming: A Defense of a Russellian Theory of Time* (Lanham, MD: University Press of America, 1981).

6. Mellor, *Real Time*, p. 51.

7. Ibid., pp. 11, 169.

8. Ibid., p. 5.
9. Ibid., pp. 140, 92.
10. Ibid., p. 10.
11. Compare, J. J. C. Smart, "Time and Becoming," in *Time and Cause*, ed. Peter van Inwagen (Dordrecht: D. Reidel, 1981), pp. 3–16.
12. Mellor, *Real Time*, p. 10.
13. Ibid., p. 106, my emphasis.
14. Ibid., p. 111.
15. Ibid.
16. Ibid., pp. 65, 24.
17. Reinhardt Grossmann defends the view that changing continuants do have temporal parts in "Chisholm's Person and Object," *Noûs* 14 (1980): 457–67, and Harold Noonan defends the view that enduring objects can be thought of as "four-dimensional worms" in "The Four-Dimensional World," *Analysis* 37 (1976): 32–39. Mellor attempts to provide indirect support for his distinction between things and events by critically discussing those arguments from physics that threaten the concept of a thing in *Real Time*, pp. 127–32. Unfortunately, he nowhere considers the meta-physical argument, elaborated by Butchvarov, that purports to establish that the concept of an individual material thing is unintelligible. See Panayot Butchvarov, *Being Qua Being: A Theory of Identity, Existence, and Predication* (Bloomington: Indiana University Press, 1979), pp. 154–83.
18. Mellor, *Real Time*, p. 150.
19. Ibid., p. 144.
20. Ibid., p. 148.
21. Compare Laird Addis, "Behaviorism and the Philosophy of the Act," *Noûs* 16 (1982): 399–420, and Roger Squires, "Memory Unchained," *Philosophical Review* 78 (1968): 178–96.
22. Recent discussions of the causal theory of time may be found in T. Chapman, *Time: A Philosophical Analysis* (Dordrecht: D. Reidel, 1982), and in *Space, Time and Causality*, ed. Richard Swinburne (Dordrecht: D. Reidel, 1982).
23. Ibid., p. 143, my emphasis.
24. Another important issue that the tenseless theory of time raises but is not discussed by Mellor is the topic of fatalism. For recent discussions of fatalism and other publications on topics relevant to time and tense, see essay 30; Van Inwagen, *Time and Cause*; Avron Polakow, *Tense and Performance* (Amsterdam: Rodopi, 1981); George Schlesinger, "How Time Flies," *Mind* 91 (1982): 501–23.





## *The Russellian Theory of Time*

There have been many objections raised against the Russellian theory of time.<sup>1</sup> One important criticism has been raised by George Schlesinger in an article titled "Philosophical Equanimity and the Stillness of Time."<sup>2</sup> Schlesinger's criticism is that there are certain undisputable phenomena that are completely inexplicable and unintelligible on the Russellian view, and since any adequate philosophy of time must be reconcilable with these phenomena, he concludes that the Russellian view is inadequate. Furthermore, he argues that the view of time associated with McTaggart is preferable to the Russellian view because the McTaggartian *can* make intelligible the undisputable phenomena in question. Schlesinger's criticism of Russell and defense of McTaggart are important and cannot be ignored by anyone who, like myself, adopts a Russellian view of time. Consequently, my task in this essay will be to provide a defense of the Russellian view that is limited to the objections that *Schlesinger* raises against it. I shall proceed by dividing the essay into two sections. In the first section, I shall explain what I take the Russellian view to be and show how on it the undisputable phenomena can be understood. In the second section, I shall consider Schlesinger's claim that the undisputable phenomena cannot be understood on Russell's view and attempt to show that his argument is unsound because it is based on a misunderstanding of the Russellian view.

### I

The aim of Schlesinger's article is to establish that ultimately we should "have to side with McTaggart [and against Russell] and concede that time must be moving."<sup>3</sup> Schlesinger claims, correctly I believe, that it is an

impression deeply felt by all of us that time flows relative to the present, and he thinks that this impression must be correct, since it is based upon some undisputed phenomena.<sup>4</sup> According to Schlesinger, the phenomena that are “strongly indicative” of the temporal universe having a movement from the future through the present and into the past are our different attitudes toward events in the future and events in the past. Concerning the first set of attitudes, we may note that a very painful experience known to have happened to us in the past, say, a painful operation, is when contemplated thought of with *relief*. As we sometimes say, “Thank goodness that’s over!” On the other hand, when we know that an equally painful operation is something that will occur in our future our attitude is one of *dread* and *anxiety*. Similarly, we often *feel nostalgia* over pleasant events that have happened and *joy* over events that we expect to happen. In both sorts of cases, there seems to be a kind of conceptual connection between the different attitudes and the nature of time. Events that are contemplated with nostalgia are not just those that are past, but they are events that are receding or moving away from us. Those that are contemplated with joy are often those that not only are in the future but are understood as coming toward us and about to overtake us—about to be in the *now*, in the stream of our lived experience. Analogously our relief that a highly disagreeable experience is over is somehow conceptually connected with our belief that the experience is moving away from us and “that our feeling of dread . . . is explained by the fact that the agonizing experience is seen to be approaching us and is known to be about to overtake us.”<sup>5</sup> It is such undisputable attitudes and experiences as these that provide, according to Schlesinger, strong evidence against the Russellian conception and for McTaggart’s conception of time.

At the outset, we may acknowledge that the difference in attitudes that Schlesinger describes do in fact exist. Moreover, I think that we must also admit that the differences in attitude imply that, in some sense, “time moves.” But the whole question centers around what is meant by saying that “time moves.” Although our attitude of dread implies that we conceive of events being first in the future and then moving toward us so that they are eventually happening to us, our attitude of dread is far from clear as to how we are to understand the “flow” of events from the future to the present. It is the task of philosophy to enable us or at least to aid us in understanding what is meant by time’s “movement.” In a passage from Russell’s lectures on the philosophy of logical atomism, he says:

The process of sound philosophizing, . . . consists mainly in passing from those obvious, vague, ambiguous things, that we feel quite sure of, to something precise, clear, definite, which by reflection and analysis we find is involved in the vague thing that we start from, and is, so to speak, the real truth of which that vague thing is a sort of shadow.<sup>6</sup>

If we apply Russell's views on "sound philosophizing" to the problem of time, we may say that if she knows what she is about, the Russellian need not deny the deeply felt impression that time is moving.<sup>7</sup> Thus, she need not dispute the "undisputable phenomena" that Schlesinger employs to justify our belief in the transiency of time. But the obvious truth that time is moving, though something that we feel quite certain of, is, nonetheless, vague and ambiguous. Thus, the task of philosophy is to reflect on that vague truth and arrive at, to use Russell's phrase, "the real truth of which that vague thing is a sort of shadow." The point here is that we cannot identify our deeply entrenched belief in the movement of time with McTaggart's account of it. To believe that time moves is not ipso facto to believe that there is a special temporal particular—the "now"—that moves along a series of events or that there are the properties of *pastness*, *presentness*, and *futurity* that events possess and continually change with regard to. Our deeply entrenched beliefs about time are not as sophisticated as McTaggart's view of time in whatever way we interpret it. Consequently, although our different attitudes toward the past and the future do imply that time has a transient aspect *in some sense*, they do not imply that time moves in the sense explained by McTaggart or any other A-theorist for that matter. It may be the case that time moves or has a transient aspect in the sense in which the Russellian says it does, and that gives rise to the following two questions: (1) What is the Russellian view of time, and (2) In what sense does time move or have a transient aspect, according to the Russellian view?

We will have occasion to delve more deeply into the Russellian view when we consider Schlesinger's objections to it, but for the present, we may content ourselves with indicating the essential aspects of that view. The most fundamental aspect of the Russellian view is that temporal relations are *simple*, *unanalyzable*, and *irreducible*. As I understand the italicized words, the Russellian view implies that (i) "earlier than" *cannot be defined* in terms of "past," "present," and "future." To be able to give such a definition or reduction would show, according to one conception of philosophy, that one need not countenance temporal relations in one's ontology. Thus, the Russellian maintains that an adequate ontology of time requires temporal relations and that temporal properties and/or temporal individuals alone will not do. The Russellian view also implies that (ii) temporal relations do not require that their relata have temporal properties. On the Russellian view, *x* can be earlier than *y*, even if it is not the case that *x* and *y* each have one of the temporal characteristics of pastness, presentness, or futurity.<sup>8</sup> The Russellian view also maintains that (iii) there are no nonrelational temporal properties of *pastness*, *presentness*, and *futurity*.

The Russellian does not deny that we truly predicate "past," "present," and "future" of events, but she maintains that that does not imply there are

temporal properties named or referred to by these predicates. Indeed, she denies that such temporal properties exist and historically has offered several different analyses of temporal predicates to demonstrate this.<sup>9</sup> The most plausible—and I would say correct—view is that the word “now” or “present” names a certain time. What time? The time at which the word is uttered or written down. Thus, for example, to say that “event  $e$  is now occurring” when uttered or written at time  $t_1$  expresses the fact that the event in question is occurring at  $t_1$ , and to say that “event  $e$  is now occurring” when uttered or written at  $t_2$  expresses the fact that the event in question is occurring at  $t_2$ , and so on. Similarly, to say that “event  $e$  will occur in the future” when uttered at  $t_1$  expresses the fact that the event in question occurs (tenselessly) later than  $t_1$ . Finally, to say at  $t_1$  that “event  $e$  has occurred in the past” when expressed at  $t_1$  expresses the fact that the event in question occurs (tenselessly) before  $t_1$ . On the Russellian view, the *nowness* of events occurring at  $t_1$  is nothing more than the time at which these events occur, namely,  $t_1$ . *Nowness* is not, on this view, a temporal particular that “shifts” from time to time. Nevertheless, we need not claim that our different attitudes toward the past and future are mistaken or irrational, and we need not deny the deeply held belief that time is moving from the future into the present. To see why this is so, we shall turn to our second question.

In what sense, then, does time move or have a transient aspect, according to the Russellian view? How could a Russellian account for our experience of time’s movement? Consider, for example, the event of the return of my wife, Linda, after a one month’s vacation in the Philippines. I have been anticipating the event for three weeks, and now I anticipate it once more with joy. All the while I sense that her return is coming closer and closer and that eventually it will be taking place. I may describe my experience as one of time’s moving, but what does that mean? On the Russellian view, a plausible answer would be the following: There is a certain event  $e$  (Linda’s return to the United States) that occurs (tenselessly) at  $t_n$ . At say  $t_1$ , I wish it was *now*  $t_n$ , or I say to my friend, “I am looking forward to Linda’s return at  $t_n$ .” Then, at a later time  $t_2$ , I wish and say the same thing. Finally, suppose, at  $t_n$  (the time at which event  $e$  occurs [tenselessly]) I experience the joy that I have been anticipating. The Russellian would say, as would everyone else, that time (event  $e$ ) moved from the future to the present. The truth that underlies that vague statement would, however, be the following: My wish or utterance occurs (tenselessly) at  $t_1$ , and the event that I wish to occur is later than  $t_1$ . At  $t_2$ , my wish or utterance occurs (tenselessly), but the temporal span (duration) between  $t_2$  and  $t_n$  is less than the temporal span between  $t_1$  and  $t_n$ . Finally, at  $t_n$ , the experience of joy occurs (tenselessly) and so does the event  $e$  that I have been anticipating at  $t_1$  and  $t_2$ . On this account, the passage of time is reflected in the fact that different wishes or utterances occur

(tenselessly) at different times and at different temporal distances from the time at which event  $e$  occurs. *Now*, at  $t_{n+1}$  I may experience nostalgia due to the "passing of the joyful event into the past," and the Russellian would unpack the kernel of truth in that phrase by saying that the experience of nostalgia occurs (tenselessly) at  $t_{n+1}$  and the joyful event  $e$  that I am nostalgic about occurs (tenselessly) at  $t_n$ , and  $t_n$  is earlier than  $t_{n+1}$ . As the temporal distance between  $t_n$  and *now* (i.e., the time referred to by the use of the word "now" in the utterance "I am now nostalgic") increases, the event  $e$  may be said to recede or pass more and more into the past. Thus, on the Russellian view, there is a justification of our different attitudes toward past and future events, and more importantly, there is a clear and intelligible sense in which time has the transiency required by our deeply felt impression, although the experience of transiency in the sense just explained does not require the existence of A-time.

In order to get a clearer understanding of the Russellian view, it will be useful to consider some arguments against the account of it just given. The first argument may be stated as follows: The series of real numbers has certainly no extra particular traveling along it, but one can say that "going" along it in one direction, we find the numbers increasing, and "going" along it in the other direction, we find the numbers decreasing. So the obvious answer of McTaggart would be similar for the Russellian who denies the existence of a moving NOW, one may speak equally well about going along the time series in one direction as in the other. Clearly seen from the other direction,  $t_1$  succeeds  $t_2$ , which succeeds  $t_3$ , which succeeds  $t_4$ , and so on. Thus, I could just as justifiably talk about being *nostalgic* toward  $e$ ; all the while, I sense Linda's return receding further and further into the future! Since the conclusion of this argument is absurd, if the Russellian view is committed to it, the Russellian view must be rejected. Fortunately, the argument is either invalid, unsound, or question-begging.

A key premise in the first argument is that "for the Russellian who denies the existence of a moving NOW, one may speak equally well about going along the time series in one direction as in the other." There are at least two things that the key premise could mean: (1) It could mean that on the Russellian view if A is earlier than B, then B is later than A, or (2) It could mean that on the Russellian view if A is earlier than B, it could still be the case that B is earlier than A. If we interpret the key premise as (1), then it is true, but it does not entail that I may be nostalgic about an event in the future. If we interpret the key premise as (2), then the first argument is valid, but it rests upon a premise that is either false or question-begging. To see what is involved in this last point, let us turn to the ontological issue surrounding the "direction" of time.

One way of understanding the ontological issue surrounding the "direc-

tion" of time is to put it in the context of what constitutes the difference between space and time. There is a peculiar difference between spatial and temporal relations that Broad once expressed in a passage worth quoting at length:

The peculiarity of a series of events in Time is that it has not only an intrinsic *order* but also an intrinsic *sense*. Three points on a line have an intrinsic order, i.e., B is between A and C, *or* C is between B and A, *or* A is between C and B. This order is independent of any tacit reference to something traversing the line in a certain direction. By difference in sense I mean the sort of difference which there is between, say, ABC and CBA. Now points on a straight line do not have an intrinsic sense. A sense is only assigned to them by correlation with the left and right hands of an imaginary observer, or by thinking of a moving body traversing the line in such a way that its presence at A is earlier than its presence at B, and the latter is earlier than its presence at C.<sup>10</sup>

For Broad, it would be nonsense to suppose that a temporal series could be going in one direction as well as the other, since what distinguishes the temporal series from a spatial series is that only the former is a series of events that have an intrinsic sense or direction without tacit reference to some "imaginary observer" or "moving body." Max Black refers to the same distinction between space and time:

[T]ime is not "isotropic," in the way that we have seen space to be, . . . It does indeed seem that the meaning of the claim that A happened earlier than B does not depend upon the speaker's position or point of view—or on the point of view of anybody or anything else. It seems to me nonsensical to suggest that if A is earlier than B, it might after all still be the case that B is earlier than A.<sup>11</sup>

It is, however, precisely that suggestion that the first argument makes against the Russellian view. Thus, on the only interpretation that would make the first argument valid, the crucial premise is false, and hence the argument is unsound.

Since there is the distinction between space and time that Broad and Black discuss, questions arise as to its ontological basis or explanation: "What in reality are the truth conditions for the direction or intrinsic sense of time?" Alternatively, "What is the difference between a spatial and a temporal series?" By briefly considering these questions, we can see in what way the first argument is question-begging. For the Russellian, the direction of time is wholly constituted by the unique asymmetrical relation of succession. The appeal to a simple temporal relation to give time a direction or sense is one and only one of several possible ontological explanations of the direction of time. McTaggart spoke of the fundamental feature of time as being consti-

tuted by the changing of events with respect to the characteristics of pastness, presentness, and futurity. For Broad, the crucial feature of a *temporal* series is that events in it acquire temporal relations through the continual increase in the sum total of existence.<sup>12</sup> For Storrs McCall, the crucial feature of time is in the progressive discarding of those possible worlds that do not become actual.<sup>13</sup> In short, there are numerous accounts of the ontological ground of the direction of time, that is, of the ontological basis of the distinction between space and time. All views that maintain that without a special kind of change there would be no temporal relations (nor a temporal series) are views that maintain that becoming is *absolute*. Absolute becoming in its various disguises are different ways of accounting for the direction of time that are anti-Russellian. Thus, if one claims that without *absolute* becoming there is no direction to time, then one would also claim that on the Russellian view there is no direction to time. In other words, the argument is that since the Russellian view spatializes time, we may speak of time as going in one direction as well as in the other, and consequently we may be nostalgic over events in the future. Such an argument is, however, one that begs the question, for it assumes that the Russellian view spatializes time in a literal and pernicious sense because it does not ground the direction of time in absolute becoming.

That the direction of time is founded upon *absolute* becoming is an essential tenet of McTaggart and other so-called A-theorists and is nicely stated by Broad:

It seems to me that there is an irreducibly characteristic feature of time, which I have called "Absolute Becoming." It must be sharply distinguished from qualitative change, though there is no doubt a connection between the two. In the experience of a conscious being Absolute Becoming manifests itself as the continual supersession of what was the latest phase by a new phase, which will in turn be superseded by another new one. This seems to be the rock-bottom peculiarity of time, distinguishing *temporal sequence* from all other instances of one-dimensional order, such as that of points on a line, numbers in order of magnitude, and so on.<sup>14</sup>

Clearly, *from the A-theorists' point of view*, without absolute becoming in some form or another, there would not be a *temporal* series but a series indistinguishable from a spatial one. Yet a McTaggartian cannot assume that central tenet in an argument against Russell without assuming what needs to be proved. The A-theory thesis that on the Russellian view time is essentially like space is at the core of Schlesinger's argument against the Russellian view, but before we return to that, let us consider another objection to our statement of it.

The second argument against my account of the Russellian view is even more important than the first, since it goes to what is perhaps the central point of Schlesinger's paper. It may be stated as follows: Because of strong



psychological reasons, an impression may have been formed in my mind that there is a tiger outside my house, and consequently, I dread to open the door. But as soon as I am reasoned with and it is clearly demonstrated to me that there is no tiger anywhere within miles of my house, I shall—if I am rational—overcome my fear. Now, it may be argued that my account of the Russellian view succeeds in explaining how according to Russell the impression of the movement of time arises, even though in objective reality there is no temporal particular that actually moves. Nevertheless, it would still leave unexplained why an enlightened person, upon realizing that his dread of a terrible event in the future relentlessly “coming” or “moving” toward him is merely an impression, since, in fact, nothing dreadful is really approaching him, does not succeed in overcoming his dread.

As in the first argument, the above argument contains a crucial but ambiguous premise, namely, that on the Russellian view, there is no objective “coming” or “moving” of future events toward us and that nothing dreadful is really “approaching” us. That premise may mean (as the critic seems to intend it to mean) (1) that on the Russellian view, there is no temporal particular that moves along the temporal series or, more generally, that there is no *absolute* becoming. Or it may mean (2) that for the Russellian, there is no objective basis whatsoever for the movement of time, and that on the Russellian view, time does not have an intrinsic sense. If we interpret the crucial premise in the second sense, then the second argument is valid: it would be irrational for us to fear or dread certain “future” events, and it would leave unexplained the reason for our irrational fear. However, the second interpretation is either false or question-begging. It is false, since the Russellian need not deny either that events move toward us or that time has an intrinsic sense (direction). For the Russellian, events do move, and time does have an intrinsic sense, and the basis of these facts about reality is that there exists a genuine temporal relation of succession that obtains between events. On the other hand, if the critic maintains that “time moves” or has an intrinsic sense if and only if there is a temporal particular, the “now,” that actually moves (or some other version of *absolute* becoming), then he is begging the question against the Russellian. The second argument fares no better if we take the crucial premise to be interpreted as (1) because then the argument is invalid. It is true that the Russellian denies that becoming is absolute, but it does not follow that an enlightened person who believes that McTaggart’s analysis of time’s movement is wrong would be irrational to continue to dread some future event that he believes is coming toward him. When one is rationally convinced that a terrible event is not coming toward him in the sense that there is a temporal particular that is actually moving toward him (or some other version of absolute becoming), it is still understandable why he might still fear the event. For the person might realize that there is another (Russellian) way in which an event may come toward him. What the Russellian view claims to

demonstrate is *not* that it is irrational to believe in the objective reality of "becoming" but that it is irrational to believe that becoming is *absolute*, for example, that in objective reality, there is a temporal particular that actually moves. The irrationality of *that* belief is not, however, to be identified with the irrationality of the belief that events are approaching us or becoming.

Finally, we may understand the flaw of the second argument against the Russellian by noting that there is a basic and fundamental disanalogy between the two situations described in it. In the spatial case, there is an impression of dread with no objective basis, and hence once the person involved knows that there is no objective basis for his fear, it is irrational for him to persist with it. In the case of time, however, it is *not* on the Russellian view irrational to continue to fear a future dreadful event even after I have been convinced that there are some obscure metaphysical senses (absolute becoming) in which it is *not* moving toward me. To make the case of time analogous with space, one would have to construct a case in which the dreadful event was believed to immediately follow one's anticipation of it but that in objective reality it was either much later than the anticipation of it or earlier than the anticipation of it (because say the event in question happened already but was forgotten). Then, once a person was informed of either of these alternatives, he would, if he is rational, overcome his fear of the event. At this point, unfortunately for the critic, the argument against Russell breaks down. For there is no reason to suppose that the person would not succeed in overcoming his fear once it is shown to be irrational. Of course, the person may still dread the event, just like the person may still fear the tiger (knowing that it is miles away), but it is not incumbent upon a philosopher to explain such irrational beliefs, and it is certainly no objection to the Russellian theory of time that people sometimes have them.

If the two arguments just considered against the Russellian view are unsuccessful, and the Russellian account of the passage of time is intelligible, then Schlesinger is mistaken when he claims that our different attitudes of joy and relief, and dread and nostalgia, are evidence for McTaggart's view of time and evidence against Russell's view of time. A question that remains, however, is why Schlesinger made the mistake. We can best answer that question by considering Schlesinger's objections to the Russellian view and uncovering the confusions upon which they are based.

## II

Schlesinger's first main claim against the Russellian view is that it is incompatible with the generally held belief that time is moving. He develops his

criticism by first explicating Russell's view: "According to Russell, there is no room for any transiency as all temporal relations between events themselves and events and moments are permanent and no temporal particular changes its fixed position in the temporal series of moments."<sup>15</sup>

McTaggart's view, on the other hand, is compatible with the belief that time is moving and for that reason is preferable to Russell's. In characterizing the McTaggartian view, he says,

According to McTaggart, however, it is possible to look upon the "now" as a particular which shifts its position relative to the series of events in the direction of the future. This movement is manifested by the fact that at one stage it is a fact that  $E_1$  is in the future which means that  $E_1$  is a point in time which is later than the time at which the "now" is situated. Yet at another stage it ceases to be a fact and the "now" reaches the same position in time at which  $E_1$  [is] situated and the two are simultaneous; then of course, it becomes true that  $E_1$  is in the present.<sup>16</sup>

On Russell's view there is no temporal particular—the "now"—that shifts its position relative to the series of events, and consequently, Russell believes that McTaggart's view is mistaken. It does not follow, however, that a Russellian must deny that the temporal universe has a transitory aspect. *To deny McTaggart's view on time is not equivalent to denying the movement of time.* Schlesinger, however, thinks that a Russellian must deny the impression shared by all of the transiency of time: "Now while nobody denies that a deeply felt impression that time indeed flows relative to the present is a part of our mental make-up, *many philosophers have already cited very strong reasons why this impression must be false.*"<sup>17</sup>

Schlesinger is mistaken, since it is not true that philosophers of the Russellian bent have denied this deeply felt impression, but rather they have denied McTaggart's interpretation of it. Schlesinger is identifying McTaggart's conception of time with our deeply felt impression about time's movement. If that is legitimate, then he is correct in saying that a Russellian must deny the impression that time is moving. But to assume that it is legitimate is to beg the question against the Russellian. According to the Russellian, it is perfectly rational to believe in the movement of time; what is irrational and mistaken is McTaggart's account of it.

Interestingly, Schlesinger recounts several of the standard but nonetheless strong arguments against McTaggart's understanding of the movement of time. Yet because he identifies McTaggart's view of time with our deeply entrenched impression concerning time's motion, and since he is unwilling to give up the impression that time moves, he is unwilling to give up McTaggart's understanding of it. As Schlesinger says:

[I]t is conceivable that we should be forced to acknowledge that moments and events have certain features which are essentially features of particulars that partake in motion. In that case we should have to side with McTaggart and concede that time must be moving even though the movement in question must be a very peculiar one, very unsimilar to movement in general or one which we cannot even hope ever completely to understand. So what we have to ask ourselves is whether this deeply entrenched impression concerning time's motion is soundly based on some undisputed phenomenon.<sup>18</sup>

The undisputable phenomena that Schlesinger uses to support our impression of time's movement and hence McTaggart's view are our different attitudes toward the past and the future. It is these different attitudes that form the basis of Schlesinger's second argument against the Russellian view.

Schlesinger correctly notes that our attitude of relief toward a painful experience that is over and anxiety toward a painful experience that is yet to come can be explained only if we suppose that time is moving from the future into the present and from the present into the past.

But it is only according to McTaggart that it is legitimate to think of events as engaged in the process of moving toward or away from the present. As we have already said, according to Russell time is essentially like space in which all relations are fixed. If it is given that I have a painful experience at a spot which is one mile to my left and also one at a spot which is one mile to my right, from this we cannot derive that there must be a difference in my attitude toward these two experiences. The spatial relations of these two relations are symmetrical with respect to my position and knowing them alone does not warrant that I should be concerned more by the one than by the other. Similarly, when an unpleasant experience occurs at a given temporal distance from the time at which this token occurs, why should it matter which direction this experience lies?<sup>19</sup>

The overriding argument is that since Russell's view cannot account for, justify, or explain our different attitudes toward the future and the past, whereas McTaggart's view can, it follows that McTaggart's view is preferable to Russell's. The argument is unsound because it is based upon the ultimately unacceptable premise that according to Russell, time is essentially like space. To see why this premise is ultimately unacceptable, we must turn to a closer examination of Schlesinger's account of the dispute between Russell and McTaggart on the nature of time.

According to Schlesinger, the dispute between McTaggart and Russell is essentially an ontological one, for it concerns the nature of temporal relations:

There are basically two different views on the nature of temporal relations that exist; one is due to McTaggart, the other to Russell. According to McTaggart,

temporal particulars possess, *in addition to the commonly agreed relations*, some very special ones, while Russell denies this. The opponents of Russell regard his temporal universe as essentially impoverished while Russellians hold that their opponents admit into their universe nonexistent properties.<sup>20</sup>

According to Schlesinger, McTaggart and the Russellians agree that temporal particulars possess the temporal relations of *earlier than*, *later than*, and *simultaneous with*. The very special ones that McTaggart affirms and Russell denies are those that obtain between the "now" or the "moving present" and the series of events generated by the commonly agreed relations. On McTaggart's view, the same event is, at different times, *earlier than*, *later than*, and *simultaneous with* the "now." For Russell, however, the "now," does not exist and consequently, there are no changing temporal relations.<sup>21</sup>

Schlesinger also characterizes the controversy concerning temporal relations in terms of the different kinds of temporal statements that exist. He says that both views agree that some temporal statements are B-statements, that is, statements that "if true at any time [are] true at all times, and if false at any time [are] false at all times,"<sup>22</sup> for example, "P is earlier than Q." The disagreement is over A-statements, that is, statements that change their truth value, for example, "P is present." McTaggart argues that time and change require A-statements, and Russell argues that time and change do not require them. On Russell's view, the putative A-statement "P is present" is no more than an abbreviation of the B-statement "P is (tenselessly) simultaneous with this token," or, if uttered at  $t_1$ , that "P is (tenselessly) at  $t_1$ ."

Thus, on Schlesinger's interpretation, there is a basic disagreement and a basic *agreement* between McTaggart and Russell. They disagree over the status of the "now" and the changing relations generated by its "movement," and they agree that B-statements express facts about temporal relations between and among particulars. It seems to me, however, that the disagreement between Russell and McTaggart is much deeper and fundamental than Schlesinger's characterization would lead us to believe. The dispute is ultimately over what Schlesinger infelicitously calls "the commonly agreed relations." According to the Russellian, temporal relations between particulars are unanalyzable and irreducible to nonrelational properties possessed by the particulars so related. According to McTaggart, however, temporal relations are reducible and analyzable in terms of nonrelational properties. In other words, Russell affirms and McTaggart denies that there are temporal relations in the ontological sense. As we shall see, not only McTaggart's writings but, paradoxically, some of Schlesinger's other writings on time also support my interpretation of the Russell-McTaggart dispute.

Let us begin by considering some of McTaggart's remarks concerning the nature of temporal relations. At the beginning of his discussion of time in *The Nature of Existence*, McTaggart notes that positions in time appear *prima facie*

to form two series. They form an A-series, that is, "that series of positions which runs from the far past . . . to the present, and then from the present, through . . . to the far future," and they also form a B-series, that is, "the series of positions which runs from earlier to later, or conversely."<sup>23</sup> He also notes that we usually contemplate time by the help of a metaphor of spatial movement. Either we take "the B series as sliding along a fixed A series," or we take "the A series as sliding along a fixed B series."<sup>24</sup> It is claims such as these that lead some commentators to hold that McTaggart construes time as involving both temporal relations and temporal properties. But there are other claims that he makes that cast serious doubt upon that interpretation. Consider the following, where McTaggart says that "the distinction between past, present, and future is . . . more *fundamental* than the distinction of earlier and later."<sup>25</sup> I submit that to say that temporal properties are more "fundamental" than temporal relations means, for McTaggart, that temporal relations are analyzable in terms of temporal properties but not vice versa. To put McTaggart's point linguistically, we may say that the fundamental nature of temporal properties reveals itself in that the B-expression "earlier than" may be defined in terms of A-expressions like "past," "present," and "future" but that A-expressions cannot be defined in terms of B-expressions. Indeed, McTaggart offers a definition of "earlier than" when he says that "the term P is earlier than the term Q, if it is ever past while Q is present, or present while Q is future."<sup>26</sup>

The linguistic point concerning the definability of "earlier than" has ontological implications. McTaggart argues that there cannot be a B-series without an A-series. The thrust of his argument is that if we remove the A-series from time, then there cannot be a series of events standing in temporal relations because it is the A-series, or more accurately, a series of A-series, that "makes" or "generates" a B-series out of a nontemporal series. In other words, on McTaggart's view, the only transitive asymmetrical relations that exist are nontemporal, and it is the becoming of events, that is, the changing of events from being in the future, to being in the present, to being in the past, that generates *temporal* relations. In short, on McTaggart's view, there are no simple, unanalyzable temporal relations. There is some clear textual evidence that bears out my interpretation:

The meridian of Greenwich passes through a series of degrees of latitude. And we can find two points in this series, S and S', such that the proposition "at S the meridian of Greenwich is within the United Kingdom" is true, while the proposition "at S' the meridian of Greenwich is within the United Kingdom" is false. But no one would say that this gave us change. Why should we say so in the case of the other series [i.e., the B series]?

Of course there is a satisfactory answer to this question if we are correct in speaking of the other series as a time-series. For where there is time, there is change. *But then the whole question is whether it is a time-series. My con-*

*tention is that if we remove that A series from the prima facie nature of time, we are left with a series which is not temporal, and which allows of change no more than the series of latitudes does.*<sup>27</sup>

Precisely the same point is made in a later passage:

[T]he series of earlier and later is a time series. We cannot have time without change, and the only possible change is from future to present, and from present to past. *Thus until the terms are taken as passing from present to past, they cannot be taken as in time, or as earlier and later.*<sup>28</sup>

Thus, although McTaggart speaks of a B-series, it does not exist ontologically. My interpretation of McTaggart is given more credence by noting that it coincides with Broad's interpretation in his *Examination of McTaggart's Philosophy*. Broad says that McTaggart's view might be put most clearly and fairly:

There is a set of terms such that at any moment every A-characteristic belongs to one or other of them, each of them has one and only one A-characteristic, and no two of them have the same A-characteristic. Each of these terms changes perpetually in respect of its A-characteristic in the direction from greater to less futurity, through presentness, to greater and greater pastness. These changes are so adjusted that the algebraical difference between the A-characteristics of any two terms remains constant and independent of the absolute values of their A-characteristics. To say that X is "so much earlier than" Y at any moment *means simply and solely that the algebraic difference between the A-characteristics of X and of Y is so-and-so at that moment*. Since this algebraical difference is constant, X will be exactly as much earlier than Y at every moment as it is at any moment.<sup>29</sup>

McTaggart asserts the fundamental nature of the A-series and claims that temporal relations are definable in terms of it. In a recent article, we find that Schlesinger agrees with McTaggart's analysis of temporal relations and attempts to vindicate it. He argues that "B-statements, e.g., 'P is earlier than Q' are in fact definable in terms of a disjunction of A-statements along the lines McTaggart has suggested."<sup>30</sup> We shall consider his definition later, but now let us note that Schlesinger views himself as vindicating McTaggart by providing an adequate definition or reduction of B-statements. Since, however, to define or reduce a B-statement in terms of a disjunction of A-statements *might* be interpreted (as Broad and I have done) as ontologically eliminating temporal relations, it follows that Schlesinger *might* have construed McTaggart as attempting to eliminate Russellian temporal relations from the ontological nature of time. If he did, then his interpretation is correct, since for McTaggart, there are no unanalyzable temporal relations. Where

Schlesinger goes radically wrong is in supposing that Russell and McTaggart partially agree concerning the ontological nature of time.

One may object to my interpretation of McTaggart and thus to my criticism of Schlesinger's account of the Russell-McTaggart dispute by claiming that McTaggart did not intend to ontologically eliminate temporal relations in terms of temporal properties but rather to establish only that unanalyzable temporal relations are dependent upon changing temporal properties. In other words, McTaggart and Schlesinger in offering definitions of "earlier than" could be asserting that temporal relations *are* irreducible and unanalyzable, but that without *absolute* becoming (e.g., changing A-characteristics, the moving now, and so on), temporal relations cannot exist. This weaker alternative is Broad's own view in his *Examination*:

Even if we reject the view that "X is earlier than Y" means that there is a difference in the A-characteristics of X and Y and that this difference is positive, there remains another alternative which would suffice for McTaggart's purpose. It might be suggested that the relation "earlier than" can hold only between terms which have A-characteristics; just as harmonic relations can hold only between terms which have pitch. . . . In fact, to use an expression of Meinong's, we might be able to see that B-relations are "founded upon" differences in the A-characteristics of the related terms. This view seems to me to be a highly plausible one, and I know of no positive argument against it. If it were accepted, we should have to grant to McTaggart that there could not be B-relations between terms unless the terms had A-characteristics, even if we refused to admit that B-relations are definable in terms of A-characteristics and their differences.<sup>31</sup>

The weaker interpretation of McTaggart and the official view of several other A-theorists is that *both* Russellian temporal relations and nonrelational temporal properties exist, but I have already argued that McTaggart and other A-theorists cannot consistently admit Russellian temporal relations into their ontology. In other words, McTaggart and Russell do not agree on the ontological status of temporal relations.

In this context, a question that immediately arises is: Why would Schlesinger mistakenly think that Russell and McTaggart even partially agree on the nature of time? The answer to this question will lead us directly to the fundamental flaw in Schlesinger's argument against Russell and therefore is worth considering at some length.

All philosophers of time, whether they are followers of McTaggart or Russell, agree that, *in some sense*, time necessarily involves temporal relations, but not all philosophers agree that statements that describe a temporal relation between two events, that is, B-statements, are "timelessly," "eternally," "permanently," or "always" true or false. For example, during one stage in his



musings on time, Broad maintained that before an event comes into existence, it does not have any temporal relations to anything, since he claimed that the future does not exist, and what does not exist cannot be a relatum of any relations, including temporal relations.<sup>32</sup> For Broad, after an event comes into existence, it joins up with the sum total of existence (the past and the present) and becomes later than past events and remains later than those events forever after. Thus, for Broad, a statement such as "P is earlier than Q" is neither true nor false at the time when P is present and Q is future, but it becomes true and remains true thereafter when Q comes into existence. On the other hand, Russell and McTaggart both *agree* that statements describing temporal relations between events are "timelessly," "permanently" and so on, true or false. But even though they completely agree concerning the "permanent" and "unchanging" truth value of B-statements, it does not follow that they even partially agree concerning the ontological nature of time. To see once more why this is so, we must attend to an ambiguity in the notions of "permanently," "timelessly," "eternally," and "always" true or false.

At first glance, to say that a statement has a "permanent" or "unchanging" truth value has a reasonably clear meaning. It means that the sentence used to make it is true (or false) whenever or at every time it is uttered or written. But what could be the basis or condition for a statement being true at every time? There are at least three possibilities: Suppose we adopt the Augustinian hypothesis and assume that before God created the heaven and the earth, there was no time.<sup>33</sup> Suppose further that the heaven and the earth will persist throughout all of time. That is, suppose the heaven and the earth are individuals that endure forever. Then, the statement that "the heavens and the earth exist" is "permanently" true or true whenever it is uttered, and the basis of its truth are individuals the earth and the heavens that exist at every time. In other words, a statement may be "permanently<sub>1</sub>" or "eternally" true, meaning that there exists *at every time* or *throughout all of history* something that is the basis of its truth. Consider next another statement that is "permanently" true and has an "unchanging" truth value, namely, "two plus two equals four." Suppose that we adopt the Russellian hypothesis and assume that such a truth asserts a relationship between and among universals.<sup>34</sup> Then, although the statement is true at every time, the basis for its truth is not something that exists at every time, but rather it is something that does not exist in time at all. Its truth is based upon something, a state of affairs, that exists apart from and independently of time. Thus, by calling "two plus two equals four" eternally<sub>2</sub>, timelessly<sub>2</sub>, or permanently<sub>2</sub> true, we mean that it would be true even if time did not exist.

The distinction being alluded to can perhaps be elucidated by comparison with Chisholm's analogous distinction between states of affairs and the *concretization* of states of affairs. According to Chisholm, states of affairs are

abstract and eternal objects; they are connected with time only insofar as they are instantiated or concretized, that is, only insofar as they have occurrences or instances that obtain in time.

[T]he state of affairs which is Socrates walking does not come into being when he begins to walk and doesn't cease to be when he ceases to walk. Rather, we have said it is an abstract object that exists throughout eternity. And this is entirely consistent with saying that it occurs at certain times and places and fails to occur at other times and places.<sup>35</sup>

To "exist throughout eternity" is an ambiguous phrase. It can mean either to "exist at every time" or "exist apart from time." Since to exist at every time would necessitate obtaining at or occurring at every time, it is clear that Chisholm does not intend the state of affairs *that Socrates walks* to be eternal in that sense, since Socrates is not always walking. Thus, we may conclude that for Chisholm, "to exist throughout eternity" means to exist "timelessly" or "apart from time." It must be acknowledged, however, that on Chisholm's view, a state of affairs may have instances that obtain at some times and fail to obtain at others. Now, if in addition to "timeless" states of affairs, we suppose that some states of affairs may have instances that collectively "obtain throughout all of time," then we can draw a distinction between statements that are permanently<sub>1</sub> true because they are about some one thing (or some series of things) that (collectively) exists at every time and statements that are permanently<sub>2</sub> true because they are about states of affairs that exist throughout eternity. The distinction between these two different kinds of eternal or permanently true statements is crucial to a correct understanding of the complete disagreement between the Russellian and the McTaggartian view of time.

According to my interpretation, Russell and McTaggart both agree that, say, "The death of Plato is earlier than the death of Aristotle" is a permanently true B-statement. They would, however, disagree concerning the kind of B-statement it is because they would disagree about the nature of the state of affairs that is its truthmaker. For the Russellian, B-statements more closely resemble eternally<sub>2</sub> true statements than eternally<sub>1</sub> true statements. Clearly, the B-statement is not timeless in *precisely* the same sense in which "two plus two equals four" is timeless: the B-statement could not be true if time does not exist, that is, if there are no temporal relations between events. Nevertheless, it does not follow that the truth of the B-statement is based upon something that exists *at every time*. On the Russellian view, a true B-statement resembles a permanently<sub>2</sub> or eternally<sub>2</sub> true statement in two ways. First, B-statements represent states of affairs that contain a temporal relation that is a *universal* that does not exist in time. In other words, a Russellian temporal relation can exist "independently" of time, which is *not* to assert the

contradiction that temporal relations can exist even if they do not exist but rather to say that temporal relations can and do exist even though they are not temporally related to anything. Furthermore, although the event of Plato's death and the event of Aristotle's death can be thought of as obtaining at certain times, *the whole temporal state of affairs, Plato's death is earlier than Aristotle's death*, like the state of affairs that *two plus two equals four*, neither stands in temporal relation to anything nor obtains at certain times nor obtains at every time. Thus, for the Russellian, temporal relations are unanalyzable, and B-statements represent states of affairs that more closely resemble eternal<sub>2</sub> states of affairs than eternal<sub>1</sub> states of affairs.

In this connection, we may distinguish a third sense of "eternal." To be eternal<sub>3</sub> has also meant to exist apart from time, although not, as an eternal<sub>2</sub> entity is, entirely independent of it. Thus, an eternal<sub>3</sub> entity is one that neither occupies moments of time, nor exemplifies temporal relations, nor has monadic temporal properties inhering in it. Rather, an eternal<sub>3</sub> entity is related to time in the following way: *it is a whole that contains successive parts*. We could say that although an eternal<sub>3</sub> entity is not contained in time, time is contained in it. Thus, the fact that *World War II is later than World War I* is eternal<sub>3</sub> because although not itself in time (or a term of a temporal relation) it contains time (a temporal relation) as a constituent. This view of eternity gives some meaning to an aphorism I favor, that *time is timeless*, that is, though time contains temporal relations, time does not exemplify them.

A good statement of this conception of "eternal" is stated by J. S. Mackenzie:

There is no time outside the process. Hence the process as a whole might be said to be eternal though every particular part in it has a place in time. The eternal thus conceived, would not be timeless, but rather that which included the whole of time. . . . The process as a whole, when we thus conceive it, is not in time, rather time is in the process. Time is simply the aspect of successiveness which the eternal process contains.<sup>36</sup>

On the version of the Russellian view of B-time that I adopt, B-statements have an unchanging or permanent truth value because their ontological correlates are eternal<sub>3</sub>.

According to the McTaggartian, however, temporal relations are analyzable and the statements that express the analysis closely resemble eternal<sub>1</sub> statements. As previously mentioned, Schlesinger himself offers a definition of temporal relational B-statement that will explain my point:

*P is before Q*  $\equiv$  *P is past at  $t$  and Q is present at  $t$  and  $t$  is in the present or P is past at  $t$  and Q is present at  $t$  and  $t$  is in the past or P is past at  $t$  and Q is present at  $t$  and  $t$  is in the future.*<sup>37</sup>

According to Schlesinger, the disjuncts in the definiens are A-statements, that is, statements that change their truth value with time. But if the disjuncts are A-statements, then the states of affairs referred to by each of the disjuncts must obtain or occur in time. In other words, there is not a single state of affairs that exists outside of the net of temporal relations or throughout all of eternity that is the basis of "P is before Q" being true, but rather its basis is a state of affairs or series of such that collectively obtain throughout all of history. Thus, for McTaggart, temporal relational B-statements more closely resemble permanently<sub>1</sub> true or false statements than permanently<sub>2</sub> true or false statements.

This point is reinforced by noticing that on McTaggart's view, it follows that there must be not only a single A-series but a sequence of A-series. The argument is stated by Richard Gale:

It can easily be shown that if there is one A-series there must be a series of A-series. Assume that the A-series consists of events M, N and O, which are respectively past, present, and future. A past (future) event by definition is one which was (will be) present. Therefore, there was (will be) an A-series in which M (O) is present. Thus, if there is one A-series there is becoming—a series of A-series.<sup>38</sup>

Thus, for Schlesinger, Gale, and other McTaggartians, B-statements such as "P is earlier than Q" are always<sub>1</sub> or permanently<sub>1</sub> true because there is *at every moment* an A-series that is the basis for its truth. Schlesinger, by not distinguishing the *three* kinds of "permanently" true or false B-statements, fails to recognize that although McTaggart and Russell agree that B-statements are permanent, they fundamentally disagree on their analyses of temporal relations. Schlesinger's failure to distinguish the *three* kinds of permanence is also at the root of his argument against Russell to which we are now ready to turn.

The key premise in Schlesinger's argument against Russell is that for Russell "time is essentially like space in which all relations are fixed." On the basis of this premise, he reasons that since we would not have different attitudes toward objects that are at the same spatial distance to our left or to our right, we should not have different attitudes toward experiences that are at the same temporal distance in the direction of earlier or later. The core of Schlesinger's argument can be stated slightly differently. Since spatial relations obtain among terms that exist *at the same time*, if one thinks of space as the relations between and among places, that is, individuals, that exist at every time, then spatial relations between particulars are permanently<sub>1</sub> fixed: they obtain between particulars that exist at every time. Furthermore, if time is essentially like space, then it is an easy step to thinking that all temporal relations between particulars are fixed in the same way as all spatial relations

between places are fixed, namely, permanently<sub>1</sub> fixed. Then, since *at every moment* the same series of events exists in the same unchanging relations, it follows that there is no movement of time in the direction of the future to the present, and so there is no justification for our different attitudes toward future and past experiences. At this juncture, the McTaggartian view introduces the moving present that inexorably shifts its position along the fixed series of events toward the future and away from the past. Hence, Schlesinger claims that McTaggart's view is preferable to Russell's, since it can justify our different attitudes toward the past and the future and our belief in time's movement, whereas Russell's view cannot justify these attitudes and beliefs.

The fundamental flaw in Schlesinger's argument is that it requires that the crucial premise ("time is essentially like space") be understood in such a way that for the Russellian "P is earlier than Q" is a permanent<sub>1</sub> B-statement, that is, a statement that is made true by something that obtains *at every time*. But that is not Russell's view and Schlesinger could only think it is if he confused Russell's view of temporal relations with McTaggart's. According to McTaggart, in a world without the moving present or the A-series, there would not be a B-series, although there could still be a nontemporal series with the same logical properties as the generating relation of the B-series, for example, the series of integers. Thus, Schlesinger would be correct in maintaining that if there are two experiences at an equal "distance" from a given position in a *nontemporal* series, then without the movement of the "now" toward one and away from the other, there would be no reason to care in which direction the experience lies. Nevertheless, Schlesinger cannot appeal to that truism in rejecting Russell's view, since on the Russellian theory of time, experiences are located in a *temporal* series, that is, a series whose generating relation is *earlier (later) than*. Consequently, even without a moving "now," it makes all the difference in the world if at  $t_2$ , an unpleasant experience is going to occur at a *later* time ( $t_3$ ) or if it occurred at an *earlier* time ( $t_1$ ): Whether an experience takes place earlier or later than *now*, that is, earlier or later than the time at which we utter the word "now," makes all the difference concerning our attitude toward it.

In support of Schlesinger's criticism of Russell's view, one might reply that all he says is that time is like space in this one respect, that just as there is no special spatial particular like the "here," there is no special temporal particular like the moving "now." This is true, but from it, it does not follow that *earlier than* and *later than* are symmetrical with respect to my position in the sense that I am moving no more toward one direction than the other. At  $t_2$ , I am moving toward the pleasant experience at  $t_3$  and away from the unpleasant experience at  $t_1$  because  $t_3$  is later than  $t_2$  and  $t_1$  is earlier than  $t_2$ . To be sure, the movement does not involve a moving "now," but it does have a basis in reality, namely, in the simple temporal relations of *earlier than* and *later than*.

Russellians who have argued that it is completely wrongheaded to speak of time as "flowing," "moving," "marching," and the like intend to reject McTaggart's view of time or anything like it that attempts to reduce temporal relations to temporal becoming. The Russellian need *not* insist, as Schlesinger maintains, that "time is no more flowing in one direction than in another."<sup>39</sup> All he must claim is that the "flow" of time is not to be understood along the lines suggested by McTaggart or his followers. Time does move for the Russellian, since events that are not now experienced by us will at later times be experienced by us, and those experienced events at still later times will be remembered by us, perhaps with nostalgia. It is the having of different experiences at different times that constitutes our experience of time's movement, and it is our experience of time's movement that is the basis of our differing attitudes toward past and future events. Thus, the Russellian theory of time can justify our different attitudes toward the past and the future, Schlesinger's argument notwithstanding.

Although Schlesinger's arguments do not refute the Russellian view, he offers another important reason for preferring McTaggart's view over Russell's. According to Schlesinger, our attitude of relief when we contemplate an unpleasant experience that we know has happened in the past and our attitude of dread when we contemplate an unpleasant experience that we know will happen in the future are self-explanatory on McTaggart's view. These attitudes are self-explanatory on McTaggart's view because for McTaggart "it is legitimate to think of events as engaged in the process of moving away from or toward the present."<sup>40</sup> But does the notion of events moving away from or toward the present really make intelligible our different attitudes toward the past and the future? The answer depends on how we are to understand the notion of "events moving." Schlesinger himself sympathetically considers some of the major objections to McTaggart's account of the movement of time. Indeed, he goes so far as to say that there are "some reasons why it is impossible to give an account of the movement of time in terms of which movement is normally understood."<sup>41</sup> How, then, is the movement of time to be understood? The natural answer is that such movement is to be explained in the way in which commentators and other followers of McTaggart have explained it. Unfortunately, it is far from obvious that the alternative A-theory accounts of time's movement are any more intelligible or shed any more light on our different attitudes than McTaggart's. For example, at one point in his career, Broad understood the movement of time in terms of the "sum total of existence . . . always increasing"<sup>42</sup> and "the *ever-lengthening* temporal order of the universe,"<sup>43</sup> but such accounts are either circular or mistaken, since they depend upon a literal and pernicious spatialization of time. Broad's later account of becoming does not elucidate the concept either: "To become present is, in fact, just to become, in an absolute sense;

i.e., to 'come to pass' in the Biblical phraseology, or, most simply, to happen."<sup>44</sup> Yet an appeal to the Bible does not help *me* in understanding becoming. Nor do the more recent A-theory accounts of time's movement shed any more light on the concept. Gale, for instance, concludes his book on time by saying that we cannot hope to understand (absolute) becoming in terms of qualitative change or any other notion, since becoming is a *sui generis* notion.<sup>45</sup> But if we say that becoming is *sui generis*, then *how* does the reality of becoming make our different attitudes toward the past and the future self-explanatory? There are other A-theory accounts of time's movement, although Schlesinger does not mention them, nor does he give an alternative account of *how* we are to understand the movement of time. Thus, it is far from evident that McTaggart's and other A-theorists talk of events moving toward or away from the present does make self-explanatory our different attitudes toward the past and the future. Indeed, the essays in part 2 of this book demonstrate just how difficult it is to make sense of the notion of the reality of becoming and our different attitudes toward the past and future. We have shown, however, that the Russellian view does offer an intelligible account of time's movement that is quite unlike McTaggart's. Thus, it would appear that a careful consideration of the Russellian and the McTaggartian theories of time reveals *not* only that Schlesinger's arguments do not refute Russell's view, but *more* importantly, and contrary to what Schlesinger would have us believe, it is the Russellian view that is preferable to McTaggart's.

## NOTES

1. Compare, for example, C. D. Broad, "Ostensible Temporality," in *The Philosophy of Time*, ed. Richard Gale (New York: Anchor Books, 1967), pp. 117–42; Steven Cahn, *Fate, Logic, and Time* (New Haven, CT: Yale University Press, 1967); Frederick Ferré, "Grünbaum on Temporal Becoming: A Critique," *International Philosophical Quarterly* 12 (1972): 426–45; Richard Gale, *The Language of Time* (New York: Humanities Press, 1968); Arthur N. Prior, "Thank Goodness That's Over," *Philosophy* 34 (1959): 12–17; Ernest Sosa, "The Status of Becoming: What's Happening Now?" *Journal of Philosophy* 76 (1979): 26–42; Richard Taylor, *Metaphysics*, 2d ed. (Englewood Cliffs, NJ: Prentice-Hall, 1974), chap. 8; G. J. Whitrow, *The Natural Philosophy of Time* (London: Thomas Nelson and Sons, 1961).

2. George Schlesinger, "The Stillness of Time and Philosophical Equanimity," *Philosophical Studies* 9 (1976): 145–59.

3. Schlesinger, "Stillness of Time," p. 153.

4. As we shall see, to admit that our impression that time flows is correct need not be taken as evidence for McTaggart's view. Thus, even though the undisputable phenomena do support the impression that time flows, they do not support McTaggart's view.

5. Schlesinger, "Stillness of Time," p. 155.

6. Bertrand Russell, "The Philosophy of Logical Atomism," in *Logic and Knowledge*, ed. Robert C. Marsh (London: George Allen & Unwin, 1964), pp. 179–80.

7. Thus, for example, Donald Williams says that "Time 'flows' only in the sense in which a line flows or a landscape 'recedes into the west.' There is passage, but it is nothing extra. It is the mere happening of things, their existence strung along in the manifold" ("The Myth of Passage," in *Philosophy of Time*, pp. 98–116). The quoted passage occurs on p. 105; cf. John Leslie, "The Value of Time," *American Philosophical Quarterly* 13 (1976): 109–21.

8. As evidence, consider the following passage where Russell says, "I maintain that there are such facts as that  $x$  has the relation  $R$  to  $y$ , and that such facts are not in general reducible to, or inferable from, a fact about  $x$  only and a fact about  $y$  only. They do not imply that  $x$  and  $y$  have any complexity, or any intrinsic property distinguishing them from a  $z$  and a  $w$  which do not have the relation  $R$ . This is what I mean when I say that relations are external" ("Some Explanations in Reply to Mr. Bradley," *Mind* 19 [1910], p. 374); cf. Bertrand Russell, "On the Experience of Time," *Monist* 25 (1915): 212–33.

9. Cf. C. D. Broad, "Time," in *The Encyclopedia of Religion and Ethics*, vol. 12, ed. J. Hastings (New York: Scribner, 1922), pp. 334–35; Milton Fisk, "A Pragmatic Account of the Tenses," *American Philosophical Quarterly* 7 (1971): 92–104; Nelson Goodman, *The Structure of Appearance*, 2d ed. (Indianapolis: Bobbs-Merrill, 1966), chap. 11, sect. 2; Willard Van Orman Quine, *Elementary Logic* (New York: Harper and Row, 1965), p. 6; Hans Reichenbach, *Elements of Symbolic Logic* (New York: Free Press, 1966), pp. 284–87; Bertrand Russell, "Review of MacColl's *Symbolic Logic and Its Applications*," *Mind* 15 (1906): 256–57. J. J. C. Smart, "The River of Time," *Mind* 58 (1949): 483–94.

10. C. D. Broad, *Scientific Thought* (Paterson, NJ: Littlefield Adams, 1959), p. 57.

11. Max Black, "The 'Direction' of Time," *Analysis* 19 (1959): 62–63.

12. As Broad says, "We have already seen that the time series has a definite intrinsic 'sense,' and that this arises because there is a continual addition to the sum total of existence" (*Scientific Thought*, p. 91). Cf. *Scientific Thought*, pp. 66–67.

13. Storrs McCall, "Temporal Flux," *American Philosophical Quarterly* 3 (1966): 270–81, and especially pp. 280–81.

14. C. D. Broad, "A Reply to My Critics," in *The Philosophy of C. D. Broad*, ed. Paul A. Schilpp (New York: Tudor Publishing, 1959), pp. 766.

15. Schlesinger, "Stillness of Time," p.151.

16. *Ibid.*, p.152.

17. *Ibid.*, my emphasis.

18. *Ibid.*

19. *Ibid.*, p. 156.

20. *Ibid.*, p. 145, my emphasis. Note how Schlesinger initially characterizes the dispute as one over temporal relations, but he concludes by characterizing it as one over temporal properties.

21. At another place in Schlesinger's article, he holds that the dispute is no longer about relations or properties but about what kind of *particulars* exist: "On the Russellian view . . . all temporal relations are permanently fixed. According to



McTaggart, however, it is possible to look upon the 'now' as a particular which shifts its position relative to the series of events in the direction of the future" ("Stillness of Time," p. 151).

22. Ibid., p. 146.

23. John M. E. McTaggart, *The Nature of Existence*, vol. 2, ed. C. D. Broad (Cambridge: Cambridge University Press, 1927), p. 10.

24. Ibid., pp. 10–11.

25. Ibid., p. 10.

26. Ibid., p. 271.

27. Ibid., p. 15, my emphasis.

28. Ibid., p. 271, my emphasis. Note also that the passages in which McTaggart explains what he means by saying the distinction of past, present, and future is more fundamental than that of earlier and later fit my interpretation. Cf. McTaggart, *Nature of Existence*, p. 30.

29. C. D. Broad, *Examination of McTaggart's Philosophy*, vol. 2, part 1 (New York: Octagon Books, 1976), p. 301, my emphasis.

30. George Schlesinger, "The Reduction of B-Statements," *Philosophical Quarterly* 28 (1978): 162–65. The quoted passage occurs on p. 162.

31. Broad, *Examination of McTaggart's Philosophy*, pp. 302–303.

32. Broad, *Scientific Thought*, p. 80; and Broad, *The Mind and Its Place in Nature* (London: Routledge and Kegan Paul, 1923), pp. 256–57.

33. Augustine, *Confessions*, bk. 2, chap. 3 (London, 1951).

34. Bertrand Russell, *The Problems of Philosophy* (New York: Oxford University Press, 1978), p. 103.

35. Roderick Chisholm, *Person and Object: A Metaphysical Study* (La Salle, IL: Open Court, 1977), p. 130.

36. J. S. Mackenzie, "Eternity," in *Encyclopedia of Religion and Ethics*, ed. J. Hastings (New York: Scribner, 1912), p. 404.

37. Schlesinger, "Reduction of B-Statements," p. 165.

38. Gale, *Language of Time*, p. 190.

39. Schlesinger, "Stillness of Time," p. 157.

40. Ibid., p. 155–56.

41. Ibid., p. 153.

42. Broad, *Scientific Thought*, pp. 66–67.

43. Broad, *Mind and Its Place in Nature*, p. 280. His final view is that we can understand becoming only if we assume that time is of at least two dimensions.

44. Cf. Broad, "A Reply to My Critics," pp. 769–72. For a critique of that gambit, see essay 13.

45. Gale, *Language of Time*, p. 242.

## *Time and Becoming*

In *Aspects of Time*, George Schlesinger raises two objections to the Russellian or tenseless theory of time.<sup>1</sup> He objects first that there are certain undisputable phenomena that are completely unintelligible on the Russellian view, and second that Russell is obliged to judge as devoid of meaning certain expressions that strike us as meaningful. Since I have discussed his first objection in essay 16, the aim of this paper will be limited to explaining how, on the B-theory, the relevant temporal expressions *can* be rendered meaningful.

Schlesinger's second argument against the Russellian view assumes that there are temporal expressions that we all would admit are meaningful. He then argues that since any adequate account of the nature of time must be able to "interpret" these sentences so that their meaningfulness is retained, and since the Russellian view cannot interpret the sentences in question in such a way that their meaningfulness is retained, it follows that the Russellian analysis of time is inadequate.

Let us approach this argument by first asking, what temporal expressions does Schlesinger take as being meaningful? He clearly states his answer:

Let us suppose that it is January 1, 1978 ( $= t_f$ ) and I am looking back on the last ten years, greatly regretting the occurrence of some events during that period which have adversely affected my life [and] in view of this I fervently wish that it was now January 1, 1968 ( $= t_0$ ). I may strongly yearn to be ten years younger.<sup>2</sup>

We must grant that Schlesinger is correct in his belief that such wishes are meaningful, and if the Russellian is committed to claiming that such wishes are devoid of meaning, then there is something wrong with the Russellian

view. But once again, the Russellian is committed to claiming that such wishes are meaningless only if their "meaning" is identified with a particular doctrine concerning the nature of time, and that leads us to a second question: What is the meaning of the wish to be ten years younger, according to Schlesinger?

Schlesinger is convinced that common sense is ontologically loaded with the McTaggartian picture of time. Connected with that conviction is his belief that my ordinary wish to be younger *means* that I wish the NOW to be elsewhere than at  $t_1$ .

My wish is, of course, futile, having no chance of fulfillment. But there is no lack of clarity as to what exactly I am asking for, nor as to why. Anybody familiar with my plight would fully sympathize with me and unfailingly grasp what feature of the universe I should like to be different from what it is: Instead of the NOW being at  $t_1$ , I should like to be at  $t_0$ .<sup>3</sup>

Clearly, if the wish means that the NOW should be situated at  $t_0$  rather than  $t_1$ , then the Russellian cannot account for the meaningfulness of such a wish. For, as Schlesinger says, on the Russellian view, one "cannot ask the NOW to be somewhere else when it is nowhere, for it does not exist at all. The course that seems open for a Russellian is to claim that indeed my wish makes no sense, for the NOW is not a thing that may shift its position."<sup>4</sup>

Schlesinger unduly limits the alternatives to two: either my wish means that the NOW is located at a point in time different from where it is in fact located, or my wish is meaningless. But Schlesinger has not given us any reason to suppose that the wish in question has the meaning that he attributes to it, and I believe that his account of what I wish, when I wish to be ten years younger, is mistaken. It is not part of what I have in mind when I wish I was ten years younger that a monadic property of *NOWNESS* characterizes events that are earlier than the events that it in fact characterizes. Nor do I have in mind or mean that a special temporal particular the NOW is simultaneous with the events at  $t_0$  rather than the events at  $t_1$ . My wish that it is now  $t_0$  rather than  $t_1$  does not involve any particular philosophical doctrine concerning the NOW.

How, then, are we to describe the meaning of sentences such as "I wish it were 1968" and "I wish I were ten years younger?" The phenomenologically correct answer seems to me to be the following. When I wish to be ten years younger, I have thoughts of myself ten years ago and memories of persons and events that I have previously perceived. I would be wishing that I could perceive and not merely remember those things I perceived ten years ago. That is, I would be wishing that I perceived events that are quite other than those I am in fact now perceiving. Furthermore, my wish would involve

the desire to anticipate those events that I can only now perceive. It would also involve the desire that the person who I am at  $t_1$ , the person whose practical and theoretical knowledge is greater than it was ten years ago, exist then at  $t_0$ , with the same knowledge I possess now. But this phenomenological description is open to many different interpretations. The meaning, in this sense, just gives us the material from which to develop an ontological account of time.

Thus, we are faced with the following question: What facts would have to exist in order for me, the person who is wishing to be ten years younger, to be satisfied and believe that my wish had been granted? The answer I propose is simply this: my wish that I was ten years younger would be satisfied if and only if the thought or utterance that is the wish corresponds to the fact that *that thought* or *that utterance* is simultaneous with each member of the set of events that constitute the time  $t_0$ . In other words, my wish would be satisfied, and I would be ten years younger if the event that is my wish occurs at a moment in time that is ten years earlier than the moment at which it in fact occurs. I conclude that a Russellian *can* render our ordinary wish to be younger meaningful and provide an interpretation of that wish that does not require the reification of the NOW. Thus, it appears that neither Schlesinger's appeal to temporal experience nor his appeal to temporal language provides a good reason to abandon a tenseless, Russellian theory of time.

## NOTES

1. George Schlesinger, *Aspects of Time* (Indianapolis: Hackett, 1980), pp. 23–39.
2. *Ibid.*, p. 38.
3. *Ibid.*, p. 39.
4. *Ibid.*



*Thank Goodness It's Over*

In a recent article, "Not Over Yet: Prior's 'Thank Goodness' Argument," Delmas Kiernan-Lewis offers a new reading of Prior's much discussed argument against the tenseless theory of time according to which reality (existence) is tenseless.<sup>1</sup> In this note, I shall argue that Kiernan-Lewis's interpretation of Prior's argument does not undermine the tenseless view, since it is either unsound or invalid. I will then offer a diagnosis of Kiernan-Lewis's mistakes.

According to the tenseless theory, all events in the temporal series are equally real; there are no fundamental ontological distinctions between past, present, and future events. Kiernan-Lewis maintains that according to Prior, this view cannot account for the knowledge we have when we are pleased that something has ceased to exist, for on the tenseless theory, nothing *really* ceases to exist. Kiernan-Lewis formulates what he takes to be Prior's argument:

Advocates of tenselessness hold that the world is entirely tenseless. So complete tenseless knowledge is complete knowledge *simpliciter*. However, I know what it is like to cease to be aware of a headache (or: to be aware that a headache of mine has ceased). I could not know this if the tenseless account of reality were true. Hence, the tenseless account is false.<sup>2</sup>

Perhaps the best way to see where this argument goes wrong is to reformulate the essence of it in the following three steps:

- (1) I know what it is like for a headache of mine to cease to exist.
- (2) I could not know this if the tenseless account of reality were true.
- (3) Hence, the tenseless account is false.

Preanalytically, premise (1) is obviously true. If I have a headache and then after, say, taking an aspirin, no longer have a headache, I know what it is for a headache to cease to exist. On the other hand, premise (2) is not obviously true. Indeed, it is not true at all. On the tenseless theory, there are the tenseless facts: (a) I am conscious of having a headache at  $t_1$ ; (b) I am conscious of taking an aspirin (and having a headache) at  $t_2$ ; and (c) I am conscious of feeling fine (and not having a headache) at  $t_3$ . The succession of these different states of consciousness is the ontological ground of knowing that a headache of mine has ceased to exist. Why would Kiernan-Lewis (or Prior) believe that those facts were not sufficient to explain the knowledge in question?

The issue centers around the correct interpretation of "ceases to exist." On the tensed view that Prior espouses, only the present exists; the past and future have no reality whatsoever. Thus, when a headache ceases to exist, it *really* ("in a strict, non-Pickwickian sense") ceases to exist. Of course, *assuming* that interpretation of "ceases to exist," the detenser cannot know that his or her headache has ceased to exist, since nothing ever does *really* cease to exist. But such an interpretation assumes what needs to be proved. In other words, if we understand "cease to exist" as the tensor would have it, premise (2) is true, but then premise (1) is either false or question-begging, since it assumes that the tensed account of existence is true and that the tenseless account of existence is false.

On the other hand, if we assume the tenseless interpretation of "cease to exist" wherein a thing ceases to exist if and only if there is a time after the existence of all of its temporal slices (or after its temporal location), then we *can* know that a headache has ceased to exist, that is, premise (2) is false (although (1) is true). And finally, if we confuse both the tensed and tenseless senses of "cease to exist," so that (1) is true (in the tenseless sense) and (2) is true (in the tensed sense), then the argument commits the fallacy of equivocation and is thereby invalid. Thus, Kiernan-Lewis's reconstruction of Prior's argument against tenseless reality is either unsound or invalid.

There are two confusions that may underlie Kiernan-Lewis's (Prior's?) argument against the detenser. First, there is the distinction between tenseless existence and eternal (sempiternal) existence. On the tenseless theory, all events exist tenselessly at the moment they do, but that does not imply that they are everlasting or exist at every moment in the time series. If one fails to be cognizant of that distinction, then one might erroneously believe that on the tenseless view, we cannot know that an event ceases to exist, since all events always (at every time) exist. Second, Kiernan-Lewis may be confusing God's tenseless knowledge of tenseless facts with our tenseless knowledge of them. If God is outside of time, looking at all tenseless facts from a distance, as it were, then for him, no event would appear to come into existence or cease to exist. But for us, beings who are in time, there is the experience of

events coming into being and ceasing to exist, and that experience can be known simply by (tenselessly) having different experiences at different times.

In short, it does not seem to me that I am aware that something *really* ceases to exist (in the tensed sense, whatever exactly that may be), and so advocates of the tenseless view need not explain, in Kiernan-Lewis's words, "how it is that we are systematically and continually deceived by that awareness."<sup>3</sup> There is no item of knowledge that the tenseless view cannot explain, and Kiernan-Lewis could only think that there was by falling prey to the confusions I discussed.

## NOTES

1. J. Delmas Kiernan-Lewis, "Not Over Yet: Prior's 'Thank Goodness' Argument," *Philosophy* 66, no. 256 (April 1991): 241–43.

2. *Ibid.*, p. 242.

3. *Ibid.*, p. 243n1.





## *On Our Experience of Ceasing to Exist*

In a recent article, J. D. Kiernan-Lewis has claimed that "it is evident that Nathan Oaklander has failed to understand both the analogy and the ontological point of the argument against tenselessness."<sup>1</sup> The argument, which he believes is implicit in Prior's classic paper "Thank Goodness That's Over," is analogous to the arguments by Thomas Nagel and Frank Jackson against physicalism.<sup>2</sup> Thus, Kiernan-Lewis argues that the detenser's attempt to provide an ontological reduction of the experience of a headache ceasing to exist fails because it does not explain the subjective, first-person experience of what it is like for a headache to cease to exist. In this paper, I shall show that his argument against the tenseless theory of time is not, as he says, "ludicrously simple and quite decisive" but rather question-begging and unsound.

In order to perspicuously uncover the errors I believe exist in Kiernan-Lewis's argument against the detenser, I shall quote his statement of it at length:

Suppose we tried to say that the experience of my headache ceasing to exist is "nothing but" my headache (or temporal parts thereof) tenselessly existing at times before other times at which it does not tenselessly exist. Well, if we tried such a reduction, the essential features of the ceasing-to-exist of my headache would be left out. No description of the third-person, tenseless facts about me and my headache would convey the subjective, first-person character of the ceasing of my headache, simply because the subjective features are different from the tenseless features. Someone—say, a timeless God—who knew all but only the tenseless facts, and so knew that my headache "ceases" in the sense of their being times after which it tenselessly occurs, would still not know what it is like for a headache to cease. Since no analysis of my experience of the ceasing-to-exist of a headache in

tenseless terms is possible, no tenseless reduction of my experience can succeed. Therefore, a tenseless description of reality is necessarily incomplete: reality contains irreducibly tensed features.<sup>3</sup>

This argument raises several questions. First, what are the essential features of the subjective, first-person experience of my headache ceasing to exist? Second, is the detenser offering an ontological reduction, arguing that the experience of an event ceasing to exist is “nothing but” some tenseless description in the way in which the physicalist argues that pain is nothing but neuron firings? And third, if, as I will argue, the detenser is not attempting an ontological reduction, then what is the explanation of Kiernan-Lewis’s assertion that the detenser is offering a reduction? In what follows, I shall take up each of these questions.

Let us begin by considering the essential features of the experience of a headache ceasing to exist. Clearly, on any analysis, to experience the ceasing to exist of a headache, I would first have to be conscious of having a headache and then be conscious of not having a headache. For Kiernan-Lewis, however, something more is involved, namely, the experience of tense. Unfortunately, Kiernan-Lewis never explains exactly how tense figures into the experience, or what the “tensed phenomenological features” of ceasing to exist are. He simply assumes, without further ado, that the tensed interpretation of the phenomena is correct.

Given the assumption that the essential features of the experience of ceasing to exist are tensed, Kiernan-Lewis’s argument against the detenser can be stated forcefully:

1. The first-person, subjective experience of a headache ceasing to exist involves the experience of tensed phenomenological features.
2. The tenseless theory of time denies the metaphysical reality of tense.
3. Hence, the tenseless theory attempts an ontological reduction of the tensed experience, maintaining that the experience of my headache ceasing to exist is “nothing but” my headache existing at times earlier than other times at which it does not exist.
4. This reduction is unsuccessful since it fails to capture the first-person perspective: the experience of my headache changing its tense.
5. Therefore, a tenseless description of reality is necessarily incomplete: reality contains irreducibly tensed features. In short, reality contains irreducibly tensed features because our *experience is tensed*.

One weakness of this argument is that the first premise assumes what needs to be proved, namely, that the proper interpretation of the subjective experience of ceasing to exist is tensed. The detenser can give an account of the experience of my headache ceasing to exist without appealing to the reality of tense. It involves first having a headache and at the same time being conscious that one is having a headache. It involves second the consciousness of no longer having a headache. This involves both the awareness of my having various thoughts and feelings and not having a headache. It also involves the memory of a headache that does not exist now, at this moment, but did exist (or exists tenselessly) at an earlier moment. In other words, if I am aware at time<sub>1</sub> that I have a headache, and I am aware at a later time<sub>2</sub> that I do not have a headache, and I remember my headache existing at time<sub>1</sub>, then I am having an experience of my headache ceasing to exist.

What this account of our experience of time makes clear is that the ceasing to exist of a headache (or any other event, for that matter) is a process that takes place at two moments: the last moment of its existence and the first moment of its nonexistence. Thus, on the detenser's reading, a headache's ceasing to exist over the interval  $t_n - t_{n+1}$  is its being located up to  $t_n$  and thus making the present tense belief "My headache exists (now)" true up to  $t_n$  and false at  $t_{n+1}$  (and later). Similarly, a headache's beginning to exist at  $t$  is nothing more than its being located at  $t$  and thus making the present tense belief "My headache exists (now)" true at  $t$  and false earlier. Kiernan-Lewis might object that since the knowledge of my headache ceasing to exist requires that the tensed beliefs "My headache exists (now)" and "My headache did exist" are both true (at different times), there must be tensed facts to account for their truth. The inference, however, is fallacious. For if a belief or judgment is indexical, as it is if it is tensed, then its truth conditions are token-reflexive. So all it takes to make a token of the tensed belief "My headache exists (now)" true is that the headache occurs simultaneously with the belief. And all it takes to make a token of the tensed belief "My headache did exist" true is that the headache ended before I had the belief (or that the belief is held after the end of the headache).<sup>4</sup>

Thus, the detenser does not deny that we have the experience of ceasing to exist but believes that the essential features of the experience can be explained in terms of our consciousness of the occurrence of different events at different times. On the tenseless theory, the subjective experience of ceasing to exist is a B-experience that does not involve any tensed features.<sup>5</sup> It should be clear, therefore, that unlike the physicalist, *the detenser is not giving an ontological reduction of the experience of ceasing to exist*. Since the experience in question is a B-experience, there is no need to offer a reductive analysis to avoid the reality of tense. The question we must now ask is why does Kiernan-Lewis make these mistakes?

Recall that Kiernan-Lewis's argument against the detenser rests on the thesis that the detenser must give a third-person description of the fact of the ceasing to exist of my headache and in so doing leaves out the first-person features. There are two confusions that lead to this mistaken thesis. First, Kiernan-Lewis confuses the detenser's account of someone *experiencing*, for example, perceiving, an event ceasing to exist and the detenser's account of an event, whether experienced or not, ceasing to exist. Thus, he claims that on the tenseless view, "the experience of my headache ceasing to exist is 'nothing but' my headache . . . tenselessly existing at times before other times at which it does not tenselessly exist."<sup>6</sup> Given this confusion, it is not surprising that Kiernan-Lewis would find something missing in the detenser's account of the *experience* of my headache ceasing to exist. What is missing, however, is not the tensed phenomenological features he avows but precisely those (tenseless) features that he failed to include, namely, the consciousness at one time of my headache and then at a later time, the memory, but not the consciousness, of my headache.

A second confusion that contributes to Kiernan-Lewis's mistakes is between a timeless God having a timeless experience of my headache ceasing to exist with a *temporally* located person (me) having a temporal experience of my headache ceasing to exist. Thus, in his argument against the detenser, he says, "Someone—say, a timeless God—who knows all but only the tenseless facts, and so knew that my headache 'ceases' in the sense of there being times after which it tenselessly occurs, would still not know what it is like for a headache to cease to exist."<sup>7</sup> Of course a timeless being could not know what it is like for a headache to cease to exist, but that is an irrelevant objection, since I am not a timeless, but a temporal, being and so can know from a first-person perspective what it is like for my headache to be over.

A final error that contributes to his argument against the detenser is that he believes "tenselessly existing items neither begin nor cease to exist at the times at which they tenselessly exist—they are, *ex hypothesi*, simply tenselessly there."<sup>8</sup> If tenselessly existing items do not come to be nor cease to be, then my experience of my headache ceasing to be must be an illusion, and an ontological reduction of that experience would be necessary. However, on the tenseless theory, events *do* come to be and *do* cease to be, and Kiernan-Lewis can only think they do not by either misinterpreting the tenseless view or assuming a tensed interpretation of coming to be and ceasing to be.

The tenseless existence of an event at a certain time does not imply that it is *permanently* there or exists at every time. On the tenseless theory, there is a time at which an event does not (tenselessly) exist and a time at which it does. Admittedly, no event ceases to exist at the time at which it (tenselessly) exists, but that does not imply that an event does not begin at the (first) time at which it does exist (tenselessly) and end at a later time when it does not

exist. In claiming that on the tenseless theory all events exist at the times at which they tenselessly exist, that they are simply tenselessly there, the detenser is not saying anything that is incompatible with the experience of ceasing to exist as I have described it above. Events that exist earlier than the time at which I (tenselessly) experience their not existing is compatible with the experience and the reality of their ceasing to exist. Why, after all, should the fact that an event, say, a headache, which exists (tenselessly) at a time<sub>2</sub> later than the time<sub>1</sub> of my writing this sentence, entail that my headache does not come into existence at that later time<sub>2</sub>? Why should the tensed sense of coming into existence (whatever sense that is) be assumed to be the sense in which events come into existence? Before we should accept the tensed account of coming to be and ceasing to be, Kiernan-Lewis must explain what the tensed account is and how, if at all, it is immune to the various dialectical arguments, stemming from McTaggart's paradox, against the tensed theory of time. Until he does, his critique of tenselessness rests upon unsupported ontological and phenomenological claims and a faulty analogy.

## NOTES

1. J. Delmas Kiernan-Lewis, "The Rediscovery of Tense: A Reply to Oaklander," *Philosophy* 69, no. 265 (1994): 231.

2. Kiernan-Lewis *assumes*, without hesitation, that the Nagel-Jackson arguments are sound. But see David K. Lewis, "What Experience Teaches," in *Mind and Cognition: A Reader*, ed. W. G. Lycan (Oxford: Blackwell, 1990), pp. 499–519; Lawrence Nemirow, "Physicalism and the Cognitive Role of Acquaintance," in *Mind and Cognition*, pp. 490–99; and Hugh Mellor, "Nothing Like Experience," *Aristotelian Society Proceedings* 93 (1992–93): 1–16.

3. Kiernan-Lewis, "Rediscovery of Tense," p. 231.

4. See Murray MacBeath, "Mellor's Emeritus Headache," *Ratio* 25 (1983): 81–88, repr. in *The New Theory of Time*, ed. L. Nathan Oaklander and Quentin Smith (New Haven, CT: Yale University Press, 1994), pp. 305–11.

5. See Clifford Williams, "The Phenomenology of B-Time," *Southern Journal of Philosophy* 30 (1992): 127–37, repr. in *New Theory of Time*, pp. 360–72; Kiernan-Lewis, "Rediscovery of Tense," p. 232.

6. Kiernan-Lewis, "Rediscovery of Tense," p. 232.

7. Ibid. For an interesting discussion of what a timeless God can know from a detenser's point of view, see Murray MacBeath, "Omniscience and Eternity," *Aristotelian Society Proceedings Supplement* 63 (1989): 55–73.

8. Kiernan-Lewis, "Rediscovery of Tense," p. 232.



*Jokić on the  
Tensed Existence of Nature*

In "The Tensed or Tenseless Existence of Nature," Aleksander Jokić responds to my defense of the B-theory against a new reading (found in Kiernan-Lewis) of Prior's "Thank Goodness" argument by adding "elements not found in his [i.e., Prior's] argument (nor in its 'new reading') which, however, will support his understanding of the ontological consequences following from his reading of 'ceases to exist.'"<sup>1</sup> The ontological consequences that Prior thought followed from his argument were that only the present exists and that the past and future have no ontological status whatsoever. Since Jokić bases his argument against me on the temporal modal logic apparatus of Milos Arsenijević,<sup>2</sup> he cannot possibly arrive at Prior's ontology of time, since Arsenijević explicitly disavows presentism<sup>3</sup> and commits himself instead to a version of the open future theory according to which the past and the present do exist (are actualized), but the future does not exist. Thus, Jokić's response to me, even if sound, would not support Prior's understanding of the ontological consequences following from his reading of "ceases to exist." I shall argue, however, that Jokić's response is not sound.

To see why, let us first turn to my formulation of the new reading of Prior's argument against the B-theory, what Jokić calls the "Master Argument" (MA).

The MA is stated in three steps:

- (MA) (1.) I know what it is like for a headache of mine to cease to exist.  
 (2.) I could not know this if the tenseless account of Nature (reality) were true.  
 (3.) Hence, the tenseless account is false.



My criticism of the Master Argument is that it is invalid, because “ceases to exist” is understood in different senses in each premise: unsound, because given the B-theory meaning of “ceases to exist,” the detenser *could know* what it is like for a headache to cease to exist; or question-begging. The argument is question-begging if it assumes at the outset that to know what it is like for a headache to cease to exist is to know what it is like for a headache to cease to be *present*, in the sense in which a presentist maintains that an event ceases to be present (i.e., it “really” ceases to exist). In other words, if one assumes that the correct ontological meaning of “ceases to exist” is Prior’s tensed ontological meaning, then the argument begs the question, since the B-theorist would deny that we can know what it is like for a headache to cease to exist in Prior’s sense. Jokić expresses my point nicely:

Oaklander is absolutely right that if they *directly* invoke this [Prior’s tensed] sense in (1.), as the sole justification for the truth of the premises, then their argument becomes hopelessly question begging right at that point because this sense presupposes not only that the tensed account is right but also that the tenseless account is false. Such an argument can have no bearing on the controversy between the tensed and tenseless theories.<sup>4</sup>

Thus, Jokić recognizes that if the tensed interpretation of “ceases to exist” is assumed the argument is circular, but he rejects the claim that “in their analysis of ‘ceases to exist’ the upholders of the tensed view of Nature (reality) *must* rely on the idea that the event is *no longer present*.”<sup>5</sup> Isn’t it possible, he asks, “that there is *some other* analysis of ‘ceases to exist’ that could be applied consistently (with both premises), and non-circularly, with the intended result, the truth of the conclusion (3.)?”<sup>6</sup> Jokić does indeed believe there is an analysis of “ceases to exist” that does not *assume* the tensed theory of time, but I shall argue that his belief is mistaken.

What, then, is his purported noncircular account of “ceases to exist”? For the answer, consider the following passage.

[I]f  $e(t)$  is a well-specified indeterministic event occurring at  $t$ , the following two equivalences should hold:

- E1. An otherwise non-vaguely specified event  $e(t)$  is a future event if and only if  $\Diamond Ae(t) \wedge \Diamond \neg Ae(t)$ ; and
- E2. An otherwise non-vaguely specified event  $e(t)$  is a past event if and only if  $Ae(t) \vee \Diamond \neg Ae(t)$  but not  $\Diamond Ae(t) \wedge \Diamond \neg Ae(t)$ ,

where  $Ae(t)$  is a sentence stating that  $e$  occurs at  $t$ .

On the basis of these equivalences, *in particular* E2, we can construct the following analysis or sense of "ceases to exist":

- (A) An event  $e(t)$  ceases to exist if and only if for all subevents of  $Ae(t)$ , call them  $e'(t')$ ,  $e''(t'')$  etc. [ $e'(t')$  meaning: the sub-event  $e'$  (of event  $e$ ) occurring at the sub-interval  $t'$  (of  $t$ )], it holds that  $\Diamond Ae(t') \vee \Diamond \neg Ae(t')$  but not  $\Diamond Ae(t') \wedge \Diamond \neg Ae(t')$ ;  $\Diamond Ae(t'') \vee \Diamond \neg Ae(t'')$  but not  $\Diamond Ae(t'') \wedge \Diamond \neg Ae(t'')$ ; etc.<sup>7</sup>

Since the analysis of "ceases to exist" is based on E2, it will be sufficient to undermine it by criticizing the equivalence E2.

Recall that E2 asserts:

$e(t)$  is a past event if and only if  $\Diamond Ae(t) \vee \Diamond \neg Ae(t)$  but not  $\Diamond Ae(t) \wedge \Diamond \neg Ae(t)$ .  $Ae(t)$ , which reads,  $e(t)$  is a past event if and only if it is possible that  $e$  occurs at  $t$  or it is possible that  $e$  does not occur at  $t$ , but it is not the case that both  $e$  occurs at  $t$  and  $e$  does not occur at  $t$  are possible. That is,

$$3. \quad \Diamond Ae(t) \vee \Diamond \neg Ae(t) \wedge \neg [\Diamond Ae(t) \wedge \Diamond \neg Ae(t)]$$

3. is equivalent to:

4.  $\Diamond Ae(t) \vee \Diamond \neg Ae(t) \wedge [\neg \Diamond Ae(t) \vee \neg \Diamond \neg Ae(t)]$  3, DeM
5.  $[\Diamond Ae(t) \vee \Diamond \neg Ae(t)] \wedge [\Box \neg Ae(t) \vee \Box Ae(t)]$  4, Def., DN
6.  $\{\Diamond Ae(t) \wedge [\Box \neg Ae(t) \vee \Box Ae(t)]\} \vee \{\Diamond \neg Ae(t) \wedge [\Box \neg Ae(t) \vee \Box Ae(t)]\}$  5, Dist.
7.  $\{[\Diamond Ae(t) \wedge \Box \neg Ae(t)] \vee [\Diamond Ae(t) \wedge \Box Ae(t)]\} \vee \{[\Diamond \neg Ae(t) \wedge \Box \neg Ae(t)] \vee [\Diamond \neg Ae(t) \wedge \Box Ae(t)]\}$  6 Dist. Twice

Since  $[\Diamond Ae(t) \wedge \Box \neg Ae(t)]$  and  $[\Diamond \neg Ae(t) \wedge \Box Ae(t)]$  are each contradictory it follows that

$$8. \quad [\Diamond Ae(t) \wedge \Box Ae(t)] \vee [\Diamond \neg Ae(t) \wedge \Box \neg Ae(t)]$$

Given (8), I do not see how his analysis of " $e(t)$  is *past*" (i.e., E2) can be correct. For (8) can be true even if  $e$  does *not* occur at  $t$ , and a fortiori even if  $e$  occurs at  $t$  is *not past*. In other words,  $[\Diamond Ae(t) \wedge \Box Ae(t)] \vee [\Diamond \neg Ae(t) \wedge \Box \neg Ae(t)]$  can be true even if both  $\Diamond Ae(t) \wedge \Box Ae(t)$  and hence  $e(t)$  is a past event, are false. Consequently, E2 does not express a logical equivalence. Furthermore, even if (8) is true because the first disjunct  $[\Diamond Ae(t) \wedge \Box Ae(t)]$  is true (and so  $e$  does occur at  $t$ ), E2 still does not express an equivalence, since " $e(t)$  is past" may be *false*. For if  $t$  is the present moment, and  $e$  occurs at  $t$ , then (8), and

therefore the *analysans* of E2, can be true even though  $e(t)$  is present.<sup>8</sup> Hence, E2 cannot be a proper analysis of  $e(t)$  is past.

In response to the preceding argument, Jokić may claim that a present event is just a past event (in that it satisfies E2).<sup>9</sup> Perhaps that would explain Jokić's claim that a noncircular account of an "event ceases to exist" is captured by the contrast between E1 and E2, . . . , by the fact that E2 applies to it and E1 does not.<sup>10</sup> Would that be enough to make MA sound? I don't think so. For if a present event just is a past event, then the first premise of MA is false. If I know what it is like for a headache to cease to exist, then I must first experience the headache as occurring and then experience the headache as not occurring. If a present event is just a past event (and so a headache is first future and then past), I could not have the complex experience of a headache of mine ceasing to exist. For that reason, step (1.) in MA would be false. In any event, since E2 does not state a logical equivalence, the contrast between E1 and E2 does not capture what it is for an event to cease to exist.

Nor is Jokić's explicit analysis of an event's ceasing to exist, namely, (A), adequate. For the analysis or sense of "ceases to exist" found in (A) depends on all subevents of  $e(t)$  being *past*, in accordance with the understanding of a past event found in E2. Yet the truth of the *analysans* in E2, and thus in (A), is compatible with each of the subevents  $e'(t')$ ,  $e''(t'')$ , and so forth being *present*. In other words, the sense of " $e(t)$  ceases to exist" cannot be captured by claiming that for all subevents of  $Ae(t)$ , it *holds* [tenselessly?] that  $\Diamond Ae(t') \vee \Diamond \neg Ae(t')$  but not  $\Diamond Ae(t') \wedge \Diamond \neg Ae(t')$ ;  $\Diamond Ae(t'') \vee \Diamond \neg Ae(t'')$  but not  $\Diamond Ae(t'') \wedge \Diamond \neg Ae(t'')$ ; and so on, since that would *not* imply and so would not be logically equivalent to  $e(t)$  (or any of its sub events) is *past* and/or that  $e(t)$  ceases to exist.

At this juncture, Jokić could introduce the A-properties of *pastness*, *presentness*, and *futurity* in order to give a sense to an event  $e(t)$  ceasing to exist:

(A') An event  $e(t)$  ceases to exist if and only if for all subevents of

$Ae(t)$ , it *now holds* that  $\Diamond Ae(t') \vee \Diamond \neg Ae(t')$  but not  $\Diamond Ae(t') \wedge \Diamond \neg Ae(t')$  and it *will hold* that  $\Diamond Ae(t'') \vee \Diamond \neg Ae(t'')$  but not  $\Diamond Ae(t'') \wedge \Diamond \neg Ae(t'')$ ; and then it *now holds* that  $\Diamond Ae(t'') \vee \Diamond \neg Ae(t'')$  but not  $\Diamond Ae(t'') \wedge \Diamond \neg Ae(t'')$ , and it *did hold* that  $\Diamond Ae(t') \vee \Diamond \neg Ae(t')$  but not  $\Diamond Ae(t') \wedge \Diamond \neg Ae(t')$ , etc.

Admittedly, (A') does capture a sense of " $e(t)$  ceases to exist" that is incompatible with the B-theory, but it is based on the use of A-determinations (as reflected in the tenses) and is therefore subject to the charge of circularity. For that reason, Jokić's attempts to rescue Prior's argument, or its new reading, by relying on the sense of "ceases to exist" expressed by the contrast between E1 and E2, or via the analysis in E2, (A), or (A'), are unsuccessful.

Whether, as Jokić believes, "it is very likely, that there are other senses based on other independent grounds that could be used for the same purpose"<sup>11</sup> is a question that lies outside the scope of this paper.

## NOTES

1. Aleksander Jokić, "The Tensed or Tenseless Existence of Nature," *Philo* 6, no. 2 (Fall–Winter 2003): 205–10. See J. D. Kiernan-Lewis, "Not Over Yet: Prior's 'Thank Goodness' Argument," *Philosophy* 66 (1991): 242–43; repr. in *The New Theory of Time*, ed. L. Nathan Oaklander and Quentin Smith (New Haven, CT: Yale University Press, 1994), pp. 322–24; and essay 21.

2. Milos Arsenijević, "Determinism, Indeterminism and the Flow of Time," *Erkenntnis* 56 (2002): 123–50.

3. See Arsenijević, "Determinism, Indeterminism and the Flow of Time," especially pp. 138–39.

4. Jokić, "Tensed or Tenseless Existence," pp. 206–207.

5. *Ibid.*, p. 206.

6. *Ibid.*

7. *Ibid.*, p. 210, my emphasis. Jokić asserts, "As for the presentness, I take simply that *present time* is an instant delineating the past and future events. For Arsenijević, the case is not that simple, since his theory is formulated in an *interval-based* system that, as such, doesn't allow us to speak of the presentness in an absolute sense. For my purpose, however, it is sufficient that there is *an* asymmetry between the past and future times independently on whether we take an instant or an interval to be the present time; so I take an easier way to formulate the argument," (p. 7, fn. 7).

8. Given Arsenijević's logical apparatus that Jokić evidently accepts, once an event *e* exists, i.e., is actualized, then it is necessary, since it is a member of all possible worlds accessible to the one real world. It remains possible, however, since there was a time before *e* became actual when "*e* could have been otherwise," since at an earlier time *t<sub>n</sub>* it was possible that *e* occurs at *t* and it was possible that *e* does not occur at *t*. All of that, however, is compatible with *e* (*t*) is *present*.

9. I owe this suggestion to Paul K. Peterson, whom I wish to thank for his comments on an earlier version of this paper.

10. Jokić, "Tensed or Tenseless Existence." Note, however, that if Jokić takes this way out, then he could no longer say that the "*present time* is an instant delineating the past and future events" (p. 7, fn. 7), for even in an instant a subevent *e'* (*t'*) could be present and not past.

11. *Ibid.*, p. 6.



## *On the Experience of Tenseless Time*

**T**he status of temporal becoming, temporal passage, or the transitory aspect of time is a paradigmatic metaphysical problem. It involves a *prima facie* conflict between reason and experience. The experience in question involves the passage of time; the "perception" of events flowing from the future into the present and from the present into the past. This experience is reflected in statements such as "I can't wait until the basketball season comes around again," "Hurray, I am finally graduating," and "Thank goodness the exam is over!" When we rationally reflect upon these statements and wonder what reality must be like in order for them to be true, we find logical difficulties, such as McTaggart's paradox, emerge. Faced with this conflict, the metaphysician has a goal to provide an ontology of time that fits the experience in question and is logically consistent. Broadly speaking, two theories of time have taken up the challenge to realize that goal: the tensed and the tenseless theories. According to the tenseless view, the logical problems surrounding temporal becoming are real and can be avoided only by recognizing, in Donald C. Williams's words, "the myth of passage." According to the tensed view, the experience of passage and the presence of experience are real and can only be accounted for by accepting the tenses as reflecting basic ontological distinctions.<sup>1</sup>

The debate between proponents of the two camps has been fought on several different fronts. Until the early 1980s, the question of translatability was of central importance. If tensed discourse could be defined without loss of meaning into tenseless discourse, then it was argued the tenses lacked ontological significance. More recently, defenders of the so-called new tenseless theory of time have sought to demonstrate that the necessity of tensed discourse is compatible with time being tenseless.<sup>2</sup> In order to do this successfully, it is necessary for the defender to deal adequately with the experi-

ence of temporal becoming. The issue centers on whether the defender of tenseless time can provide an adequate analysis of the presence of experience and the appropriateness of certain of our attitudes toward future and past events. In a recent article, "Passage and the Presence of Experience," H. Scott Hestevold argues that the tenseless theory of time cannot account for our experience of time.<sup>3</sup> In what follows, I shall attempt to show his objections to the tenseless theory can be overcome, and an adequate analysis of tenseless time is possible.

## THE PRESENCE OF EXPERIENCE

According to the tenseless theory of time, there are no basic ontological differences between past, present, and future events. All events exist tenselessly in the network of *earlier*, *later*, and *simultaneity* temporal relations. If, however, all events exist tenselessly, then how can the detenser explain our knowledge that a certain experience, say, a headache, is [presently] occurring? How can the detenser explain the fact that experiences can be known to be present? According to Hestevold, no explanation is possible because

[t]he claim that experiences, essentially, can be known to be present implies that there cannot occur an experience which occurs only tenselessly; experiences *cannot* be mere tenseless occurrences on the B series!<sup>4</sup>

The reasoning underlying the implication in the above passage is open to two interpretations. First, since none of the terms of the B-series (the series of events generated by the earlier-later relation) are intrinsically present, no experienced events on the B-series can be known to be present. Second, if the detenser defines the presence of an experience in terms of its occurring at a certain date, or its being simultaneous with some temporal item, then it follows all experiences are (tenselessly) present. In that case, however, the detenser cannot explain the knowledge we possess of which experiences are happening *now*. For if all our experiences exist tenselessly at the moment they do, what is the explanation for the phenomenological fact that certain of those experiences are known to be occurring *now*, while others are not known to be occurring *now* or are even known *not* to be occurring now?

I think the detenser has a reasonably good response to that question. It begins with the truism that whenever we are aware of an object (or have an experience), we are conscious of being aware of that object (or of having that experience). Thus, one aspect of our knowledge of the present is grounded in the consciousness of our experiences at the time they are occurring. If we combine that thesis with the claim by Thomas Reid that "consciousness . . .

is an immediate knowledge of the present,"<sup>5</sup> we arrive at the required result: For an individual, every experience he or she is conscious of is one known to be present. Of course, Hestevold may ask, "Doesn't this claim from Reid posit something that really is present? If you need that claim to finish off your argument, haven't I made my point?" Not necessarily, because Reid's reference to "the present" can be understood to designate the cross-section of experiences that are simultaneous with one's consciousness of them. There is nothing more, ontologically speaking, to the presence of experience than our being conscious of our experiences when they are happening.

To this explanation of the presence of experience, it may be objected that merely being (tenselessly) conscious of an experience when it is (tenselessly) occurring does not give knowledge of which experiences are [presently] occurring. But I do not think this objection can be sustained, for the knowledge we seek can be explained tenselessly, and the argument to the contrary is a non sequitur.

According to a detenser, if I am conscious at  $t_1$  of an experience that occurs tenselessly at  $t_1$ , and if as a matter of tenseless fact it is  $t_1$ , then I know the experience is present. Of course, tenses use the same antecedent to infer that detensors cannot know which experiences are present, but such an inference is based on a misinterpretation of the tenseless view. The tenseless view gives rise to several different images. One is that of experiences in the B-series existing "eternally" or totally outside of time. Another views experiences as existing sempiternally or at every time, and still another views experiences from a point of view outside of time, looking down at all experiences and events and seeing them as parts of a never-changing present. Each of these images falsifies the detenser's view in a fundamental way. On the tenseless theory, experiences and events are not eternal or sempiternal, and they do not all exist at once, *totum simul*. Rather, experiences, like our consciousness of them, exist in time, in succession, one after another. We are in time and, therefore, conscious of our experiences from a temporal point of view. The significance of this last point can be clarified by means of a spatial analogy. We are in space and so experience things from a spatial point of view. I am *here*, hence distant from some places and near others. Accordingly, the answer to the question "Which things are existing here?" depends on the place at which the question is asked. Similarly, the answer to the question, "Which events are existing now?" depends on the time at which the question is asked. Right now, as I look at the clock on my desk, it is 10:00 AM, September 11, 2003, and so the experience of my looking at the clock (of which I am conscious) is known by me to be present. There is no need to suppose that there is any special property of events that are present, or objects that are here, that enable us to know which events are present or which objects are here. Admittedly, if we were somehow outside of time, and so nontem-



porally conscious of all our experiences (as God might be of the history of the world), then no experience could be known to be present to the exclusion of others. But our consciousness of experiences, like the experiences themselves, are in time, and at any given time, we can know what experiences are present simply by being conscious of them as opposed to remembering or anticipating them.

To all this Hestevold makes the following reply. If, at  $t_1$ , I record the presence of my experience of, say, an excruciating toothache, by telling the dentist, "I am now in pain," then on the tenseless theory that *means* " $t_1$  is tenselessly occurring, and my excruciating pain is (tenselessly) occurring at  $t_1$ ." However, that judgment is true *at any time* and so would not be sufficient to convey to the dentist the requisite information, namely, that I am in pain now. In order to convey that information, the tensed fact that my pain is now occurring is indispensable.

Once again, Hestevold's argument is a non sequitur. It proves that the tenseless sentence [" $t_1$  is tenselessly occurring, and my excruciating pain is (tenselessly) occurring at  $t_1$ "] does not have the same *meaning* as the tensed sentence ("I am now in pain"), but it does not prove that the two sentences are used to describe different *states of affairs*, one describing a tenseless fact and the other describing a tensed fact.<sup>6</sup> Admittedly, the tensed sentence conveys more information than the tenseless one, but it does not follow that it does so because of the reality of tense. The dentist who hears the tensed sentence token "I am now in pain" knows that I am using that sentence to describe a state of affairs existing simultaneous with my utterance, and so he or she administers the anaesthetic. Whereas if I uttered the tenseless sentence, the dentist would not know that I needed relief now unless he knew what time it was. Thus, the two sentences do not convey the same information and so do not have the same meaning. Nevertheless, it does not follow that they do not describe the same state of affairs, and, more generally, the indispensability of tensed discourse does not imply the indispensability of tensed facts.

Before leaving the topic of the presence of experience, I want to consider another phenomenological datum that allegedly supports the tensed theory. George Schlesinger has defended the tensed theory by appealing to the experience of the NOW as "the point in time at which an individual who is temporally extended is alive, real or Exists with a capital E."<sup>7</sup> More recently he claimed "our attitude toward the present may be described as regarding it as distinct from every other temporal position, for while the future is yet to be born and the past is rapidly fading, the present is palpably real."<sup>8</sup> I suggest we can make sense of Schlesinger's phenomenological claims without countenancing transitory temporal properties. Again, a spatial analogy may help. I am here and so experience space differently from the way I would if I were

outside of space. I can know what goes on in distant places, and given causal laws, I can affect what goes on elsewhere less surely and reasonably regard what goes on there as less important because it affects my life much less. Similarly, I am now (at this time), hence those events that are at temporally distant times are less affected by me and have less affect upon me than those that are in the present. Thus, I may reasonably regard what is happening now as being more important, or more real, and that is the only (harmless) sense in which the present is "palpably real" or Exists with a capital E; the reality of tense has nothing to do with it.

## OUR ATTITUDES TOWARD THE FUTURE AND THE PAST

Another argument intended to demonstrate that the tenseless theory of time cannot be squared with our experience is based on the claim that dread and relief are inexplicable attitudes on the tenseless theory. Hestevold explains the reasoning underlying this claim:

On Monday I dread the painful tooth extraction scheduled for Tuesday, and on Wednesday I am relieved that the extraction is over. Dread on Monday and relief on Wednesday *are* appropriate attitudes to have toward the Tuesday tooth extraction. If ST [the static theory] is correct, however, then dread and relief are never appropriate since there are no future and past events toward which to direct them! That Wednesday *follows* the day of the tooth extraction is a tenseless fact which is true before, during and after the extraction. Thus it is as appropriate to feel relief that Wednesday follows Tuesday before or during the extraction as it is to feel such relief on Wednesday. But this is absurd. . . . Hence, TT [the tensed theory] must be adopted to make sense of the appropriateness of our attitudes toward the future and the past.<sup>9</sup>

Hestevold's point is that since the fact *Wednesday* is *later than Tuesday* is one that exists before Wednesday, if *that* fact is what explains relief, then it is just as sensible to feel relief on Monday or Tuesday for a painful experience that is taking place on Tuesday as it is to feel relief on Wednesday for the same painful experience.

The mistake in this argument is the assumption that the tenseless fact that renders relief appropriate exists before, during, and after the extraction. On the tenseless view, the fact in question does not exist before, after, or during the extraction. The pain exists before the relief, and the experience of the relief exists after the cessation of pain, but the fact that *the pain occurs*

*before Wednesday* (or that *the relief occurs after the pain*) does not exist in time at all. Thus, while it is "always" true to assert that "Wednesday follows Tuesday," it does not follow that *Wednesday following Tuesday* always exists, and so Hestevold ought not conclude that relief is justified before the pain or during it. To think that it is justified is to confuse tenseless facts with semipiternal things.

Further evidence that Hestevold does make that confusion occurs when he says, "After all, on Wednesday, there is a sense in which the extraction is not over; on Wednesday, the extraction is "eternally" and tenselessly occurring on Tuesday."<sup>10</sup> Again, this way of viewing the matter is fraught with difficulties. To say that an extraction is tenselessly occurring on Tuesday ( $t_2$ ) is to say, assuming that time is relational, that the extraction is simultaneous with each member of the set of simultaneous events that constitutes  $t_2$ . That fact, however, does not exist on Tuesday, or on Wednesday, or on any other day; it is eternal. But to say that an event's occurring at a certain time is an eternal fact does not imply that the event in some sense is always occurring, although looked at from an external godlike perspective, it may appear as if this is so. But from the inside, and in reality, our painful experiences are (we hope) short-lived, and as they are succeeded by more pleasant experiences, my awareness of the painful ones become a mere memory. Indeed, it is just this succession of different psychological attitudes toward the same event (first anticipation, then perception, then memory) that gives rise to the impression of time's flow, and it is that impression that provides the basis for our different attitudes toward the future and the past.

Accepting all this, a critic may wonder why treating facts as outside of time helps to resolve Hestevold's problem. If it is always true that the dread occurs before the painful experience, and the fact of the dread occurring before the pain never changes, why should I be happy *now* that the toothache is over? Of course, if the painful experience will occur, but is not yet occurring, that is, if it will move from the future to the present with the passage of time, then, so the critic alleges, we can easily understand an attitude or feeling of dread. We cannot understand that attitude on the tenseless theory, where all events exist and nothing really moves through time at all. In short, the tenseless theory never explains why dread is appropriate *before* a bad event rather than after or during it.

One way of responding to this objection is to question the premise upon which it is based, namely, the assumption that the feeling of dread is appropriate when the dreaded event is in the future. Perhaps we should say dread is an appropriate attitude to take before an unwelcome event in that it is a *rational* attitude to take. However, it might plausibly be argued that dread often is not rational if it does not make us more efficient in meeting the problems we face. Dread of a dentist's visit does nothing but make one's life mis-

erable before the visit, and it may even stop us from keeping our appointments. It serves in no way to direct one's actions, since the visit is necessary for good health. So although it is *natural* enough, perhaps, at least for a certain sort of personality, to dread certain sorts of events, it is not clear it is appropriate in the sense of being rational.

Maybe it is *in general* useful to dread bad events because dread in general motivates us to prepare for or avoid such events in ways that we would not employ if we did not experience dread. So it is easy to see how dread might evolve biologically. But like many biologically evolved defense systems, this one often actually does harm, preventing us from acting efficiently, and so must often be controlled or suppressed if one is to behave more reasonably. Dread before the event is functional (when dread is functional at all) because one can still do something about it. The same feeling after the event is never functional, so never appropriate. Thus, our attitude toward dread is like the attitude we have toward preparing oneself, say, for an exam—it makes sense *before* but not *after* the exam because preparation affects the outcome. Similarly, if dread spurs on preparation, it might have survival value and thus be appropriate before the event but not after. In other words, the causal efficacy of dread and the direction of causality in time are what explain its appropriateness before, but not after, the event.<sup>11</sup> Since that explanation works perfectly well for a detenser, I conclude neither the presence of experience nor our attitudes toward the past, present, or future pose insurmountable difficulties for an adequate analysis of tenseless time.

## NOTES

1. The most elaborate defense of the tensed theory of time is found in Quentin Smith, *Language and Time* (New York: Oxford University Press, 1993).

2. Proponents of the new tenseless theory of time include Michelle Beer, "Temporal Indexicals and the Passage of Time," *Philosophical Quarterly* 38 (1988): 158–64; Hugh Mellor, *Real Time* (Cambridge: Cambridge University Press, 1981); L. Nathan Oaklander, *Temporal Relations and Temporal Becoming: A Defense of a Russellian Theory of Time* (Lanham, MD: University Press of America, 1984), and essays 23–25 in this volume. Recent discussions of this type of argument are found in Brian Garrett, "Thank Goodness That's Over' Revisited," *Philosophical Quarterly* 38 (1988): 201–205; J. Delmas Kiernan-Lewis, "Not Over Yet: Prior's 'Thank Goodness' Argument," *Philosophy* 66 (1991): 256–58.

3. H. Scott Hestevold, "Passage and the Presence of Experience," *Philosophy and Phenomenological Research* 50 (1990): 537–52.

4. *Ibid.*, p. 543.

5. Thomas Reid, *Essays on the Intellectual Powers of Man* (Cambridge, MA: MIT Press, 1969), p. 359.

6. Cf. Clifford Williams, "The Date-Analysis of Tensed Sentences," *Australasian Journal of Philosophy* 70 (1992): 198–203.
7. George Schlesinger, *Aspects of Time* (Indianapolis: Hackett, 1980), p. 23.
8. George Schlesinger, "E Pur Si Muove," *Philosophical Quarterly* 41 (1991): 427.
9. Hestevold, "Passage and the Presence of Experience," pp. 544–45.
10. *Ibid.*, p. 545.
11. Also, of course, the word *dread* contains "before the event" in its meaning or usage—after the event one may regret or rue it, or look back on it with horror, but one cannot dread it. But looking back on it with horror is close enough to the feeling of dread, so we can get away from mere grammar here and ask why such a feeling of horror is not appropriate after it is over. If one holds that dread is appropriate even when it is dysfunctional, merely because the event really is awful, then looking back on it with horror would also be appropriate.

## *Craig on the Experience of Tense*

In his recent book, *The Tensed Theory of Time: A Critical Examination*,<sup>1</sup> William Lane Craig offers several criticisms of my views on our experience of time. The purpose of the present essay is to respond to some of those criticisms. The best place to begin the discussion is with Craig's own account of our experience of time and what I take to be the confusions upon which it is based.

As I have indicated throughout, there are two ways in which we think about, talk about, and understand time. We understand time in terms of temporal becoming, or events being past, present, and future and changing their position with respect to those notions, and we understand time in terms of temporal relations, which are unchanging relations of earlier/later than and simultaneous with, between, and among events. All philosophers of time, whether A-theorists or B-theorists, would agree or should agree that at the preanalytic level of ordinary language and thought, there are temporal relations and there is temporal becoming. The ontological question concerns the truth ground of temporal language and thought. In virtue of what are temporal judgments true? Understood preanalytically, our judgments, thoughts, and language about time are ontologically neutral. It is the task of the philosopher to determine what entities are necessary to adequately interpret those judgments. Craig does not agree. Craig maintains that our language and thought about time express what he calls "properly basic beliefs," and I have nothing to criticize if what he means is that we ordinarily think and talk about time in several different ways. Unfortunately, that is not what Craig means. Craig argues that since the reality of tense and temporal becoming is a properly basic belief—a universal belief whose veridicality is given to us in experience<sup>2</sup>—the A-theory of time is true. Indeed, according to Craig, the A-theory is necessarily true, since "our experience of tense and temporal

becoming is an intrinsic defeater-defeater that overwhelms any B-theoretic arguments against the reality of tense without specifically rebutting or undercutting them."<sup>3</sup> In this he is mistaken, since his reasoning either assumes what needs to be proved or confuses common sense with ontology or both.

Craig begins by assuming not only that judgments that reflect the transitory and static aspects of time (to use phrases coined by Broad) are true but also that the A-theory of time is a basic datum that is given to us in experience in virtue of which they are true. Thus, in characterizing our belief in temporal becoming and the reality of tense as property basic, Craig is assuming at the outset that the A-theory of time is true and enjoys "such powerful warrant that it itself defeats the alleged defeater brought against it by simply overwhelming it."<sup>4</sup> This way of putting the matter begs the question twice over. First, it assumes that our experience of time is A-theoretic, that we experience time in accordance with Craig's ontology. And second, it assumes that the B-theory is attempting an ontological reduction of our experience of A-theoretic time. Both assumptions are mistaken. Admittedly, our experience of temporal becoming (and temporal relations) are data that need to be explained, but it does not follow that it is an experiential datum that time flows in some A-theoretic sense. For that reason, the B-theory does not attempt an ontological reduction or elimination of an A-theoretical ontology from our experience analogous to the way in which a physicalist attempts to eliminate mental phenomena. Thus, Craig's talk about defeater-defeaters that overwhelm the attempt to defeat a properly basic belief is irrelevant and question-begging. B-theorists are not attempting to defeat the experience of time, but rather they are attempting to explicate what are the ontological commitments of that experience. Craig packs into the experience an ontology that assumes what needs to be proved and then criticizes the B-theory for trying to eliminate an A-theoretic ontology that is given to us in experience.

That Craig begs the question against the B-theorist is evident by the following passage:

Now it is precisely my contention that belief in the objectivity of tense and the reality of temporal becoming is a properly basic belief. *Indeed, I should say that belief in the reality of tense and temporal becoming enjoys such powerful positive epistemic status for us that not only can we be said to know that tense and temporal becoming are real, but also that this belief constitutes an intrinsic defeater-defeater which overwhelms the objections brought against it.* The truth of these stronger claims, is, however, not essential to the A-theorist's case; all he need do is show the proper basicity of our belief in tense and refute the B-theoretical defeaters brought against it. We have already observed that the experience of tense is universal among mankind.<sup>5</sup>

Of course, there remains the issue of whether the B-theorist *can* provide an adequate account of our experience of time. Before I revisit that issue and consider some of Craig's arguments against my account of our experience of time, I want to point out a difficulty in reconciling Craig's account of properly basic beliefs with many of his other "basic" beliefs.

Craig claims that "B-theorists are a source of wonderment," that he finds it "simply amazing that such persons can convince themselves that our most deeply seated and ineludible intuitions about the nature of reality are delusory," and that B-theorists are "irrational."<sup>6</sup> Nevertheless, Craig is committed to the proposition that McTaggart's paradox *can* be a defeater of certain A-theoretical interpretations of our belief in tense and temporal becoming, and he does take McTaggart's paradox seriously enough to "consider extensively the B-theoretical defeaters brought against the tensed view of time, including McTaggart's paradox."<sup>7</sup> Clearly, Craig wants to have it both ways. On the one hand, Craig takes metaphysical defeaters of the A-theory seriously enough to want to refute them. Indeed, Craig himself gives dialectical arguments, based on McTaggart's paradox, against other versions of the A-theory, so he evidently believes that McTaggart is relevant to ontology.<sup>8</sup> On the other hand, Craig claims that "McTaggart's paradox is an engaging and recalcitrant brain-teaser whose conclusion nobody really takes seriously,"<sup>9</sup> thus implying that basic beliefs are metaphysically sacrosanct and immune to refutation. How can we understand this waffling? Only by seeing that Craig confuses ontology and common sense. At times Craig recognizes that McTaggart's argument could defeat an A-theoretic ontology, and so he is implicitly treating properly basic beliefs as true, but ontologically neutral. At other times he treats the basic belief in tense and temporal becoming as tantamount to a specific ontological analysis. That is, he both distinguishes the preanalytic claim that time passes from its metaphysical interpretation, and then he identifies the preanalytic claim with the metaphysics of his version of the A-theory. Thus, he concludes that the B-theory is absurd and that defenders of it are irrational, since they must deny our most deeply seated and ineludible intuitions about the nature of temporal reality. What he fails to realize is that it is not our intuitions that are mistaken (at least on the standard B-theory<sup>10</sup>) but only the A-theoretical interpretations of them.

The question remains regarding what account of temporal experience can be given that is consistent with the B-theory. Craig argues that there is none and appeals to several features of our experience to establish his point, to wit, our experience of events as happening in the present, the peculiar attitudes we have toward past and future events, and our experience of the process of temporal becoming. In the course of his discussion, he criticizes some of the things I have said in earlier essays on these topics, and in the remainder of this essay, I shall reply to his objections.



The first type of experience allegedly indicative of A-time is the experience of the present and the presence of experience. According to Craig, we experience things and events as present when we perceive them and when we perceive them our experience is present. But Craig does not mean by this that we experience events, things, or acts of perception as having the nonrelational property of *presentness*, since on his latest view he seems to deny the existence of such a property. Rather, since to be present is to exist, it follows that our awareness of the present is an awareness of what exists. The B-theorist need not disagree, since she can maintain that to perceive that something exists is the perception that it is present, *but this does not commit her to an A-theoretic ontology*. To perceive that something is present is just to have a nonreflexive awareness of the perception of an object.

Craig's main objection to the B-theorists' account of the experience of the present is that the awareness of an event as present is not a reflexive awareness of events as it would have to be if the B-theory were correct.<sup>11</sup> Craig approvingly quotes Quentin Smith:

For proponents of this thesis [i.e., B-theorists], apprehending an A-determination requires a reflexive act of consciousness in which I turn my attention back onto myself and discern that my psychological experiences stand in some B-relation to some other event(s). . . . Definitions such as these do not square with our many *unreflexive* awareness of events as present, past, or future; I perceive the cloud to be passing at present over the treetops without at the same time reflexively grasping my own perceptual experiencing of the event. I am not attending to my perceiving but to that which I am perceiving: the cloud passing over the treetops.<sup>12</sup>

Is it really the case that, if the B-theory were true, all acts of consciousness would have to be reflexive? I think not, and we can see that this is not the case if we are careful to draw the distinction between our *perceiving* a cloud as present and our *judging* that a cloud or the perceiving a cloud is present. To *perceive* an object is present does not involve a reflexive act, whereas to *judge* that an object perceived or the perception of an object is present does.

To perceive a cloud as present is just to be aware of perceiving the cloud. And to presently perceive a cloud is just to perceive a cloud. Craig would agree. In fact, he expresses the same view: "Our belief that they [events] are happening presently is really no different than our belief that they are happening. . . . Hence, if beliefs like 'I see a tree' are properly basic, so is 'I am presently seeing a tree,' since the former is a tensed belief identical with the later."<sup>13</sup> When we assert that "I am presently seeing a tree," we are making explicit what is implicit in the experience expressed by "I see a tree," namely, that when I see a tree, I am aware or conscious of seeing a tree. In other words, to see a tree is to be nonreflexively conscious of seeing a tree, and to

be nonreflexively conscious of seeing a tree is to be nonreflexively conscious of both the seeing and the tree as being present. There is nothing more to the awareness of an object being present, or to the perception of an object as being present then, than having a nonreflexively (or "non-positional," to use Sartre's phrase) consciousness of perceiving a tree. For that reason, whenever I perceive something, I am aware of the perceiving and the object perceived as being present. Thus, the existence of grammatical tense in "I am presently seeing a tree" need not commit us to an A-theoretical metaphysics.

To see a tree or to presently see a tree is to be nonreflexively conscious of the experience of seeing a tree, but to *judge* that a tree or cloud is present, or to *judge* that a certain event is past or yet to come, is something altogether different. To be conscious that I am presently perceiving a cloud does not involve a reflexive awareness of a temporal relation between the experience of perceiving and the cloud, it simply involves being conscious of perceiving the cloud. However, the judgment that the *cloud* is present, or the judgment that the *perceiving* of the cloud is present, does involve a reflexive awareness of the simultaneity of "this" perceiving with the passing cloud.<sup>14</sup> Where reflection comes in is when we *judge* that an object (or consciousness state) is past or future, for example, that what I am remembering is past or what I am anticipating is future.<sup>15</sup>

Another aspect of our temporal experience that Craig believes undercuts the B-theory is our differential experience of the past and future. We dread unpleasant future events and feel relief over unpleasant events once they are past. Craig criticizes my account (in essay 16) on the grounds that it attempts to ground our different attitudes toward the past and the future by appealing to the asymmetry of time. Craig claims that "[i]t seems to me quite evident that Oaklander's bid to substitute the asymmetry or anisotropy of time for temporal becoming is a failure."<sup>16</sup> This argument against me is, however, guilty of the straw man fallacy, since I never said that the anisotropy of time is what gives time its intrinsic direction, and in fact, I do not think that it is the case. I took the ground of the different directions to the temporal relation to be a primitive, irreducible difference and attempted to explain our different attitudes (relief, anticipation) in terms of the simple temporal relation of succession and our different mental states and experiences at different tenseless clock times toward one and the same event. The anisotropy of time has nothing to do with it. I feel relief because the unpleasant event is earlier than my memory of it, and I feel anxiety because the unpleasant event is later than my anticipation of it. At the time when I have relief, I am also having the experience of things and events that I know take place after an unpleasant experience (e.g., feeling the numbness of the novocain wearing off), and when I feel anxiety, I am also having the experience of things and events that I know are precursors of my later unpleasant

experience, for example, seeing the dentist's office as I drive up to it. Since I know what "earlier" and "later" means by having experienced what relations those terms refer to, I can have different emotions toward the same event, depending on whether or not I judge it to be it is earlier, simultaneous, or later than the time at which I am conscious of remembering, perceiving, or thinking about it. If I am relieved that a remembered event is past, then I am reflexively aware (i.e., I judge) that the remembered event is earlier than the temporal perspective I have when I remember it. And when I anticipate a future event, I am reflexively aware (i.e., I judge) that the anticipated event is later than the perspective I have when I anticipate it. The reality of an A-theoretic ontology has nothing to do with it.

Craig appeals to our experience of temporal becoming as a further refutation of the B-theory:

The external world is presented to us as a tensed world. What could be more obvious than the fact that we see things coming to exist and ceasing to exist, that we experience events happening? . . . Yet the world of temporal becoming is even more obvious to us than the existence of the external world itself. For in the inner life of the mind we experience a continual change in the contents of consciousness, even in the absence of any apprehension of an external world, and this stream of consciousness alone constitutes for us a temporal series of tensed events.<sup>17</sup>

There are two main problems with this passage. First, while it is obvious that we see things coming to exist and ceasing to exist, it is not obvious that Craig's presentist ontology is true. In fact, it is false, as I have shown. Hence the appeal to the obvious fact of generation and corruption does not support the reality of A-time. Second, the fact that the inner life of the mind is experienced as a continual change does not imply that the series of events we experience come marked out as past, present, and future rather than earlier and later. Indeed, on the B-theory, the continual changing stream of consciousness is a temporal series of B-series events and not tensed events. The fact that our experience divides events into past, present, and future might be explained by reference to our temporal perspective and our temporal relations to those events, rather than by the fact that they are *really* past, present, and future.

For similar reasons, I find his remarks on my debate with Kiernan-Lewis unconvincing. I argued that according to the B-theorist, we cannot know that a headache has ceased to exist in any A-theoretic sense, since no headache does in fact cease to exist in that sense. Thus, Kiernan-Lewis cannot argue that since we all know what it is like for a headache to cease to exist, and the B-theory cannot account for this, the B-theory must be false. Craig's comment on this criticism of Kiernan-Lewis is that

even if the B-theorist [Oaklander] denies us the propositional knowledge that our headache has ceased, he cannot deny the phenomenological fact that we know what it is like to be aware that our headache has ceased. On the B-theory I have an undeniable awareness or experience of things' really ceasing to exist, even though they do not; in other words I am deceived by non-veridical experiences.<sup>18</sup>

From my point of view, this argument begs the question, for I have argued that we do not have an awareness of things really ceasing to exist because our experience is not equivalent to the A-theoretic account of it. The claim that Craig (and Lewis) make is that the very awareness of temporal becoming involves a becoming of awareness, but this the B-theorist will deny. There is a continual change of awareness, but that does not imply that there is a becoming of awareness in an A-theoretical sense, since change just involves a succession of experiences strewn along the B-series. For these reasons, I do not believe that Craig has undermined the B-theorists' account of our experience of tense.<sup>19</sup>

## NOTES

1. William Lane Craig, *The Tensed Theory of Time: A Critical Examination* (Dordrecht: Kluwer Academic, 2000).

2. *Ibid.*, p. 165.

3. See Craig, *Tensed Theory of Time*, pp. 138, 164–65.

4. *Ibid.*, p. 137.

5. *Ibid.*, p. 138, my emphasis.

6. *Ibid.*, p. 165.

7. *Ibid.*, p. 138.

8. Consider that in criticizing George Schlesinger, Craig says that "absolute becoming is necessary, but it goes too far to specify that such becoming takes the metaphysical shape of a 'now' which literally moves along the B-series of events. The feeling of relief is rational only if an event which was present no longer is; but whether that event existed before becoming present and exists after ceasing to be present is a further metaphysical question, which I discuss in my *The Tenseless Theory of Time: A Critical Examination*" (*Tensed Theory of Time*, p. 152). He has also vehemently argued against other A-theorists such as Storrs McCall, Quentin Smith, and A. N. Prior.

9. Craig, *Tensed Theory of Time*, p. 165.

10. For a nonstandard version of the new B-theory, see essay 25.

11. Craig, *Tensed Theory of Time*, p. 139.

12. Quentin Smith, "The Phenomenology of A-Time," *Dialogos* 52 (1988): 147–48.

13. Craig, *Tensed Theory of Time*, p. 139–40.

14. For a response to the objection that “this” reintroduces tense into the analysis, see essay 25.

15. In Ronald C. Hoy, “Explaining the Appearance of Temporal Passage,” *CHRONUS: The Annual Proceedings of the Philosophy of Time Society* 5 (2002–2003): 41–60, Hoy takes seriously the idea that ordinary temporal beliefs, including ones about mental occurrences, such as relief that an unpleasant event is over, can and ought to be replaced in a correct scientific image of reality. For that reason, it may be argued, as Hoy has in private correspondence, that Craig and Smith are insufficiently “theoretical” in trying to take experience at face value. See Hoy, “The Theoretical Character of Husserl’s Account of Time Consciousness,” in *The Importance of Time, Proceedings of the Philosophy of Time Society, 1995–2000*, ed. L. Nathan Oaklander (Dordrecht: Kluwer Academic, 2001), pp. 171–77, where he argues that even Husserl takes all perceptual temporal consciousness to involve (necessarily) a reflexive component. But he is not so naïve to think that ordinary folk in ordinary language would be able to articulate such reflexivity.

16. Craig, *Tensed Theory of Time*, p. 154.

17. Ibid., p. 159.

18. Ibid., p. 160.

19. I wish to thank Heather Dyke and Ronald C. Hoy for their helpful comments on earlier versions of this essay.

## B. Temporal Semantics



## *The New Tenseless Theory of Time*

### A Reply to Smith

Quentin Smith has argued that the two extant versions of the new tenseless theory of time (the “token-reflexive version” and the “date-version”) are open to insurmountable difficulties and so must be either radically reworked or abandoned in favor of the tensed theory.<sup>1</sup> The purpose of this paper is to defend the new tenseless theory against Smith’s objections. I shall argue that Smith’s central arguments raise irrelevant objections because they rest upon assumptions that are accepted by the old tenseless theory of time but are rejected by the new tenseless theory.

Recent defenders of the tenseless view have come to embrace the thesis that tensed sentences cannot be translated by tenseless ones without loss of meaning. Nevertheless, they have denied that the ineliminability of tensed language and thought entails the reality of temporal properties. According to the new tenseless theory of time, tensed discourse is indeed necessary for timely action, but tensed facts are not, since the truth conditions of tensed sentences can be expressed in a tenseless metalanguage that describes unchanging temporal relations between and among events.

On the token-reflexive version of the new tenseless theory, the temporal relation between a tensed sentence token and the event or date that such a judgment is about provides an objective basis for the truth value of any tensed sentence. For example, any token *S* of “It is now 1980” is true if and only if *S* occurs in 1980; any token *R* of “It was 1980” is true if and only if *R* is later than 1980, and so on. Thus, on the token-reflexive account, the truth conditions of tensed sentence and judgment tokens are tenseless facts.

Smith begins his argument against the token-reflexive account of the truth conditions of tensed sentences by noting that



(1) It is now 1980

entails the sentence

(2) 1980 is present.

In the language of facts, this means that there cannot be a fact statable by any token *S* of (1) unless there is a fact statable by any token *V* of (2). In other words, a fact statable by *S* implies a fact statable by *V*, and consequently a fact statable by *V* is among the truth conditions of *S*.<sup>2</sup>

As this passage makes apparent, Smith assumes that a logical entailment among sentences in ordinary language must be represented by a "logical entailment" among the facts that make those sentences true. That is, he assumes that since (1) entails (2), the truth conditions of (1) must entail the truth conditions of (2). He then argues that since the tenseless truth conditions (or the fact statable by any token *S*) of (1), namely, *S* occurs in 1980, do not entail the tenseless truth conditions (or the fact statable by any token *V*) of (2), namely, *V* occurs in 1980, he concludes that in addition to tenseless truth conditions, (1) and (2) must also have tensed truth conditions. As Smith puts it, the token-reflexive version of the new tenseless theory fails to establish that

tenseless facts are the *only* truth conditions of tensed sentence-tokens; tensed facts need to be assumed to account for the entailment-relations between tensed sentences. . . . [Token-reflexive] tenseless truth conditions could not explain the logical equivalence of "It is now 1980" and "1980 is present," since *S* occurs in 1980 neither implies nor is implied by *V* occurs in 1980.<sup>3</sup>

We may agree that tenseless truth conditions cannot explain the logical equivalence of (1) and (2), but that constitutes an objection to the tenseless view only if we presuppose a conception of analysis that is shared by proponents of the old tenseless theory of time but is rejected by my interpretation of the new theory.<sup>4</sup>

To begin to see what is involved in this last point, note that the early defenders of the tenseless view believed that a complete description or analysis of time could be symbolically represented in a nonindexical tenseless language. To give a complete description or analysis involves constructing a single language that performs two functions. First, in its "logical" function, this perspicuous or ideal language (IL) is a symbolic device for representing or transcribing the logic of sentences contained in ordinary language. For example, in ordinary language, arguments are given that involve the entail-

ment of one sentence by another, and in its logical function the IL represents the correct logical form that all sentences and all entailments in a natural language can take. The second function of the IL, call it the "ontological" function, is to provide a representation of the kinds of entities that there are as well as the facts that exist. One might conceive of the IL in its ontological function as containing expressions that are neither true nor false but are ontological explanations for (some) true sentences in ordinary language, or "stand-ins" for the facts represented by them. By assuming that both these functions could be performed by a single IL, the old tenseless theory drew ontological conclusions from logical considerations. Specifically, they argued that since the logic of ordinary temporal discourse could be represented in a tenseless language, the ontological nature of time consisted of unchanging temporal relations between terms that did not have tensed properties.

Given the assumptions concerning analysis implicit in the old tenseless theory, Smith's argument against the token-reflexive account is very strong. For in order to perform its logical function, the analysis of tensed discourse must be able to explain the inference from (1), "It is now 1980," to (2), "1980 is present." However, in order to perform its ontological function, the analysis of tensed discourse must represent those sentences as tenselessly expressing temporal relations between a sentence token and the time at which it occurs. The problem, then, is that the ontological description expressible in a tenseless language cannot explain the logical entailment of (2) by (1). Thus, on the tenseless view, the logical representation of tensed discourse is inadequate, and given that the logical and ontological representations are to be performed by a single language, it follows that the ontological representation is also inadequate and that, therefore, there must be temporal properties and tensed facts.

Thus, Smith does indeed have a point. He has shown that the token-reflexive account of tense cannot be a complete description or analysis of time insofar as it purports to represent, within a single language, both the logical form of ordinary temporal discourse and the metaphysical nature of time. But that is not an argument against the new tenseless theory of time because in rejecting the criterion of translatability as a method for determining the metaphysical nature of time, proponents of the new tenseless theory are, or should be, rejecting the conception of analysis upon which Smith's argument rests.

The new tenseless theory accepts the tensor's claim that tensed discourse and thought are ineliminable. It therefore agrees that any logically adequate representation of temporal language, that is, any language capable of representing the meaning and logical implications of our ordinary talk about time, must be tensed. The detenser denies, however, that from an ontological point of view, a perspective that attempts to represent the nature of time, that

tense is ineliminable. Smith understands very well that recent detensers maintain that tenseless sentences cannot be replaced by tenseless ones without loss of meaning. What he fails to appreciate is that in accepting the irreducible nature of tensed discourse, the new tenseless theory abandons the analytic ideal of arriving at a single language that is adequate for both ontological and logical investigations. Once these two functions of language are separated and kept distinct, it is open to the defender of the tenseless view to maintain that logical connections among sentences in ordinary language do not represent ontological connections between facts in the world. Thus, though (1) and (2) mean the same thing and entail each other, it does not follow that there must be a necessary connection between the facts that provide the basis for their truth. Nor does it follow that tensed facts must be introduced to explain their logical equivalence. According to the new token-reflexive account of time not only can two sentences, such as "It is now 1980" and "S occurs in 1980," with different meanings correspond to the same fact, but two sentences, such as (1) and (2), with the same meaning can correspond to different facts. These are the consequences of rejecting the conception of analysis upon which Smith's criticism is based. By failing to acknowledge them, Smith's argument, while applicable to the old token-reflexive version of the tenseless theory, is inapplicable to the new theory.

Smith's main argument against the "date-version" of the new tenseless theory of time also raises an irrelevant objection and for the same reason. On the date-analysis, temporal indexicals like "now," "this time," and "the present" as used on a given occasion, and proper names such as dates, are referring terms that rigidly designate a time. Thus, the truth conditions of the tensed sentence "It is now 1980" uttered in 1980 are expressible by the use of the necessary truth "1980 is at 1980" uttered at any time. And this is just the point. The metaphysical implications of tensed discourse are nil. An event or time being now is nothing more than its occurring at the time at which it occurs.

Smith attempts to avoid that conclusion by arguing that a 1980 token of "It is now 1980" is logically contingent and for that reason must impart the tensed information that 1980 has the property of presentness. He begins his argument by claiming that "the date '1980' in its normal use expresses the sense that is also expressible by an attributive use of the definite description 'the 12-month period that is 1979 years later than the birth of Christ'."<sup>5</sup> He then argues that

a 1980 token of "now" refers to the set of all and only those events that, in fact, possesses the property of being the 12-month period that is 1979 years later than the birth of Christ. If we call this set "A," we can say that the 1980 token of "It is now 1980" directly refers to A and asserts the identity of A with the 12-month period that is 1979 years later than the birth of Christ.

But this identity is contingent! For there are possible worlds in which A is not the 12-month period that is 1979 years later than the birth of Christ.<sup>6</sup>

Smith's reasoning is valid, but his conclusion, that "the 1980 token of 'It is now 1980' is only contingently true" constitutes an objection to the new tenseless theory only if he confounds the two functions of language that the new theory insists must be distinguished.

To see why this is so, consider that in ordinary language the date expression "1980" has the same meaning as "the twelve-month period that is, 1979 years later than the birth of Christ." Thus, if the representation of "It is now 1980" is to preserve its informational content and capture its meaning, then we cannot transcribe it as the necessary truth "1980 is at 1980." In other words, in a logically adequate language—a language that represents the meanings and entailments of sentences in a natural language—"1980" cannot be a rigid designator of the time referred to by a 1980 use of "now," since if it was, then the transcription would not convey the information that we ordinarily associate with a tensed sentence like "It is now 1980." On the other hand, in an ontologically adequate language—a language used to represent the metaphysical nature of time—"1980" cannot be replaced by the description that captures its meaning, since if it was then, the transcription would no longer be a perspicuous representation of the tenseless theory of time.

If, however, we keep the logical and ontological functions of language distinct, then detensers can agree that in a language constructed to represent the logical form of sentences in ordinary language, "It is now 1980" is contingent, while also maintaining that in a language constructed to represent the metaphysical nature of time it is a trivial truth perspicuously represented as "1980 is at 1980."

Smith's central arguments against both versions of the new tenseless theory of time result from a fusing of logical and ontological considerations. He thereby presupposes a methodological framework or conception of analysis shared proponents of the old tenseless theory but rejected by defenders of the new tenseless theory. Although Smith is not alone in assuming this framework, I believe that detensers are correct in abandoning it. Since it is beyond the scope of this paper to give a general argument in support of that point, I shall conclude with the more modest claim to have defended the new tenseless theory of time against Smith's central objections.

## NOTES

1. Quentin Smith, "Problems with the New Tenseless Theory of Time," *Philosophical Studies* 52 (1987): 371–92. See Smith's article for references of proponents of the new and old tenseless theories of time. Contrary to what Smith says, I *do* subscribe to a version of the new tenseless theory in my book, *Temporal Relations and Temporal Becoming: A Defense of a Russellian Theory of Time* (Lanham, MD: University Press of America, 1984), pp. 109–35.

2. Quentin Smith, "Problems with the New Tenseless Theory," p. 379.

3. *Ibid.*, p. 384.

4. The conception of analysis that I shall discuss has its roots in the philosophy of logical atomism. Those roots are examined in L. Nathan Oaklander and Silvano Miracchi, "Russell, Negative Facts, and Ontology," *Philosophy of Science* 47 (1980): 434–55. See also Edwin B. Allaire, "Relations and Recreational Remarks," *Philosophical Studies* 34 (1978): 81–90.

5. Smith, "Problems with the New Tenseless Theory," p. 387.

6. *Ibid.*

## *A Defense of the New Tenseless Theory of Time*

As we ordinarily think and talk about time, it is a truism that time passes. Dates, like the events that occur at those dates, are once in the future, then become present, and then recede into the more and more distant past with the passage of time. To think of time as passing, and events as changing with respect to the characteristics of pastness, presentness, and futurity, is to conceive of the transient aspect of time or temporal becoming. The central issue in the philosophy of time that we have been concerned with throughout this book is the ontological nature of temporal becoming. Do events exemplify the nonrelational properties of *pastness*, *presentness*, and *futurity*, as the tensed theory maintains, or are they intrinsically tenseless, exemplifying only the unchanging relations of *simultaneity*, *earlier*, and *later*, as the tenseless view believes? Although the issue is metaphysical, the dispute between the tensed and the tenseless views has, until quite recently, centered on temporal language. Defenders of the tenseless view have often argued that since tensed discourse could be eliminated or translated without loss of meaning into tenseless discourse, an adequate account of the nature of time need not countenance any special kind of tensed fact or tensed properties. In other words, the old tenseless theory of time assumed that a logical analysis of ordinary language that eliminates tensed discourse supported an ontological analysis of time that rejects transient temporal properties. The tensor shared that assumption but argued that since no tenseless translations were successful, temporal becoming in some form or another (for example, as the acquiring and shedding of transitory temporal properties, or as the moving NOW) is necessary in any adequate account of time. Tensors claim, in other words, that because tensed discourse is ineliminable, the detenser is mistaken and tensed properties and facts must exist.

For a variety of reasons, some having to do with arguments in the phi-

losophy of time and some having to do with arguments in the philosophy of language, recent defenders of the tenseless view have come to embrace the thesis that tensed sentences cannot be translated by tenseless ones without loss of meaning.<sup>1</sup> Nevertheless, recent detensers have denied that the ineliminability of tensed language and thought entails the reality of temporal properties. According to the new tenseless theory of time, our need to think and talk in tensed terms is perfectly consistent with its being the case that time is tenseless. Tensed discourse is indeed necessary for timely action, but tensed facts are not, since the truth conditions of tensed sentences can be expressed in a tenseless metalanguage that describes unchanging temporal relations between and among events.

In a provocative article, Quentin Smith offers a provocative response to the new tenseless theory of time.<sup>2</sup> He argues that since the new tenseless theory is faced with insurmountable problems, it must be either radically reworked or abandoned in favor of the tensed theory. Although he offers numerous arguments in support of these contentions, his central arguments purport to show that the detenser gives a logically inadequate analysis of ordinary temporal discourse and a metaphysically inadequate (because incomplete) account of the truth conditions of tensed sentences. The purpose of this essay is to argue that the tenseless theory of time need not be abandoned or radically reworked (although perhaps it needs to be clarified), since the difficulties Smith raises are indeed surmountable.

## I

Smith launches his attack on the new tenseless theory by criticizing D. H. Mellor's token-reflexive version of it. On Mellor's view, the world is intrinsically tenseless in that events and things are not in themselves past, present, or future. Of course, we do make judgments (and have beliefs) about the tense of things, and such judgments (or beliefs) are sometimes true, but the truth conditions of a tensed sentence or judgment-token can be given in terms of a tenseless and not a tensed fact. On the token-reflexive account that Mellor propounds, the temporal relation between the date at which one says, thinks, or writes down a tensed sentence and the event or thing that it is about provides an objective basis for the truth-value of any tensed sentence. A present tense sentence token is true if, and only if, it occurs (exists tenselessly) at (roughly) the same time as the event it is about; a past-tense token is true if, and only if, it occurs at a time later than the event it refers to, and so on. Thus, on the token-reflexive account, the truth conditions of tensed sentence and judgment-tokens are tenseless facts.<sup>3</sup>

Mellor argues that we should not be misled into thinking that tensed discourse is eliminable, translatable, or has the same meaning as tenseless discourse. For a necessary condition of one sentence being the translation of another is that they both have the same truth conditions, but tensed sentences *have different truth conditions* from tenseless ones.<sup>4</sup> At this point, through a judicious selection of quotes, Smith argues that Mellor contradicts himself because he also maintains that tensed sentences *have the same truth conditions* as the tenseless sentences that state their truth conditions and thus *are* translatable in terms of the tenseless ones. Consequently, Smith claims that Mellor's tenseless account of time is internally inconsistent, since he maintains that tensed sentences both do and do not have the same truth conditions as tenseless sentences and that tensed sentences both are and are not translatable by tenseless ones.<sup>5</sup>

At the outset, we may admit that Mellor is not always as clear as he should be and that, therefore, there is some basis in the text for attributing an internal inconsistency to him. Nevertheless, the token-reflexive version of the new tenseless theory of time can avoid the contradiction Smith appears to uncover by distinguishing between sentence-types and sentence-tokens. To see how this distinction helps, let us begin by clarifying it. A sentence-token is a particular object that exists at a definite time and a definite place. A sentence-type is either the sum of all the tokens of that type or the geometrical property (the shape) that is common to all tokens of that type. As Mellor puts it:

For me, the important feature of tokens as opposed to types is that a token is a particular object, in this case an arrangement of ink on the particular piece of paper you are looking at, i.e. a thing which is in a definite place at every moment of its existence. The sentence type, by contrast, is a much more widespread object than any of its tokens, if indeed it is an object at all. The sentence type you are now reading a token of, for instance, is scattered across the world as widely as—I hope—copies of this book are. Sentence types are in fact not so much objects as properties of objects, namely of all the objects that are their tokens.<sup>6</sup>

Now, consider the sentence type

(1) It is now 1980

and call it "S." What are the truth conditions of S? Insofar as S is construed as a tensed sentence-type, it does not strictly speaking have truth conditions; only its tokens do. As a consequence, we should also say that, strictly speaking, tensed sentence-types have no truth value. Nevertheless, we can



speak of the "truth conditions" of *S* in a Pickwickian sense, in which case they will vary from time to time, that is, they will depend on when a token of *S* is thought or uttered or written down. A sentence-token "is uttered" when the words, either written or spoken, of which it is composed are produced on a given occasion. And in the case of token-reflexive sentences like *S*, "is true" and "is false" apply to sentence-tokens. Thus, a token of *S* uttered in 1980, call it "*S*(1980)," is true because it occurs (exists tenselessly) in 1980, whereas another token of *S* uttered in 1981, call it "*S*(1981)," is false because it does not occur in 1980. Clearly, then, "some tokens of the same tensed type will differ in truth-value depending on their date." On the other hand, none of the tokens of the same tenseless type will vary in truth-value from time to time. For example, all tokens of "*S*(1980) occurs in 1980" have the same truth-value regardless of the date.<sup>7</sup> Thus, the truth conditions of (the different tokens of) the sentence-types "*S*" and "*S*(1980) occurs in 1980" are different because a token of the tenseless sentence may be true at a time when a token of the tensed sentence is false.

However, if we are considering "*S*" and "*S* occurs in 1980" as sentence-tokens, then their truth conditions are the same: they are true if, and only if, *S* occurs in 1980. Smith, on the other hand, interprets Mellor to be saying that "any token of '*S* occurs in 1980' has different truth conditions than any token *S* of 'It is now 1980' because *S* is true if it occurs in 1980 and '*S* occurs in 1980' if true at all is true 'at all times' it is tokened."<sup>8</sup> But this way of putting the point is misleading. If we are talking about a token of "*S* occurs in 1980," then it is nonsense to speak of it as being true at all times it is tokened. Tenseless sentence-types are "true" (or "false") at all times they are tokened (that is, tokens of a tenseless sentence-type are either all true or all false), but tokens are not themselves tokened at different times. Furthermore, to maintain that *S* is not true "at all times" is ambiguous and masks a confusion. If "*S*" stands for a sentence-type, then any token of it is true if it is produced in 1980. But if "*S*" stands for a 1980 token of "It is now 1980," then, like the tenseless sentence that states its truth conditions, *S* is true at all times. To quote Mellor once again: "The whole point of the type/token distinction, . . . is that tensed tokens as opposed to types, have definite and temporally unqualified truth values. . . . A saying or writing of 'e is past' which occurs before *e* always was and always will be just plain false."<sup>9</sup> Thus, it does not follow that tensed sentence-tokens have different truth conditions from the tenseless sentence-tokens that state these truth conditions. Smith could only think they were different by confusing sentence-tokens with sentence-types. More importantly, Mellor's version of the token-reflexive theory can be modified to avoid an alleged internal inconsistency. For there is no inconsistency in claiming that tensed and tenseless sentence-types have tokens with different truth conditions, while also claiming that tensed and tenseless sentence-tokens themselves have the same truth conditions.

From Smith's point of view, this way out of the contradiction will provide Mellor with little solace. For if tensed tokens have the same truth conditions as tenseless ones, then Mellor's view reduces to the old tenseless theory of time, which he explicitly denies. As Smith argues:

Mellor's *only* ground for holding that tokens of tensed sentences cannot be translated by tokens of tenseless sentences is that these tokens have different truth conditions, and once these truth conditions are seen to be the same, Mellor is deprived of his reasons for subscribing to the thesis of the new theory that tensed tokens are untranslatable.<sup>10</sup>

Smith's reasoning here is not very convincing. In the first place, for Mellor, having the same truth conditions is a necessary but not a sufficient condition for translatability. Thus, even if a tensed and tenseless sentence-token have the same truth conditions, it does not follow that the former can be translated by the latter. Furthermore, it is simply not true that Mellor's only ground for denying the translatability thesis is that tensed and tenseless sentences have different truth conditions. Mellor gives other reasons for denying the translatability thesis. He claims that in order for two sentences to have the same meaning, they must have the same use. Now, one of the chief uses of tensed sentences is to tell people what time it is. For example, it is perfectly correct to answer the question "When are we going to the movies?" with the retort "We are going to the movies now." On the other hand, we cannot use the tenseless sentence "Our going to the movies" is simultaneous with the token "We are going to the movies now" to inform a questioner when we are going to the movies. Hence, Mellor concludes that tensed and tenseless sentence-tokens have different meanings, and that is one reason, other than their having different truth conditions, why tokens of tensed sentences cannot be translated by tokens of tenseless sentences.<sup>11</sup>

There are other reasons for denying the translatability thesis, but we need not pursue them, for on that point recent detensors and tensors both agree. Moreover, the crucial question is not whether Mellor's view is internally consistent but rather whether the token-reflexive version of the new tenseless theory of time is true. And that turns on the following question: Do tokens of tensed sentences have only those tenseless truth conditions stated by tokens of tenseless sentences? Smith argues that they do not, since tensed facts must also be introduced, but I shall argue that his arguments fail.

Smith begins his argument against the token-reflexive account of the truth conditions of tensed sentences by noting that

(1) It is now 1980

entails the sentence

(2) 1980 is present.

In the language of facts this means that there cannot be a fact statable by any token S of (1) unless there is a fact statable by any token V of (2). In other words, a fact statable by S implies a fact statable by V, and consequently a fact statable by V is among the truth conditions of S.<sup>12</sup>

Smith then claims that the tenseless truth conditions (or the fact statable by any token S) of (1), namely, S occurs in 1980, do not entail the tenseless truth conditions (or the fact statable by any token V) of (2), namely, V occurs in 1980 (for (1) could be true although no token V of (2) is uttered). He concludes that tenseless truth conditions are not sufficient to explain the logical relations between (1) and (2), tensed truth conditions must be introduced for that purpose. Thus, Mellor's token-reflexive version of the tenseless theory fails because

he could not establish that the tenseless facts are the only truth conditions of tensed sentence-tokens; tensed facts need to be assumed to account for the entailment-relations between tensed sentences for which Mellor's tenseless truth conditions could not account. . . . Mellor's tenseless truth conditions could not explain the logical equivalence of "It is now 1980" and "1980 is present", since *S occurs in 1980* neither implies nor is implied by *V occurs in 1980*.<sup>13</sup>

There does indeed *appear* to be a difficulty here for the token-reflexive analysis. For if one sentence logically implies a second, then we should be able to justify the inference on the basis of truth conditions; we should be able to show that what makes the first true must make the second true. If we cannot do this, there would seem to be grounds for concluding either that we are mistaken about the putative entailment relations or that we have not got the right truth conditions for the sentences in question.

Although Mellor does not directly consider this objection, his most recent pronouncements on time and tense suggest a way out of the difficulty Smith raises.<sup>14</sup> It involves employing Kaplan's views on demonstratives and indexicals and arguing that one can thereby account for the logical equivalence of (1) and (2) in terms of tenseless truth conditions.<sup>15</sup> According to Kaplan (and Mellor), the meaning of an indexical sentence-type (and all of its tokens) is a semantic function (rule) from facts about tokens of that type (their context of utterance) to their tenseless truth conditions. In particular, the meaning of (1) and (2) is a semantic function from the context of utterance, namely, the time at which their tokens are produced, to their tenseless

truth conditions. Since the context of utterance varies, so do the truth conditions of their tokens, but in each case, the truth conditions are tenseless. Thus, any token of (1) is true with respect to the context in which it is produced (namely, the time at which it is uttered), if, and only if, the year of that context is 1980, and the same may be said of any token of (2). Consequently, since the truth conditions of (tokens of) (1) and (2) are the same, the difficulty of getting (1) and (2) to be logically equivalent vanishes.<sup>16</sup>

## II

In the second part of his paper, Smith critically examines the "date-version" of the new tenseless theory of time. Like the token-reflexive account, the date-version of the tenseless theory is not new. Earlier proponents of the tenseless theory such as Russell, Goodman, and Quine adopted it.<sup>17</sup> In its old form, the date-version of the tenseless view maintained that a sentence in which the word "now" or its equivalent is used can be translated through the use of a second sentence formed by replacing the "now" in the first sentence with any date-expression used to refer to the time at which the first sentence was uttered. Consider, for example, Quine's statement of this view:

Logical analysis is facilitated by requiring rather that each *statement* be true once and for all or false once and for all, independently of time. This can be affected by rendering verbs tenseless and then resorting to explicit chronological descriptions when need arises for distinctions of time. . . . The sentence (1) 'Henry Jones of Lee St., Tulsa, is ill' uttered as a tensed sentence on July 28, 1940, corresponds to the statement 'Henry Jones of Lee St., Tulsa, is [tenseless] ill on July 28, 1940.'<sup>18</sup>

The new date-version denies the thesis of linguistic reducibility and claims instead that corresponding to every tensed sentence-token is a tenseless sentence that gives its truth conditions. For example, Smart claims that

the notion of becoming present seems a pretty empty notion, and this is even more obvious when we recognize the indexical nature of words like "present," "past," and "future." When a person P utters at a time t the sentence "Event E is present" his assertion is true if, and only if, E is at t. More trivially, when P says at t "time t is now" his assertion is true if, and only if, t is at t so that if P says at t "t is now" his assertion is thereby true.<sup>19</sup>

This view has recently been modified, renamed the coreporting thesis, and defended by Richard Gale and Michelle Beer. Again, the heart of the core-

porting thesis is that temporal indexicals like "now," "this time," and "the present," as used on a given occasion, are referring to terms that denote a time.<sup>20</sup> On this view, if a temporal indexical sentence such as "Event E is now occurring" is uttered at  $t_1$ , then it reports an event that is identical with the event reported at any time by the use of the nonindexical sentence "Event E is occurring at  $t_1$ ." On this view, indexicals and proper names such as dates are rigid designators. Thus, a tensed sentence like "It is now 1980" uttered in 1980, reports the same fact as the necessary truth reported by "It is 1980 in 1980" or "1980 is at 1980." It does not follow, and it is not part of the coreporting thesis to maintain that "It is now 1980" and "1980 is at 1980" express the same proposition or have the same meaning. On this version of the new tenseless theory of time, as on the other, two sentences can have different meanings, while still having the same truth conditions or corresponding to the same fact.

Smith's main arguments against the date-version of the new tenseless theory of time purport to demonstrate that the truth conditions of tensed sentences are not what the tenseless theory claims them to be. He does this by arguing that (i) a 1980 token of "It is not 1980" is logically contingent and that (ii) Smart's truth conditions analysis of "E is present" is mistaken. His first argument in support of (i) is stated as follows:

[E]ven if tokens of 'now' are rigid designators, it is false that 1980 tokens of "It is now 1980" are tautologically true. . . . Now, for any tautologically true sentence-token, the truth of the token is entailed by premises stating the relevant tautological fact and that the token occurs. But

(1) 1980 is at 1980,

and

(2) S occurs,

do not entail

(3) S is true.<sup>21</sup>

It is not clear to me why (2) alone does not entail (3). Since "S" is the name of a 1980 token of "It is now 1980," premise (2) could also be read as

(2') A 1980 token of "It is now 1980" occurs

and (2') does entail (3). Smith might object that (2) cannot be replaced by (2') because

"S" is a proper name of the sentence token and (if the Kripke-Donnellan theory is correct) thereby directly refers to S, without imparting any information about it, such that it has the property of occurring in 1980.<sup>22</sup>

I would reply that since "S" names a sentence that contains a 1980 token of "now," (2) can be replaced by (2'), or at least (2) entails (2'), which in turn entails (3).

But suppose that Smith is correct and (3) is not entailed by (1) and (2), so that a 1980 token of "It is now 1980" is logically contingent. What metaphysical significance does that have? Plenty, according to Smith, for

it shows . . . that rigidly designating 1980 is not the only semantic property of ["now"]. That this token in addition imparts some information about 1980. . . . It must also impart the tensed information that 1980 is present. The 1980 token of "now" rigidly designates 1980 and ascribes to it the property of presentness.<sup>23</sup>

Clearly, Smith is drawing ontological conclusions from logical investigations, but I do not think this follows merely from the fact that a 1980 token of "It is now 1980" is contingent. Before we can see why this is so, let us consider one more reason Smith gives for supposing that a 1980 token of "now" ascribes the property of presentness to 1980.

Smith argues that if "It is now 1980" and "1980 is present" are contingent sentences, then the fact that 1980 is at 1980 cannot explain the logical equivalence of "It is now 1980" and "1980 is present" or of the 1980 tokens of these sentences. For no tautological fact can make two logically contingent sentence tokens true in all and only the same circumstances. A logically contingent fact is required, such as the fact that *it is now 1980*.<sup>24</sup>

On the one hand, Smith's argument raises an irrelevant objection, for he does not seem to realize that the date-version analysis of the truthmakers of tensed sentences need not also explain the logical equivalence of (1) and (2); the synonymy of "present" and "now" in ordinary usage is sufficient to do that. On the other hand, Smith does raise at least a *prima facie* problem for the date analysis. He claims that any token "It is now 1980," uttered in 1980, is only contingently true; the same token might have occurred in 1990 and so have been false. However, the truth conditions ascribed to it by the date analysis, namely, *1980 is at 1980*, could not have failed to obtain. Consequently, on the date analysis a 1980 token of "It is now 1980" is necessarily, not contingently, true. However, if a token is genuinely only contingently true, then no sentence that is necessarily true can state that token's truth conditions. Thus, Smith con-

cludes that the date analysis must be mistaken and that the truth conditions of a 1980 token of "It is now 1980" must include the fact that *it is now 1980*.

In reply, a defender of the date analysis may concede that a 1980 token of "It is now 1980" is contingent but allow its truth conditions to vary from context to context (in this case, the contexts are possible worlds). In the actual world, its truth conditions are that *1980 is at 1980*, so the token is actually true. In another world, where the token occurs at 1990, its truth conditions are that *1990 is at 1980*, and so it is false in that world. Thus, even though the token in question is contingent, the proper analysis of its truth conditions does not yield any tensed fact or tensed property.

Smith's final criticism of the new tenseless theory concerns the date-version analysis of the truth conditions of contingent sentence tokens. On this analysis, when for example, John Doe utters in 1814 the sentence "The Battle of Waterloo is present," his utterance is true if and only if the Battle of Waterloo occurs in 1814.

Let us call John's utterance "U." Is a necessary condition of U's truth that the Battle of Waterloo occur in 1814? The year 1814 is the set of all and only the events that occur during the 12-month period that possesses the property of being 1813 years later than the birth of Christ. Let us call the set that actually possesses this property "B."<sup>25</sup>

Smith then considers a possible world ( $W_1$ ) in which U is true (because it occurs when the Battle of Waterloo occurs) but in which B is not 1,813 years later than the birth of Christ (because Christ was not born). On the basis of  $W_1$ , he concludes that "the occurrence of the Battle of Waterloo in 1814 is not a necessary condition of U's truth."<sup>26</sup> I shall argue, however, that whether we understand "1814" attributively or referentially Smith's argument is unsuccessful.

In ordinary discourse, the date-expression "1814" is used to attribute to an event or set of events the relational property of being 1,813 years later than the birth of Christ. In metaphysical discourse, however, "1814" is used to refer to the moment or period of time denoted by that date. We shall assume, as Smith apparently does, that the referent of "1814" is a certain set B of successive and overlapping events. Now, admittedly, there is some possible world ( $W_1$ ) in which B does not have the property ordinarily associated with the use of "1814." Nevertheless, the possibility of  $W_1$  does not demonstrate that the occurrence of the Battle of Waterloo in 1814 is not a necessary condition of U's being true. For if we are using "1814" to attribute a certain property to the events in set B, then  $W_1$  is a world where neither the Battle of Waterloo nor U occur in 1814. But if U does not occur in 1814, then U cannot be a true 1814 token of "The Battle of Waterloo is present." Thus, if "1814" is being used attributively, then Smith is mistaken in main-

taining that U's truth is compatible with the battle's not occurring in 1814. On the other hand, if we give "1814" a *de re* reading and claim that "1814" refers directly to B, then the existence of the possible world Smith conjures up cannot prove his point. For even in  $W_1$  both the Battle of Waterloo and U belong to set B, that is, the time denoted by "1814," and so U is true if, and only if, the Battle of Waterloo occurs in 1814.

To his credit, Smith considers giving a *de re* reading of "1814" but does not think that avoids the problem. There is, he claims, a possible world ( $W_3$ ) where "U is true, but the Battle of Waterloo does not belong to B."<sup>27</sup>  $W_3$  is a world in which John Doe utters U while the Battle of Waterloo is occurring but in which a leaf that did fall in the actual world does not fall. Smith continues:

Since sets with different members are different, the set in  $W_3$  is not the set B but some different set C. This shows that U is true in  $W_3$  even though the Battle of Waterloo is not a member of B. Therefore, the Battle's occurrence in 1814 is not a necessary condition of U's truth even if "1814" is read *de re* as referring directly to B.<sup>28</sup>

I disagree. What Smith's argument shows is that it is possible for U to be true even if the Battle of Waterloo is not a member of the set denoted by a *de re* reading of "1814." But why would that undermine the date-version analysis of the truth conditions of U? Insofar as U is a token, it has a date. Thus, even if there is a possible world,  $W_3$ , in which U and the Battle of Waterloo do not belong to B and so do not exist in 1814, they still exist at the same time. In  $W_3$  a different date, say, "1814\*," will refer directly to set C, and then a token of "The Battle of Waterloo is present" uttered in 1814\* will be true if the Battle of Waterloo occurs in 1814\*. To put the point otherwise, "1814" may not denote a time that contains U and the Battle of Waterloo, but then there is another possible world,  $W_3$ , where some other time  $t$  contains U and the Battle of Waterloo, and in that world U is true at time  $t$  if the battle is at time  $t$ . Furthermore, if in  $W_3$  the Battle of Waterloo is not a member of B, and U is simultaneous with the battle, then U does not occur in B either. And if U does not occur in B, then U cannot be a true 1814 token of "The Battle of Waterloo is present." Thus, whether we interpret "1814" attributively or referentially, Smith cannot claim that (an 1814 token) U is true even if the Battle of Waterloo does not occur in 1814.

Smith has not shown that the (tenseless) occurrence of an event  $e$  at a certain time  $t$  is not a necessary condition for the truth of "Event  $e$  is present" uttered at time  $t$ . We have also seen that his earlier argument against the token-reflexive account failed to establish that it is internally inconsistent or that tenseless truth conditions are not sufficient to account for the truth of tensed



sentences. I conclude, therefore, that contrary to what Smith maintains, the new tenseless theory of time need not be abandoned or radically reworked.<sup>29</sup>

## NOTES

1. See, for example, Michelle Beer, "Temporal Indexicals and the Passage of Time," *Philosophical Quarterly* 38 (1988): 158–64; Jeremy Butterfield, "Indexicals and Tense," in *Exercises in Analysis*, ed. Ian Hacking (Cambridge: Cambridge University Press, 1985), pp. 69–87; Murray MacBeath, "Mellor's Emeritus Headache," *Ratio* 25 (1983): 81–88; Hugh Mellor, *Real Time* (Cambridge: Cambridge University Press, 1981), chap. 5; L. Nathan Oaklander, *Temporal Relations and Temporal Becoming* (Lanham, MD: University Press of America, 1984), chap. 4; and Keith Seddon, *Time* (New York: Croom Helm, 1987), chap. 13.

2. Quentin Smith, "Problems with the New Tenseless Theory of Time," *Philosophical Studies* 52 (1987): 371–92.

3. See Mellor, *Real Time*, chap. 2.

4. *Ibid.*, pp. 74–78.

5. Smith, "Problems with the New Tenseless Theory," pp. 374–78.

6. Mellor, *Real Time*, p. 35.

7. *Ibid.*, p. 100. I wrote the sentence-type as "S(1980) occurs in 1980" because, to be precise, "S occurs in 1980" does not have all true (or false) tokens. Since "S" is the name of a sentence-type, when tokens of S do not occur in 1980, tokens of "S occurs in 1980" will be false, but when tokens of S do occur in 1980, tokens of "S occurs in 1980" will be true. In other words, if "S" stands for a sentence-type, then the truth-value of (the tokens of) both "S" and "S occurs in 1980" will vary from time to time depending on their date.

8. Smith, "Problems with the New Tenseless Theory," p. 379.

9. Mellor, *Real Time*, pp. 99–100.

10. Smith, "Problems with the New Tenseless Theory," p. 387, my emphasis.

11. See Mellor, *Real Time*, pp. 74–88.

12. Smith, "Problems with the New Tenseless Theory," p. 379.

13. *Ibid.*, pp. 379–80.

14. Hugh Mellor, "I and Now," *Proceedings of the Aristotelian Society* 89, part 2 (1988–89): 79–94.

15. David Kaplan, "On the Logic of Demonstratives," *Journal of Philosophical Logic* 8 (1978): 81–98; repr. in *Propositions and Attitudes*, ed. Nathan Salmon and Scott Soames (Oxford: Oxford University Press, 1988), pp. 66–82.

16. In essay 25, I propose a different way out of the problem Smith raises for the token-reflexive account.

17. Willard van Orman Quine, *Elementary Logic* (New York: Ginn, 1941); Nelson Goodman, *The Structure of Appearance* (Indianapolis: Bobbs Merrill, 1966); Bertrand Russell, "Review of Hugh MacColl's *Symbolic Logic and Its Applications*," *Mind* 15 (1906): 255–60.

18. Quine, *Elementary Logic*, p. 6.

19. J. J. C. Smart, "Time and Becoming," in *Time and Cause*, ed. Peter van Inwagen (Dordrecht: Reidel, 1981), p. 5.

20. Richard Gale, "An Identity Theory of the A- and B- Series," (unpublished MS, 1984), and Michelle Beer, "Temporal Indexicals and the Passage of Time," *Philosophical Quarterly* 38 (1988): 158–64; repr. in *The New Theory of Time*, ed. L. Nathan Oaklander and Quentin Smith (New Haven, CT: Yale University Press, 1994), pp. 87–93.

21. Smith, "Problems with the New Tenseless Theory," p. 386.

22. *Ibid.*, p. 387.

23. *Ibid.*

24. *Ibid.*, my emphasis.

25. *Ibid.*, p. 388.

26. *Ibid.*, p. 389.

27. *Ibid.*

28. *Ibid.*

29. Smith furthers the debate between the new tenseless and the tensed theories in Quentin Smith, "The Co-reporting Theory of Tensed and Tenseless Sentences," *Philosophical Quarterly* 40 (1990): 213–22; repr. in *New Theory of Time*, pp. 94–103. However, a consideration of his discussion lies beyond the scope of this essay.



## *Two Versions of the New B-Theory of Language*

### 1. INTRODUCTION

THE most fundamental debate in the philosophy of time concerns the status of temporal becoming. Do events really pass from the future to the present and into the past, as A-theorists such as C. D. Broad, George Schlesinger, Quentin Smith, Storrs McCall, Michael Tooley, William Lane Craig, and others have maintained, or is the passage of time a myth and an illusion, as B-theorists such as Bertrand Russell, Donald C. Williams, Adolf Grünbaum, J. J. C. Smart, L. Nathan Oaklander, Robin Le Poidevin, Hugh Mellor, Heather Dyke, and others have maintained?<sup>1</sup> That is one issue. Another closely connected issue concerns the proper “analysis” of tense in ordinary language and thought. We express the passage of time (or the myth of passage) by means of tensed discourse and tensed beliefs. For example, we ordinarily say, at different times, that an event *will* occur, *is* occurring, and *did* occur, and it is commonplace to believe that, for example, *today* is Monday, *tomorrow* will be Tuesday, and *yesterday* was Sunday. Two questions of analysis concerning these ordinary tensed sentences and beliefs immediately arise: (1) What is the meaning of tensed discourse? and (2) What are the truth conditions or truthmakers of tensed sentences? A third issue, intimately related to the other two, concerns the reference of temporal indexicals (such as “now,” “yesterday,” and “tomorrow”). Do temporal indexicals refer directly to some items (such as times or sentence tokens), or do they refer indirectly to items via a mediating sense (such as the property of *presentness*); or do they, perhaps, perform both functions, or neither?

In recent articles and books on time, defenders of the A-theory have attacked the date-analysis, the token-reflexive analysis, and the sentence-type analysis of the meaning and truth conditions of tensed sentences as well as

the B-theory account of temporal indexicals. In his most recent publications on the topic, William Lane Craig claims that "if Quentin Smith delivered the mortal blow to the New B-Theory of Language, then Laurie Paul (1997) has written its obituary."<sup>2</sup> Smith is more circumspect. Although he "agree[s] with Craig that 'the B-theory of tense and time, though still widely held, is a theory in retreat,'"<sup>3</sup> he thoughtfully acknowledges that "some criticisms of the tensed theory, such as Graham Nerlich's penetrating essay 'Time as Spacetime' (1998) and Oaklander's equally forceful 'McTaggart's Paradox and Smith's Tensed Theory of Time' (1996) require responses before the A-theorist can say the tensed theory of time is fully justified as it stands."<sup>4</sup> Smith's last point is very important, since if, as Nerlich and Oaklander argue, there are no tensed propositions, nonrelational tensed properties, or tensed facts, then it is impossible that there are tensed truth conditions in any ontologically significant way. Thus, either all tensed judgments are false, or the B-theory account of their truth conditions must be correct after all. Or is there some third alternative? I shall return to this question later.

What, then, of the plethora of arguments given by Smith, Craig, and others? Do they really sound the death knell for the B-theory of time? I don't think so, although the primary concern of this essay will not be with them but with the (truth-conditional) method that protagonists in the debate have more or less taken for granted in their discussions. According to this method, if the truth conditions of one sentence can be given by means of another sentence, then the sentence stating the truth conditions either *has* or *gives* (or states) the meaning of the other sentence, and, if those truth conditions obtain, then the sentence expressing them represents the correct ontology of time. The purpose of this essay is to cast doubt on the method of truth conditions by arguing that tenseless truth conditions sentences cannot have, give, or state the (complete) meaning of tensed sentences *and* also depict the metaphysical truth about time.<sup>5</sup> As a result, the new B-theory of *language* will have to be modified, but when it is, the new theory of *time* will remain intact.

In the course of my discussion, I shall explicate two different versions of the new B-theory of language. What should be emphasized, however, is that on all versions of the B-theory, the only temporal facts are B-facts, and the only intrinsically temporal constituents of B-facts are B-relations. All versions of the B-theory, whether old or new, reject A-facts and A-properties (such as *pastness*, *presentness*, and *futurity*). Thus, though there are methodological disagreements among, for example, Mellor, Butterfield, Beer, Le Poidevin, Oaklander, Dyke, and Smart, there are no significant ontological disagreements among them.<sup>6</sup> Whether we are talking about the old or the new B-theory, temporal reality does not contain an ontological reflection of verbal or conceptual tense. In order to clarify the two versions of the new theory, it will be necessary to say something about the old B-theory of time

and the related notions of meaning and truth conditions. To those topics I shall turn next.

## 2. TRUTH CONDITIONS AND MEANING

Although the notion of "truth conditions" is well entrenched in the philosophical lexicon, philosophers have meant different things by it. In the standard semantic use, a truth conditions sentence states necessary and sufficient conditions for a sentence's being true (or false). Ludlow expresses this sense as follows:

If the semantics of natural language takes the form of a T-theory, and hence the semantics of a sentence is given by theorems like (3), then the right-hand side of the theorem—the portion following "if and only if"—states the literal truth conditions of the sentence of the left-hand side.

(3) "Snow is white" is true if and only if snow is white.

In this case, the truth conditions are that snow is white.<sup>7</sup>

I have detected three other notions of truth conditions in the literature. Robin Le Poidevin distinguishes truth conditions from truthmakers as follows: "The *truth-conditions* of some proposition *p* are whatever must obtain for *p* to be true. The *truth-makers* of a token belief that *p*, in contrast, are the facts which make the truth-conditions of *p* obtain on a particular occasion."<sup>8</sup> For Le Poidevin, truth conditions are not necessary and sufficient for truth but only *necessary* (whatever *must* obtain) for the truth of some proposition *p*.<sup>9</sup> For Smith, on the other hand, truth conditions are *sufficient* conditions for truth. He says that "'the truth conditions of [sentence] *S*<sub>1</sub> and [sentence] *S*<sub>2</sub>' does not refer to a relation between *S*<sub>1</sub> and *S*<sub>2</sub> but to the *states of affairs that make S*<sub>1</sub> and *S*<sub>2</sub> true."<sup>10</sup> According to Smith, "A state of affairs is whatever corresponds to a true proposition."<sup>11</sup> Contrary to Smith, Craig wants to separate the truth conditions of tensed sentences entirely from the grounds of truth of tensed sentences:

The giving of truth conditions is a semantic exercise; specifying grounds for a statement's truth concerns ontology. One can layout semantic conditions which will permit one to determine for any sentence whether that sentence is true or false without saying anything at all about the ontological facts which make that sentence true.<sup>12</sup>

Given the ambiguity in the notion of "truth conditions," it is not always easy to see what those who reject the B-theory on the grounds that no B-sentence can state all the "truth conditions" of an A-sentence mean. The matter is further complicated by the fact that the B-sentences stating the truth conditions of A-sentences are supposed to have the same meaning (on the old B-theory) or give the meaning (on the new B-theory) as the A-sentences under analysis. It is then argued that since no B-sentence has the same meaning or can give the meaning of an A-sentence, it follows that no B-sentence can state all the truth conditions of an A-sentence, and therefore, both the new and the old B-theory of time are false. But as in the case of "truth conditions," the notion of "meaning" is ambiguous.

In one sense of "meaning," the meaning<sub>1</sub> of a sentence or thought is whatever is (intended to be) asserted by a sentence or represented by a thought. Thus, for example, if I say, "The cat is on the mat or the dog is on the mat," then what this sentence states and what the corresponding thought intends is that the cat is on the mat or the dog is on the mat. Suppose we call this sense of meaning *intentional meaning*<sub>1</sub>. I should note, however, that the ontological status of the intentional meaning<sub>1</sub> of a sentence or thought is ambiguous and open to debate. On the one hand, the intentional meaning<sub>1</sub> could be identified with a mind-independent proposition or content represented by a thought or stated by a sentence. On the other hand, since language, viewed as physical marks on paper or sounds in the air, is not intrinsically meaningful<sub>1</sub>, and it is not by its own nature about anything, one may, for that reason, identify the meaning<sub>1</sub> of a sentence with what it is an expression of, a thought, an intrinsically intentional content, or a mind-dependent proposition that each exists in a conscious mental state. I shall return to this distinction later when we discuss the move from the new to the newer version of the B-theory of language.

There is another notion of "meaning," and it involves not what is *asserted* or *thought* to be the case but what *is* the case. If what is asserted by a sentence is true, then we can say that the meaning<sub>2</sub> of a sentence or thought is the fact that makes it true, its *truthmaker*. Given this usage, meanings<sub>2</sub> are nonlinguistic items, or facts, that make sentence or belief tokens (or the propositions they express) true. They are one of the relata of the correspondence relation. The existence of meanings in this sense does not depend on the existence of true sentence-tokens or on language at all. If the B-theory is true and one accepts a date-analysis of tense, then the meaning<sub>2</sub> of a true August 1, 2003, sentence-token of "It is now raining" is the B-fact that *rain occurs on August 1, 2003*. If the tensed theory is true, then the meaning<sub>2</sub> of what is stated anytime by a true sentence-token of "It is now raining" is (or includes) the tensed fact that *it is now raining*. Thus, in the second sense, the meaning<sub>2</sub> or, as I shall also call it, the *reference* or *ontological meaning*<sub>2</sub> of a sentence, word, or phrase is given by its truthmaker, its ontological ground, or that to which it refers.

In a still different sense, the *meaning*<sub>3</sub> of what is asserted by a sentence-token is identical to its truth conditions. (Of course, this definition of "meaning" is inherently ambiguous owing to the lack of clarity in the notion of "truth conditions.") On the token-reflexive version of the B-theory, the *meaning*<sub>3</sub> and hence the truth conditions of what is asserted by an A-sentence token are token-reflexive. That is, the appropriate temporal relation between an A-sentence or belief token and what it is about are the necessary and sufficient conditions for what is asserted by the token to be true. For example, on the token-reflexive account, what is stated by a sentence token N of "It is now 1980" is true if and only if N is simultaneous with or occurs at or during 1980. Or again, to comprehend the token-reflexive truth-conditional *meaning*<sub>3</sub> of what is asserted by the A-sentence token Z of "It *was* raining" is to know that what Z asserts is true if and only if Z exists later than it's raining.

B-theorists typically accept either a token-reflexive or date-analysis account of the truth conditions of tensed sentences, but if McTaggart is right, then A-sentences and A-beliefs are logically false because they imply self-contradictions and so cannot have truthmakers. Thus, what is expressed by A-sentences cannot strictly speaking have truth conditions, for the B-sentences that state token-reflexive or date-analysis truth conditions are sometimes true and therefore cannot state truth conditions for A-sentences that are never true and cannot possibly be true. Thus, if I (following McTaggart) am right in maintaining that A-sentences and A-beliefs are necessarily false, then neither token-reflexive nor date-analysis sentences (nor tensed sentences for that matter) can state necessary or sufficient conditions for A-sentences' being true.<sup>13</sup> Since, however, some of the arguments against the new theory appeal to token-reflexive and date-analysis truth conditions of A-sentences, I will employ the notion of truth conditions in discussing those arguments. In the end, however, I will reject the claim that the token-reflexive or the date-analysis sentences state truth conditions of A-sentences. At most, token-reflexive and date-analysis sentences state "pragmatic conditions," since their obtaining is what makes A-sentences and beliefs useful even though they are false. I will discuss these points further in section 6.

To return to the topic of meaning, in a fourth sense, the *meaning*<sub>4</sub> of sentence or belief types or tokens is the linguistic rules that govern their correct usage. Thus, different tokens of the same tensed sentence-type can have the same *meaning*<sub>4</sub> (or, following Kaplan, "character") even though their reference *meaning*<sub>2</sub> and token-reflexive truth-conditional *meaning*<sub>3</sub> differ. For example, all tokens of the sentence-type "It is now raining" (call it "S\*") have the same *meaning*<sub>4</sub>, or what I shall call *linguistic meaning*<sub>4</sub>, and are, in some sense, saying the same thing, but nonsimultaneous utterances of S\* have different token-reflexive *meanings*<sub>3</sub> and are made true by different ontological facts. What, then, is the *meaning*<sub>4</sub> of tensed and tenseless sentences?



Clearly, part of the meaning<sub>4</sub> of tensed sentences, such as  $S^*$ , is that they are *context sensitive*, since the truth value of their tokens varies depending on when they are uttered. Part of the meaning<sub>4</sub> of tenseless sentence-types, such as "It is raining on July 8, 2003" (call it " $R$ "), is that they are *context insensitive*; all tokens of a tenseless sentence have a common truth value regardless of when (or where) they are uttered. Since a token of  $S^*$  could be true and a token of  $R$  false, tokens of  $S^*$  and  $R$  can have different truth conditions. Given that sameness of meaning of sentence-types implies sameness of truth conditions of all the tokens of those types, it follows that  $S^*$  and  $R$  have different meanings<sub>4</sub> and so cannot translate each other. Nevertheless, there is an important connection between meaning<sub>4</sub> and truth conditions (or meaning<sub>2</sub>): the meaning<sub>4</sub> of a tensed sentence is a semantic function or rule whose argument is the context of utterance and whose value is that sentence's truth conditions or truthmaker in that context. In other words, the linguistic meaning<sub>4</sub> or character of a tensed sentence tells us how the context determines the sentence's truth condition or, to use Kaplan's terminology, "content."<sup>14</sup> But what is the ontological status of the *context* of utterance; is it an A- or a B-time? And what are the truth conditions of a tensed sentence in a given context of use—are they A- or B-facts? Of those questions, more later.

### 3. A CRITIQUE OF THE OLD B-THEORY OF LANGUAGE

One can already begin to see that the old B-theory goal of providing a tenseless truth conditions sentence that captures the meaning in the sense that it *has* the same meaning as a tensed sentence, in all these various senses of meaning, is going to be a daunting task. In fact, the enterprise of translation that requires B-sentences to have the same meaning as tensed ones breaks down in at least two main ways. To see why, consider the question "Is what is stated by a tensed sentence or intended by a tensed thought—its intentional meaning<sub>1</sub>—the same as the ontological fact that makes that sentence or thought true, and is the reference meaning<sub>2</sub> of the tenseless truth conditions sentence?" The old B-theory said that they were the same, but clearly they are not. When I think, "It is now raining," or "The exam is past," what is stated or thought is the intentional meaning<sub>1</sub> *it is now raining* or *the exam is past*, but the meaning<sub>1</sub> of tensed language and thought in that sense is not what makes the sentences or thoughts true. What makes them true are B-facts such as *it is raining at  $t_1$*  and *the exam is earlier than  $t_1$* . For that reason, the tenseless truth conditions sentence does not state both the intentional meaning<sub>1</sub> and the reference or ontological meaning<sub>2</sub> of tensed sentences and therefore cannot translate them.

Another reason why the old B-theory failed is that no tenseless truth conditions sentence has the same linguistic meaning<sub>4</sub> as the tensed sentence it is supposed to translate, since they obey different rules of use. All tokens of a tenseless sentence-type have the same truth-value, whereas the truth-values of tokens of the same tensed sentence-type vary from time to time. Hence, no B-sentence-type has tokens whose truth conditions are always the same as the tokens of the tensed sentence-type they were alleged to translate. Since for one sentence to translate another sentence without loss of meaning the one must be substitutable by the other in all contexts without change of truth-value, it follows that tenseless translation of tensed discourse is impossible and that, therefore, the old B-theory of language is unacceptable.

Early defenders of the B-theory, such as Russell, Broad, Goodman, and Smart, were guilty of confusing different senses of the term *meaning*.<sup>15</sup> Since to give the "meaning" of tensed sentences is to specify the "conditions" under which they are true, they believed that the tenseless sentence that stated the truth conditions that would obtain if a tensed sentence is true—the ontological fact—also captured its "meaning" and could translate it. Unfortunately, we have just seen that there is no single truth conditions B-sentence that can carry the weight it is forced to bear. Early B-theorists may be right, as new B-theorists believe they are, in maintaining that the ontological or reference meaning<sub>2</sub> of A-sentence tokens is captured by B-sentences that merely describe temporal relationships between and among terms in the B-series. It does not follow, however, that the linguistic meaning<sub>4</sub> or the intentional meaning<sub>1</sub> of an A-sentence can be expressed by means of the B-sentence that has the same ontological meaning<sub>2</sub> as the A-sentence. Indeed, no tenseless sentence has the same meaning<sub>1</sub> or meaning<sub>4</sub> as any tensed sentence, and for that reason no tenseless sentence can translate a tensed sentence, even if it has the same ontological meaning. Thus, the old B-theory conception of analysis that hoped to capture the (complete) meaning of a tensed sentence and represent the metaphysical nature of time with a single B-sentence had to be abandoned.

To analyze ordinary language so as to render transparent how it enables us to communicate information, engage in timely action, express our thoughts, and depict the correct ontology of time requires recognizing different kinds of meaning and correspondingly different notions of "truth conditions." Thus, to believe that the tenseless truth conditions sentence on the right side of the biconditional, which states the truth conditions of what is asserted by the tensed sentence on the left, can capture *all* the various notions of meaning is a mistake. It is, however, a pervasive mistake that is committed by A-theorists and old and new B-theorists alike. In order to see how it is to be avoided, we need to clarify the new B-theory of language and update it with a newer version.

## 4. THE NEW B-THEORY OF LANGUAGE

The new B-theory of language advocated by Smart, Mellor, and Oaklander, among others, rejects the old B-view that the tenseless sentences that state the truth conditions of tensed sentences have the same meaning and so can translate them. However, these philosophers do not go far enough in repudiating the old tenseless theory. For example, Smart held that the A-theory of time is false, since the meaning and truth conditions of ordinary A-sentences and their tokens can be stated in a tenseless metalanguage. Recall that Smart's truth conditions sentence says that "[w]hen P says at *t* 'time *t* is now' his assertion is true if and only if *t* is at *t*, so that if P says at *t* 't is now,' his assertion is thereby true." Smart thus maintains that since "the *semantics* of indexical expressions can be expressed in a tenseless metalanguage," it follows that tokens containing temporal indexicals convey no information about events or times not conveyed by date-analysis sentences.<sup>16</sup> Smith states this aspect of Smart's theory nicely:

Smart is here saying that the tenseless metalanguage adequately expresses the meaning of (in the sense of "gives truth conditions of") ordinary indexical expressions such as "E is present," and Smart infers from this the thesis of "metaphysical significance," that the tenseless theory of time is true.<sup>17</sup>

Mellor's token-reflexive account of A-sentences that he gave up for a date-analysis account is also intended to capture the meaning of tensed sentences. For Mellor, tensed sentences "may not *have* the same meaning as tenseless sentences that give their truth conditions [and for that reason cannot *translate* them], but those truth conditions surely *give* their meanings."<sup>18</sup>

It seems to me, however, that the new B-theorists' view that one can analyze ordinary language by constructing tenseless truth conditions sentences that state the meanings of sentences in a natural language does not sufficiently break away from the old B-theory. Admittedly, new B-theorists abandon the criterion of translatability as the mark of ontological commitment. Nevertheless, they seem to accept the same basic idea as the early detensers, namely, that a single tenseless truth conditions sentence can capture the (complete) meaning of A-sentences and represent what exists in the world that makes A-sentences true. Before I attempt to explain again why I think the method of truth conditions as defined in section 1 is a mistake, and indicate how another version of the new B-theory of language can avoid it, I want to explain how, by making the distinctions between the various senses of meaning and truth conditions, we can avoid some of the objections to the new theory posed by Smith and Craig.

The first argument against the B-theory is Smith's entailment argument

against the token-reflexive account of the truth conditions of tensed sentences or the propositions they express.<sup>19</sup> We can begin to see what is wrong with this argument by noting that even if token-reflexive "truth conditions" can only capture the meaning<sub>2</sub> of tensed sentences in the sense of specifying a fact that is sufficient to make what is stated by an A-sentence token true, it does not follow that token-reflexive reference meaning<sub>2</sub> is the only meaning tensed sentences have, nor does it follow that token-reflexive "truth conditions" are necessary and sufficient to account for all the entailment relations between and among tensed sentences in ordinary language. Other truth conditions, for example, the date-analysis truth conditions, are sufficient to do that.

Thus, it seems to me that Smith's entailment argument against the token-reflexive theory of tenseless time is irrelevant to a critique of the B-theory.<sup>20</sup> His argument is as follows: If what is stated by a token *S* of

(1) It is now 1980

has the same truth conditions (i.e., the same meaning) as what is stated by any token *U* of "S occurs in 1980," then, since (1) entails

(2) 1980 is present

(and indeed has the same meaning), the truth conditions of (i.e., the fact statable by) (2) must be among the truth conditions of both *S* and *U*. But this is not the case, since *V* occurs at (or in) 1980 is a truth condition of any token *V* of (2) but not of *U*. Therefore, Smith concludes, "since a fact statable by *V* is a truth condition of *S* but not of *U*, it follows that *S* and *U* have different truth conditions and fail to translate each other."<sup>21</sup> And this contradicts the assumption that *S* and *U* have the same truth conditions and do translate (have the same meaning as) each other. To put the argument otherwise, the tenseless sentence tokens ("S occurs in 1980" and "V occurs in 1980") that state the truth conditions that allegedly capture the meaning (or translate) the tensed sentences (1) and (2) do not really do so, since the tenseless truth conditions stated by those tenseless sentences cannot account for the entailment of (2) by (1).

This argument assumes that the tenseless sentences and their tenseless truth conditions that represent the token-reflexive meaning<sub>2</sub> of tensed sentences must be the same as the tenseless sentences and truth conditions that account for the entailment between tensed sentences. Perhaps the version of the new tenseless theory initially put forth by Mellor made that assumption,<sup>22</sup> but I do not think it is integral to the tenseless theory of time and I think we can avoid Smith's entailment argument if we deny it.

Clearly, the truth conditions specified by the date-analysis can explain the inference from (1) to (2), since the meaning<sub>2</sub> (i.e., the real truth or fact that underlies the vague truths "It is now 1980" and "1980 is present") is the same for both, namely, the trivial fact that *1980 is at 1980*. To suggest that date-analysis truth conditions can explain the inference from (1) to (2) does not imply that the tenseless sentences that state those truth conditions (or the tenseless truth conditions themselves) can capture the intentional meaning<sub>1</sub> or translate tensed sentences. Nor does it suggest that tensed descriptions of events are unnecessary in ordinary life. Rather, the date-analysis suggests that since misunderstanding the tenses can lead to the unacceptable metaphysics of temporal passage, in depicting temporal reality tenseless descriptions are preferable.

By not keeping these different notions of meaning and truth conditions separate, Smith offers a fallacious objection to my explanation of the entailment of (2) ("1980 is present") by (1) ("It is now 1980").<sup>23</sup> Following Kaplan, I have argued that the meaning<sub>4</sub> of (1) and (2) is a semantic function from the context of utterance, namely, the time at which their tokens are produced, to their tenseless truth conditions. Since the context of utterance varies, so do the truth conditions of their tokens, but in each case the truth conditions are tenseless. Thus, I argued that any token of (1) is true with respect to the context in which it is produced (namely, the time at which it is uttered), if and only if the year of that context is 1980, and the same may be said of any token of (2). Consequently, since the truth conditions of (tokens of) (1) and (2) are the same, the difficulty of getting (1) and (2) to be logically equivalent vanishes.<sup>24</sup> Smith's objection runs as follows:

The tenseless truth conditions of tokens of (1) and (2) are not the same, and Oaklander can create the appearance of sameness only by equivocating on "it." . . . But once we replace the occurrences of "it" by names of the relevant tokens, this appearance of similar truth conditions vanishes. The tenseless truth conditions are these:

- (3) Any token of (1) is true with respect to the context of *S*'s utterance if and only if the year of *S*'s context of utterance is 1980.
- (4) Any token of (1) is true with respect to the context of *V*'s utterance if and only if the year of *V*'s context of utterance is 1980.

. . . These two tenseless facts mentioned after the biconditionals in these truth-condition sentences are *S occurs in 1980* and *V occurs in 1980*. We are now back in the situation I described in Essay (2). These two tenseless facts do not entail each other. *S* could occur in 1980 even if *V* does not occur at all, and vice versa. Consequently, these facts are insufficient to explain the logical equivalence of *S* and *V*.<sup>25</sup>

I am not convinced by this argument. Admittedly, if "It is now 1980" and "1980 is present" are true, then there will be the (token-reflexive) truth conditions *S occurs in 1980* and *V occurs in 1980*, but they are not the only truth conditions, nor are they the relevant ones. If the context in which I utter *S* is 1980, then its (i.e., *S*'s) truth condition is *1980 is at 1980*. And if the context in which I utter *V* is 1980, then its (i.e., *V*'s) truth condition is also *1980 is at 1980*. Thus, given the linguistic meaning<sub>4</sub> of the tensed sentence tokens *S* and *V*, they have the same truth conditions and the inference from *S* to *V* is accounted for, although neither the tenseless sentences that state their truth conditions, nor the tenseless truth conditions themselves, capture their meaning<sub>1</sub> or meaning<sub>4</sub>.

Of course, Smith has argued that while the appeal to date-analysis truth conditions may account for the inference from *S* to *V*, the date theory of the truth conditions of A-sentences (or what they express) is inadequate and is therefore to be rejected. Indeed, Smith, Craig, and Paul have offered myriad objections to the date-analysis that deserve attention.<sup>26</sup> Although I shall not attend to all of them here, I do want to consider two of Smith's arguments, since I think they can be refuted if we keep the different notions of meaning and truth conditions distinct.

Smith characterizes the date-analysis as follows:

The thesis of the date theory is that each successive token of some A-sentence-type corresponds to a distinct date-sentence-type, such that corresponding to the token of "Henry is ill" that occurs on July 28, 1940 is the date-sentence-type "Henry (is) ill on July 28, 1940" and corresponding to the token of this A-sentence that occurs on July 29 there is "Henry (is) ill on July 29, 1940." Thus, if the date theory of A-sentences is to be refuted, it must be shown that the *relevant semantic features* of a given token of an A-sentence-type are different from those of the corresponding date-sentence-type. In this section I shall show that *the truth conditions* of a given A-sentence-token are different from those of its corresponding date-sentence-type and that this refutes both the old and new versions of the tenseless date-sentence theory.<sup>27</sup>

Clearly, Smith is assuming that the relevant semantic features of A-sentences are given in terms of their truth conditions. Therefore, he believes that to show that the truth conditions of A-sentences are not adequately represented on the date-analysis is to demonstrate that the semantics for A-sentences is not what the date theory claims it to be and vice versa. However, I think that if we keep the *metaphysics* (or meaning<sub>2</sub>) of the date analysis of B-time distinct from the *semantics* (or meaning<sub>4</sub>) of the date-analysis of tensed language, then Smith's objection can be answered.

According to the date-analysis, the A-sentence "Henry is ill" as spoken

by John on July 28, 1940, and the B-sentence "Henry (is) ill on July 28, 1940" have the same (tenseless) truth conditions. That is, they are each true if and only if Henry (is) ill on July 28, 1940. Smith asserts that

defenders of the new tenseless theory (such as Smart) will take [these claims] as showing that the date-sentences *suffice to give the truth conditions and thereby the meaning* of the A-sentence-tokens, from which it follows that these tokens convey no information about time not conveyed by the date-sentences.<sup>28</sup>

Smith then argues that the date-analysis does not give the correct truth conditions of A-sentence tokens, since, for example, "The Battle of Waterloo is present" (call this "*U*"), uttered in 1814, does not have as a necessary (truth) condition that the Battle of Waterloo (call it "*E*") occurs in 1814. Suppose that "1814" refers to a date and we accept a relational view of time according to which a moment is a set of events simultaneous with a given event. Smith reasons that an 1814 utterance of *U* could be true (in the actual world) but that in some possible world its truth conditions sentence "The Battle of Waterloo occurs in 1814" could be false. For if a moment is defined as a set of events simultaneous with some given event, then there is some possible world ( $w_3$ ) in which *U* and the Battle of Waterloo exist simultaneously (and thus a world where *U* is true) but in which *E* does not occur in 1814. For that reason, and contrary to what the date analysis asserts, *E*'s occurrence in 1814 is not a necessary condition of *U*'s truth.<sup>29</sup>

In a previous reply to this argument, I suggested that we could avoid Smith's criticism by world-indexing truth conditions.<sup>30</sup> Thus, even if there is a possible world ( $w_3$ ) where "1814\*" denotes a time that contains both *U* and *E*, then the date-analysis truth condition that *the Battle of Waterloo occurs at 1814\* in* ( $w_3$ ) is necessary for the truth of *U* (in  $w_3$ ). According to Smith, this way out fails, since

world-indexed truth conditions are insufficient to *give the meaning (semantic content) of tensed sentence-tokens*. . . . A truth condition sentence that gives . . . semantic content, or at least gives it up to logical equivalence, must state conditions that obtain in all and only the worlds in which this utterance is true, and this can be done only in terms of truth conditions that are not world-indexed.<sup>31</sup>

More recently, Smith has made the same point: "Once truth conditions are world-indexed, they have no bearing or an accidental bearing on the meaning of the tensed-utterance."<sup>32</sup> I think we can save the date-analysis from *this* objection (recognizing that Smith has others) by distinguishing between linguistic meaning and reference meaning. Let us suppose that the

meaning<sub>4</sub> of a tensed sentence-type and all of its tokens must have a character that is the same in every possible world. That is, let us suppose that there is a common meaning<sub>4</sub> to all occurrences of a given A-sentence-type regardless of when and where and in what world they occur. Admittedly, the common meaning of all tokens of an A-sentence-type cannot be given by the ontological meaning<sub>2</sub> (or the date-analysis truth conditions), since the truthmakers of A-sentence-tokens (or what they state) are not constant but vary depending on the time and world in which they occur. Thus, even if the linguistic meaning<sub>4</sub> of "The Battle of Waterloo is present" is not world indexed, it does not follow that the truth conditions or truthmakers of its tokens are not world indexed. To give the relevant semantic features of *U* (its meaning<sub>4</sub>) is not to give its meaning<sub>2</sub>. If these two notions of meaning are kept distinct, then Smith cannot infer that the *ontological* ground of A-sentences' being true cannot be represented by world-indexed B-sentences merely because the linguistic meaning<sub>4</sub> of A-sentences cannot be given in terms of them.

We can see where Smith's argument against the date-analysis account of truth conditions goes wrong in yet another, related way. Smith argues that world-indexing truth conditions do not give truth conditions in the proper semantic sense of "truth conditions," for if it did,

then the utterance of "Beth is waking up" at *t* in *w* states a truth in world *w* if and only if *it rains in Paris on June 1, 1914 in w*. Since the clause after the biconditional has no bearing on the meaning of the utterance of "Beth is waking up" at *t* in *w*, despite the logical equivalence stated in the biconditional, world-indexing the truth conditions prevents sentences stating truth conditions from explaining or having a relevant bearing on the statement whose truth conditions are given. These are not "truth conditions" in the intended and proper semantic sense of "truth conditions."<sup>33</sup>

Again, there seem to be different senses of "meaning" and "truth conditions" at play here. Smith's claim that *it rains in Paris on June 1, 1914, in w* (call it "*P\**") does not state the truth conditions of "Beth is waking up" at *t* in *w* (call it "*B*") is certainly correct if by "truth conditions" he means truthmakers or reference meanings<sub>2</sub>. Clearly, the ground of the truth of "Beth is waking up" at *t* in *w* is not *it rains in Paris on June 1, 1914, in w*. On the other hand, if by "truth conditions" he means what Craig seems to mean by it, namely, necessary and sufficient conditions for truth, but not what makes a sentence true, then his claim that *P\** does not state truth conditions for *B* is not true. Finally, if by "truth conditions" he means the intentional meaning<sub>1</sub> of a sentence, then what he says is true, since *P\** does not capture the meaning<sub>1</sub> of *B*. All of these points are, however, compatible with the date-analysis claim that an utterance at *t* in *w* of "Beth is waking up" has *Beth is waking up in t in w* as its



meaning<sub>2</sub> or truth condition. I conclude, therefore, that if we distinguish the different senses of "meaning," Smith's arguments against world-indexing date-analysis truth conditions can be refuted.

To sum up, if we distinguish the old B-theory of time from the old B-theory of language, we arrive at the new B-theory of time, or more simply, the *new theory*. According to the new theory, the need for tensed sentences and beliefs, while necessary in ordinary language and thought, does not imply the existence of tensed facts in the world. The new theory thus distinguishes two languages, one necessary for communication and timely action and the other necessary for a correct description of temporal reality. The former requires tensed sentences; the latter eliminates them, since in an ontologically perspicuous language where paradox is to be avoided, the sentences or propositions that represent temporal reality are B-sentences or B-propositions.

Of course, even if tensed sentences or sentences that contain temporal indexicals are eliminated from a language that reflects the metaphysical truth about time, they are ineliminable from the ordinary language that we use to talk about it. Thus, a detenser, no less than a tensor, must give an account of the meaning and reference of indexicals and the relation of those topics to the metaphysical dispute between A- and B-theories of time. I shall turn to those tasks next.

## 5. THE MEANING AND REFERENCE OF TEMPORAL INDEXICALS

In the debate over the meaning of temporal indexicals, we must distinguish the reference meaning<sub>2</sub> and the linguistic meaning<sub>4</sub> of an indexical and consider the connection between them. The linguistic meaning of a word or phrase is a semantic function or rule of language that, as Kaplan puts it, "determines the content of an occurrence of a word or phrase in a given context."<sup>34</sup> According to Kaplan, one of the rules of use of an indexical is that it is, in each of its occurrences, directly referential. He believes that since "now" refers to the date at which it is used, the content of a sentence containing an indexical varies with its context and so does its truth-value.

But why does the truth-value of different tokens of "It is raining now" vary with its context? Indeed, what is the ontological status of the context of utterance, and what is the truth condition determined by the context? These questions are closely related to each other and to the tensor-detensor debate. For, if the context of utterance of a sentence containing an indexical is a tensed time, for example, a time that exemplifies *presentness*, then the reason

why the truth-value of tokens of sentences containing indexicals changes is that the events they are about to undergo temporal becoming. And if the meaning<sub>4</sub> or rule of use of temporal indexicals is not simply to directly refer to a time, but also to characterize that time as being present, then the truth condition determined by the tensed context will be an A-fact. On the other hand, if the context of utterance is a tenseless date, then the meaning<sub>4</sub> of a temporal indexical is directly referential and the truth condition<sub>3</sub> of the sentence containing it is a B-fact.

How then do we determine whether the context is tensed or tenseless and hence whether or not the meaning<sub>4</sub> of sentences containing indexicals entails tensed or tenseless truth conditions? It does not seem to me that one can arrive at the correct account of the meaning<sub>2</sub> of tensed sentences via the philosophy of language alone, since if the metaphysics of a particular linguistic analysis is irremediably flawed, then the analysis is mistaken, and that is not what we mean. Thus, if it turns out, as I believe it does, that the tensed theory is false because it leads to contradictions or other problematic results, then the ascription of tensed properties to dates is not part of the meaning<sub>2</sub> of temporal indexicals. Still, I think it is worthwhile to consider one argument for the claim that temporal indexicals are used both to refer to a time and also to attribute *presentness* to that time. To do so will lend support to the new theory date-analysis of the meaning<sub>2</sub> of tensed sentences and reveal once again how the failure to keep different notions of meaning separate can lead to trouble.

Smith has argued that "the direct reference theory of indexicals according to which indexicals do not refer to items indirectly via a sense, . . . [but] are supposed to refer directly to times, is based on some genuine insights"<sup>35</sup> but needs to be revised. The revision consists in introducing a sense into the content of temporal indexicals—specifically, the sense of "is present" or "has presentness." Smith's argument for that claim is that unless we introduce the sense of "is present" into the content of a temporal indexical, we cannot account for entailment relations between sentences containing a temporal indexical and sentences not containing one.

Smith claims that a case in point is the entailment of

(5) The meeting is starting

by

(6) The meeting starts now.

Smith says that (5) contains a present-tensed copula but no temporal indexical.<sup>36</sup> Thus, the proposition expressed by (5) has "a constant semantic con-

tent the same on each occasion of its use," whereas the proposition expressed by (6) has a variable semantic content.<sup>37</sup> What, then, is the proposition expressed by (5)? On Smith's view, (5) expresses the proposition "that the meeting has the property of starting and that its having of this property *has presentness*. Whenever (5) is uttered it expresses this semantic content."<sup>38</sup> Given this account of the semantic content of (5), Smith argues that in order to account for the inference of (5) by (6), we must attribute the sense of "has presentness" to the time denoted by "now" in (6). It seems to me, however, that we do not need to introduce presentness into the content of temporal indexicals to account for the entailment of (5) by (6), since contrary to what he says, and in accordance with his own analysis elsewhere, present-tensed sentences *do* involve temporal indexicals.

Smith argues that (5) ("The meeting is starting") "contains a present-tensed copula, but no temporal indexical."<sup>39</sup> Prima facie this is an implausible view. If the copula is present tensed, as opposed to past- or future-tensed, or tenseless, then it can also be expressed as "is now." In that case, however, "The meeting is now starting" and "The meeting starts now" would certainly have the same meaning, and the same truth conditions and the entailment would hold without having to postulate an additional sense to the referent of "now."

Suppose, however, that Smith is correct and the present-tensed sentence "The meeting is starting" is indexical free. Let us suppose further that, as Smith says, the semantic content of (5) is "that the meeting has the property of starting and that its *having* of this property *has presentness*."<sup>40</sup> The problem with introducing presentness into the inherence of presentness is that such a move reintroduces an indexical element into the proposition expressed by any token of "The meeting is starting." In discussing the infinite regress of temporal attributions (in the context of McTaggart's paradox), Smith says, "[T]he complete *analysans* of the present-tensed sentence '*E* is present' . . . conveys the information that *E* is *now* present rather than *was* or *will be* present."<sup>41</sup> If, however, the present-tensed sentence "*E* is present" conveys the same information that "*E* is now present" conveys, then mustn't the present-tensed sentence "The meeting is starting" convey the same information that "The meeting is now starting" conveys? But then, of course, (5) does contain an indexical, and Smith's argument that (5) is not entailed by (6) collapses. For clearly, "The meeting is now starting" and "The meeting starts now" have the same date-analysis truth conditions, and thus (5) is entailed by (6) without the assumption that "now" in (6) refers to a date and also ascribes presentness to that date.

Finally, Smith's claim that (5) has a constant semantic content whereas (6) has a variable semantic content does not give credence to the thesis that temporal indexicals express senses that characterize moments as present either, since that claim equivocates on the notion of "semantic content." It is

true that (5) has a constant semantic content in that its linguistic meaning<sub>4</sub> is always the same, and it is true that (6) has a variable semantic content, in that its reference meaning<sub>2</sub> always varies over time. It does not follow, however, that (5) and (6) differ with respect to either their meaning<sub>4</sub> or their meaning<sub>2</sub>, or that the inference from (6) to (5) requires the ascription of presentness to the referent of "now."

Undoubtedly, work in the philosophy of language and particularly in the areas of tensed discourse and temporal indexicals is necessary to complete an analysis of B-time. For even if tensed discourse does not accurately reflect the nature of temporal reality, it is meaningful and the detenser must be able to explicate what it means. But we cannot arrive at the philosophical truth concerning time by an analysis of the meaning<sub>4</sub> (or the meaning<sub>1</sub>) of ordinary temporal language. As Smith has correctly noted, whether the direct reference theory is true "depends on whether the tenseless theory is true," and "if the tensed theory of time is true and uses of 'now' ascribe the property of presentness, then the New Theory of Reference is false."<sup>42</sup> We are thus led back to the question with which this essay began: namely, do events really pass through time as the A-theory maintains, or does ordinary temporal language systematically mislead us into believing in the myth of passage, as the B-theory asserts? Although I am a critic of the tensed theory and a staunch advocate of the tenseless theory, a full account of my reasons for rejecting the former and adhering to the latter is clearly a project that lies outside the scope of this essay. What does not lie outside its scope is another objection to the B-theory that will lead to a newer version of the B-theory of language.

## 6. A NEWER VERSION OF THE B-THEORY OF LANGUAGE

Murray MacBeath claims that the feeling of gladness expressed by a father who says to his daughter, "Thank goodness I'm never going to sit another examination," exhibits intentionality; it is about something.<sup>43</sup> According to MacBeath, the father is glad about the "intentional fact" that he is never going to sit another examination again, or more simply that a certain event is (forever) past. The new B-theorist maintains that the "intentional fact" is not a tensed fact and does not actually exist at all, for though the situation implies that the *belief* about the intentional fact is irreducibly tensed, the fact that makes the belief true is tenseless.

My concern is with the ontological status, if any, of the "intentional fact" or the intentional object that a tensed belief is about as well as with the tensed belief itself. Clearly, the intentional object of the tensed belief "X is

past" is different from the intentional object of the tenseless belief "X occurs at  $t_1$ " or "X occurs earlier than  $t_3$ ." How is this difference in intentional meaning<sub>1</sub> accounted for?

Suppose one maintains, as I believe Mellor does, that the intentional object of a tensed belief is not an A-fact but an A-proposition. Thus, when I believe (or think) that X is past, what my thought or belief is about, what it means, its intentional object is the A-proposition, X is past. The proposition, the sentence that expresses it, and the belief about it are all made true by the existence of a B-fact. For that reason, we can explain how it *seems* that we are relieved about an A-fact when all that exists are B-facts. As Mellor puts it:

Being glad has a propositional content, in this case the A-proposition that my pain is past, which differs from the proposition that I believe my pain is past. And it is the former proposition, not the latter, which must be true at  $t$  for my gladness at  $t$  to be well founded. But the A-proposition can still be made true at  $t$ , and hence my gladness well founded, by the B-fact that my pain is earlier than  $t$ .<sup>44</sup>

What follows is a difficulty I see with this account.

The meaning of a tensed sentence is an A-proposition, so to know what a tensed sentence or tensed belief means is to intend an A-proposition. The meaning of A-sentences (and A-beliefs) is a function (what Mellor calls a "tc-function") from the time of their occurrence to their truth conditions at that time. To know what an A-sentence means is to be able to understand and be able to use an A-sentence properly. We can do that if we know that "for any B-place  $s$  and B-time  $t$ , " $s$  is here" is true at and only at  $s$ , and "It is now  $t$ " is true at and only at  $t$ ."<sup>45</sup>

That is all well and good. The difference in meaning<sub>4</sub> between A- and B-sentences is accounted for without positing A-facts, for A- and B-sentences have different meanings in virtue of having different rules of use but not in virtue of having different truth conditions or corresponding to different kinds of facts. But if an A-proposition were the meaning of an A-sentence or A-belief, then it would follow that an A-proposition is the meaning given by the tc-function for an A-sentence. There is, however, something amiss here. What we believe when we believe that X is past is not the linguistic meaning<sub>4</sub> or rule of use for an A-sentence. Thus, there seems to be some aspect of meaning<sub>1</sub> (cognitive significance?) that is not captured by distinguishing tensed and tenseless sentences and beliefs by means of a difference in their (Kaplan-type) character.

In other words, there is a difference in cognitive or intentional meaning<sub>1</sub> between believing that X is now and believing that X occurs at  $t$  (even if the thought that X is now occurs at  $t$ ); they seem to have different contents or

intentional objects. However, that difference is not the same as the difference in linguistic meaning reflected in the different *tc*-functions of the tensed and tenseless sentences or the beliefs that they express. Since on the B-theory the content, in Kaplan's sense, is a tenseless content, so that the tensed belief's meaning<sub>2</sub> is a B-fact, there seems to be nothing on the side of the subject that accounts for the A-belief's being about or intending the tensed content, namely, that *X* is past. The fact that the linguistic meaning<sub>4</sub> of the A-belief is different from that of a B-belief is not sufficient to account for the difference in intentional meaning between the two kinds of beliefs. What more is needed to account for the intentional meaning of an A-belief is something on the side of the *subject* that is irreducibly tensed. Without such an account, the new B-theory explanation of the meaning<sub>1</sub> of irreducibly tensed beliefs seems to leave something out.

Thus, the following questions arise: What does capture the differences in the intentional meaning of A- and B-beliefs? What makes an A-belief intrinsically or irreducibly tensed? In virtue of what does an A-belief mean or intend what seems to be an A-fact but is not a fact at all? Does the irreducibly tensed belief imply some irreducibly tensed constituent *in* the belief that accounts for the belief's intending what seems to be an A-fact? If not, how is one to account for irreducible A-belief's being about or intending what appear to be irreducible A-facts? If there is a tensed element in the A-belief, then is the B-theorist forced to hold that tense is subjective in a way that compromises the commitment to an ontology of time that countenances only temporal relations?

These questions do pose a challenge to B-theorists, and in this essay, I shall attempt to do no more than suggest the outlines of a possible response to them. One possible way of answering these questions begins by distinguishing the intentional "relation" (and intentional meaning<sub>1</sub>) from the correspondence relation (and reference meaning<sub>2</sub>). The intentional meaning of an A-sentence or belief is the subjective tensed content that (together with a property such as being a perceiving or being a remembering) is contained in a conscious mental state or "mental act." A belief is irreducibly tensed not only because it does not have the same meaning<sub>4</sub> as a B-sentence but also because it has a certain *content*. A content is a *natural sign* of its object.<sup>46</sup> That is, a content, in virtue of being the kind of entity that it is, stands in the intentional relation to just this certain object. Thus, contents are intrinsically intentional meanings<sub>1</sub> of A-sentences. To say that contents are "intrinsically intentional" is to say that they are natural signs of some thing or fact other than themselves. Since, however, there are no A-facts, when I am thinking that *A* is present, what I am thinking about does not exist. Thus, intentionality is an abnormal relation that, in this case, connects what does exist—the subjective tensed content—with what does not exist, an A-fact that has no

ontological status whatsoever.<sup>47</sup> The reference meaning<sub>2</sub> of a sentence is, on the other hand, the fact or state of affairs that obtains if the content expressed by the sentence is true, that is, if what the content represents, intends, or is about, exists.

Recall that the problem for the new theory is to explain how what is asserted by the A-belief that, say, *X* is past can be genuinely (irreducibly) tensed and so be about an A-fact that does not exist, while claiming that the irreducible A-belief is *true* in virtue of corresponding to a B-fact that does exist. The newer version of the B-theory attempts to answer that question (or rather, avoid it), while remaining consistent with a B-theoretic ontology. However, to do so requires taking the radical step of denying that A-sentences and A-beliefs are true. Let me explain.

According to the newer B-theory of language, A-sentences express subjective contents that are their intentional meaning<sub>1</sub> and are what accounts for the representative character (i.e., the aboutness) of thought. Furthermore, contents are the primary bearer of truth and falsity, whereas sentence-tokens understood as physical objects are only derivatively so. Since, however, there are no tensed facts that would make A-contents true, they are, literally and metaphysically, false. Thus, A-sentences have an intentional meaning<sub>1</sub>, but they do not have a reference meaning<sub>2</sub> since, given considerations resulting from McTaggart's paradox, there are no A-facts, nor could there be any A-facts, that contents would correspond to so as to make them true.<sup>48</sup> Nevertheless, our having A-beliefs with tensed contents is pragmatically useful in enabling us to get along in the world. They are useful even though they do not correspond to any tensed facts because they are typically caused by B-facts and when they are so caused, tensed thoughts are the basis for timely action and appropriate emotions. I think we can best clarify this newer version of the B-theory of language by seeing how it would deal with some of the objections to the new B-theory that have not yet been considered.

In his most recent book on the tensed theory of time, Craig discusses what he calls "Mellor's Indexed B-Theory of Language."<sup>49</sup> His main objection against Mellor's indexed theory, which is nothing other than the date-analysis, is that it does not supply truth conditions or truthmakers for tensed sentence types or tokens *simpliciter*, such as "Jim races tomorrow," but only for A-sentences at a time, such as "Jim races tomorrow" said at *t*<sub>1</sub>. Craig states his objection as follows:

We want to know, not what makes *Jim races tomorrow* true at June 1, but what makes it true that *Jim races tomorrow* or that *Jim is racing*. If tensed sentence types need truthmakers, then we need tensed facts as the truthmakers of such tensed sentence types. For if there are no tensed truthmakers then it is inexplicable why *P* is true—not true at *t*, mind you, but simply true.<sup>50</sup>

The response to this argument is that it begs the question against the view I am putting forth, since it assumes that the A-belief "Jim is racing" (call it "*P*") is true.<sup>51</sup> On the newer B-theory of language, however, *P* is false, since there are no tensed truthmakers. Since the content *C* expressed by *P* (its intentional meaning<sub>1</sub>) is part of a conscious state that occurs at a time *t*, what is true is that the conscious state including *C* occurs at *t*, but what makes that true is a B-fact. And if "Jim is (tenselessly) racing" is true, then what makes the content expressed by that sentence true is a B-fact. And if "Jim is (tenselessly) racing later than the time at which I have a tensed belief" is true, then what is stated—the subjective content—also means<sub>2</sub> a B-fact. However, none of those B facts are the truthmakers of "Jim is (now) racing" or "Jim is racing tomorrow," since these A-beliefs and the mind-dependent tensed contents they express are necessarily false because they are about tensed facts, and there are none and there logically couldn't be any, or so B-theorists typically maintain.<sup>52</sup> For that reason, it is no objection to the B-theory that it is inexplicable why "Jim is racing" is true because it is not true and so there is nothing to explicate.<sup>53</sup>

An analogous response would follow if Craig criticized the B-theory of language along the lines of his criticism of Butterfield.<sup>54</sup> To avoid the problem that the token-reflexive account faces in explaining the meaning<sub>2</sub> of the proposition "There are no tokens now," Butterfield countenances tensed propositions that he believes can be given tenseless truth conditions. Craig argues, however, that "if the tense of a sentence is part of its propositional content, then does not a view of truth as correspondence imply that reality is tensed?"<sup>55</sup> My answer to Craig's rhetorical question is no. Since the intentional meaning of a tensed sentence is not a *true* proposition expressed by the sentence, but rather, on the version of the new theory suggested here, a false mind-dependent tensed proposition or subjective content, there is no need or possibility that it corresponds to a reality that is tensed because there are no tensed facts.

It is frequently argued, on the basis of Prior's "Thank Goodness" argument, that the B-theory cannot account for what we are believing when we believe that a given event is past, or analogously when we know that a given event is present, or happening now. The traditional new theory claims that there are no tensed facts, but there are irreducibly tensed beliefs such as "It is now raining" or "It was a painful experience" that are true in virtue of B-facts. The view I am proposing agrees with the traditional new theory that there are just B-facts but disagrees that the meaning<sub>1</sub> of a tensed belief, which accounts for its cognitive significance, is adequately explained by appealing to the difference in linguistic meaning<sub>4</sub> between an A-belief and a B-belief. What makes a belief irreducibly tensed is the intentional content contained within it. And there is nothing that makes it true but something that causes



it, namely, a certain set of B-facts. Thus, arguments from cognitive significance can be accommodated on the newer B-theory, since our beliefs about past and present experiences and events are based on irreducibly tensed beliefs with tensed contents. Since, however, those beliefs are false, the B-theoretic ontology remains intact.

Finally, it may be objected that if the existence of mind-dependent tensed propositions or subjective contents is indispensable to explain timely actions and our experience of the present, then those propositions or contents must be true and so they must correspond to something tensed that exists in reality. After all, if tensed beliefs are one and all false, why then do we act as if they are true? If they are false, why are they also indispensable? The implication is that if tensed beliefs are indispensable, it must be because there are tensed facts to which they correspond and that if we ignore these facts, then we are incapable of navigating our way around in the world. I think that there are two ways of responding to this objection. First, one may grab the bull by the horns and argue that tensed beliefs are indispensable, but the causal connection between tensed beliefs and B-events (including tenseless thoughts) is sufficient to explain our timely actions. Second, one may question the assumption that tensed thoughts and beliefs are indispensable.<sup>56</sup> Of course, to say that tensed beliefs are dispensable does not mean that we can translate A-beliefs by means of B-sentences. We cannot do that for reasons we have already discussed. Nevertheless, the existence of token-reflexive meanings<sub>2</sub> may be sufficient for timely action even if there are no tensed contents or facts. Thus, a sufficient condition for my getting to a 1 PM meeting on time could be the B-facts that I am (tenselessly) conscious that "this perception" (which is included in my total mental state) of the clock striking 1 PM is occurring at roughly the same time as the striking of the clock, and that is sufficient for me to get up and go to a 1 PM meeting. Or if I am conscious that "this memory" is later than my very last examination, then I will be relieved that I will never have to take another examination again. Thus, while A-beliefs are useful in helping us keep our appointments and generating certain useful psychological attitudes, since they have a causal connection to B-events in the world, they are not necessary, since our consciousness of certain B-facts is sufficient to explain our different psychological attitudes and our timely behavior.

Of course, a critic may object that the introduction of the indexical "this" into the intentional meaning, reintroduces tense into the content, and that would undermine any attempt to render tensed beliefs dispensable. Ludlow expresses this point in the following passage:

Still more perplexing for the B-theorist, the indexical element in "this utterance" looks an awful lot like a temporal indexical predicate. . . . It looks for

all the world as if the extra indexical element just means *now*, and as if the expression "this utterance" means something akin to "the utterance happening now".<sup>57</sup>

I don't agree that "this perception" means<sub>1</sub> "the perception that I am having now." "This" simply refers to the perception directly without attributing any property of *presentness* to it. Thus, token-reflexive conditions are needed to know when it is time to act, but once they are introduced, not as truth conditions, but as pragmatic conditions, they enable us to dispense with the need for mind-dependent tensed propositions or contents—or at least to dispense with the need for tensed facts to explain why we have tensed beliefs.

## 7. CONCLUSION

It should be clear how and why the new theory of B-time that I am suggesting differs from that propounded by other new theorists. Smith explains the thesis of the original version of the new theory of time as follows:

The new tenseless theory of time... as espoused by Smart, Mellor, MacBeath, and others, is based on the thesis that the tensed theory of time is false *on the grounds that the truth conditions of ordinary A-sentences and their tokens can be stated in a tenseless metalanguage*; that is, it is the theory that tenseless truth condition sentences provide a "logically adequate representation of ordinary temporal language" and therefore that the tenseless theory of time is true.<sup>58</sup>

The version of the new theory put forth here differs from its predecessors in that my grounds for believing that the tensed theory is false is that the A-sentences that allegedly represent or have a tensed ontological meaning are false because of the logical paradoxes that can be generated from tensed ascriptions of properties. Furthermore, I do not agree that the B-theory is true because B-sentences can give the complete meaning of A-sentences. On the new theory as I conceive it, no tenseless sentence can state all the truth conditions, that is, give the complete "meaning" of a tensed sentence. A-theorists such as Smith conclude that the B-theory is false. However, just because no B-sentence type or token gives *all* the truth conditions (read "meanings") of an A-sentence-type or token, it does not follow that no B-sentence truth conditions sentence can state *one* of the conditions of an A-sentence. Indeed, a tenseless sentence can state the most important condition of a tensed sentence, namely, its pragmatic condition that accounts for why A-sentences and A-beliefs are useful. A-beliefs, although they are false, are generally useful in

getting us to act in an appropriate manner when the event believed to be past, present, or future exemplifies the B-relation of earlier than, simultaneous with, or later than to the time at which it is remembered, perceived, or anticipated. Perhaps A-beliefs are even dispensable, for if we are conscious that certain token-reflexive conditions obtain, then that would be sufficient to cause us to engage in timely actions. Thus, as I said at the outset, the difference between the versions of the new B-theory of language that I have discussed is methodological and not ontological. Concerning matters that matter, there is no difference between the new theory of B-language and my newer theory.

## NOTES

1. Works of A-theorists include C. D. Broad, *Scientific Thought* (London: Routledge and Kegan Paul, 1923; repr., New York: Humanities Press, 1969); C. D. Broad, *Examination of McTaggart's Philosophy*, vol. 2 (Cambridge: Cambridge University Press, 1938; repr., New York: Octagon Books, 1976); George Schlesinger, *Aspects of Time* (Indianapolis: Hackett, 1980); Quentin Smith, *Language and Time* (New York: Oxford University Press, 1993); Storrs McCall, *A Model of the Universe* (Oxford: Clarendon Press, 1994); Michael Tooley, *Time, Tense, and Causation* (Oxford: Clarendon Press, 1997); and William Lane Craig, *The Tensed Theory of Time: A Critical Examination* (Dordrecht: Kluwer Academic, 2000). Works of B-theorists include Bertrand Russell, "On the Experience of Time," *Monist* 25 (1915): 212–33; Donald C. Williams, "The Myth of Passage," *Journal of Philosophy* 48 (1951): 457–72; Adolf Grünbaum, "The Status of Temporal Becoming," in *Modern Science and Zeno's Paradoxes* (Middletown, CT: Wesleyan University Press, 1967), pp. 7–36; J. J. C. Smart, "Time and Becoming," in *Time and Cause: Essays in Honor of Richard Taylor*, ed. Peter van Inwagen (Boston: Reidel, 1980), pp. 3–15; L. Nathan Oaklander, *Temporal Relations and Temporal Becoming: A Defense of a Russellian Theory of Time* (Lanham, MD: University Press of America, 1984); Robin Le Poidevin, *Change, Cause and Contradiction: A Defense of the Tenseless Theory of Time* (New York: St. Martin's Press, 1991); Hugh Mellor, *Real Time II* (London: Routledge, 1998); and Heather Dyke, "McTaggart's Paradox and the Truth about Time," in *Time, Experience and Reality*, ed. Craig Callender (Cambridge: Cambridge University Press, 2002), pp. 137–52.
2. William Lane Craig, "On Truth Conditions of Tensed Sentence Types," *Synthese* 120 (1999): 265–70. The quoted passage occurs on p. 265. The reference is to Laurie Paul, "Truth Conditions of Tensed Sentence Types," *Synthese* 111 (1997): 53–71.
3. Quentin Smith, "The 'Sentence-Type Version' of the Tenseless Theory of Time," *Synthese* 119 (1999): 233–51. The quoted passage occurs on p. 249. The references are to Graham Nerlich, "Time as Spacetime," in *Questions of Time and Tense*, ed. Robin Le Poidevin (Oxford: Clarendon Press, 1998): 119–34, and essay 14.
4. Smith, "'Sentence-Type Version' of the Tenseless Theory of Time," pp. 24–48.
5. This method takes different forms and yields different results, depending on

whether by "sentence" is meant a sentence-token (Hugh Mellor, *Real Time* [Cambridge: Cambridge University Press, 1981]; essay 24; Smart, "Time and Becoming"; and Smith, *Language and Time*), a sentence-type (Paul, "Truth Conditions of Tensed Sentence Types"), or what is asserted or the proposition expressed by a sentence-token (Michelle Beer, "Temporal Indexicals and the Passage of Time," in *The New Theory of Time*, ed. L. Nathan Oaklander and Quentin Smith [New Haven, CT: Yale University Press, 1994], pp. 87–93; Beer, "Tenseless Date-Sentences and the Truth Conditions of Tensed Propositions," [paper presented at the Central Division Meetings of the Philosophy of Time Society, Minneapolis, MN, 2001]; William Lane Craig, "Tense and the New B-Theory of Language," *Philosophy* 71 [1996]: 5–26; Craig, *Tensed Theory of Time*; Smith, "'Sentence-Type Version' of the Tenseless Theory"). Heather Dyke, "Tokens, Dates and Tenseless Truth Conditions," *Synthese* 131 (2002): 329–51; Dyke, "Tensed Meaning: A Tenseless Account," *Journal of Philosophical Research* 27 (2003): 67–83; Robin Le Poidevin, "The Past, Present, and Future of the Debate about Tense," in *Questions of Time and Tense*, ed. Le Poidevin (Oxford: Clarendon Press, 1998), pp. 13–42; and Oaklander in essay 24 of this book draw a distinction between meaning (of tensed sentence-types) and truth conditions (of tensed sentence-tokens) but are still firmly within the camp of the new B-theory of language. Craig, *Tensed Theory of Time*, pp. 91–96, argues that for Mellor, *Real Time II*, sentence-types are the bearers of truth-value and have truth conditions. It is, however, not clear to me that this is so, since Mellor claims that A-propositions (and not sentence-types) are true and false and that true A-propositions have B-facts as their truthmakers. B-theorists such as Smart, "Time and Becoming," p. 15, and Le Poidevin, "The Debate about Tense," in *Time and Tense*, p. 29, claim that their method is consistent with Donald Davidson, "Truth and Meaning," *Synthese* 17 (1967): 304–23. Peter Ludlow, *Semantics, Tense, and Time: An Essay in the Metaphysics of Natural Language* (Cambridge, MA: MIT Press, 1999), explains and pursues an "absolute truth-conditional semantics" derived from Davidson. For a critique of Ludlow's presentist semantics, see essay 7.

6. Mellor, *Real Time II*; Jeremy Butterfield, "Indexicals and Tense," in *Exercises in Analysis* (Cambridge: Cambridge University Press, 1985), p. 69–87; Beer, "Tenseless Date-Sentences"; Le Poidevin, "The Past, Present, and Future of the Debate about Tense," in *Questions of Time and Tense*, pp. 13–42; Dyke, "Tokens, Dates and Tenseless Truth Conditions," p. 329–51; Dyke, "Tensed Meaning: A Tenseless Account," p. 67–83; Smart, "Time and Becoming," p. 3–15. This is somewhat of an overstatement, since there are disagreements among B-theorists concerning whether or not temporal relations are definable in terms of causal relations and over whether temporal relational facts such as *A is earlier than B* are in time or nontemporal. My overall point does, however, hold.

7. Ludlow, *Semantics, Tense, and Time*, p. 7.

8. Le Poidevin, "Can Beliefs Be Caused by Their Truth-Makers?" p. 149.

9. In correspondence, Le Poidevin has indicated that what he meant is that truth conditions are necessary and sufficient and not only necessary conditions. I include this quotation from him merely to indicate how easy it is to slide into different interpretations of this term of art.

10. Smith, *Language and Time*, p. 5, my emphasis.

11. Ibid., p. 151.
12. Craig, "New B-Theory of Language," p. 22.
13. This point does not bar token-reflexive or date-analysis truth conditions from being necessary and sufficient conditions for certain B-sentences (or what they express) being true.
14. See Mellor, *Real Time II*, p. 59.
15. Russell, "On the Experience of Time"; C. D. Broad, "Time," in *Encyclopedia of Religion and Ethics*, ed. J. Hastings (New York: Scribner, 1921), pp. 334–45; Nelson Goodman, *The Structure of Appearance* (Indianapolis: Bobbs Merrill, 1951); J. J. C. Smart, *Philosophy and Scientific Realism* (London: Routledge and Kegan Paul, 1963).
16. Smart, "Time and Becoming," pp. 5, 11, my emphasis.
17. Quentin Smith, "Smart and Mellor's New Tenseless Theory of Time: A Reply to Oaklander," in *New Theory of Time*, pp. 83–86. The quoted passage occurs on p. 84.
18. Mellor, *Real Time*, p. 25, *Real Time II*, pp. 62–63.
19. For discussion of this argument, see Smith, *Language and Time*; Smith, "General Introduction: The Implications of the Tensed and Tenseless Theories of Time," in *New Theory of Time*, pp. 1–14; Smith, "The Truth Conditions of Tensed Sentences," in *New Theory of Time*, pp. 69–76; and Smith, "'Sentence-Type Version' of Tenseless Time." Smith's arguments against the token-reflexive analysis are criticized in Paul, "Truth Conditions of Tensed Sentence Types"; Dyke, "Tokens, Dates and Tenseless Truth Conditions"; Dyke, "Tensed Meaning: A Tenseless Account"; Le Poidevin, "The Debate about Tense"; Joshua M. Mosersky, "Tense and Temporal Semantics," *Synthese* 124 (2000): 257–79; and essay 24. For responses to Paul, see Smith, "'Sentence-Type Version' of Tenseless Time," and Craig, "On Truth Conditions of Tensed Sentence Types."
20. Smith, "Problems with the New Tenseless Theory."
21. Ibid., p. 45.
22. Mellor, *Real Time*.
23. Smith, "Truth Conditions of Tensed Sentences."
24. See essay 24.
25. Smith, "Truth Conditions of Tensed Sentences," pp. 72–73; Smith, "Problems with the New Tenseless Theory of Time," in *New Theory of Time*, pp. 38–56;
26. Smith, *Language and Time*; Smith, "Truth Conditions of Tensed Sentences"; Craig, *Tensed Theory of Time*; Paul, "Truth Conditions of Tensed Sentence Types."
27. Smith, *Language and Time*, p. 33, my emphasis.
28. Ibid., p. 35.
29. For a criticism of Smith's argument, see Michael Tooley, "Response to the Comments on *Time, Tense, and Causation* by Storrs McCall, Nathan Oaklander and Quentin Smith," in *The Importance of Time: Proceedings of the Philosophy of Time Society* (1995–2000), ed. L. Nathan Oaklander (Dordrecht: Kluwer Academic, 2001), pp. 49–54.
30. See essay 24.
31. Smith, "Truth Conditions of Tensed Sentences," pp. 74–75.
32. Smith, "'Sentence-Type Version' of the Tenseless Theory," p. 237.
33. Ibid.

34. David Kaplan, "Demonstratives," in *New Theory of Time*, p. 129.
35. Quentin Smith, "Temporal Indexicals," in *New Theory of Time*, p. 136.
36. Ibid., p. 141.
37. Ibid., pp. 141–42.
38. Ibid.
39. Ibid., p. 141.
40. Ibid., p. 142.
41. Quentin Smith, "The Infinite Regress of Temporal Attributions," in *New Theory of Time*, p. 185.
42. Smith, "Implications of the Tensed and Tenseless Theories," p. 12.
43. Murray MacBeath, "Mellor's Emeritus Headache," in *New Theory of Time*, p. 309.
44. Mellor, *Real Time II*, p. 41.
45. Ibid., p. 60.
46. For an extensive defense of the theory of contents as natural signs, see Laird Addis, *Natural Signs: A Theory of Intentionality* (Philadelphia: Temple University Press, 1989); and Laird Addis, "The Simplicity of Content," *Metaphysica, International Journal for Ontology and Metaphysics* 1 (2000): 23–43.
47. For a discussion and defense of the existence of "abnormal relations" like intentionality, see Reinhardt Grossmann, "Nonexistent Objects versus Definite Descriptions," *Australasian Journal of Philosophy* 62 (1984): 363–77; and Reinhardt Grossmann, *The Existence of the World: An Introduction to Ontology* (London: Routledge, 1992).
48. For arguments based on McTaggart's Paradox against the existence of A-facts, see essays 5, 7, 8, 10, and 13. See also Mellor, *Real Time II*; Dyke, "McTaggart's Paradox and the Truth about Time"; Le Poidevin, *Change, Cause and Contradiction*; and Smart, "Time and Becoming."
49. Craig, *Tensed Theory of Time*, p. 91.
50. Ibid., pp. 95–96.
51. Mellor may object to Craig's argument by asking, On what basis can Craig say that "Jim races tomorrow" is true? Either he means a *token* of this sentence, in which case the truth conditions *are* for "Jim races tomorrow" said at *t*, or he means the *type*, in which case it is neither true nor false and so strictly speaking has no truth conditions. Joshua Mosersky pointed out this objection to me.
52. I say "typically" because there are dissenters. Josh Parsons, "A Theory for B-Theorists," *Philosophical Quarterly* 52, no. 206 (2002): 1–20, is a "card-carrying B-theorist" who maintains that McTaggart's Paradox does not render A-properties and tensed facts incoherent, and other B-theorists reject A-properties on the grounds that they have no idea (because they don't experience) what A-properties could be. See Laird Addis, *Time and Method* (unpublished MS, University of Iowa, 1975).
53. One may argue that there is something to explicate, namely, the "semantic content" of mind-dependent tensed propositions or contents. I confess that I am not sure what to say here. The most recent and elaborate A-theory of the content of A-beliefs or the thoughts they express is contained in Ludlow, *Semantics, Tense, and Time*. Another equally sophisticated account is found in Smith, *Language and Time*. According to Smith, the A-belief "Jim is racing" expresses the proposition that the

event of Jim's racing exemplifies *presentness*. There is also Tooley's *Time, Tense, and Causation* account of "tensed" propositions, among many others. Perhaps if tensed contents are not dispensable (although I argue below that they are), then some account of what makes them "tensed" (over and above the fact that they represent [falsely] tensed facts) is needed. Since, however, it seems to me that all accounts of tensed reality are logically false, the particular analysis of the precise content of A-thoughts or A-beliefs does not, after all, seem to be that important a question for a B-theorist to answer.

54. Jeremy Butterfield, "Indexicals and Tense," in *Exercises in Analysis*, ed. Ian Hacking (Cambridge: Cambridge University Press, 1985), pp. 69–87.

55. Craig, *Tensed Theory of Time*, p. 85.

56. This assumption has also been questioned in Ronald C. Hoy, "How to Dispense with Tense," (unpublished MS, California University of Pennsylvania, 1989).

57. Ludlow, *Semantics, Tense, and Time*, p. 90.

58. Smith, *Language and Time*, p. 13, emphasis in original.

## *Part 4*

*Time, Identity,  
Responsibility, and  
Freedom*





## *Delmas Lewis on Persons and Responsibility*

### A Critique

In a recent article, Delmas Lewis offers what he considers to be a new and powerful objection to the tenseless view of time.<sup>1</sup> The overall structure and heart of his argument may be stated as follows:

- (1) If a person is to be held responsible for a past action, then he must be the very same person who performed that action. That is, responsibility presupposes that a person is an enduring entity persisting through change.
- (2) According to the tenseless view of time, however, "a person is not an entity enduring or persisting through change, because there are no such entities on this view."<sup>2</sup>
- (3) Therefore, on the tenseless view persons cannot be held responsible for their actions.

On the basis of this argument, Lewis concludes that "[a]ny philosopher who holds that we are sometimes responsible for our actions has a conclusive reason to reject the tenseless view of time."<sup>3</sup> The purpose of this essay is to defend the tenseless view against Lewis's objection. I shall proceed by arguing that Lewis's argument is either unsound because the second premise is false, invalid because a nonsubstantialist account of persons can account for responsible action, or question-begging because the first premise assumes what needs to be proved.

We can begin to cast doubt on the second premise by noting that two recent defenders of the tenseless view, Hugh Mellor and Jeremy Butterfield, have explicitly denied it!<sup>4</sup> Interestingly, Mellor's argument for treating persons as enduring entities without temporal parts is virtually isomorphic to Lewis's argument against the tenseless view. Mellor argues that "the first pre-

requisite for moral and legal responsibility is identity through time. Nothing and no one can be held responsible for an earlier action unless he, she, or it is identical with whoever or whatever did that earlier action. . . . Now whatever identity through time may call for elsewhere, here it evidently requires the self-same entity to be wholly present both when the deed was done and later when being held accountable for it."<sup>5</sup> I will consider the cogency of this argument below, but the point I want to emphasize now is that given Mellor's views on persons and time, (2) is certainly suspect. Why, then, does Lewis believe that on the tenseless view persons cannot be entities enduring or persisting through change?

There seem to be three arguments. His first argument is a fallacious appeal to authority. Lewis mentions an article by Ronald Hoy in which Hoy concludes that the tenseless theory of time (by which he means Grünbaum's mind-dependence theory of becoming) goes hand in hand with a nonsubstantialist or temporal parts doctrine of the self.<sup>6</sup> Unfortunately, Lewis simply assumes, without any discussion, that Hoy's argument in support of that conclusion is valid. Since, however, Hoy's conclusion is controversial, we must briefly attend to the argument in support of it.

According to the defenders of tense, there are certain features of experience that cannot be made intelligible without supposing the reality of tense. One stems from the fact that while we engage in a great number of actions throughout our lifetime, only a small subset of them are experienced now. So how can the tenseless view, according to which all events exist tenselessly at their respective dates, explain why my experience of writing a reply to Lewis on May 1, 1987 ( $= t_2$ ), and not my experience of reading Lewis's paper on April 1, 1987 ( $= t_1$ ), is present? Hoy claims that the problem of temporal location does indeed create a problem for the tenseless view if one assumes that a person is an enduring entity that is strictly self-identical throughout its existence but that it does not arise if a person is really a four-dimensional process (or a whole having temporal parts). He therefore concludes: "that a tenseless theory of time . . . goes hand-in-hand with a view of persons according to which a person-at-a-moment is only loosely identical (gen-identical) with the 'same person' at other times in 'its' career."<sup>7</sup> Lewis takes the cogency of Hoy's argument for granted, but it can be questioned.

Mellor has argued that the problem of temporal location can be answered even if one assumes that a person is in the strictest sense the same through time. To see how, we must first say something more about Mellor's views on time. On the "token-reflexive" account that Mellor propounds, the temporal relation between the date at which a tensed sentence is uttered and the event or thing that such a judgment is about provides an objective basis for the truth-value of any tensed sentence. A present-tense sentence-token is true if and only if it occurs at (roughly) the same time as the event it is about;

a past-tense token is true if and only if it occurs at a time later than the event it refers to, and so on. Thus, on the token-reflexive account, the truth conditions of tensed sentence and judgment tokens are tenseless facts.<sup>8</sup>

With this background, we can give Mellor's explanation of why my experience of writing this reply to Lewis's article and not my experience of reading it is present. He would say that since as a matter of tenseless fact it is  $t_2$ , a sentence token of type "I am presently writing a reply to Lewis's article at  $t_2$ ," is, by its token-reflexive truth conditions, true, whereas a sentence of the type "I am presently reading Lewis's article at  $t_1$ ," is, by those same conditions, false. Consequently, my experience of writing this reply is present. Undoubtedly, defenders of tense will find something to criticize in Mellor's account and the debate will continue. My point, however, is not to settle the dispute but merely to claim that Lewis cannot simply assume on the basis of Hoy's remarks alone that the tenseless view must reject the view that persons are enduring entities.

Lewis's second argument in support of (2) may be stated as follows:

- (4) If persons are enduring entities, then we must accept a realistic account of tense.
- (5) However, if we accept the reality of tense, then tenseless view of time is false.
- (6) Therefore, if persons are enduring entities, then the tenseless view is false, or equivalently, if the tenseless view is true, then persons are not enduring entities.

The problem with this argument is that step (4) is false. We can begin to see why by first noting that Lewis interprets the doctrine that persons are enduring entities to be the claim that personal identity is unanalyzable, that persons are substances that remain literally the same through change. That is, he aligns himself with the views of Chisholm and Swinburne on personal identity.<sup>9</sup> A person is a substance that has properties and experiences; it is not a succession of experiences appropriately related. The question we must ask, therefore, is this: "Why does Lewis think that the substantialist view of personal identity implies the reality of tense?"

Lewis's argument in support of (4) begins with an apparent paradox concerning identity:

- (7) Suppose the "present you" has one set of properties and the "former you" another.
- (8) Then, since two things  $x$  and  $y$  cannot be strictly the same thing unless they have all their properties in common,

- (9) It appears to follow that the "present you" and the "past you" cannot be the same thing.

To this argument Lewis, following Chisholm, makes the following reply: "If tense is real, then, it makes perfect sense to say that the 'present you' had the same properties that the 'former you' had, because the only relevant existing thing to which 'former you' can refer is the present you. That is, it is possible to understand 'former you' in terms of 'the present you at an earlier time' on a tensed ontology, as it is not possible to do on the tenseless view."<sup>10</sup> Appealing to tense is one way of explaining how one and the same thing can have incompatible properties, but it is not the only way. The apparent difficulty may also be resolved by introducing absolute time in the form of moments. The individual that exists at  $t_1$  (the "former you") has all the properties that the individual that exists at  $t_2$  (the "present you") has even though it has different properties at  $t_1$  and  $t_2$ . For on this version of the tenseless view, individuals have (tenselessly) the properties they ever will have. If, for example, at  $t_1$  P is thinking of Plato, and at  $t_2$  P is not thinking of Plato (but thinking of Descartes), then P has (tenselessly) the properties of thinking of Plato at  $t_1$  and of thinking of Descartes at  $t_2$ . Thus, on this view of time and change, persons can be enduring entities even if tense is unreal. Thus, (4) is false and consequently, Lewis's second argument for (2) is unsound. Let us see if his third argument fares any better.

Lewis states the question of personal identity as follows: "What does it mean to say that person  $P_1$  at  $t_1$  is the same person as person  $P_2$  at  $t_2$ ?" He goes on to claim that if, as the tenseless theory maintains, persons are composed of temporal parts, then "it is misleading to ask what it means to say that Jones-at- $t_1$  is the same person as Jones-at- $t_2$ . For Jones-at- $t_1$  as well as Jones-at- $t_2$ , strictly speaking are not persons at all, but temporal parts of Jones. And, strictly speaking, they are not identical, because they are different temporal parts of Jones in much the same way that his feet and hands are different spatial parts of him."<sup>11</sup> Lewis's argument seems to be that

- (10) Since temporal parts of persons are not persons and since
- (11) Different temporal parts existing one before the other cannot be identical, it follows that
- (12) The existence of temporal parts is incompatible with the existence of persons as enduring entities.

Of course this argument, even if valid, does not establish that the tenseless view must deny that persons are enduring entities. For, as I have argued, a proponent of the tenseless view may claim, without inconsistency, that persons do not have temporal parts.<sup>12</sup> The point I wish to make now, however,

is that the existence of persons with temporal parts is compatible with their being continuants, and that therefore, (12) is false.

To see why this is so, note that the question "What does it mean to say that the person  $P_1$  at  $t_1$  is the same person  $P_2$  at  $t_2$ ?" is ambiguous. For the phrase "the person  $P_1$  at  $t_1$ " may mean "the temporal part  $P\text{-at-}t_1$ " (more simply, " $p_1$ "). Or it may also mean "the entity  $P$ , of which  $P\text{-at-}t_1$  ( $p_1$ ) is apart." Clearly if we mean the former, then it is misleading, indeed false, to assert that  $P\text{-at-}t_1$  ( $p_1$ ) is the same person as  $P\text{-at-}t_2$  ( $p_2$ ), but this does not imply that the person of which these two different stages are temporal parts is not the same at these different times. For on the second interpretation we can say that the person  $P$  who at one stage in its life ( $p_1$ ) is thinking of Plato is the very same person  $P$  that at a later stage ( $p_2$ ) is not thinking of Plato. Thus, the existence of temporal parts is compatible with treating persons as enduring entities that in the strictest sense persist through change. Consequently, even if detensers are committed to temporal parts, (12) is false, and therefore Lewis has not established that premise (2) is true.

Interestingly, this analysis of time and change that recognizes continuants with temporal parts shows that there is a third way of dealing with the incompatible properties problem that (a) countenances persons as enduring entities, (b) is compatible with the tenseless view of time, and (c) does not imply the reality of moments. For on the temporal parts analysis, the property of duration; the familiar temporal relations of *earlier than*, *later than*, and *simultaneity*; and also a temporal part-whole relation, are the only intrinsically temporal entities.<sup>13</sup>

Let us summarize the argument to this point. Lewis's thesis that the tenseless view of time cannot be reconciled with the view that persons are sometimes responsible for their actions ultimately rests on the premise that the tenseless view must deny that persons are enduring identities. I have argued that Lewis has not established that crucial premise and therefore has not provided any reason, much less a "conclusive reason," to reject the tenseless view. A further question is whether or not a Humean-type view that denies, from an ontological point of view, that persons are true continuants can be reconciled with the common belief that we are morally responsible agents. It is to that question that I shall next turn.

Suppose we assume that the tenseless view is committed to maintaining that a person is not a substance but a succession of mental and/or physical experiences and events. Then we can recast Lewis's original objection to the tenseless view as an objection to the psychological or physical continuity view of personal identity:

- (1') Morality, responsibility, and human action presupposes a conception of persons as persisting agents having an identity through time.

- (2') On any nonsubstantialist, Humean-type view of persons, persons are not persisting agents having an identity through time.
- (3') Therefore, on a Humean-type view, there are no morally responsible actions.

The difficulty with this argument is that it is either unsound because (2') is false, invalid since a Humean-type view can give an account of responsibility and human action, or question-begging because (1') assumes what needs to be proved.

Commonsensibly, the thesis that "responsibility implies persisting agents or identity through time" is in some sense true, but it is not nearly as evident as Lewis and Mellor claim that its truth requires the existence of a simple continuant that remains the same through time.<sup>14</sup> Those who analyze personal identity in terms of psychological continuity could very well accept the truism that responsibility implies identity but deny that responsibility implies the existence of persons as Lewis conceives of them. For if we analyze a person as a succession of experiences, then we could agree that a person at  $t_2$  is responsible for the deed of a person at  $t_1$  if and only if the person at  $t_2$  is identical with the person at  $t_1$  and then go on to say that the person at  $t_2$  is identical with the person at  $t_1$  if and only if there exists or could exist an experience at  $t_2$  which is or contains a memory of (and/or is in some way psychologically connected or continuous with) the experience of performing the deed at  $t_1$ . Analogously, if we analyze a person as a living human body, then we could agree that a person at  $t_2$  is the agent who is engaging in an action begun at  $t_1$  if and only if the person or agent persists from  $t_1$  to  $t_2$  and then go on to say that the person (agent) at  $t_2$  is identical with the person (agent) at  $t_1$  (i.e., persists from  $t_1$  to  $t_2$ ) if and only if  $P$  at  $t_2$  is physically continuous with  $P$  at  $t_1$ . In short, a Humean need not deny the commonsense truth that persons are perduring agents. Consequently, if (1') is taken for what it is namely, a metaphysically neutral, preanalytic truth of common sense, then the argument is unsound because (2') is false. Of course, if the phrase "persisting agent having an identity through time" is interpreted in terms of a Cartesian-ego, then (2') is true, but then the argument in which it occurs is invalid. For the preanalytic truth of (1') together with (2'), construed as denying a specific metaphysical analysis of that truth, is compatible with the existence of morally responsible agents.

If, on the other hand, Lewis simply assumes under the guise of common sense that the truism expressed by (1') is the metaphysical view that persons (agents) are simple substances, then he begs the question against the Humean by assuming that his analysis or ontological interpretation of common sense is correct. Perhaps Lewis would reply that since our concepts of morality, responsibility, and human action or what we mean by statements

that employ those concepts are intimately bound up with persisting agents, it follows that the correct metaphysical analysis requires simple continuants. Elsewhere I have argued that the inference from what we ordinarily mean, by so-and-so to what there is in the world in virtue of which so-and-so is true, is fallacious because it is based on a mistaken concept of analysis.<sup>15</sup> I shall not, however, argue that point again here, since I have already established that even if Lewis is correct and persons are literal continuants, the tenseless view of time can be defended against his objection.

## NOTES

1. Delmas Lewis, "Persons, Morality, and Tenselessness," *Philosophy and Phenomenological Research* 47 (1986): 305–309.

2. *Ibid.*, p. 306.

3. *Ibid.* For a recent criticism of the subjective view of time from a philosopher sympathetic with the tenseless account, see Melvin M. Schuster, "Is the Flow of Time Subjective?" *Review of Metaphysics* 39 (1986): 695–714. For a defense of the tenseless view against numerous other objections, see my *Temporal Relations and Temporal Becoming: A Defense of a Russellian Theory of Time* (Lanham, MD: University Press of America, 1984), especially chaps. 5–8.

4. See Hugh Mellor, *Real Time* (Cambridge: Cambridge University Press, 1981), chap. 7; Jeremy Butterfield, "Spatial and Temporal Parts," *Philosophical Quarterly* 35 (1985): 32–44; Butterfield, "Seeing the Present," *Mind* 93 (1984): 161–76; Butterfield, "Indexicals and Tense," in *Exercises in Analysis*, ed. Ian Hacking (Cambridge: University Press, 1984), pp. 69–87.

5. Mellor, *Real Time*, p. 106, my emphasis.

6. Ronald C. Hoy, "Becoming and Persons," *Philosophical Studies* 34 (1978): 269–80.

7. *Ibid.*, p. 275.

8. Mellor's notion of a "tenseless fact" is problematic, as I argue in essay 15.

9. See Lewis, "Persons, Morality, and Tenselessness," pp. 306–307.

10. *Ibid.*, p. 307.

11. *Ibid.*, p. 306.

12. And Harold Noonan has argued that temporal parts of persons are themselves persons in "The Four-Dimensional World," *Analysis* 37 (1976): 32–39, and in "A Note on Temporal Parts" *Analysis* 45 (1985): 151–52.

13. This view is defended in greater detail in Reinhardt Grossmann, *The Categorical Structure of the World* (Bloomington: Indiana University Press, 1983), pp. 89–101. See also Robert Coburn, "The Persistence of Bodies," *American Philosophical Quarterly* 13 (1976): 173–84, and Hugh S. Chandler, "Defending Continuants," *Noûs* 4 (1970): 279–82.

14. This common sense truism has recently been abandoned by Derek Parfit in *Reasons and Persons* (New York: Oxford University Press, 1985), part 3.



15. See Oaklander, *Temporal Relations and Temporal Becoming*, chap. 4, and Oaklander and Silvano Miracchi, "Russell, Negative Facts, and Ontology," *Philosophy of Science* 47 (1980): 434–55. For a dialectical argument against the ontological category of substance qua agent, see Gustav Bergmann, *Realism: A Critique of Brentano and Meinong* (Madison: University of Wisconsin Press, 1967), pp. 111–24.

## *Temporal Passage and Temporal Parts*

There are two perennial philosophical issues that have recently received considerable attention. The first concerns identity through time, and the second concerns temporal becoming.<sup>1</sup> The purpose of this paper is to explore one important connection between these two issues. More specifically, I shall attempt to demonstrate that if one accepts the doctrine of four-dimensional objects and temporal parts, then the tensed or A-theory of time cannot adequately explain the sense in which individual things, either persons or nonpersons, are moving toward the future, or the sense in which the future is moving toward individual things. If true this would, in effect, render the tensed theory incompatible with the doctrine of temporal parts. Thus, it is a thesis worth considering, and a useful place to begin a discussion of it is with an explication of (one version of) the tensed theory of time.

One of the most familiar features of our experience is the passage of time. Events that are once in the future become present and then recede into the more and more distant past as time passes. Not only events but individual things such as sticks, stones, and persons are presumed to be continually moving through time toward their eventual destruction or death. How is such temporal becoming, passage, or change to be understood? According to the most prevalent version of the tensed or A-theory of time, temporal passage is to be understood literally, as ascribing to things and events the successive gain and loss of the metaphysically monadic temporal properties of *pastness*, *presentness*, and *futurity*. Given this version of the tensed theory and the view that individual things are wholes composed of temporal parts, can any sense be given to the claim that individual things move through time from one moment to another? I do not think so, but before arguing the point, we must clarify the doctrine of temporal parts.

Preatalytically ordinary objects, including persons, are continuants; they persist (or exist) at more than one (or through) time. The philosophical issue concerns the analysis of that truth. What is a continuant and how does a continuant persist through time? The doctrine of four-dimensional objects that incorporates the notion of temporal parts is one answer that has found favor among many contemporary philosophers. To see what is involved in that view, consider a spot, call it "A," draw a line through the middle and color one part, call it " $a_1$ " green, and the other part, call it " $a_2$ " red. Then we can say that a spot A that exists in part at  $a_1$  is the same as the spot A that exists in part at  $a_2$ , that it is one and the same spot that is red and green even though  $a_1$  is not the same as  $a_2$ . On the temporal parts view, individual things are *extended* through time as they are extended through space: they persist by having different (and suitably related) temporal parts at different times. Accordingly, when someone says "P is thinking of Descartes at  $t_1$ ," he or she is referring to the entire extended whole and ascribing to it the property of having a  $t_1$ -part that is thinking of Descartes. As van Inwagen has recently put it,

[T]his sentence ["Descartes was hungry at  $t_1$ "] is exactly analogous to "Water Street is narrow at the town line" in saying *that* you refer to the whole of Water Street and ascribe to it the property of having a narrow town-line-part. What occupies  $R_1$  [a spatiotemporal slice of a four-dimensional object] is not what anyone, ever, even at  $t_1$  refers to as 'Descartes'; it is rather, a proper, temporal part of the single referent that Descartes always has.<sup>2</sup>

Thus, on the temporal parts approach, the *entire* object is not wholly present at one or at many successive times. Rather, ordinary objects exist *from* one time to another in that different temporal parts of the entire, temporally extended, object exist at different times.<sup>3</sup>

However, if an object X is a whole composed of temporal parts, and if the tensed theory of time is true, then there are reasons to suppose that X cannot move through time. On the tensed theory, the locution "X moves through time" implies that X exemplifies *presentness* (is present) at different times. In other words, as *presentness* moves from one time to another, X allegedly moves along with it. Since, however, X does not strictly speaking exist at different times, only its temporal parts do (different temporal parts at different times)—it follows that X cannot exemplify *presentness* at different times and therefore cannot move through time. To put the same point otherwise, though *presentness* can move from one temporal part of X to another, X itself cannot approach a future event by moving from one time to another, since X (as a temporal whole) does not literally exist at any time at which its temporal parts do. At best, each temporal part of X is successively becoming present, but it is difficult to understand how that would constitute X moving in time.

Of course at any one time, all the parts of X have some transitory temporal property; each one is either past, present, or future. But then the most we can say of X is that it is partly past, partly present, and partly future. We cannot say of X that it is present *simpliciter* but that is what we must be able to say for it to be true that "X moves in time."

The point can be made most clearly by comparing the temporal case with the spatial case. A spatial whole that is part green and part red is, strictly speaking, neither green nor red but only partly each. Analogously, a temporal whole that is part past, part present, and part future is, strictly speaking, neither past, present, nor future but only partly each.

At this point, a defender of the compatibility of temporal passage and temporal parts may reject the analogy between space and time and claim that in the temporal case a whole may have the same temporal property that a part has, even if other parts of that whole exemplify different temporal properties. Specifically, a defender may argue that a temporal whole W is present if one of the W's temporal parts is present on the grounds that its denial entails a contradiction. Thus, if W is past (future) when one of its temporal parts is present, then W is past (future) when its earliest (latest) temporal part is present, which is absurd.<sup>4</sup>

The problem with the above argument is that it proves too much, since analogous reasoning can be used to support the thesis that W is past (future) if one of its parts is past (future). For example, to suppose that W is present (future) if one of its temporal parts is past entails the absurdity that W is present (future) when its latest temporal part is past. Thus, the only argument for the thesis that W is present if a temporal part of W is present proves at most that W is partly past, partly present, and partly future but not that W is present *simpliciter*, not that W exemplifies *presentness*.<sup>5</sup>

Thus, it would appear, *prima facie*, that if a thing is a whole of temporal parts, it cannot exemplify *presentness* at any one time. However, if it cannot be present at any one time, then it cannot literally move from one moment to the next as *presentness* moves from one of its temporal parts to the next. I conclude, therefore, that the traditional tensed theory of time is incompatible with the doctrine of temporal parts.

Two other versions of the theory of time that take tense seriously need to be considered before our thesis concerning the incompatibility between the passage of time and the temporal parts account of individual things can be claimed to be complete. According to the first, adopted by Roderick Chisholm and Arthur Prior, events do not don and doff transitory temporal A-properties because there are no such properties for events to acquire and shed.<sup>6</sup> Nor do events exist tenselessly in the B-series network of temporal relations. Rather, on this view of temporal becoming, only the *present* exists. The future is what will exist but does not yet exist, and the past is what did

exist but no longer exists. Interestingly, both Chisholm and Prior reject the temporal parts analysis of identity through time, and it is easy to see why. If there is no sense in which the past and future parts of a whole exist now (or more accurately, if all the temporal parts of a whole do not at every moment exemplify some transitory temporal property), then the past and the future do not exist. But if only one part of a whole person exists (is present), then it is impossible to say that the whole person exists (is present).

To this it may be objected that a whole can exist even if only one part is present, for it is possible that a whole has only one part. Thus, on the Prior-Chisholm tensed theory, we could say when time  $t_1$  is present, the whole  $W$  is composed only of the part  $p_1$  that is then present, and when the later time  $t_2$  is present,  $W$  is composed of the part  $p_2$  that is then present. The same whole is composed of different parts at different times, and as the successive parts become present (come into existence), the whole moves from one moment to another.

At the outset we should note that even if this argument is valid, it would establish that an ordinary object's passage through time is compatible with the doctrine of temporal parts only if one rejects mereological essentialism, the view that a whole has its parts necessarily.<sup>7</sup> But the argument is not valid. Admittedly, if a whole had only one part, then it would be present if the part was present. However, to suppose that a whole has only one part creates a dilemma. The whole is either identical with that part or it is not. If the relation between a part and the whole of which it is a part is identity, then a change in a part would imply a change in the whole. In that case, the coming into existence of a new and different temporal part would not help explain the movement of *one and the same object* from one time to another. If, on the other hand, a whole with only one part is not identical with that part, then what is it (identical with)? I can think of two possibilities: (1) an aggregate of (different) temporal parts that successively come into existence or (2) a continuant without temporal parts. On the second possibility, a whole is not composed of one (or many) temporal parts, since it has none, and so its existence is irrelevant to the question of whether or not the doctrine of temporal parts is compatible with the passage of time. Unfortunately, the first alternative is equally unattractive. For if a whole is something distinct from its presently existing part and is the aggregate of all its parts, then it does not exist at any one time and so cannot, in any literal sense, move from one moment to the next as, according to the tensed theory, it must.

A final version of the tensed theory that I shall consider is a view recently put forth by David Zeilicovici.<sup>8</sup> The heart of his view is that the past and present do exist but that the future does not exist. The passage of time consists in the replacement of one A-series (which contains past and present moments or events) with another A-series whose membership is increased. It

would take us too far afield to go into the details of this view, which I have criticized elsewhere (essay 10), but enough has been said to enable us to see why Zeilicovici's account of passage will not render it compatible with the doctrine of temporal parts. In fact, it seems to me that his view suffers from the defects of each of the preceding alternatives.

As on the traditional view of tense, at any given moment at which one temporal part is present, there will exist other temporal parts that are past (except at the first moment of the "thing's" existence), and thus at any moment we can only say that *W* is partly past and partly present, but that does not enable us to give a sense of *W*'s moving through time. Furthermore, since only the past and present parts of a whole exist, the point that we raised against Chisholm's view holds here too, namely, that a whole cannot exist at a moment if all the parts do not exist. Consider the spatial case again. If *A* is the sum of *a*, *b*, and *c*, and only *a* and *b* exist, then *A* cannot exist. Similarly, if a temporal whole, *W*, is a succession of temporal parts  $p_1$ ,  $p_2$ , and  $p_3$ , and only  $p_1$  and  $p_2$  exist, then *W* (in the sense of this whole) does not exist. And if *W* does not exist at any one time, then *W* cannot be said to literally move from one time to another. It would appear, then, that Zeilicovici's version of the tensed theory of time can no more render intelligible an individual's moving through time (given the doctrine of temporal parts) than can its predecessors. I conclude, therefore, that the tensed theory of temporal passage and the temporal parts analysis of continuants are incompatible.<sup>9</sup>

## NOTES

1. For a sampling of recent literature on identity, including personal identity, see Andrew Brennan, *Conditions of Identity* (Oxford: University Press, 1988); Hector N. Castañeda, "Reflexivity of Self-Consciousness: Sameness/Identity, Data for Artificial Intelligence," *Philosophical Topics* 17 (1989): 27–58; Castañeda, "Objects, Identity, and Sameness," *Topoi Supplement* 4, *The Object and its Identity* (1989): 31–64; Graeme Forbes, "Is There a Problem About Persistence," *Aristotelian Society Supplement* 61 (1987): 137–55; Mark Johnston, "Is There a Problem About Persistence," *Aristotelian Society Supplement* 61 (1987): 107–35; E. J. Lowe, "Substance, Identity and Time," *Aristotelian Society Supplement* 62 (1988): 61–78; Harold Noonan, *Personal Identity* (New York: Routledge, 1989); Derek Parfit, *Reasons and Persons* (Oxford: Oxford University Press, 1984); David Wiggins, *Sameness and Substance* (Oxford: Basil Blackwell, 1980); and Kathleen V. Wilkes, *Real People* (Oxford: Oxford University Press, 1988). For recent work on temporal becoming, see Hugh Mellor, *Real Time* (Cambridge: Cambridge University Press, 1981); George Schlesinger, *Aspects of Time* (Indianapolis: Hackett, 1980); Keith Seddon, *Time: A Philosophical Treatment* (London: Croon Helm, 1987); J. J. C. Smart, "Time and Becoming," *Time and Cause*, ed. Peter van Inwagen (Dordrecht: D. Reidel, 1980), pp. 3–15; Quentin Smith, "Problems with

the New Tenseless Theory of Time," *Philosophical Studies* 52 (1987): 371–92; Smith, *Language and Time* (Oxford: Oxford University Press, 1993); and David Zeilicovici, "Temporal Becoming Minus the Moving Now," *Noûs* 23 (1989): 505–24.

2. Peter van Inwagen, "Four-Dimensional Objects," *Noûs* 24 (1990): 247.

3. Cf. Mark Heller, *The Ontology of Physical Objects* (Cambridge: University Press, 1990); Pablo Dau, "Part-Time Objects," in *Midwest Studies in Philosophy*, vol. 11, ed. P. A. French, T. E. Uehling Jr., and H. K. Wettstein (Minneapolis: University of Minnesota Press, 1986), pp. 323–34.

4. This argument is found in Quentin Smith, "Personal Identity and Time" (unpublished MS read at the Central States Philosophical Association Meetings in Iowa City, Iowa, 1989). Subsequently published in *Philosophia* 22 (1993): 155–67.

5. Some may still claim, on the basis of different spatial analogy (for example, the whole ceiling is over the table when part of the ceiling is over it), that we can legitimately say that the whole is present if a part is present. However, the analogy fails because the two cases are dissimilar in a crucial respect: being *over a table* is a *relation* whereas being *present* is a *nonrelational* property.

6. Roderick Chisholm, *The First Person* (Minneapolis: University of Minnesota Press, 1981); and Arthur N. Prior, *Time and Tense* (Oxford: University Press, 1968).

7. In Castañeda, "Objects, Identity, and Sameness," it is argued that mereological essentialism is incorrect about our ordinary objects, which are conceived as Aristotelian substances in a hierarchy of emergent individuals among lower materials.

8. Zeilicovici, "Temporal Becoming Minus the Moving Now."

9. I have benefited greatly from the written comments on earlier versions of this essay by Hector-Neri Castañeda, Ronald C. Hoy, and Quentin Smith. I also wish to thank Charles E. M. Dunlop and Gregory Trianosky for stimulating conversations on the issues surrounding this paper.

## *Personal Identity, Responsibility, and Time*

### 1. INTRODUCTION

**B**efore Derek Parfit's revolutionary book *Reasons and Persons*, it was assumed that a necessary condition for moral and legal responsibility is personal identity.<sup>1</sup> After all, what could be more obvious than the thesis that to hold a person culpable for misconduct, he or she must *be* the person who engaged in the deed? As F. H. Bradley once expressed it:

Now the first condition of the possibility of my guiltiness, or of my becoming a subject of moral imputation, is my self-sameness; I must be throughout one identical person. . . . If, when we say, "I did it," the I is not to be the one I, distinct from all other I's; or if the one I, now here, is not the same I with the I whose act the deed was, then there can be no question whatever but that the ordinary notion of responsibility disappears.<sup>2</sup>

The question thus arises: What makes, or is the ontological ground of, a person at one time and a person at another time being one and the same person? In other words, what is the basis of the *numerical identity* or selfsameness of the person charged with a crime and the person who was its perpetrator? Speaking very generally, there are two responses to this question. According to the first, the "substantialist (or endurantist) view," the numerical identity of a person is grounded in a substance that is *wholly present* at each moment of its existence. According to the second, the "relationalist (or perdurance) view," there is no single substance that is "wholly present" at each moment of a person's existence.<sup>3</sup> Rather, a person is a whole (a particular) that has spatial and temporal parts, and the numerical identity of a person is grounded in the relation (or relations) between and among the dif-



ferent successive and overlapping stages, phases, or time slices that each constitute one stage or segment in a person's life.<sup>4</sup>

The debate between the relationalist and substantialist is connected with the topic of responsibility in the following way. Substantialists have argued that their view must be correct, since only on it is the person who was the perpetrator of a deed at one time numerically identical with the person who at a later time is on trial for it. For, on the relational view, where our identity is based upon a relation between *different* stages, it is alleged that we do not have *one* person who performed the crime and later is on trial for it. Rather, there is one stage where an evil deed is done and another stage where a trial is taking place, but there is no selfsame substance that exists at both times. It is affirmed, therefore, that on the relational view, no person can be held responsible for any past action.<sup>5</sup>

This argument was, to my knowledge, first propounded in Thomas Reid's *Essays on the Intellectual Powers of Man*.<sup>6</sup>

Our consciousness, our memory, and every operation of the mind, are still flowing like the water of a river, or like time itself. The consciousness I have this moment can no more be the same consciousness I had last moment, than this moment can be the last moment. Identity can only be affirmed of things which have a continued existence. Consciousness, and every kind of thought, are transient and momentary, and have no continued existence; and, therefore, if personal identity consisted in consciousness, it would certainly follow, that no man is the same person any two moments of his life; and as the right and justice of reward and punishment are founded on personal identity, no man could be responsible for his actions.<sup>7</sup>

In the last section of this paper, I shall explore the "argument from responsibility," as I shall call it, against the relational view of identity.

There is, however, another question I want to attend to first. Namely, what connection, if any, is there between the substantialist/relationalist debate (commonly called "the endurance/perdurance" debate) on the one hand and the debate between the A- and B-theories of time on the other? If, as some have recently argued,<sup>8</sup> the substantialist view of identity entails (some version of) the A-theory, then, since the B-theory is the denial of the A-theory, it follows that B-theorists must reject the substantialist view and adopt the relational view of personal identity. In that case, however, the B-theorist will have to deal with the argument from responsibility. Thus, the question whether endurance entails the A-theory is an important one indeed. To clarify the issues involved, I shall begin by turning to the A/B theory debate.

## 2. THE A- AND B-THEORIES OF TIME

The debate between the A- and B-theories of time is an ontological dispute: it concerns what kinds of intrinsically temporal entities there are. For the B-theorist, the only intrinsically temporal entities are the *relations* of *simultaneous with*, *earlier than*, and *later than*. Because these relations hold between terms whether those terms are, as we ordinarily say, past, present, or future, it follows that all of the terms in a B-series are located at the time they are regardless of what time it is. A corollary of this view, on my interpretation of the B-theory, is that the B-facts that are the truthmakers for temporal relational statements (such as *A is earlier than B*) are "eternal."<sup>9</sup> That is, temporal relational B-facts do not exist in time (although time exists in them),<sup>10</sup> since they do not come into existence; they do not stand in temporal relations to each other (or anything else); they do not occupy moments of absolute time; and they do not exemplify the nonrelational temporal properties of *pastness*, *presentness*, and *futurity*. This aspect of the B-theory can be summarized by the aphorism *Time is timeless*.

For the A-theorist the situation is different. There is, however, no single way to state how the A-theory differs from the B-theory, since there are many different versions of the A-theory, of which I shall distinguish three. First, there is the *traditional* view according to which there are (or rather there are alleged to be) *both* the familiar B-relations as well as A-determinations that the terms of B-relations have and then lose with the passage of time.<sup>11</sup> Second, there is the *open future* view, according to which events are nonrelationally *past* and *present* but not future since the future does not exist, it is a nonentity. On this view, neither temporal relations nor the facts they enter into are eternal, since both kinds of temporal items *come into existence* as new events are added to the sum total of existence.<sup>12</sup> Finally, there is *presentism*, according to which only the present exists; the past and the future are species of unreality.<sup>13</sup> For the presentist, temporal entities are "in time" in virtue of *being present*, which means to just plain exist or to exist *simpliciter*, without regard to time. On this view there are, ontologically speaking, no temporal relations, and on all (consistent) versions of presentism there are no nonrelational temporal properties either (except perhaps the property of *presentness*). Indeed, insofar as I can tell, for the presentist, time has no ontological status whatsoever, or if it does, then time is grounded (inconsistently) in the (tensed) exemplification relation.<sup>14</sup>

### 3. THE ENTAILMENT THESIS

Given the variety of A-theories, it is not always clear what is meant by the claim that endurance entails the A-theory of time.<sup>15</sup> We shall have to look at the arguments to determine whether, in fact, substance ontologists must be A-theorists and if so, of what variety. Let us begin then with Robin Le Poidevin's argument for the entailment thesis. Philosophical problems often arise through a conflict of intuitions. Le Poidevin juxtaposes three intuitions that he claims cannot be accounted for if we combine a substance ontology with the B-theory of time. We intuitively believe (a) that things, including people, change by having different properties at different times. From that it follows that (b) I *persist* and so am extended in time from, say, 1945 to 2045, if I'm lucky. (c) We also believe that the "entire" person exists at any one moment in its life history and that a person is "wholly present" at each moment of his or her existence. The conflict is between (b) and (c). If an individual is spread out or extended in time, then how can it have its *entire being wholly located* at a given moment? According to Le Poidevin, only on the [traditional?] A-theory can one say that whole objects have a temporal extension by "moving through time" from one moment to the next:

Now [the] tensed theory can resolve this tension between (b) and (c) by insisting that objects *change* their temporal locations, and so have temporal extension in the sense of having occupied different times in the past from those they occupy now, and from those they will occupy in the future.<sup>16</sup>

It is not clear to me, however, why the "whole" temporally extended object cannot exist at each moment even if we adopt a B-theoretic ontology. Admittedly, if objects are extended in time in the way in which they are extended in space, by having different temporal parts at different times, then the entire temporally extended object cannot be present at any one time any more than the entire spatially extended object can be present at any one place.<sup>17</sup> But to assume that on the B-theory, objects are extended in time as they are extended in space is to beg the question against a B-theorist, such as D. H. Mellor, who thinks that things, including persons, are objects that *endure* through time.<sup>18</sup> Le Poidevin seems to assume that if time is like space in that objects in time exist equally regardless of whether they are past, present, or future, just as objects in space exist equally whether they are here, there, or elsewhere, then it follows that objects must be wholes of spatiotemporal parts and not "wholly present" at each time. However, the validity of that inference is just the point in question.

Why, in other words, could not the B-theorist maintain that objects have temporal extension in virtue of the B-fact that they (or their having properties)

exist (*simpliciter*, or tenselessly) or are located at different temporal locations (which, I take it, is Mellor's view). Since such objects have no temporal parts, they can be wholly located at a moment, and since they are (*simpliciter*) at many moments, they are temporally extended. Everything appealed to is a B-fact. Thus, Le Poidevin has not shown that enduring substances imply the A-theory.

There is, however, a way of understanding the notion of "wholly located" at a time, or "wholly present" at a time that does support the entailment thesis. On this interpretation, if an enduring object *O* exists (*simpliciter*) at many different times, as the B-theory maintains, then *O* is wholly present at time *t*, or wholly located at time *t*, if and only if *all* the times at which *O* exists are times that are present or located at *t*. Since, of course, *all* the times at which *O* exists are not located at time *t*, *O* cannot be wholly present at every time it exists if one adopts the B-theory and therefore there cannot be enduring substances on the B-theory.

This notion of "wholly present" involves not only that *all* the *times* at which a thing exists (*simpliciter*) are located at every moment it exists but also that *all* the *properties* a thing has (*simpliciter*) be present or located at every moment it exists. Given this meaning of "wholly present," one may also argue that the intuitions (a) and (c) contradict one another. For if we intuitively believe that a person is "wholly present" at each moment of his or her existence, then it is false to say that the person as he or she is now (or was at some earlier time) is wholly present at each moment of his or her existence. For the way I am now is not the way I was earlier, for the properties I have at the present time are not the same as the properties I have at an earlier time.<sup>19</sup> This point leads directly to another argument for the entailment thesis.

This other argument for the entailment thesis stems from the familiar problems of change and temporary intrinsics. The puzzle is generated by the indiscernibility of identicals, and it goes like this. If *A* is numerically identical to *B*, then every property that *A* has *B* also has, or everything that is true of *A* is true of *B*. But then, if *A* is *F* and *B* is not *F*, then it follows that *A* is not numerically identical to *B*. Or if, in spite of *A*'s being *F* and *B*'s being not *F*, *A* is identical to *B*, so that they each exemplify the same properties, then an absurdity results. How, then, can a single object *O* change from being *F* to being not *F*? How can one and the same object have incompatible properties? Presumably this puzzle can be resolved by adding time into the mix. There are several different ways in which this can be done, but it is questionable that the introduction of time can reconcile enduring substances with B-time.<sup>20</sup>

One possibility is to say that:

- (1) *O*-at-*t* is (*simpliciter* or tenselessly) *F* and *O*-at-*t*<sup>\*</sup> is *G*,

but then we still have the difficulty that  $O\text{-at-}t$  and  $O\text{-at-}t^*$  are not the same, since they are discernible.<sup>21</sup> In fact, packing time into the subject (1) in effect rejects substances in favor of the doctrine of temporal parts. Different temporal parts of  $O$  have different properties at different times.

On a second alternative, we can say that

(2)  $O$  is  $F\text{-at-}t$  and  $O$  is not  $F\text{-at-}t^*$

but this will not do. Admittedly, the alleged contradiction is avoided since there is no incompatibility in the selfsame substance  $O$  having both  $F\text{-at-}t$ , and not  $F$  (or  $G$ )  $\text{-at-}t^*$ , but the introduction of time-indexed properties vitiates this account. The problem is to explain how  $O$  can change its *intrinsic* properties without either violating the indiscernibility of identicals or implying a contradiction. However, if the only properties that  $O$  has are time-indexed properties like  $F\text{-at-}t$ , then the fact that needs to be accounted for, namely, how a substance  $O$  can have the nontime-indexed properties,  $F$  and not  $F$ , still awaits an explanation. A critic may reply that since there are no intrinsic nonindexed properties, there is nothing to be explained. I would say that the notion of time-indexed properties does not make ontological sense (and so there are none) because it is particulars or events, but not properties, that are at times. Furthermore, such properties obliterate the distinction between changing and staying the same, since being  $F\text{-at-}t^*$  is as different from being  $F\text{-at-}t$  as being  $G\text{-at-}t^*$  is (where  $F$  and  $G$  are, as we think of them, incompatible properties).<sup>22</sup>

A third alternative, related to the second, is to treat intrinsic properties as relations to times. On this gambit,

(3)  $F(O, t) \ \& \ G(O, t^*)$

Once more, this move avoids any contradiction, since there is no incompatibility or violation of the indiscernibility of identicals.  $O$  can have one *relation* to one time  $t$  and another relation to another time  $t^*$ , and the selfsame  $O$  can have both relational properties at  $t$  and  $t^*$ . Nevertheless, there are two difficulties with this gambit. First, it seems to commit one to absolute time in the form of temporal individuals or moments.<sup>23</sup> Second, by making  $F$  and  $G$  relations, the third alternative does away with *intrinsic* properties and so does away with change in the sense required.

Another possibility, recently put forth by Mellor, is to introduce time into the equation of change as the *locations* of different B-facts.<sup>24</sup> Thus, the contradiction is allegedly avoided by saying

(4) at  $t$ ,  $O$  is  $F$  and at  $t^*$ ,  $O$  is not  $F$

On Mellor's view, these times are not *constituents* of the fact that O is F and O is not F, in any of the ways implied by (1)–(3), but rather, they are the *locations* of the facts in question. Mark Hinchliff and Trenton Merricks, both presentists, have argued that Mellor's view does not avoid the contradiction in temporary intrinsics.<sup>25</sup> For they ask, is it not a contradiction to assert O is F and O is not F, even if, as on Mellor's analysis, each of those facts has the *additional* relational properties of being located at *t* and *t*\*? As Hinchliff puts it,

Why isn't the candle-is-bent fact located at *t* also a truthmaker for "the candle is bent?" I understand that Hugh does not *want* "the candle is bent" to have a truthmaker; for if it did, so would "the candle is straight," yielding a contradiction. But what principles of Mellor's theory preclude "the candle is bent" from having as its truthmaker the fact that the candle is bent (a fact that happens to be located at *t*)? If these truthmakers are like particulars located in space and time (as Mellor suggests), and then they would seem to exist in the same sense as Socrates exists for the B-theorist. And if a truthmaker for a sentence exists, the sentence is true.<sup>26</sup>

Mellor responds to Hinchliff but rather than consider their debate, there is another argument against Mellor's gambit, or any other substantialist attempt to combine endurance with B-time, that I wish to consider.<sup>27</sup>

To make sense of the substantialist view, one must be able to unpack the notion of "wholly present" in a way that is consistent with an enduring object changing some of its parts over time. In what sense, then, is a presently existing enduring object "wholly present" at the present time? Presumably, if a presently existing object is "wholly present," then all of its parts (properties and times) exist at the present time. Since, however, an enduring object is wholly present at every time it exists, it would follow that for an enduring object, *all of its parts exist at every time at which it exists*. Unfortunately, it is not the case that *all* the parts of an object exist *simpliciter* at every time at which the object exists, assuming that the object exists at more than one time and that it has different parts at different times. Thus, it is not the case that a presently existing object is wholly present at every time it exists, that is, there are no enduring substances.

One may argue that this argument is invalid, since one can be a mereological essentialist, in which case a presently existing object *can* have all its parts existing at every time it exists because it always has the parts it ever will have. This point is well taken if by "parts" we mean only "physical parts." But if we expand the notion of "parts" to include times, properties, and spatial locations, then it is not the case that an object is wholly present (i.e., has all of its "parts" *simpliciter*) at every time at which it exists.

To put the argument otherwise, if all of an enduring object's parts exist (*simpliciter*) at every time at which it exists, then if O has a part at *t* that O does

not have at  $t^*$ , then O will violate the parts indiscernibility of identicals, or O will have incompatible parts, and that is absurd. Of course, there is no contradiction in claiming that objects have incompatible parts *at different times*, but there is also no way to formulate the claim that enduring objects persist through time if we take that gambit. If, as Merricks says, but does not endorse,

(1\*) For any presently existing object O and for any time  $t$ , O *endures* if and only if O persists and all of O's *parts at  $t$*  exist at the present time,<sup>28</sup>

then if an object has different parts at  $t$  and at the present time, then it has not endured, according to this analysis, but Chisholm, Reid, and other "monadists" notwithstanding, we should say that the object has endured. Thus, we are faced with a dilemma. Either substances can have parts (properties and locations) *simpliciter*, or they can only have them *at times*. If they can only have them at times, then one cannot state what it is for an object to endure (or be wholly present) through a change of parts (or intrinsic properties), for it requires that an object have all its "parts" at every time it exists, and that is absurd. If they can only have them *simpliciter*, then one must be a presentist. Thus, Merricks concludes that "if we allow change of parts, I think that there is no way at all to make sense of an object's 'being wholly present at every time at which it exists' without the doctrine of presentism."<sup>29</sup>

A presentist has an obvious solution to the problem of change of properties and change of parts, for he or she will maintain that substances just plain have properties or have them *simpliciter*. Ordinary properties like *being green* or *being red* are neither relations to times nor time-indexed properties nor *intrinsic* properties of temporal parts of particulars. They are intrinsic, nonrelational properties exemplified by substances, and they can maintain that thesis without violating the indiscernibility of identicals or contradicting themselves because the only properties or parts an object has are those it presently has. "Something is bent at  $t$  if and only if *when  $t$*  is present, it is bent."<sup>30</sup> Thus, *when  $t$*  is present and, say, O is F, it is *not* also the case that O is not F. What is the case at  $t$  when  $t$  is present is that O will be F. Merricks states his point as follows:

The fact that O is not F at some time other than the present no more implies that O is not F than, for example, the fact that I am forty feet tall "in some other possible world" implies that I really am forty feet tall. So, given presentism, O's both being not F at some time other than the present *and* being F is not contradictory.<sup>31</sup>

One may ask how the presentist can maintain both that substances just plain have properties, or have them *simpliciter*, and also maintain that they have

properties *simpliciter* only *when* the moment at which they exist is present? Indeed, if O is F *when t* is present, and O is not F at some time other than the present, then it would appear that there must be some time (event/thing) earlier or later than the present. Merricks agrees, for he says that "even the presentist should accept the obvious fact that objects have properties at times. The presentist should also accept that objects have properties at places, at distances from the moon and *either before, after, or during the American Revolution.*"<sup>32</sup>

Thus, the presentist must provide an account of temporal relations, and to provide such an account is to specify what there is in the world, independently of minds, that is the truthmaker of judgments asserting that two entities stand in a temporal relation. I do not, other B-theorists do not, and even some A-theorists do not think that presentists have the ontological resources to ground all of time in presently existing tensed facts.<sup>33</sup> It would, however, take us too far afield to explore that issue here. Suffice it to say that if, as seems to be the case, the substantialist view implies presentism, then the B-theory must reject the substantialist view and face the argument from responsibility, to which I shall now return.

## 4. THE ARGUMENT FROM RESPONSIBILITY

Recall that the argument from responsibility asserts that we cannot hold a person responsible for an action *unless* he or she is the selfsame person who did it. Only on the view that takes a person to be a substance that remains literally the same (and thus wholly present) from one time to the next can we claim that the selfsame "I" (= person) on trial for a deed is the "I" (= person) who actually did it. Thus, given the arguments of the preceding section, it follows that on the B-theory of time, no person is literally the same through time and change. And from that, we may conclude that no person can be held responsible for any action that was done in the past. The argument can be paraphrased as follows:

### *Argument from Responsibility I*

1. If a person is to be held responsible for a past action, then he or she must be the very same person that performed that action.
2. On the relational analysis of personal identity, the very same person does not exist at two different times.
3. The B-theory implies the relational analysis of personal identity.
4. Hence, on the B-theory, no person can be held responsible for his or her actions.



It seems to me that a B-theorist has four possible responses to this argument.

First, a B-theorist can claim that our ordinary notion of responsibility does presuppose the notion of an enduring self—the substantialist view—but that our ordinary notion of responsibility is false. More specifically, we ought not to be held responsible for our actions, since the ordinary notion of responsibility implies a view of the self (and of time) that is false. This is what Parfit calls the “Extreme Claim.” One might add that though the ordinary notion of responsibility is mistaken, it is useful for enabling us to get along in the world, since rewarding and punishing people for what we believe to be their deeds has utilitarian value. This view may be defensible, but I shall not try to defend it.

Second, a B-theorist can claim that the argument from responsibility begs the question by assuming that the identity of the sort required for responsibility is the identity of a substance that is wholly present at each moment of its existence. Thus, the relationalist will restate the argument making the implicit question-begging assumption explicit:

### *Argument from Responsibility II*

- 1'. If a person is to be held responsible for a past action, then the person must be a substance wholly present at each moment of his or her existence.
- 2'. On the relational analysis of personal identity, no person is wholly present at each moment of his or her existence.
- 3'. The B-theory implies the relational analysis of personal identity.
- 4'. Hence, on the B-theory, no person can be held responsible for a past action.

The relationalist will claim that what it is “to be” the selfsame person just is for the different temporal parts of an object to be suitably related. Thus, they will assert that though premise (2') is true, premise (1') is false, and to assume that it is true in an argument against the B-theory is to beg the question.

Of course, substantialists will reply that it is the relationalist who begs the question. For they will claim that if it is not the selfsame subject of experience, the selfsame agent wholly present when the act was done and when the person is held accountable for it, then responsibility evaporates. What we have here is a case of one person's *modus ponens* is another person's *modus tollens*. The substantialist will claim that since responsibility implies identity in the sense of a substance wholly present at each moment of a person's existence, it follows that on the relational view (since there are no such substances) there is no responsibility. The relationalist will claim that since

responsibility implies identity in the sense of a suitably related whole of numerically diverse temporal parts, and since we can be held responsible for our actions, it follows that we are identical through time in the relational sense, that it is the selfsame subject of experience. How are we to resolve the impasse? One possibility is to claim that preanalytically or commonsensically, responsibility entails the truth of some identity statement, but the specific truth conditions is a question that remains to be settled by argument. The substantialist view, which presents itself as the commonsense view, is, in fact, highly theoretical and should not be assumed to be true without further argument.

Indeed, with our earlier discussion of time and identity as a backdrop, the relationalist can offer the following argument against the substantialist account. The notion of "wholly present" is problematic, since it appears to involve the thesis that all the properties a thing has (*simpliciter*), and *all* the parts a thing has (*simpliciter*), and *all* the times at which a thing exists (*simpliciter*), are present at each moment of that object's existence. Given that understanding of wholly present, if at  $t_1$  an object (A) that F is identical with at  $t_2$  an object (B) that is not F, then A must exist with all of its properties at  $t_2$ , and B must exist with all of its properties at  $t_1$ , and that contradicts the assumption that the same object has different properties at different times.

A substantialist may attempt to avoid this argument by maintaining that it is based on a mistaken understanding of the indiscernibility of identicals (II, for short). They will say that (II) does not imply that if any object ( $x$ ) at  $t$  has different properties from any object ( $y$ ) at  $t'$ , then  $x$  is not the same as  $y$ . Rather, as Lawrence Lombard puts it,

The principle of the indiscernibility of identicals does indeed assert that objects that differ in property are distinct; but that just means that no object can, at any time, differ in its properties from those that it has at that time. Thus, here is a principle according to which things that differ in their properties are distinct:

(7) For any object,  $x$ , any object  $y$ , and any time, if  $t$ ,  $x=y$ , then for any property, F,  $x$  has F at  $t$ , if and only if  $y$  has F at  $t$ .<sup>34</sup>

Thus, a leaf (A) that is green in the summer can be the same as a leaf (B) that is brown in the fall, so long as (A) in the fall is brown and (B) in the summer is green. Perhaps this is how we should understand (II), but if so, it can provide little solace for those who claim that for (A) to be identical to (B), (A) and (B) must be wholly present at every time they exist. For if (B) must exist with *all* of its properties when A exists, then it must be brown as well as green in the summer. And if (A) must exist with all of its properties when B exists,

then it must be green as well as brown in the fall. For these reasons, either B is not identical to A, or if A is identical to B, a contradiction ensues.

Similarly, if one adopts the wholly present notion of identity, then an objection such as that put forth by Robin Le Poidevin certainly has force.<sup>35</sup> Le Poidevin argues that

In order to have a property (or at least an intrinsic property) at a time, an object must exist at that time. Since change takes place over time, an object cannot change unless it exists at more than one time. But now suppose that there is no passage of time and every proposition about an object is, if true, true for all times. Then, if  $x$  is F at  $t'$  and  $x$  is not F at  $t'$ , and the B-theory of time is true, then it is true for all times both that  $x$  exists at  $t$  and that it exists at  $t'$ . Is this not a contradiction?<sup>36</sup>

Indeed it is, but only if  $x$  is "wholly present" at each time it exists, for then at  $t$ ,  $x$  exists at  $t$  and  $t'$ , and at  $t'$ ,  $x$  exists at  $t$  and  $t'$ . Of course, it is absurd for the same thing to exist at two different times at the same time. But the obvious way to avoid that contradiction is to reject the claim that for an object to be the selfsame object at two different times is for it to be wholly present at those times.

As I indicated above, the only way out of the conundrums concerning change, consistent with the doctrine of "wholly present" so far enunciated, is to adopt presentism. For then all of the properties an object has, and all of the parts an object has, and all of the times at which an object exists, are properties, parts, and times that it now has, since only the present exists.

David Lewis has claimed, but has not argued, that on a presentist ontology a person has no past or future.<sup>37</sup> If he is right and premise (1') is true, then responsibility is an illusion. For if I have no past, then I wouldn't exist at more than one moment, since there wouldn't be more than one moment. Therefore, I couldn't be responsible for any actions that were done by me at an earlier moment or a moment in the past, for there would be none! Presentists and others dismiss Lewis's claim as being sheer sophistry. Thus, for example, in response to Lewis, William Lane Craig says that "[B]ut surely on presentism I have a past in the sense that I existed at and lived through times which *once were present*, and I have a future in that I shall exist and live through times which *will be present*."<sup>37</sup> However, Craig's reply cannot possibly stand on its own without an account of the ontological correlates of "once were [i.e., was] present" and "will be present," since if one countenances A-properties at all, as Craig does, such phrases imply not only presentness but pastness and futurity as well. And arguably the reality of tensed properties implies the existence of past and future entities that have them. Nor can one ground my having had a past by appealing to presently existing *evidence*.<sup>38</sup> After all, why

believe, for example, that my presently having lines around my eyes, or my presently having relatively little hair on the top of my head, is evidence that I have aged over the past twenty years, unless present evidence is causally related to the past, which thereby must exist? In other words, if only the present exists, how could the past be causally related to it? Again, the issues are complex, and I do not wish to settle or prejudge the issue. What I do wish to claim, however, is that if substances endure by being "wholly present" at each moment at which they exist, and if being wholly present is interpreted as I have indicated, then presentism must be true. Thus, to the extent to which presentism is false, personal identity cannot be defined in terms of an enduring substance being wholly present at each moment of its existence.

There is another way of understanding the substantialist notion of "wholly present" that may avoid both contradiction and presentism. One could maintain that what is wholly present is not an object with its properties and parts, but either an object without properties and without parts or an object with parts (and properties) that "persists intactly" through every moment of time at which it exists. Thus, one could take personal identity to be constituted by a Cartesian pure ego, or a *monad*, as Reid calls it, an indivisible immaterial substance without spatial parts that has a continued, uninterrupted existence through a period of time. On the Cartesian view, the person has properties such as thinking of Descartes, perceiving a tree, and being related to a body, but the identity through time of the person in no way requires that it together with those properties be wholly present at each moment it exists. Thus, if a person understood as a Cartesian pure substance passes through the waters of Lethe (a river whose waters made a person forget all his previous life) and then acquires a new body, it would nevertheless be the same substance wholly present at more than one time. For that reason, it would be the same person.

Alternatively, one could take the identity of the self or personal identity to be grounded not in an immaterial soul but in some physical thing that has (*simpliciter*) intact persistence, a position championed by Roderick Chisholm. For Chisholm, objects persist intactly if "it would exist at at least two different times, . . . and at no time during which it exists does it have any part it does not have at any other time during which it exists."<sup>39</sup> A person whose intactly persisting part was suddenly destroyed would thereby cease to be the same identical person. On either of these views of personal identity, an enduring substance can be wholly present at successive moments without contradiction and perhaps without presentism.<sup>40</sup> However, if one understands personal identity in either of these ways, the argument from responsibility loses its force, since then personal identity is no longer necessary for responsibility.

To see what is involved in this last point, recall that for the Cartesian, the

*I* that exists at successive moments is something distinct from its properties, and in Chisholm's case, the *I* that exists at successive moments does not change its parts; it has all the parts it ever will have. But neither view can capture what *personal* identity consists in, for a particular without any properties is not bare but naked. A bare particular never comes without properties, although it has no properties rooted in its nature (since it has no nature). A naked particular is a "this" without any properties, except perhaps the essential property of being a thinking thing, but then that cannot be what distinguishes my personal identity from yours, since we are both thinking things. Certainly, this particular without properties and theoretically without a body or within someone else's body cannot constitute my personal identity, since it is not what I am. Therefore, the continued existence of a pure ego cannot account for the continued existence of me or be the ground of moral responsibility. Look at it this way. I was born about the same time that FDR died. Suppose that FDR's soul without his psychology (including his memories), left his body and entered mine at conception or birth and remained there to this day. It would still not follow that I was or am FDR, entitled to the rewards and punishments befitting his life.<sup>41</sup>

Chisholm's view seems equally implausible. It may be (although it most likely is not the case) that some intact persisting part of my brain is the subject of my thoughts and the primary agent that causes me to choose when I choose freely, but it is surely not the case that such an intactly persisting part is me. For it would seem that small part of my brain could be replaced and yet I continue to exist, so long as my thoughts continue to have a subject and my agency an effect.

The point that I am trying to make is this. If wholly present entails that all the properties and all the parts that an object has are present at each time it exists, then a contradiction ensues, unless one claims that an object can be wholly present at different times without properties (or without having different properties at different times) and without having parts (or without having different parts at different times). Since both of those responses avoid contradictions, but do away with personal responsibility (since the resulting individual objects are not persons), they must be rejected.

Thus, to return to the argument from responsibility, the B-theorist need not merely assert, but can positively argue, as I have just done, that premise (1), interpreted as (1') is false. It is false because if (1) is interpreted at (1'), then either (a) wholly present implies presentism, which is false, or (b) wholly present implies a pure ego, in either the Cartesian or Chisholmian sense, whose persistence has little or nothing to do with personal identity and moral responsibility.

Alternatively, the B-theorist could argue that premise (1) is true if it is interpreted in a way that avoids the absurdities implicit in the "wholly present" substantialist account of identity, but then premise (2) is false. Given

the relational interpretation, the argument from responsibility can be reformulated once again as follows:

### *Argument from Responsibility III*

- 1". If a person is to be held responsible for a past action, then a person must be a temporally extended whole whose stages are suitably related to constitute one and the same person.
- 2". On the relational analysis of personal identity, no person is a temporally extended whole whose person stages are suitably related to constitute one and the same person existing at two times.
- 3". The B-theory implies the relational analysis of personal identity.
- 4". Hence, on the B-theory, no person can be held responsible for a past action.

The third response a B-theorist can give to the argument is to claim that it is unsound, since it rests on an obviously false premise (2"). Therefore, the argument has not proven that on the B-theory, no person can be held responsible for his or her past action.

A fourth and final way a B-theorist could respond to the argument from responsibility is by claiming that premise (3) is false, since the B-theory, while certainly compatible with the relational view, does not imply it. That is, once we jettison the notion that numerical identity requires a substance "wholly present" throughout time and change, a B-theorist can deny that a person is a whole of temporal parts and maintain instead that person stages are "time-slices" not of persons but of their *histories* or *careers*. On this view, there is a distinction between a person and its history, but naturally there is also a close connection between them. One can then think of a person not as a temporal part of a particular, or as a sum of such parts, but rather as a common constituent of the successive spatiotemporal stages that constitute a person's life history. On this view, the person (and not a temporal part) has intrinsic properties, and a person stage is the instantiation of intrinsic properties by the particular.

What, then, accounts for the different person stages having the same person as a common constituent at different points in its life? The answer is not to be given in terms of an unanalyzable or simple substance or monad that remains wholly present in each stage, which is absurd or irrelevant to moral responsibility. Rather, the identity of the person is analyzable in terms of a relation between the stages of which it is a common constituent. Once one rejects the claim that a person's identity over time consists in a substance being wholly present at each moment of its existence, the B-theory can be

rendered compatible with either the relational or the modified endurantist view of the self.

Thus, the argument from responsibility can be reformulated so that premise (1) is interpreted along endurantist lines (although, of course, not the problematic (wholly present) substantialist lines) and thereby making the third premise false. More specifically, the final formulation of the argument from responsibility is as follows:

### *Argument from Responsibility IV*

- 1<sup>'''</sup>. If a person is to be held responsible for a past action, then a person is a persisting object with a history whose earlier and later stages are so (appropriately) related as to constitute the history (or career) of one continuing person.
- 2<sup>'''</sup>. On the relational analysis of personal identity, a person is not a persisting object with a history whose earlier and later stages are so (appropriately) related as to constitute the history (or career) of one continuing person.
- 3<sup>'''</sup>. The B-theory implies the relational analysis of personal identity.
- 4<sup>'''</sup>. Hence, on the B-theory, persons cannot be held responsible for their actions.

Given this formulation of the argument from responsibility, the fourth and final response is that premise (3<sup>'''</sup>) is false. The B-theory does not imply the relational analysis of personal identity insofar as that analysis presupposes the doctrine that a person is a whole of temporal parts.

It should be noted that while the fourth way of responding to the argument from responsibility is a theoretical possibility for the B-theorist, it raises questions that threaten its plausibility. In particular, one may ask what is the common constituent of the stages of a person's history? Given that a person is not a nonphysical substance, and given that a person at eighty has no physical constituent in common with a person at birth, it is not clear what the common constituent could be.<sup>42</sup> On the other hand, if a person is something distinct from its history in the sense that it is not a common constituent of the temporal stages that constitutes a person's life history but is something that *has* a history, we are still left with the questions: What, then, is a person and in what sense does a person *have* a history, that is, how is the person related to the stages in its history? And finally, what is the appropriate relation—the unity relation—between the person stages that are the stages in the life of one and the same person? A consideration of these questions, however, lies outside the scope of this paper.

In conclusion, let me summarize my defense of the B-theory from the argument from responsibility. Suppose we return to the original formulation of it (Argument I). Insofar as the first premise is interpreted to mean that responsibility implies that a substance is wholly present at each moment of its existence, the B-theorist would claim that the *first premise is false*. Insofar as the first premise is taken to mean that responsibility implies that a person is a whole of temporal parts suitably related, the B-theorist would claim that the *second premise is false*. And finally, insofar as the first premise is interpreted to mean that responsibility implies that the identity of a person is analyzable in terms of an appropriate relation between the stages of a person's *history* or *career*, the B-theorist would claim that the *third premise is false*. Thus, regardless of how one construes the premise that responsibility implies personal identity, it turns out that the argument from responsibility is unsound. I conclude, therefore, that the B-theory can adequately respond to the argument from responsibility.

## NOTES

1. Derek Parfit, *Reasons and Persons* (Oxford: Oxford University Press, 1984).
2. Francis H. Bradley, *Ethical Studies* (London: Oxford University Press, 1927), p. 4.
3. This notion of "relational" is not to be confused with the antiabsolutist position with respect to space and time or with the view of properties as relations to times.
4. Arguably, there is a third position: fictionalism, according to which the person is simply a construction of some sort. I have decided, however, to restrict the discussion to realist theories.
5. There is also Geach's related objection to the temporal parts view, namely, that no temporal part is capable of any action because it doesn't last long enough. One can consider temporal parts as extended, but, strictly, these will just be collections of durationless parts. Thus, one can ask how, if a person is a whole of temporal parts, and no temporal part can be responsible for an action (since it doesn't perform any), how can a person be responsible for an action? I shall not explore that issue in this paper.
6. Thomas Reid, *Essays on the Intellectual Powers of Man* (Cambridge, MA: MIT Press, 1969); "Of Mr. Locke's Account of Our Personal Identity," essay 3, chap. 6, first published in 1785.
7. Reid, *Essays on the Intellectual Powers of Man*, p. 360.
8. See Trenton Merricks, "Endurance and Indiscernibility," *Journal of Philosophy* 91, no. 4 (1994): 65–84; Merricks, "On the Incompatibility of Enduring and Perdurating Entities," *Mind* 104 (1995): 523–31; and Merricks, "Persistence, Parts, and Presentism," *Noûs* 33, no. 3 (1999): 421–38. For a response, see Lawrence Lombard, "On the Alleged Incompatibility of Presentism and Temporal Parts," *Philosophia* 27, nos. 1–2 (1999): 253–60; Theodore Sider, "Merricks on the Perdurant/Endurance Incompatibility" (unpublished MS, 1996); and Sider, *Four-Dimensionalism* (New York:



Oxford University Press, 2001). See also William R. Carter and H. Scott Hestevold, "On Passage and Persistence," *American Philosophical Quarterly* 31 (1994): 269–83; David Lewis, *On the Plurality of Worlds* (Oxford: Blackwell, 1986); Quentin Smith, "Personal Identity and Time," *Philosophia* 21, no. 4 (1991): 155–67; and Ronald C. Hoy, "Becoming and Persons," *Philosophical Studies* 34 (1978): 269–80.

9. Robin Le Poidevin, "Can Beliefs Be Caused by Their Truth-Makers?" *Analysis* 59, no. 3 (1999): 148–56, agrees with this understanding of temporal relational B-facts. My view of B-facts is stated and defended in *Temporal Relations and Temporal Becoming: A Defence of a Russellian Theory of Time* (Lanham, MD: University Press of America, 1984), and essay 30.

10. Time exists in relational B-facts, since they contain the only intrinsically temporal entities-B relations.

11. The most highly developed and sophisticated version of the traditional view is that propounded by Quentin Smith, *Language and Time* (New York: Oxford University Press, 1993), and in his essays in *The New Theory of Time*, ed. L. Nathan Oaklander and Smith (New Haven, CT: Yale University Press, 1994). I say that on the traditional view, "there are alleged to be the familiar B-relations" because in essay 15 I have shown that Smith is not able to provide an adequate ontological ground of temporal relations. It should be noted, however, that on some versions of the A-theory that countenance the full range of A-determinations, B-relations are supposed to reduce to A-determinations.

12. See C. D. Broad, *Scientific Thought* (London: Routledge, 1923). Related views are espoused by Storrs McCall, *A Model of the Universe: Space-Time, Probability, and Decision* (Oxford: Clarendon Press, 1994), and Michael Tooley, *Time, Tense, and Causation* (Oxford: Clarendon Press, 1997).

13. For defenders of presentism, see Arthur N. Prior, *Papers on Time and Tense* (Oxford: Oxford University Press, 1968); Merricks, "Endurance and Indiscernibility"; Merricks, "On the Incompatibility of Enduring and Perdurating Entities"; Merricks, "Persistence, Parts, and Presentism"; William Lane Craig, "Oaklander on McTaggart and Intrinsic Change," *Analysis* 59 (1999): 319–20; Craig, "McTaggart's Paradox and the Problem of Temporary Intrinsics," *Analysis* 58 (1998): 122–27; William Lane Craig, "Is Presentness a Property?" *American Philosophical Quarterly* 34 (1997): 27–40; John Bigelow, "Presentism and Properties," in *Philosophical Perspectives*, vol. 10, *Metaphysics*, ed. James Tomberlin (Cambridge, MA: Blackwell, 1996), pp. 35–52; Mark Hinchliff, "The Puzzle of Change," in *Metaphysics*, pp. 119–36; Peter Ludlow, *Semantics, Tense, and Time: An Essay in the Metaphysics of Natural Language* (Cambridge, MA: MIT Press, 1999); Dean Zimmerman, "Temporary Intrinsics and Presentism," in *Metaphysics: The Big Questions*, ed. Dean W. Zimmerman and Peter van Inwagen (Cambridge MA: Blackwell, 1998), pp. 206–19; among others.

14. On a fourth view, all entities exist at the time they do *simpliciter*; they are in the words of Michael Tooley, actual *simpliciter*, and in so doing, Tooley shares the view of the B-theorist. But in sympathy with the A-theorist, Tooley also maintains that at any one time, only the past and the present are actual. For criticism of Tooley's view, see Robin Le Poidevin, "Review of Michael Tooley, *Time, Tense, and Causation*," *British Journal of the Philosophy of Science* 49 (1998): 365–69; Hugh Mellor, *Real Time II* (London: Routledge, 1998); essay 11; and Quentin Smith, "Review of Michael Tooley's *Time, Tense, and Causation*," *Philosophical Review* 188, no. 1 (1999): 123–27.

15. For example, Carter and Hestevold, "On Passage and Persistence," pp. 276–78, argue for the entailment thesis and seem to mean by the A-theory (what they call "transient time") what I have defined as the traditional view. However, when they argue for the entailment, they seem to rely on a presentist interpretation of the A-theory.

16. Robin Le Poidevin, *Change, Cause and Contradiction: A Defense of the Tenseless Theory of Time* (New York: St. Martin's Press, 1991), p. 18.

17. Although if we are talking about our intuitions here, certainly we could say that, for example, Hill Road starts at Linden Road and that Fenton Road is in the middle of the numerically identical Hill Road and that Saginaw Street is at the end of the selfsame Hill Road. Thus, the numerically identical Hill Road is (partially) at many different places. The importance of this point will emerge later when we consider an analogous temporal case.

18. Hugh Mellor, *Real Time II* (London: Routledge, 1998), pp. 89–96.

19. This point was suggested to me by Charles E. M. Dunlop.

20. Indeed, we shall see that it is questionable that enduring substances can be reconciled with A-time either. Hence, the argument for the entailment thesis may lead directly to the relational view and the argument from responsibility, regardless of which theory of time (A or B) one adopts.

21. I shall consider an objection to this line of reasoning below.

22. Robin Le Poidevin has suggested to me a further difficulty with time-indexed properties. He says that if we allow them in, then what could we appeal to in order to ban object-indexed properties as exhibited by "trans-persons"? Thus, suppose on some view you and I are just "personal parts" of some larger entity, N. Then, although you are in the United States and I am in England, is contradiction avoided by saying that N is in-United-States-at-Oaklander but in-England-at-Le Poidevin?

23. For the argument, see Quentin Smith and L. Nathan Oaklander, *Time, Change, and Freedom: An Introduction to Metaphysics* (New York and London: Routledge, 1995), pp. 110–13.

24. Mellor, *Real Time II*. There is a final way of avoiding the contradiction involved in change, and this involves introducing time into the exemplification relation. This might be represented as follows:

(3) O is *t*ly (is-at-*t*) F and O is *t*\*y (is-at-*t*\*) not F.

Sally Haslanger claims that this preserves the idea that there are temporary intrinsic properties. It is not entirely clear what this adverbial view amounts to, and in particular if it remains consistent with the B-theory. She distinguishes two versions of the adverbial gambit. One takes exemplification to be a three-term relation between an object, a property, and a time. She says that this relation is partly defined in terms of an object exemplifying a property. But her actual position seems to be different. She seems to be packing tense into the exemplification relations: "An endurance theorist will demand a temporally sensitive construal [of intrinsic property], e.g., that a property is (at a time) intrinsic if the object has (at that time) the property in virtue of the way it is (at that time), independently of anything else" ("Endurance and Temporary Intrinsic," *Analysis* 49 [1989]: 123–24).

This is even clearer in the following passage: "The endurance theorist denies that the description, which characterizes the object 'timelessly,' is the description that captures all of the intrinsic properties of the object. The enduring object is bent and then straight; it is not a shapeless blob" (p. 124).

I think her point is that objects do not exemplify their properties timelessly, but do so in succession, and that the terms of the succession do not exist *simpliciter* at the moments at which they occur, but they did, do, or will exemplify incompatible properties in succession. Mark Johnston also seems to hold that the adverbial view is committed to presentism or a view like Smith's. It is not clear which view he maintains or is committed to. (See Mark Johnston, "Is There a Problem about Persistence?" *Proceedings of the Aristotelian Society Supplement* 61 (1987): 107–35, particularly pp. 127–29.) For a recent criticism of Haslanger and Johnston, see David Lewis, "Tensing the Copula," *Mind* 3, no. 441 (2002): 1–14.

25. Hinchliff, "Puzzle of Change"; Merricks, "Endurance and Indiscernibility," *Journal of Philosophy* 91, no. 4 (1994): 65–84; Merricks, "On the Incompatibility of Enduring and Perdurating Entities," *Mind* 104 (1995): 523–31; Merricks, "Persistence, Parts, and Presentism," *Noûs*, 33, no. 3 (1999): 421–38.

26. Mark Hinchliff, "McTaggart, Change and Real Tense: A Critical Notice of Hugh Mellor's *Real Time II*," in *The Importance of Time*, ed. L. Nathan Oaklander (Dordrecht: Kluwer Academic, 2001), p. 67. Merricks makes essentially the same point in correspondence when he says,

It sounds like he [Mellor] is saying that O can be F but also that O can fail to be F. That certainly sounds impossible to me. I mean, adding things to this doesn't help (adding claims about where O's being F is located, for example), since you can't render the impossible possible just by asserting more claims. On the other hand, if what he adds somehow qualifies O's being F (or O's failing to be F), then, by qualifying these facts, he may render them consistent. But of course by qualifying them in this way, it looks like he's building the temporal "location" into the having of the property. So I'd say he faces a dilemma: Either stuff about "location" qualifies the having of the properties (and their denials) or it does not. If it does so qualify, he's just got a version of the old "build time/tense into the property or its mode of exemplification" move. If it does not so qualify, it's irrelevant to whether we have impossibility or a contradiction in O's being F and O's failing to be F (personal correspondence, 2001).

27. Mellor's response to Hinchliff is as follows: "Mark asks why the truthmaker for 'the candle is bent at *t*,' namely, a candle-is-bent fact located at *t*, doesn't also make true 'the candle is bent.' The answer is, as I have said, that B-sentences of the form 'a is F' (as opposed to 'a is always F') have no truthmakers because they have no truth-values, since they express no propositions" (*Real Time II*, p. 97).

28. Merricks, "Persistence, Parts, and Presentism," p. 425.

29. *Ibid.*, p. 429.

30. *Ibid.*, p. 177.

31. *Ibid.*, p. 422.

32. *Ibid.*, p. 423, my emphasis.

33. Smith, *Language and Time*; Michael Tooley, *Time, Tense and Causation* (Oxford: Clarendon Press, 1997); and essays 7 and 8.

34. Lawrence Lombard, "The Doctrine of Temporal Parts and the 'No-Change' Objection," *Philosophy and Phenomenological Research* 54, no. 2 (1994): 368.
35. Robin Le Poidevin, "Change," *Routledge Encyclopedia of Philosophy*, ed. Edward Craig (New York: Routledge, 1998), pp. 274–76.
36. Lewis, *Plurality of Worlds*, p. 204.
37. William Lane Craig, "McTaggart's Paradox and the Problem of Temporary Intrinsics," *Analysis* 58 (1998): 127, my emphasis.
38. For the argument, see essay 7. See also Ludlow, *Semantics, Tense and Time*.
39. Roderick Chisholm, "Problems of Identity," *Identity and Individuation*, ed. M. K. Munitz (New York: New York University Press, 1981), p. 17.
40. I say "perhaps" because the question—concerning how a substance can wholly be present at several times without it being at all of those times at present—still exists. I shall not, however, pursue that objection here.
41. Admittedly, not everyone would agree. The Buddhist view, for example, maintains that a soul that is reincarnated is the same person and moreover suffers the consequences of its previous incarnations' deeds, although it has neither the psychology nor the physicality of the previous "self." My intuitions are that such a self is not me and its continued existence would not constitute the continued existence of myself or my personal identity.
42. Heather Dyke brought this difficulty to my attention.



## *Time and Foreknowledge*

### A Critique of Zagzebski

In her recent book, *The Dilemma of Freedom and Foreknowledge*, Linda Trinkaus Zagzebski argues that divine foreknowledge is in fact compatible with human freedom.<sup>1</sup> In the course of her discussion, she argues for a certain view of the nature of time, namely, the "open future" version of the tensed or A-theory of time (according to which the past and present do exist, but the future does not exist); a certain view of the nature of freedom, namely, an indeterminist or incompatibilist conception of freedom; and a certain view of the nature of God's "eternity," namely, a temporal eternity (God exists throughout all of time). What is missing, of course, is an account of divine foreknowledge. In the last chapter of her book, Zagzebski offers a model by which God knows the future because she recognizes that "in spite of everything already said [she previously offered a "Thomistic-Ockhamist" account of foreknowledge], it still may not seem plausible that God can know future contingents because it is so hard to see *how* he could come by such knowledge."<sup>2</sup> In this brief note, I shall argue that the model of foreknowledge Zagzebski offers to support the coplausibility of divine foreknowledge and human freedom is inconsistent with the A-theory.

Before turning to her new model of foreknowledge, it will be useful to summarize Zagzebski's views on time. She claims that common sense supports the view that "there is an asymmetry between past and future, an asymmetry that is both ontological and modal."<sup>3</sup> Ontologically, the past is real and the future is not. Once an event has happened, it becomes part of the world's furniture, "genuinely real and hence ontologically finished, . . . it is determinate, untouchable."<sup>4</sup> The future, on the other hand, is not part of the world's furniture, it is sheer nonbeing, with no ontological status. As Zagzebski puts it: "The future does not exist, so the past is not related to the present as the present is related to the future since the future is not there to be related to anything."<sup>5</sup>

Closely connected with the ontological asymmetry between past and future is a modal asymmetry: The past is *fixed* whereas the future is *open*. The past is fixed because it is actual. The future is open because in the present, there exists a potency for many different possible futures. This potency is connected with freedom, on the one hand, since there is nothing in present causes that determines the future, and with time, on the other hand, since the empty future becomes the actual present depending on what I freely (indeterministically) choose to do. Zagzebski draws the connection between time and freedom when she says, "if the future is not real, it is indeterminate and still to be created, and this leaves open the possibility that we might have a hand in creating it."<sup>6</sup> The question I now wish to explore is whether Zagzebski's new model of freedom and foreknowledge is compatible with her views on time.

Zagzebski makes use of a book called *Flatland*, by Edward Abbott Abbott, to help explain how infallible foreknowledge of free acts can occur. Flatland is a two-dimensional world in which the inhabitants perceive everything as two-dimensional. Suppose a three-dimensional object passes through their world. Flatlanders would thus perceive a succession of two-dimensional cross-sections of the three-dimensional object. An inhabitant of Spaceland (a three-dimensional world) would see this movement as movement in space of a three-dimensional object as opposed to change in time of a two-dimensional one (which is how Flatlanders perceive it.) Zagzebski says: "Flatland, then, is the world as perceived by them [Flatlanders], not the world as things actually exist."<sup>7</sup> This is important. What the Flatlanders perceive as fleeting properties of a two-dimensional object, Spacelanders perceive as "enduring properties" of a three-dimensional object. Ultimately, however, it is what the Spacelanders perceive that is real.

How can this example help us to understand God's knowledge of our future in a way that is compatible with the A-theory of time? Zagzebski suggests that if rather than being three-dimensional being we were really four-dimensional, then when we perceive changes in ourselves as changes through time, those changes "would be perceived by the fourth-dimensionaler as enduring properties of ourselves in time."<sup>8</sup> Zagzebski makes use of an anonymous letter to explain some of the implications of four-dimensional space:

Assume the past and future of the universe to be all depicted in four-dimensional space and visible to any being who has consciousness of the fourth dimension. If there is motion of our three-dimensional space relative to the fourth dimension, all the changes we experience and assign to the flow of time will be due simply to this movement, the whole of the future as well as the past always existing in the fourth dimension.<sup>9</sup>

According to Zagzebski, this is "a model in which God, or any being with the perspective of the fourth dimension, can know what we know all at once. Everything that has been, is now, or will be from the viewpoint of three dimensions is already present to be observed in the fourth dimension. This model, then, has the advantage of preserving a very strong notion of omniscience, . . . without the problems . . . that arise from the view that God transcends space-time."<sup>10</sup> In particular, one problem Zagzebski claims her model of foreknowledge avoids is the incompatibility with the A-theory, but I fail to see how she does avoid the incompatibility.

If we take the model literally, as Zagzebski suggests we do, then what appears to us, from our limited three-dimensional perspective, to be successive events are *really* simultaneous parts of a four-dimensional continuant that endures as it moves through the fourth dimension from one space to the next. Furthermore, even though from our limited perspective the future does not exist, Zagzebski agrees that from God's temporal perspective all past, present, and future events do exist: "the whole of the future as well as the past *always existing* in the fourth dimension." How, then, can this model preserve the A-theory tenets of "a single absolute temporal order embracing all events"<sup>11</sup> and the nonexistence of the future?

A similar difficulty arises when we ask "exactly what does God see?" Does God see, at once, all the spatiotemporal positions the four-dimensional object will occupy? If he doesn't (since the future does not exist), then God's knowledge is limited, and the coplausibility of foreknowledge and freedom has not been established. If he does see the places into which the four-dimensional object will move then he must see, *at once*, not only the past, present, and future of the three-dimensional object but the past, present, and future of the four-dimensional object as well. In other words, God sees, *at once*, all the spatiotemporal positions the four-dimensional object ever is in. In that case, however, God does not perceive *movement* in time, and if an all-knowing *temporal* God doesn't see temporal passage or movement, then it does not exist. Thus, on the assumption that God is temporal and the open future version of the A-theory is true, Zagzebski has not provided an adequate model of divine foreknowledge.

## NOTES

1. Linda Trinkaus Zagzebski, *The Dilemma of Freedom and Foreknowledge* (New York: Oxford University Press, 1991).

2. *Ibid.*, p. 173.

3. *Ibid.*, p. 26.

4. *Ibid.*, p. 18.



5. Ibid., p. 17.
6. Ibid., p. 18.
7. Ibid., p. 175.
8. Ibid., p. 177.
9. Ibid., p. 174.
10. Ibid., pp. 177–78.
11. Ibid., pp. 174, 178.

## *Freedom and the New Theory of Time*

**A**lthough McTaggart's famous article on "The Unreality of Time" initiated the contemporary debate between tensed and tenseless theories of time, it was not until the last two or three decades that the literature and interest in the issue blossomed. Undoubtedly, one of the reasons why the tensor-detensor debate in the philosophy of time has recently attracted so much attention is its connection with other important issues in philosophy. The area I wish to connect with the tensor-detensor controversy is metaphysics or, more specifically, the problem of human freedom. Indeed, the connection between time and freedom is so close that many have argued that in order to preserve human freedom, we must abandon the tenseless theory of time and adopt the tensed theory. The arguments for this position are not new. Perhaps the first argument connecting time and freedom is implicit in Aristotle's discussion of the sea battle, and it is still common for defenders of the tensed theory to argue that the tenseless view is incompatible with human free will.<sup>1</sup>

The criticism that the tenseless theory leads to a denial of human freedom has been levied on several different fronts. Some have argued that the tenseless theory implies a *logical* threat to freedom.<sup>2</sup> Since detensors maintain that all events exist determinately at the moment they do, regardless of what moment it is, they are committed to the determinacy of truth-value and so to the principle of bivalence. But then, the logical fatalist argues, that if, for any statement *S* and any time *t*, *S* is either true at *t* or false at *t*, it follows that every statement, including statements about the future, is either *now* true or *now* false and that, therefore, the future (like the past) is fixed and unalterable.

According to others, the tenseless theory implies a *metaphysical* threat to freedom. For if all objects in time have a tenseless existence, then nothing

comes into existence or ceases to exist, and autonomous control over what does or does not exist is an illusion.<sup>3</sup> Moreover, if detensers maintain, as arguably they must, that objects persist by *perduring*, that is, persisting things are wholes composed of temporal parts, then nothing *really* changes.<sup>4</sup> Without real change, however, we cannot bring about a change in the properties of an object, and human creativity and freedom are lost.

Furthermore, some have claimed that the tenseless theory implies a *causal* threat to our freedom. Since, on the tenseless view, all events exist at the time and place they do, with the qualities they have, they are determinate in their existence and statements about them are determinate in their truth-value. If, however, all temporal objects, and the statements about them, are *determinate*, then everything that takes place is *determined* to be exactly the way it is. Conversely, a critic of tenseless time may argue that the only reason for thinking of the future as determinate is the belief in determinism. But if all events, including human actions, are determined, then they are unfree.<sup>5</sup>

Tensers also argue that the tenseless theory implies a *phenomenological* threat to freedom, since it cannot account for our experience of freedom.<sup>6</sup> We experience the future as being an open realm of possibilities, but for the detenser, all events are equally real, there being, as Yourgrau puts it, “a *symmetry of past, present and future with respect to facticity*.”<sup>7</sup> However, if the future is as real as the present, and so already exists or already is a fact, then how can the detenser account for our experience of the role we play in creating the (*not yet existing*) future?

Finally, there is what I will call the *argument from science*. This argument incorporates virtually all of the objections to tenseless time contained in the preceding arguments.<sup>8</sup> It runs something like this. The mathematical representation of physical objects in contemporary physics entails a tenseless theory of time. On this representation, time is a spacelike dimension along which physical objects lie. It is then argued, as Lucas once put it, that “an inevitable concomitant of this approach [is] that we take a block view of the universe in which the future course of events is already laid out as a path in Minkowski space-time,”<sup>9</sup> which, in turn, implies the logical, metaphysical, and phenomenological threats to human freedom previously delineated.

Clearly, any complete defense of the tenseless theory of time must address the various charges that it is incompatible with human freedom. To consider all the issues I raised with the detail and complexity they deserve would require much more space than I have for this essay. For that reason, my aim is more modest, and the limitations of this essay should be clear at the outset. I am not attempting to give a complete account of human freedom but only to show that the nature of tenseless time, when properly understood, does not entail a denial of human freedom and that only a host of misinterpretations could lead one to believe that it does.

## 1. THE NEW THEORY OF TIME

The theory that I wish to defend has been called the “static,” “stasis,” and “spacelike” theory of time, or, less pejoratively, the “tenseless” or “B-theory” of time. I prefer to call it the “new theory” of time. The other labels, and especially terms such as “spacelike” and “tenseless,” can easily lead to misinterpretations. For example, the notion of time being “tenseless” is problematic because it is ambiguous. Tenselessness is a feature of language, and (for some) it is also a feature of reality. Indeed, the distinctive feature of the new theory of time is that tensed (or tenseless) language and TENSED (or TENSEless) reality must be clearly separated, although proponents and opponents of the tenseless theory have not always kept them separate. Early advocates of the tenseless theory argued that metaphysical TENSE was eliminable from reality because grammatical tense was translatable without loss of meaning from ordinary language. On the new theory, the existence of grammatical tense as represented in ordinary language and thought is not to be confused with ontological TENSE, as represented in a tensed theory of time. Thus, on the new theory, the need for tensed discourse in ordinary language does not imply the existence of tensed properties in reality. And conversely, the rejection of ontological TENSE, that is, the denial of tensed properties and tensed facts, does not imply the translatability of tensed language in ordinary discourse. In other words, given that we are representing reality, a tensed language is eliminable in terms of a tenseless one, even though a tensed language cannot be translated in terms of a tenseless one.<sup>10</sup>

To see why tense and tenselessness as applied to language and time must be kept distinct, consider the following sentence-types:

- (A) Oaklander is (present tense) working on a paper on time and freedom.

and

- (B) Oaklander is (tenselessly) working on a paper on time and freedom on October 13, 2003.

According to some tensed theorists, (A) literally changes its truth-value in that it expresses a proposition that has different truth-values at different times. For defenders of the new theory, on the other hand, the difference between (A) and (B) consists in two related facts. First, (B) is time indexed and (A) is not, and because of that fact, different tokens of (A) can have different truth-values, whereas different tokens of (B) each have the same truth-

value. More generally, sentences with a tenseless copula have an “unchanging” or “permanent” truth-value; they are “always” true (if they ever are), whereas sentences with a tensed copula can “change” their truth-value (i.e., can have tokens with different truth-values), depending on when they are tokened. But why is that so? How is the tenselessness of the copula to be interpreted?

There are three likely possibilities. On one interpretation the tenseless copula is literally without tense, so that (B) is read as:

(B') Oaklander's working on a paper on time and freedom has the property of presentness on October 13, 2003.

Alternatively, we can interpret the tenseless copula as *omnitensed* so that (B) is read as:

(B'') Oaklander is (was and will be) working on a paper on time and freedom on October 13, 2003.<sup>11</sup>

Or we can interpret the tenseless copula as *timeless* as in “Red is a color” or “Two plus two is equal to four” so that (B) is read as:

(B''') Oaklander is (timelessly) working on a paper on time and freedom on October 13, 2003.

Any of these models provide a basis for the “permanent” or “unchanging” truth-value of (B), and the “fact” that (B) is “always” true, but they can also easily give rise to trouble.

Clearly, (B') is a tenseless sentence in the sense specified. Different tokens of (B') always have the same truth-value. But either (B') means that *E* is simultaneous with October 13, 2003, or it means that *E* occurs on October 13, 2003, and *E* has *presentness*. The former interpretation is innocuous, whereas the latter commits one to the reality of TENSE, and for that reason is unacceptable to the detenser.

Similarly, if one interprets the tenselessness of the copula in (B) as omnitemensed (B''), and if one then confuses *omnitensed* language with temporal reality, a tenseless truth like (B) will imply the existence of tensed properties, a thesis adamantly denied by new theorists. Furthermore, if one confuses the “tenseless” sentence (B'') with its truth-conditions (or the fact in virtue of which it is true), then it is a short step to the conclusion that the basis in reality for the permanent truth of (B'') is a state of affairs that *always exists* or *exists at every moment*. Thus, if (B'') represents the nature of time and not just

the language we use to communicate about it, then (B'') implies that I am now (always have been and always will be) working on this paper on October 13, 2003, and that is absurd!

The third interpretation of the tenselessness of the copula is equally troublesome. For if the tenseless copula in (B) is construed as the *timeless* copula of, say, "Two plus two is equal to four," and tenseless language is confused with timeless reality, then the objects in the B-series would be timeless, and time and change would be unreal.

C. D. Broad, who thought often and deeply about the problem of time and change, seems to have misinterpreted tenseless time in the ways I have just explained. In his *Examination of McTaggart's Philosophy*, Broad says:

The [tenseless] theory seems to presuppose that all events, past, present, and future, in some sense "co-exist," and stand to each other *timelessly or sempiternally* in determinate relations of temporal precedence. But how are we to think of this "co-existence" of events? It seems to me that the events and their temporal relations are thought of either by analogy with timeless abstract objects such as the integers in their order of magnitude, or by analogy with *simultaneous persistent particulars*, like points of a line in spatial order from left to right. Neither of these analogies will bear thinking out.<sup>12</sup>

I agree that neither of these analogies will bear thinking out, but I disagree that the new theory of time is committed to either of them. On the new theory, temporal relations between events are in some sense analogous to the relations that obtain between universals, but we need not claim that the terms of temporal relations are to be thought of as universals, that is, as timeless abstract objects. Like relations among universals, temporal relations between and among events, and the facts that they enter into, are not located at any time or in any place. Yet it does not follow that the *terms* of temporal relations coexist timelessly in the way in which universals do. Nor does the eternal truth of " $E_1$  is earlier than  $E_2$ " require  $E_1$  and  $E_2$  to be located at all times. Why, then, might Broad think that events are persistent particulars or timeless objects?

One possible explanation for Broad's mistake is that he does not clearly separate the language that states the truth conditions of " $E_1$  is earlier than  $E_2$ " from the reality to which that sentence corresponds. By construing the tenselessness of language as either omnitemporal or timeless, and then confusing the language of time with the reality of time, one might easily be led to the conclusion that the terms of temporal relations are simultaneous persistent particulars or timeless abstract objects.<sup>13</sup>

A more recent example of the confusion between tenseless language and temporal reality occurs in the writing of Alan Padgett, who argues that what he calls the "stasis" theory is guilty of committing the fallacy of "confusing

the logical with the physical."<sup>14</sup> He claims that detensers confuse the logical with the physical when they argue that since something is a fact at time  $T_3$ , and it is thus always a fact and can be expressed by a true statement that is always true, then in some way the fact of "the fact at  $T_3$ " must always exist.<sup>15</sup> But what exactly is the difference between logical facts and physical facts, and do new theorists actually confuse these two notions? As we shall see, what Padgett says concerning this distinction reflects the blurring of language and reality to which I have been alluding:

There is a distinction between a "fact" from a logical point of view and a "physical" fact. A "fact" from a logical point of view is the truth expressed by a true statement. Thus it is a "fact" that  $2+2=4$ , or that "London is south of Cambridge."<sup>16</sup>

In this passage, Padgett's notion of a logical fact equivocates on the phrase "the truth expressed by a true statement." On the one hand, the truth expressed is the fact or state of affairs that makes a statement true, for example the fact that  $2+2=4$ . On the other hand, it means the sentence or statement that is true, for example, "London is south of Cambridge."<sup>17</sup>

It seems clear, however, that, for Padgett, a logical fact or "truth" expressed by a true statement is not the fact to which it corresponds, since he distinguishes logical from physical facts by maintaining that

A "physical" fact . . . is an event or some state of affairs *in the world*. I will call such things "physical states of affairs." . . . Examples of a physical state of affairs would then be: my having the thought I am having now, the hotness of the sun, and the liquidity of the water in my cup. Now physical states of affairs can only be real or existing events. Thus the difference between the stasis and the process views of time can be put this way: is it now a physical state of affairs that the sun rises (tenselessly!) on July 4, 1776? The process theorist says "No," and the stasis theorist says "Yes." For the stasis view insists that, in some way or other, the event of the sun's rising exists (tenselessly) on July 4, 1776.<sup>18</sup>

Padgett interprets the new theorist to be claiming that since "the sun's rising (tenselessly) on July 4, 1776," is a tenselessly true statement, it follows there now exists (always did exist and always will exist) the physical fact of *the sun's rising on July 4, 1776*. For that reason, he accuses the new theorist of confusing the logical fact or "truth" that is always true with the physical fact that exists only on July 4, 1776.

Admittedly, it is indeed a fallacy to argue that simply because "*E* occurs at  $t_1$ ," *always* expresses a truth, it follows that it is now (always was and always will be) a physical fact that *E* occurs at  $t_1$ , but the new theorist does not

commit it. Padgett could only think that it did follow by first confusing tenseless language with omnitemporal language and then confusing omnitemporal language with temporal reality. To see what other difficulties the failure to keep language and time separate can give rise to, I shall turn to the logical threat to freedom allegedly posed by the new theory, namely, fatalism.

## 2. LOGICAL FATALISM

Logical fatalism is based upon the principle of bivalence according to which for any sentence  $S$ , including those about the future, and any time  $t$ ,  $S$  is either true at  $t$  or false at  $t$ .<sup>19</sup> If, however, at time  $t$ , a sentence about the future is *now* true, or *already* true, then the future is *fixed* and there is nothing we can do to prevent it. And if, at time  $t$ , a sentence about the future is *now* false, or *already* false, then there is nothing we can do to bring it about. In either case, as Aristotle puts it, "nothing is or takes place fortuitously, either in the present or in the future, and there are no real alternatives; everything takes place of necessity and is fixed."<sup>20</sup>

The crucial assumption in this argument for fatalism is that if a sentence is now true at time  $t$ , then there now exists (or "already exists") at time  $t$  a state of affairs in virtue of which it is true. Fortunately, the new theorist need not accept that assumption. Consider the future-tense sentence "There will be a sea fight." According to the new theory as I understand it, the fact in virtue of which that sentence is true will vary depending on the time at which it is uttered or inscribed. For example, if the sentence in question is asserted today, at  $t_1$ , then the state of affairs that exists if the sentence is true is *a sea fight occurs later than  $t_1$* . However, that state of affairs is not located at the time at which the future-tense sentence is uttered, and it is not located at any later (or earlier) time. Of course something is located at  $t_1$ , namely, the inscription or utterance "There will be a sea fight," and assuming the utterance is true, something is located at a time later than  $t_1$ , namely, the sea fight, but the whole state of affairs that *a sea fight occurs later than  $t_1$*  is not located at  $t_1$ , is not located at  $t_2$ , and is not located at any earlier or later time. Indeed, it is not located in time at all.<sup>21</sup>

States of affairs that contain temporal relations between events are *eternal* in the sense of existing outside the network of temporal relations but not in the sense of existing (or persisting) throughout all of time. Thus, an "eternal" entity is one that neither occupies moments of time nor exemplifies temporal relations nor has monadic temporal properties inhering in it. Rather, an eternal entity is related to time in the following way: it is a whole that contains successive parts. We could say that although an eternal entity is not con-



tained in time, time is contained in it. Thus, the fact that *World War II is later than World War I* is eternal because, although not itself located in time (or a term of a temporal relation), it contains time (a temporal relation) as a constituent. Consequently, the truth of a future-tense sentence does not imply that the future "preexists" in the present or that the future "already exists."

Of course, if one confuses the tenseless sentence "A sea fight occurs later than  $t_1$ ," which states the truth conditions of "There will be a sea fight" (uttered at time  $t_1$ ), with the (TENSEless temporal relational) fact to which it corresponds, namely, *a sea fight occurs later than  $t_1$* , then fatalistic worries will emerge. For the sentence describing the (TENSEless) truth conditions of a future-tense sentence is tenselessly true, that is, true *simpliciter*. However, if one confuses true *simpliciter* with true *at every time*, then one will conclude that the tenseless sentence is *always* true. If one then confuses the tenseless sentence with the state of affairs to which it corresponds, one might conclude that it is *always* existing. If, however, *a sea fight's occurring later than  $t_1$* , or *a sea fight's occurring at  $t_2$* , always exists and thus "already" exists at  $t_1$ , that is, at a time before the sea fight occurs, then my choice is an illusion, for I can neither bring about nor prevent at  $t_2$  what already exists at  $t_1$ . On the other hand, if one recognizes that a future-tense sentence is true in virtue of an event's occurring *later* than the time of the sentence, and not in virtue of anything that is located at the time of utterance, the difficulty vanishes.

My new theorist response to logical fatalism rests upon the notion of an "eternal" state of affairs. Alan Padgett has criticized my notion of "eternal" temporal relations for again confusing the logical fact that " $S_1$  is earlier than  $S_2$ ," which is always true, with the physical fact that  $S_1$  and  $S_2$  always exist. Thus, he says:

The process theorist can agree, if need be, that "facts" like  $S_1$ -earlier-than- $S_2$  or Alan-born-before-Carl are "eternal" in that they are omnitempally true. Tensed sentence tokens affirming their existence all make statements which are true, always, were, and always will be. From this it does not follow, however, that the episodes referred to by  $S_1$ ,  $S_2$  and  $S_3$  exist eternally, any more than it follows that Carl and I are 'eternally' born, or exist "eternally." Oaklander and others who follow this argument have committed the fallacy of confusing the logical with the physical.<sup>22</sup>

I agree that such an inference would be fallacious but deny that I make it. To say that " $S_1$ -is-before- $S_2$ " is always true does not imply that  $S_1$  and  $S_2$  are either eternal, sempiternal, or timeless objects, and Padgett could only think that the new theory would imply that it did by falling prey to the confusion between temporal language and temporal reality discussed throughout this essay.

Although Padgett's argument does not undermine the existence of "eternal" facts (or timeless temporal relations), one might still object that the

existence of events that are TENSElessly located at later moments takes away our freedom. For if there is a fact that, say, *I vote for Howard Dean* (assuming he is nominated) *in 2004* (or that *I vote for Dean later than  $t_1$* ), then, arguably, that fact *necessitates* the occurrence of my voting for Dean in the year 2004, or synonymously, that it is not within my power, in 2000, to prevent my voting for Dean in 2004. It is not at all clear, however, that the existence of an eternal fact necessitates anything. The necessity does not follow from the principle of bivalence. The law necessitates that one of a pair of contradictory statements is true, but it does not imply that either "*P*" is necessarily true or "*not-P*" is necessarily true. If I vote for Dean in 2004, then my present statement (in 2003) "*I will vote for Dean in 2004*" is true, and if I do not vote for him, then my present statement "*I will not vote for Dean in 2004*" is true. Thus, which statement is true depends on whether or not the fact *I vote for Dean (approximately one year) later than November 15, 2003*, exists or does not exist, but whether or not that fact exists depends upon what I will choose to do on election day, November 2004. In other words, it is my later decision that determines which of two contradictory statements about the future is true, since it is my later decision that determines what eternal fact exists. Thus, the existence of eternal facts is not incompatible with our having it within our power to bring about or prevent certain events. Indeed, it is because we do have it within our power (because we do choose or do not choose) to bring about or prevent certain events that certain eternal facts exist.<sup>23</sup>

One might still wonder how the existence of facts that are not located in time can depend on something that is located in time. How can the "eternal" fact that *I vote for Dean later than November 15, 2003*, depend for its existence on something that occurs in November 2004? Although eternal facts do not exist in time (i.e., as terms of temporal relations), they do contain temporal relations and their relata as constituents. Thus, the fact that I am going to vote for Dean in four years includes my decision next year to vote for Dean. That decision is an event that exists in time, and if it does not occur on November 5, 2004, then there is no such fact as my voting for Dean in 2004. For that reason, the truth of a future-tense sentence does not entail the existence of a fact, which, in turn, determines my choice. Rather, my choice in November 2004 determines what (TENSEless) fact exists, and hence what future-tense sentence is true.

Interestingly, Storrs McCall, a tenser, who once argued that propositions about the future must have an indeterminate truth-value, has recently changed his mind. And what he says on this topic closely reflects the new theorist's view:

We shall say that the truth of an empirical proposition supervenes upon events in the sense of being wholly dependent upon them, while at the same

time events in no way *supervene upon* truth. Thus the truth of the proposition that *X* is in Warsaw town square at noon next Friday depends upon what happens next Friday, and in this way the sting of "logical determinism" is drawn. . . . What is true today depends upon what happens tomorrow, not the other way round. The set of true propositions in no way determines what the future is like. Instead, what the future is like determines the set of true propositions.<sup>24</sup>

### 3. METAPHYSICAL FATALISM

While the logic of temporal language does not commit the new theorist to denying human freedom, the metaphysical implications of the new theory may. In a recent and provocative paper, Niall Shanks claims that there are important connections between the free will/determinist debate and some issues in the metaphysics of time.<sup>25</sup> Specifically, he argues that friends of libertarian incompatibilism can find no support in modern indeterministic physics because (1) modern physics implies the *S*-theory (presumably for spacelike or static theory) of time, and (2) if the *S*-theory is true, then there is no human autonomy.<sup>26</sup> In this section, I will consider Shanks's main arguments in defense of (2)—the thesis that the *S*-theory implies the denial of human autonomy—and argue that they suffer from a pernicious spatialization of (TENSEless) time and a confusion of common sense with ontology.

To see what is involved in these claims and to justify them, let us turn to Shanks's argument in support of (2). Shanks believes that in order to have genuine human autonomy, the universe must be open in three senses of the term: one causal and two ontological. In the causal sense, the universe is open<sub>1</sub> if indeterminism is the case, that is, if the location and configurations of physical objects at some time *t* are underdetermined by (or not all lawfully connected with) earlier states of the universe. In an ontological sense, the universe is open<sub>2</sub> if not only is it indeterministic (open<sub>1</sub>), but also the locations and configurations of physical objects are *autonomously changeable*. "That is, [location and configuration] must be properties of a physical object which admit of alteration and adjustment as a consequence of intervention by, or interaction with an autonomous being."<sup>27</sup> In other words, in an open<sub>2</sub> universe, the actions of a causally efficacious (underdetermined) agent are capable of bringing about a *real change* in a physical object. In a third sense, the universe is open<sub>3</sub> if there is *ontological indeterminacy*, meaning that "there are many possible futures compatible with their present circumstances, and it is by no means determined or 'fixed' at present which of these will come to pass"<sup>28</sup> and thus that the objects of history *do not* tenselessly exist at their respective moments with their respective properties, that is, the new theory

is false. Autonomous action requires openness in each of these senses. For if the universe is either causally determined (closed<sub>1</sub>) or ontologically *determinate* (closed<sub>3</sub>), then it is closed<sub>2</sub>, since no autonomous being is capable of "bringing about" or "causing" an existential or qualitative change in a physical object, and genuine human autonomy is impossible.

Shanks claims that even though the S-theory *does* allow for the possibility that the universe is indeterministic (or open<sub>1</sub>), it renders the future fixed (or closed<sub>3</sub>), and human autonomy impotent (closed<sub>2</sub>). For on the S-theory, "time is literally a space-like dimension along which an object is extended," and since "the distinct spatial parts of an object at some given time *t* enjoy the same existential status . . . the distinct temporal parts of an object will likewise be on a par, ontologically speaking." However, if the four-dimensional shapes of physical objects are nothing more than "coexisting temporal parts," tenselessly existing in different regions of space-time, "then the objects of history neither begin to exist nor cease to exist."<sup>29</sup> Unfortunately, if objects of history neither begin nor cease to exist but exist *simpliciter*, then what the future will be is determined or fixed at present, and the belief in autonomous changeability and human autonomy is an illusion.

Shanks's argument, familiar as it is seemingly persuasive, is nevertheless rooted in a web of confusions. We can begin to see what they are by noting that Shanks believes our commonsense intuitions and ordinary language talk about time have implications for ontology:

In order to see that the information expressed by the tenses has ontological consequences, it suffices to consider the following fragments of ordinary language: "Elizabeth I *existed* four hundred years ago," "Elizabeth II *exists*," and "Elizabeth III will (possibly) *exist*." According to common sense, of the three monarchs, only Elizabeth II actually exists. The tenses thus enable ordinary speakers to express existential differences between the objects of history.<sup>30</sup>

Since, however, the tenseless theory treats all objects as *ontologically on a par, tenselessly existing* at the times they do, Shanks concludes that the S-theory must deny our intuitions that only the present exists and that there are existential differences between the objects of history.

It seems to me, however, that Shanks's line of reasoning confuses grammatical tense as represented in ordinary language and thought with ontological TENSE as represented in the new theory of time. That is, Shanks assumes that since we use *grammatical* tenses to indicate existential differences between objects of history, it follows that it must be the tensed properties of *pastness*, *presentness*, and *futurity*, or the tensed facts—It was the case, It will be the case, or It is the case that X is present—that distinguish objects that exist from those that do not. In other words, on the tensed theory, the

commonsense platitude “only the present exists” carries ontological weight. On the new theory, on the other hand, there are no such properties (and no such facts), and *in that respect*, time is analogous to space. Just as there is no monadic property of *hereness* that distinguishes this place, or the place where I am located, from any other place, there is no monadic property of *presentness* that distinguishes this time, or the time when I am located, from any other time. Thus, time is TENSEless, and all objects are ontologically on par in that there are no tensed properties that distinguish those events that exist from those that do not. It does not follow that tensed language and thought is translatable in terms of tenseless language or that we could communicate without tensed language. Nor does it follow that our intuitions about time are mistaken (although they need to be properly interpreted) or that tensed language is false. Indeed, once our ordinary language of time is distinguished from a metaphysically perspicuous language of time, it can be shown how and why our temporal intuitions are true.

As I now write (at 4:00 PM, November 15, 2003), only those events that are (roughly) simultaneous with my utterances exist and are located at that date. Events that will occur (or TENSElessly occur) on November 23, 2003, eight days later than my writing, do not yet exist in that they are not located at (and do not TENSElessly exist on) November 15, and events that did occur (or TENSElessly occur) on November 14, 2003, one day earlier than my writing, no longer exist in that they are not located at (and do not TENSElessly exist on) November 15, either. Thus, on the new theory, our ordinary beliefs that the future is not yet and the past is no longer and the present is now are true but innocuous. Future events are not yet because they are located at times later than my speaking; past events are no longer because they are located at times earlier than my speaking; and only the present exists in the deflationary sense that only those events that are simultaneous with my speaking are located at 4:00 PM, November 15, 2003. These are the tenseless truths that underlie the intuitions that there are existential differences between objects of history and that only the present exists; the existence of tensed properties or facts has nothing to do with it.

In addition to “tenselessly existing,” two other phrases that give rise to trouble are “equally real” and “coexisting.” There is, of course, a phenomenological difference between space and time: although we experience objects at different spatial locations as being “equally real” (i.e., occurring at the same time), we do not experience objects at different temporal locations as being *equally* real or *coexisting*. This phenomenological claim is used by tensers to support, on the side of common sense, the claim that the present has a privileged position in the temporal spectrum (i.e., only the present exists), and on the side of ontology the claim that objects in time exist if and only if they exemplify *presentness*.

The fallacy in this line of reasoning consists in its confusing TENSEless time with space. We do experience objects elsewhere in space as coexisting equally with objects that are here, but we do not experience past (earlier) and future (later) events as coexisting with those events that are present. Thus, if one thinks that time is literally like space, then the claim that four-dimensional objects are composed of "coexisting temporal parts" or that all objects in TENSEless time are "equally real" will be taken to deny this phenomenological fact and reduce temporally separate events to simultaneous parts of a presently existing whole. In that case, however, the universe is ontologically determinate (closed<sub>3</sub>), since what the future will be, is fixed at present, and human autonomy is lost.

Fortunately, such an illicit spatialization of time, along with its dire consequences for human autonomy, is not a necessary part of the new theory of time. On the tenseless theory, as Bertrand Russell, (the early) C. D. Broad, Clifford Williams, L. Nathan Oaklander, and other detensers have conceived of it, temporal relations are primitive and unanalyzable relations, and the difference between spatial and temporal relations is an irreducible qualitative difference.<sup>31</sup> The experience of earlier and later upon which the experience of time and change is built is primitive and is intrinsically different from our experience of one colored patch being to the left of another differently colored patch. For that reason, objects coexist in time in a fundamentally different sense from the way they coexist in space. Thus, time possesses a quality that space does not possess: spatially separated objects can exist at the same time, but temporally separated events cannot occur at the same time. It is this crucial difference between the terms of spatial and temporal relations that is the phenomenological basis of the sense of privilegedness that the present moment possesses.<sup>32</sup>

Of course, there are crucial similarities between space and time as well. Just as temporally separated objects cannot exist at the same time, spatially separated objects cannot exist at the same place, and just as spatially separated objects can exist at the same time, temporally separated objects can exist at the same place. Nevertheless, neither of these analogies between space and time should lead one to deny that on the new theory there is an intrinsic difference between time and space or assert that the terms of the temporal relations of earlier/later coexist in the way in which the terms of the spatial relations of left/right coexist.

Closely connected with the particular interpretation Shanks gives to the S-theory is the claim that "if the S-theory is true, then the objects of history neither begin to exist, nor cease to exist."<sup>33</sup> Once again, if this is true, then nothing could be brought into existence and autonomous existential control (that is, the ability to bring or not bring something into existence) would be impossible. But it is not true.

Consider, for example, the experience of a headache ceasing to exist. It involves first having a headache and at the same time being conscious that one is having a headache. It involves second the consciousness of no longer having a headache. This involves both the awareness of my having various thoughts and feelings and not having a headache. It also involves the memory of a headache that is not located now, at this moment, but is located (or exists TENSElessly) at an earlier moment. In other words, if I am aware at time<sub>1</sub> that I have a headache, and I am aware at a later time<sub>2</sub> that I do not have a headache, and I remember my headache existing at time<sub>1</sub>, then I am having an experience of my headache ceasing to exist.

What this account of our experience of time makes clear is that the ceasing to exist of a headache (or any other event, for that matter) is a process that takes place at two moments: the last moment of its existence and the first moment of its nonexistence. Thus, on the detenser's reading, a headache's ceasing to exist over the interval  $t_{n-n+1}$  is its being located up to  $t_n$  and thus making the present-tense belief "My headache exists (now)" true up to  $t_n$ , and false at  $t_{n+1}$  (and later). Similarly, a headache's beginning to exist at  $t$  is nothing more than its being located at  $t$  and not earlier, thus making the present-tense belief "My headache exists (now)" true at  $t$  and false earlier.

To this it might be objected that since the knowledge of my headache ceasing to exist requires that the *tensed beliefs* "My headache exists (now)" and "My headache did exist" are both true (at different times), there must be *tensed facts* to account for their truth. The inference, however, is fallacious. For if a belief or judgment is indexical, as it is if it is tensed, then its truth conditions are token-reflexive. So all it takes to make a token of the tensed belief "My headache exists (now)" true is that the headache occurs simultaneously with the belief. And all it takes to make a token of the tensed belief "My headache did exist" true is that the headache ended before I had the belief (or that the belief is held after the end of the headache). If, however, we can make sense of objects coming into existence and ceasing to exist on the new theory, existential control (as reflected, for example, in determining "whether or not to make an apple pie for supper") is still within the grasp of the new theorist.<sup>34</sup>

Human autonomy also requires qualitative control and Shanks attempts to show that to be impossible on the four-dimensionalist account of change, since the four-dimensionalist must reject the commonsense intuition that objects persist with a numerical identity through time. For

if the S-theory is true, then Elizabeth II, for example, will be said to have temporal parts in Paris *and distinct temporal parts* in London, it no longer makes sense to say that the object in Paris at  $t_1$  is one and the same object that is now in London at  $t_2$ —instead there are distinct temporal parts of a four-dimensional whole at these spacetime locations.<sup>35</sup>

To uncover the confusions that permeate this argument, note that his statement "it no longer makes sense to say that the object in Paris at  $t_1$  is one and the same object that is now in London at  $t_2$ " is ambiguous. For the phrase "the object in Paris ( $P$ ) at  $t_1$ " may mean "the temporal part  $P$ -at- $t_1$ " (or, more simply, " $p_1$ "). Or it may also mean "the entity  $P$ , of which  $P$ -at- $t_1$  ( $p_1$ ) is a part." Clearly, if we mean the former, then it is misleading, indeed false, to assert that  $P$ -at- $t_1$  ( $p_1$ ) is the same person as  $P$ -at- $t_2$  ( $p_2$ ), but this does not imply that the person of which these two different stages are temporal parts is not the same person at these different times. For on the second interpretation we can say that the person  $P$  who at one stage in her life ( $p_1$ ) is in Paris is the very same person  $P$  that at a later stage ( $p_2$ ) is in London. Thus, the existence of four-dimensional objects with temporal parts is compatible with thinking of these objects as being the subjects of qualitative change and with our being able to bring about some of those changes.<sup>36</sup>

It seems, therefore, that some of the crucial intuitions that are employed in the argument for the incompatibility of the new theory of TENSEless time and human freedom, for example, that only the present exists, that there are existential differences between the objects of history, that objects can begin to be and cease to be, and that things change, *can* be explained on the new theory. What, then, of Shanks's claim that

the modality which some people believe the future to have—in the sense that they believe there are many possible futures compatible with their present circumstances, and it is by no means determined or "fixed" at present which of these will come to pass—must, when analyzed in S-theoretic terms, arise instead merely from ignorance.<sup>37</sup>

If by "determined" *at present* Shanks means that, on the S-theory, the locations and configurations of physical objects at some future time  $t$  are causally determined (closed<sub>1</sub>) by (or lawfully connected with) present states of the universe, then he is falling prey to the confusion between "determined" and "determinate" he sought to avoid. And if by "fixed" *at present* Shanks means that, on the tenseless theory, there *now* exist facts that ground the truth of future contingents, then he is wrong. For on the new theory, the truth of " $A$  will do  $X$ " when uttered at time  $t$  corresponds (in part) to the fact that  $X$  *exists* (TENSElessly) *later than*  $t$  (and not to any fact that is located *at*  $t$ ). On the other hand, if he means that the future is fixed like the past in that we cannot change it, then I would agree. But to say that we cannot change the future is not to say that we do not have a hand in making it or that our choices do not bring it about.



## 4. THE PHENOMENOLOGY OF FREEDOM

Nevertheless, there is an intuition that we all share according to which the past is unalterable, fixed, and already settled and thus no longer within our power to control, whereas we are free to make choices that will determine how the future will be. What account of the phenomenological asymmetry of openness with respect to the past and future can the new theorist give? In this concluding section, I will mention three possibilities congenial to the new theory that are worthy of further exploration.

The asymmetry of openness is analyzed by David Lewis as an asymmetry of counterfactual dependence. The future depends counterfactually on the present in a way in which the past does not so depend. As Lewis puts it,

What we can do by way of "changing the future" . . . is to bring it about that the future is the way it actually will be, rather than any of the other ways it would have been if we acted differently in the present. . . . Likewise, something we ordinarily *cannot* do by way of "changing the past" is to bring it about that the past is the way it actually was, rather than some other way it would have been if we acted differently in the present.<sup>38</sup>

This suggestion by Lewis is quite plausible, and it is compatible with both the new theory and with determinism. My major hesitation concerns Lewis's analysis of counterfactual dependence and the subsequent commitment to possible worlds that it entails. Thus, in order to avoid the thorny problem of giving an adequate account of the truth conditions of counterfactuals, I therefore prefer, although I will not here explore in any detail, two suggestions put forth by Broad during his (early) detenser stage.

Broad says that there are two senses in which the past is fixed and unalterable, while the future depends, in part, on our volitions.

(i.) However much I may know about the laws of nature, I cannot make probable inferences from the future to the past, because I am not directly acquainted with the future, but I can make probable inferences from the past to the future; i.e., although every possible proposition about the future is even now determinately true or false, I may be able to judge now, from my knowledge of the past and present and of the laws of nature, that some propositions about future events are much more likely to be true than others. . . . (ii.) I know with regard to certain classes of events that such events never occur unless preceded by a desire for their occurrence, and that such desires are generally followed by the occurrence of the corresponding events. But the existence of a desire for *x* does not increase the probability that *x* *has* happened. If it did we might be said to affect the past in exactly the same sense in which we can affect the future. Thus the assertion that we

can affect the future but not the past seems to come down to this; (a) that propositions about the future can be inferred to be highly probable from a knowledge of the past and present, but not conversely, because of our lack of direct acquaintance with the future; and (b) that the general laws connecting a desire for  $x$  with the occurrence of  $x$  always contain  $x$  as a consequent and never as an antecedent.<sup>39</sup>

According to Broad's first point, the asymmetry of openness is epistemological. The second point seems to me to be more convincing. Our experience of the openness of the future is based upon the awareness that the desire for the occurrence of a certain event is something that is causally efficacious or lawfully connected with the desired event only when the event is *later* than the desire. And our experience of fixity stems from our knowledge that a desire or wish that something *had* happened is not lawfully connected with that event's having happened. For these reasons, we do not experience the past as something we have any control over, whereas we do experience the future as something over which we do have some control.

I think the new theorist's account of coming into existence and ceasing to exist is relevant here. For the openness of the future is, in part, based on our experience of an event that does not yet exist (i.e., is not located at the time of my decision to bring it about) coming into existence (or being located at a time) after I decide to bring it about. As I argued earlier, the experience of coming to be and ceasing to be is one that the new theorist can accommodate. On the other hand, the experience of the closed past or the fixity of the past stems from the experience or realization that my desire (at  $t_1$ ) for a certain event to have happened in the past (at  $t_1$ ) does not bring that event into existence. Similarly, my decision (at  $t_2$ ) to end an unpleasant event (at  $t_2$ ) may be lawfully connected with that event ceasing to exist (or not being located at  $t_3$ ), but my wish (at  $t_3$ ) for an unpleasant past event (at  $t_2$ ) not to have happened (or not to be located at  $t_2$ ) does not make a difference. These experiences, which form the basis of the asymmetry of openness between the future and the past, can be explained on the new theory.

Although much more could and should be said concerning the phenomenology of freedom, these brief remarks suggest the direction a new theorist of time could consistently take. In conclusion I hope to have developed the new theory sufficiently to convince you that it is not the threat to human freedom that its detractors have claimed it to be.<sup>40</sup>

## NOTES

1. For recent examples see John R. Lucas, *The Future: An Essay on God, Temporality and Truth* (New York: Blackwell, 1989); Niall Shanks, "Time, Physics and Freedom," *Metaphilosophy* 1 (1994): 45–59; and Pallé Yourgrau, *The Disappearance of Time* (New York: Cambridge University Press, 1992).

2. See, for example, Stephen Cahn, *Fate, Logic and Time* (New Haven, CT: Yale University Press, 1967; repr., Atascadero, CA: Ridgeview Publishing Company, 1982). For a good discussion of the connection between time, truth, and fatalism, see M. H. Bernstein, *Fatalism* (Lincoln: University of Nebraska Press, 1992).

3. Cf. Shanks, "Time, Physics, and Freedom," pp. 45–59.

4. William Carter and H. Scott Hestevold, "Temporal Passage and Temporal Persistence," *American Philosophical Quarterly* 31, no. 12 (1994): 269–83, argue that the tenseless theory implies the doctrine of temporal parts. For arguments that purport to show that nothing really changes on a temporal parts ontology, see Lawrence Lombard, *Events: A Metaphysical Study* (New York: Routledge and Kegan Paul, 1986); Lombard, "The Doctrine of Temporal Parts and the No Change Objection," *Philosophy and Phenomenological Research* 54, no. 2 (1994): 365–72; and Peter T. Geach, "Some Problems about Time," *Studies in the Philosophy of Thought and Action*, ed. P. F. Strawson (Oxford: Oxford University Press, 1968), pp. 175–91. For a reply to Lombard, see Mark Heller, "Things Change," *Philosophy and Phenomenological Research* 52 (1992): 695–704. For a reply to Geach, see L. Nathan Oaklander, *Temporal Relations and Temporal Becoming* (Lanham, MD: University Press of America, 1984). For a fully developed causal account of tenseless change within a temporal parts ontology, see Robin Le Poidevin, *Change, Cause and Contradiction: A Defense of the Tenseless Theory of Time* (New York: St. Martin's Press, 1991).

5. Jan Lukasiewicz, "On Determinism," in *Polish Logic*, ed. Storrs McCall (Oxford: Oxford University Press, 1967), pp. 19–39, seems to argue in this fashion. For critiques of the inference from determinate to determined, see Adolf Grünbaum, "The Exclusion of Becoming from the Physical World," in *The Concepts of Space and Time*, ed. Milic Capek (Boston: D. Reidel, 1976), pp. 471–500; Oaklander, *Temporal Relations and Temporal Becoming*; Quentin Smith and L. Nathan Oaklander, *Time, Change, and Freedom* (New York: Routledge, 1995); and Donald C. Williams, "The Sea-Fight Tomorrow," in *Structure, Meaning and Method: Essays in Honor of Henry M. Sheffer*, ed. Paul Henle, H. M. Kallen, and S. K. Langer (New York: Liberal Arts Press, 1951), pp. 282–306.

6. See Lucas, *The Future: An Essay on God, Temporality and Truth*.

7. Yourgrau, *Disappearance of Time*, p. 46.

8. Cf. Yourgrau, *Disappearance of Time*.

9. John R. Lucas, "The Open Future," in *The Nature of Time*, ed. Raymond Flood and Michael Lockwood (Oxford: Blackwell, 1986), p. 130. Lucas himself does not accept this implication of modern physics and adopts a version of the open future theory of time that he argues is compatible with physics. For a recent discussion of the open future theory, see Ned Markosian, "The Open Past," *Philosophical Studies* 79 (1995): 95–105.

10. For recent articles on the new theory and criticism, see the essays by Mellor, MacBeath, Oaklander, Williams, and Smith in part 1 of *The New Theory of Time*, ed. L. Nathan Oaklander and Quentin Smith (New Haven, CT: Yale University Press, 1994).

11. Alan Padgett, *God, Eternity and the Nature of Time* (New York: St. Martin's Press, 1992), interprets the tenseless copula as omnitemporal, and Quentin Smith, *Language and Time* (New York: Oxford University Press, 1993), interprets it as conjunctively (present- and future-) tensed. According to the new theory, however, a tenseless copula lacks any tense.

12. C. D. Broad, *Examination of McTaggart's Philosophy*, 2 vols. (Cambridge: Cambridge University Press, 1933), vol. 2, p. 307, my emphasis.

13. Admittedly, in order to represent reality, we must use language, and for that reason, temporal language and temporal reality are not entirely distinct. Nevertheless, the new theorist maintains that the language used to represent the metaphysical nature of temporal reality must be without tense, since the reality of TENSE (as either properties or facts) entails unacceptable dialectical difficulties (i.e., McTaggart's Paradox). For a discussion of McTaggart's Paradox and criticisms of recent attempts to avoid it, see Oaklander and Smith, *New Theory of Time*, part 2, and essays 3, 5-8, 13, and 14.

14. Padgett, *God, Eternity and Time*, p. 118.

15. *Ibid.*, p. 119.

16. *Ibid.*, p. 118.

17. In correspondence, Padgett has replied that "the fact that 'London is south of Cambridge' is a *physical fact*; on p. 118 I am NOT talking about the sentence, 'London is south of Cambridge' but rather the *physical facticity* that this sentence denotes" (e-mail message, 5 June 1996, my emphasis). However, if that is Padgett's view, then he is confusing logical and physical facts, since in the passage quoted in the text, Padgett uses "London is south of Cambridge" as an example of a *logical fact*.

18. Padgett, *God, Eternity and Time*, p. 118, my emphasis.

19. An anonymous reader correctly noted that the principle of bivalence concerns truth *simpliciter* and not truth at a time. Nevertheless, one might confuse the two concepts of truth: because all tokens of a tenseless sentence are true (or false) whenever they are uttered or written, one might mistakenly infer that a tenseless sentence is *always* true, i.e., true at every time, and thus fallaciously conflate the principle of bivalence (for truth *simpliciter*) with the corresponding principle of bivalence (for truth at a time). We shall see that those who attribute logical fatalism to the new theory of time are guilty of that mistaken inference and subsequent confusion. Alternatively, if one holds a tensed view of time, one might reject the concept of truth *simpliciter* in favor of the concept of truth at a time. Since, however, according to the detenser, all truth is truth *simpliciter*, any argument against the new theory that is based on the concept of truth at a time (as logical fatalism is) is question-begging and unsound. Recently, Michael Tooley, *Time, Tense and Causation* (Oxford: Oxford University Press, 1997), has argued that an adequate conception of temporal reality requires both conceptions of truth *simpliciter* and truth at a time. For a criticism of Tooley's theory, see essay 11.

20. Aristotle, *De Interpretatione: The Basic Works of Aristotle*, ed. Richard McKeon (New York: Random House, 1941), p. 46.

21. Similarly, the fact that *Socrates is taller than Phaedo* exists outside time but depends for its existence on Socrates and Phaedo, who exist in time. Robin Le Poidevin has suggested to me another argument for the claim that facts do not exist in time. Suppose that the fact (call it "F") that *e occurs at t* exists at *t*. Then there is another fact, namely, the fact that *F exists at t*, and so on ad infinitum. On the other hand, D. H. Mellor has objected to my saying of some facts that they exist outside time. He would say of some facts not that they do not exist in time but that they have no limited location in time and likewise for space. Thus, the fact, call it *P*, that Mitterrand dies, is located in space and time: Mitterrand dies in Paris in January 1996. On the other hand, the fact, call it *Q*, that Mitterrand dies in Paris in January 1996 is not located in any region *R* of space-time such that "*Q in R*" is true and "*Q outside R*" false. For Mellor, this is just a consequence of the fact that all of *P*'s temporal and spatial aspects are already stated in *Q*. As far as responding to the fatalist's argument against the new theory, Mellor's point may be well taken. My preference for treating temporal relational facts as outside time stems from the belief that temporal relations are simple, existents, and atemporal universals. A defense of these views is outside the scope of this essay.

22. Padgett, *God, Eternity and Time*, p. 120.

23. Perhaps one will ask how, say, Jones is *able* to not eat dinner at  $t_1$  if it is true (or a fact) that Jones does eat dinner at  $t_1$ . Very briefly, I would say, that the notion of "ability" or what we "can" do is ambiguous. Relative to one set of facts someone may be able to do something that relative to another set of facts one is unable to do. Thus, given the fact *Jones eats dinner at  $t_1$* , there cannot also be the fact that *Jones does not eat dinner at  $t_1$* , but given certain other facts that we ordinarily take to be relevant to what we can or cannot do, it can be the case that Jones does not eat dinner at time<sub>1</sub>. Given facts about Jones's physical capacity to drive a car and to stop by the local pub, his propensity to have a drink, and the typical rush-hour traffic around dinner time, and so on, he can avoid eating dinner at time<sub>1</sub>, but he will not. See David Lewis, "The Paradoxes of Time Travel," in *The Philosophy of Time*, ed. Robin Le Poidevin and Murray MacBeath (Oxford: Oxford University Press, 1993), pp. 135–46.

24. Storrs McCall, *A Model of the Universe: Space-Time, Probability, and Decision* (Oxford: Clarendon Press, 1994), p. 14.

25. Shanks, "Time, Physics, and Freedom."

26. That modern physics implies the tenseless theory is a highly contentious point that Shanks assumes without argument. Recent discussions of the issue occur in Smith, *Language and Time*; Howard Stein, "On Relativity Theory and the Openness of the Future," *Philosophy of Science* 58 (1991): 147–67; and Tooley, *Time, Tense and Causation*.

27. Shanks, "Time, Physics, and Freedom," pp. 48–49.

28. Ibid., p. 55.

29. Ibid., p. 58, 52, 56, 55.

30. Ibid., p. 51.

31. See Bertrand Russell, "On the Experience of Time," *Monist* 25 (1915): 212–33; C. D. Broad, "Time," in *Encyclopedia of Religion and Ethics*, ed. J. Hastings (New York: Scribner, 1921); Clifford Williams, "The Phenomenology of B-Time," in *New Theory of Time*, pp. 360–72; Oaklander, *Temporal Relations and Temporal Becoming*; Smith and Oaklander, *Time, Change and Freedom*; and essay 16.

32. Cf. Williams, "The Phenomenology of B-Time," pp. 360–72. The quoted passage occurs on pp. 365–66. For a causal analysis of tenseless temporal relations, see Le Poidevin, *Change, Cause and Contradiction*; and Hugh Mellor, *Real Time* (New York: Cambridge University Press, 1981).

33. Shanks, "Time, Physics, and Freedom," p. 55.

34. *Ibid.*, p. 57.

35. *Ibid.*, p. 52.

36. Heller has argued that "once we accept that there really is such a thing as the extended four dimensional whole, there is no good reason to deny that it, and not just its temporal parts, does have properties at various times" ("Things Change," p. 700). Cf. essay 29.

37. Shanks, "Time, Physics, and Freedom," pp. 54–55.

38. David Lewis, "Counterfactual Dependence and Time's Arrow," in *Conditionals*, ed. Frank Jackson (New York: Oxford University Press, 1991), p. 53.

39. C. D. Broad, "Time," p. 335.

40. I wish to thank Ron Hoy, Ned Markosian, Robin Le Poidevin, Hugh Mellor, and Alan White for their very helpful comments on earlier versions of this chapter. I have also benefited from discussions of this chapter at the Mike Morden Memorial Colloquium at Oakland University (in Michigan) and at West Virginia University.

The research for this chapter was supported (in part) by a fellowship from the faculty development fund of the University of Michigan–Flint.



# *Index of Names*

- Abbott, Edward Abbott, 332  
 Addis, Laird, 10, 181n, 291n  
 Allaire, Edwin B., 250n  
 Aristotle, 335, 341, 354n  
 Arsenijević, Milos, 225n  
 Augustine, 90, 206n
- Beer, Michelle, 233, 257, 263n, 288n  
 Bergmann, Gustav, 10, 48n, 89, 97n, 302n  
 Bernstein, M. H., 352n  
 Bigelow, John, 43, 47n-48n, 61n, 63n, 71-74, 75n, 84, 86, 90-93, 96n, 98n, 113n, 118, 326n  
 Black, Max, 188, 205n  
 Bradley, F. H., 42, 205n, 309, 325n  
 Brennan, Andrew, 307n  
 Broad, C. D., 22, 25, 48n, 58, 62n, 74n, 79, 131, 133n, 145-51, 155-57, 160, 167n, 168n, 188-89, 196, 198, 203, 204n, 205n, 206n, 236, 271, 288n, 290n, 326n, 339, 347, 350-51, 353n, 354n, 355n  
 Butchvarov, Panayot, 181n  
 Butterfield, Jeremy, 262n, 266, 285, 287, 292n
- Cahn, Steven, 204n, 352n  
 Callender, Craig, 98n, 113n, 114n, 288n  
 Capek, Milic, 352n
- Carter, William, 46, 327n, 352n  
 Castañeda, Hector N., 307n, 308n  
 Chandler, Hugh, 301n  
 Chapman, T., 181n  
 Chisholm, Roderick, 67-68, 69n, 112n, 198-99, 206n, 297-98, 305-307, 308n, 316, 321-22, 329n  
 Christensen, Ferrell, 79  
 Coburn, Robert, 301n  
 Copeland, B. J., 97n  
 Craig, William Lane, 9, 27-28, 47n, 61n, 62n, 63n, 77-80, 90, 96n, 97n, 98n, 101-12, 113n, 114n, 115n, 235-41, 241n, 242n, 265-67, 272-75, 284-85, 288n, 289n, 290n, 291n, 292n, 320, 326n, 329n
- Dainton, Barry, 117-20, 120n  
 Dau, Pablo, 308n  
 Davidson, Donald, 289n  
 Dean, Howard, 343  
 Descartes, René, 117  
 Dunlop, Charles E. M., 308n, 317n  
 Dyke, Heather, 10, 242n, 265-66, 288n, 289n, 290n, 291n, 329n
- Einstein, Albert, 118, 129
- Farmer, David J., 47n, 61n  
 Feigl, Herbert, 34n, 62n



- Ferré, Frederick, 204n  
 Forbes, Graeme, 307n  
 Foster, John, 117  
 Freddoso, Alfred, 106, 114n  
 Frege, Gottlob, 130  
 French, T. E., 308n
- Gale, Richard, 34n, 61n, 109–10, 115n,  
 135, 141n, 146, 201, 204, 204n,  
 206n, 257, 263n  
 Galilei, Galileo, 117  
 Garrett, Brian, 33, 36n, 119, 233n  
 Geach, Peter, 325n, 352n  
 Gödel, Kurt, 129–32  
 Goodman, Nelson, 205n, 257, 262n,  
 271, 290n  
 Graham, Nerlich, 98n, 166, 288n  
 Grossmann, Reinhardt, 49n, 89, 62n,  
 97n, 181n, 291n, 301n  
 Grünbaum, Adolf, 25, 41, 157, 168n,  
 265, 288n, 296, 352n
- Hacking, Ian, 262n  
 Hasker, William, 61n  
 Haslanger, Sally, 327n, 328n  
 Hastings, J., 48n, 168n, 205n, 290n, 354n  
 Heller, Mark, 308n  
 Hestevold, H. Scott, 46, 228–32, 233n,  
 234n, 327n, 352n  
 Hinchliff, Mark, 28, 97n, 113n, 117, 315,  
 326n, 328n  
 Hochberg, Herbert, 89, 98n  
 Horwich, Paul, 58, 62n, 117  
 Hoy, Ronald C., 10, 241n, 292n, 296–97,  
 301n, 308n, 326n, 355n  
 Husserl, Edmund, 242n
- Jackson, Frank, 355n  
 Jeffrey, Richard, 129  
 Johnston, Mark, 307n, 328n  
 Jokić, Alexandar, 97n, 113n, 225n
- Kallen, H. M., 352n  
 Kant, Immanuel, 129  
 Kaplan, David, 256, 262n, 269–70,  
 274–75, 278, 283, 291n
- Keeling, S. V., 112n, 167n  
 Kiernan-Lewis, Delmas, 211–12, 213n,  
 215–19, 219n, 225n, 233n, 240–41,  
 295, 297, 301, 301n
- Langer, S. K., 352n  
 Le Poidevin, Robin, 10, 25, 46, 47n–48n,  
 61n, 62n, 63n, 71, 74n, 84, 86, 96n,  
 97n, 98n, 113n, 157, 167n, 168n,  
 265–67, 288n, 289n, 290n, 291n,  
 312–13, 320, 326n, 327n, 329n,  
 354n, 355n  
 Leibnitz, Gottfried Wilhelm, 117  
 Leslie, John, 205n  
 Levison, A. B., 79, 160  
 Lewis, David, 78, 85–86, 96n, 320, 326n,  
 328n, 329n, 350, 354n, 355n  
 Locke, John, 325n  
 Lockwood, Michael, 352n  
 Lombard, Lawrence, 325n, 329n, 352n  
 Lowe, E. J., 61n, 102, 120, 160, 167n,  
 168n, 307n  
 Lucas, John R., 71, 75n, 336, 352n  
 Ludlow, Peter, 86, 90, 93–96, 98n, 113n,  
 267, 286, 289n, 291n, 292n, 326n,  
 329n  
 Lukasiewicz, Jan, 352n
- MacBeath, Murray, 47n, 61n, 133n,  
 262n, 281, 287, 291n, 353n, 354n  
 MacColl, Hugh, 262n  
 Mackenzie, J. S., 200, 206n  
 Markosian, Ned, 41, 169n, 342n, 355n  
 Marsh, Charles, 97n  
 Maxwell, George, 34n, 62n  
 McCall, Storrs, 79, 83, 136, 189, 205n,  
 241n, 265, 288n, 290n, 326n, 343,  
 352n, 354n  
 McTaggart, John M. E., 9, 19, 22–29,  
 31, 34n, 41, 43, 47n–48n, 51–52,  
 54, 56–57, 59–60, 71, 74, 74n,  
 101–102, 105, 107, 112, 113n–14n,  
 117–18, 129, 140, 145–46, 149–50,  
 152, 154–61, 167n–68n, 176, 183–  
 85, 187, 189–203, 204n, 206n, 269,  
 335, 339

- Mellor, Hugh, 10, 25, 47n, 61n, 62n, 71, 86, 97n, 102–103, 106–107, 113n, 114n, 115n, 117, 131, 133n, 135, 141n, 157, 160, 167n, 168n, 175–78, 180n, 181n, 193, 233n, 252–56, 262n, 265–66, 272–73, 284, 288n, 289n, 290n, 291n, 297, 296–97, 299–300, 301n, 307n, 312, 315, 327n, 328n, 353n, 354n, 355n
- Merricks, Trenton, 46, 49n, 63n, 315–17, 325n, 326n, 328n
- Miracchi, Silvano, 98n, 250n, 302n
- Morden, Mike, 355n
- Mosersky, Joshua M., 290n, 291n
- Munitz, Milton K., 329n
- Nagel, Thomas, 215
- Newton, Isaac, 117
- Noonan, Harold, 301n, 307n
- Oaklander, Linda Galang, 10
- Oaklander, Nathan, 33, 36n, 47n–48n, 61n, 62n, 75n, 86, 97n, 98n, 111, 113n, 133n, 157, 162, 167n, 168n, 180n, 215, 225n, 233n, 239, 242n, 250n, 262n, 263n, 265–66, 272, 274, 288n, 289n, 290n, 302n, 326n, 327n, 328n, 347, 352n, 353n
- Padgett, Alan, 339–42, 353n, 354n
- Parfit, Derek, 301n, 307n, 309, 325n
- Parmenides, 129
- Parsons, Josh, 62n, 291n
- Paul, Laurie, 266, 275, 290n
- Percival, Phillip, 113n
- Peterson, Paul, 225n
- Plantinga, Alvin, 83, 96n
- Plato, 132
- Poincaré, Henri, 117
- Polakow, Avron, 181n
- Prior, Arthur N., 34n, 61n, 79, 83, 86, 88, 93–94, 96n, 97n, 98n, 99n, 101, 104, 112n, 119, 159, 167n, 204n, 211–12, 215, 241n, 305–306, 308n, 326n
- Quine, Willard Van Orman, 205n, 247, 262n
- Reichenbach, Hans, 205n
- Reid, Thomas, 228–29, 233n, 300, 316, 321, 325n
- Russell, Bertrand, 24, 32, 36n, 42, 48n, 69n, 88, 97n, 131, 133n, 157, 168n, 184–85, 192–96, 197–99, 202, 205n, 206n, 207, 257, 262n, 265, 271, 288n, 290n, 347, 354n
- Salmon, Nathan, 262n
- Sartre, Jean-Paul, 239
- Savitt, Steven, 55, 62n
- Schlesinger, George, 9, 33, 34, 34n, 36n, 41, 47n, 61n, 71, 80, 83, 145–52, 167n, 181n, 183–85, 189, 191–94, 200–204, 204n–206n, 207–208, 209n, 230, 234n, 241n, 265, 288n, 307n
- Schlipp, Paul A., 129
- Schuster, Melvin, 124, 127n, 301n
- Seddon, Keith, 262n, 307n
- Sellars, Wilfred, 60, 62n
- Shanks, Niall, 344–45, 347, 349, 352n, 354n, 355n
- Sheffer, Henry M., 352n
- Shoemaker, Sydney, 101, 112n
- Shorter, J. M., 157, 168n
- Sider, Theodore, 325n
- Smart, J. J. C., 41, 47n, 61n, 152–53, 181n, 205n, 258, 263n, 265, 271–72, 287, 288n, 289n, 290n, 307n
- Smith, Quentin, 9, 10, 29–30, 36n, 40–41, 47n–49n, 61n, 62n, 63n, 75n, 78, 83, 86, 97n, 113n, 114n, 132n, 133n, 153, 160–66, 167n–69n, 225n, 233n, 238, 241n–42n, 245–49, 250, 252–61, 262n, 263n, 265–67, 272–74, 276–78, 287, 288n–92n, 307n–308n, 326–28n, 352n–53n
- Soames, Scott, 262n
- Sosa, Ernest, 204n
- Squires, Roger, 181n
- Stein, Howard, 117, 132n, 141, 142n, 354n

- Strawson, P. F., 352n  
 Swinburne, Richard, 297  
  
 Taylor, Richard, 204n  
 Thomason, Richard, 132n  
 Tomberlin, James, 63n, 96n, 113n, 326n  
 Tooley, Michael, 9, 30-31, 34n, 36n,  
     47n, 61n, 86, 96n, 97n, 113n, 120n,  
     117, 119, 135-41, 141n, 288n, 290n,  
     291n, 326n, 327n, 353n, 354n  
 Trianosky, Gregory, 308n  
  
 Uehling, T. E., Jr., 308n  
  
 Van Inwagen, Peter, 96n, 113n, 181n,  
     288n, 308n, 326n  
  
 Wettstein, Howard K., 308n  
 White, Alan, 355n  
 Whitrow, G. J., 204n  
 Wiggins, David, 307n  
 Wilkes, Kathleen V., 307n  
 Williams, Clifford, 37, 39-41, 44-45,  
     47n, 49n, 61n, 62n, 63n, 133n, 157,  
     168n, 236n, 347  
 Williams, Donald C., 41, 205n, 227, 265,  
     288n, 352n

# Index of Subjects

- A-belief(s), 269, 282–87
- absolute becoming, 118–19, 146, 189–91, 197. *See also* temporal becoming, A-theory
- absolute simultaneity, 118
- absolute time, 110, 124, 297–98, 311, 314
- A-change, 58, 60, 107, 159
- A-characteristic(s), 23, 155, 176, 196–97. *See also* A-determination(s), A-properties
- A-contents, 284
- actual *simpliciter*, 136
- actual world, 73–74, 104
- actualism, 102
- A-determination(s), 28, 78, 101, 102, 106–107, 109–10, 123, 148–50, 238, 311
- A-expression, 195
- A-fact(s), 119, 266, 279, 282–84, 286
- A-passage, 41, 44, 61
- A-properties, 29, 41–42, 45–46, 54–56, 61, 71, 77–79, 89, 93, 95, 101, 151, 159, 161, 164–65, 266, 320. *See also* A-determination(s), A-characteristic(s)
- A-proposition, 282
- A-relations, 61, 107–109
- A-sentence token (type), 276–77, 287
- A-sentence(s), 40, 268–69, 272, 276, 277, 282–84, 287
- A-series, 17, 18, 23, 26, 43, 51–59, 74, 101–102, 104–107, 111–12, 124–27, 148–49, 154–55, 158, 160, 177, 195–96, 201–202, 306. *See also* A-theory, tensed theory of time
- A-statements, 18, 194, 196, 201
- asymmetry of openness, 350–51
- asymmetric dyadic relation, 22
- A-theoretic metaphysics/ontology, 239–40
- A-theory (theorist), 9, 17, 22, 24–27, 30–31, 39–46, 51, 53, 57–58, 61, 77–79, 86, 87, 94, 101–102, 105–108, 112, 123–24, 127, 132, 185, 189, 203–204, 235–37, 265, 272, 278, 281, 303, 310–13, 317, 331–32. *See also* A-series, tensed theory of time
- A-time, 24, 39–46, 56, 59, 61, 101, 129, 131, 187, 238–40
- Augustinian hypothesis, 198
- backward becoming, 88
- backward causation, 131, 135, 175
- bare particular, 322
- B-belief(s), 283, 285
- becoming, 112, 151, 201, 203–204. *See also* temporal becoming
- belief token, 268
- Bergsonian response, 45
- B-events, 286
- B-experience, 217

- B-expression, 195  
 B-fact(s), 10, 119, 266, 279, 282–85, 311–12, 314  
 B-nonpassage, 61  
 B-propositions, 278  
 B-relations, 24–25, 30, 43, 45, 51–56, 58–61, 69, 77, 80, 89, 101, 105, 107–12, 119, 123, 125–26, 148–49, 154, 157, 163, 197, 266, 287, 311  
 B-sentence(s), 125, 268–72, 282, 286–87  
 B-series, 17–18, 23–24, 26, 39, 51–52, 54, 56, 59, 102, 106, 123–26, 131, 148–49, 154, 156–57, 176, 195–96, 202, 211, 228, 240, 271, 305, 311. *See also* B-theory, tenseless theory of time  
 B-statements, 18, 25, 109, 194, 196–97, 199–202  
 B-succession, 41, 44  
 B-theoretical defeaters, 237  
 B-theory (theorist), 9, 10, 17–18, 22, 24, 31, 37, 39, 40, 42, 44–46, 51, 106, 115, 119, 124, 130–31, 136, 207, 235–41, 265–66, 268–69, 271–73, 278, 281, 283, 285–87, 310–13, 317–18, 320, 322–25. *See also* B-series, tenseless theory of time  
 B-theory of language, 278  
 B-time, 24, 39–46, 54, 56, 58, 60, 131, 281, 313  
  
 Cartesian-ego, 300, 321  
 causal relations, 25, 88, 131, 140, 157  
 causal theory of time, 139–40  
 causation, 136, 139, 179  
 change, 20, 22–23, 27, 31, 39, 41, 53–55, 57, 59–60, 74, 77–79, 85, 96, 101, 107, 112, 129, 151, 153–54, 159–60, 165–66, 178, 196, 306, 313–14, 320  
 closed future, 132  
 closed universe (determinate, fixed)/closed past, 345, 347, 349, 351  
 compound presentism, 118–19  
 continuants, 299–300, 304, 306, 333  
 co-reporting thesis, 257  
 correspondence relation, 268, 283  
 counterfactual dependence, 350  
 counterfactuals, 135  
 C-relations, 53  
 C-series, 23, 43, 51–60, 123, 126, 148, 154, 156–67  
  
 date-analysis (of time), 265, 268–69, 272–75, 284  
 date-analysis truth condition, 277, 280  
 date-sentence type, 275–76  
 date-theory (of time), 275  
 date-version (of time), 245, 248, 257–60  
 demonstratives, 256  
 detenser(s), 24, 25, 31, 40, 71, 135, 153, 157, 160, 166, 212, 215–19, 227–29, 233, 247–49, 251–52, 255, 272, 278, 281, 340, 347–49, 350. *See also* B-theory  
 determinism, 336, 350  
 difference, 20  
 divine foreknowledge, 10, 331, 333  
 durationless present, 90  
  
 earlier than, 19, 22, 41, 51, 56, 108, 185  
 earlier than/later than, 9, 53, 69–73, 85, 106, 107, 109, 112, 119, 194–95, 202, 235, 287, 299, 311, 347  
 endurance/perdurant debate, 310  
 endurance view of identity, 46, 324  
 enduring entity (-ies)/object, 31, 295–96, 299, 315. *See also* continuant  
 enduring object, 315  
 entailment argument (thesis), 263, 312–13  
 eternal facts, 343  
 events, 79, 123–24, 178  
 exemplification, 30, 164–66  
 existence at a time, 138  
 existence *simpliciter*, 138–39  
 extrinsic direction, 22  
  
 four-dimensionalism, 93  
 freedom, 51–63  
 futurity, 21, 23, 32, 38, 43, 72, 78–79, 86, 88, 92, 102, 106–107, 118, 146, 161, 163–66, 175, 185, 189, 251, 266, 311, 320, 345

- Gödel's R-universes, 130  
 Greenwich, 24
- human freedom (autonomy), 119, 331, 333, 336, 343, 347, 349, 351  
 Humean supervenience thesis, 146  
 Humean type view of persons, 300  
 hybrid A/B theory of time, 9, 18, 29–30, 32, 61, 77, 78–80, 83
- ideal language, 246–47  
 identity, 296  
 identity through time, 303  
 incompatible property (-ies), 20, 56, 155  
 indexical expressions, 272  
 indexical(s), 139, 160, 217, 256–57, 279–80. *See also* temporal indexicals  
 indiscernibility of identicals, 313–16, 319  
 indistinguishability argument, 37  
 inherence relations, 29, 30  
 inferences of presentness, 29, 161, 280  
 intentional meaning, 268, 271, 274, 277, 282–86  
 intentional relation, 283  
 intentionality, 281, 283  
 intrinsic defeater-defeater, 83, 236  
 intrinsic direction (of time), 21, 22, 110–11, 156, 239  
 intrinsic properties, 314, 316  
 intuition, 20  
 irreducible relations, 40
- Kripke-Donnellan theory, 258
- language. *See* ideal language, ordinary language, temporal language, new B-theory of language  
 later than, 67  
 legal responsibility, 309. *See also* moral responsibility, responsibility  
 libertarian incompatibilism, 344  
 linguistic meaning, 269, 271, 276, 278, 283  
 logical fact(s), 340  
 logical fatalism, 341  
 logical operators, 105
- McTaggartian view of time, 201–204, 208  
 McTaggart's paradox, 10, 26–29, 38, 45, 51, 53–69, 71–74, 77–80, 83, 93–95, 101–108, 123, 135, 140, 147, 153, 160–62, 164, 166, 219, 227, 236, 284  
 meaning, 271, 281. *See also* intentional meaning, linguistic meaning, ontological meaning, reference meaning  
 mereological essentialist, 315  
 metaphysical defeaters, 237  
 Minkowski space-time, 336  
 moments, 20–21, 26, 56, 110, 124–26, 147, 150, 154, 276, 298, 314  
   absolute, 27, 77, 124, 126  
   relational, 126  
 monad, 321  
 monadic property (-ties), 24, 29, 40, 42, 78, 107, 346  
 monadic temporal properties, 29, 88, 165, 200, 303, 341. *See also* temporal properties  
 moral responsibility, 296, 309, 322. *See also* legal responsibility, responsibility
- naked particular, 322  
 negative facts, 89  
 new B-theory of language, 266, 268, 271–72, 281, 284–85, 287  
 new B-theory of time, 278, 284, 286–87, 337–38, 340–41, 345  
 new tenseless theory of time, 245, 247–49, 251–52, 255, 257–58, 260–61, 269, 287, 295, 346–47, 349, 351  
 new theory of reference, 281  
 nonexistent future, 135  
 nonrelational (temporal) properties, 42, 43, 77–78, 118, 311, 316  
 nonrelation tensed properties, 266  
 nontemporal properties, 178  
 nontemporal relation, 51, 57–58  
 nontemporal series, 202  
 NOW/"now", 17, 24, 33, 46, 54–55, 58,

- 74, 84, 93, 105, 111–12, 123–26, 129, 145–47, 149–52, 155, 158–59, 166, 187, 192, 194, 202–203, 208–209, 228, 230, 251, 280–81, 287
- numerical identity, 309, 323
- objective becoming, 104
- ontological meaning, 268, 270, 277
- open future, 9, 30, 132, 311, 331, 351
- open universe (indeterministic), 344–45
- ordinary change, 77–78
- ordinary language, 9
- passage, 39, 43, 56, 58–61, 71–73, 117–19, 145, 159, 186, 227–28, 251, 265, 303, 305–306
- past, present, and future, 9, 32
- pastness, 21, 29, 38, 43, 72, 78–79, 86, 88, 92, 102, 106–107, 118, 146, 161, 163–66, 175, 185, 189, 251, 266, 303, 311, 320, 345
- perception, 179
- perdurant view of identity, 46, 336
- perduring entity, 31
- persisting agents, 300
- person, 300, 309–10, 312, 324, 349
- personal identity, 10, 178, 297–99, 317–18, 321–22. *See also* relationalist view, substantialist view
- personal responsibility, 309, 325. *See also* responsibility
- physical fact(s), 340
- physicalism, physicalist, 215–17, 236
- possible world(s), 71–74, 80, 89, 101, 104, 106, 129, 261, 277, 350
- precedence, 179
- predicted shadow, 125–26
- present properties, 90
- present *simpliciter*, 305
- presentism, 9, 27, 39, 43, 77–80, 83–86, 89–93, 101–107, 118, 311, 316–17, 320–22. *See also* compound presentism
- presentist, 28, 29, 43–44, 77, 83–86, 88, 92–93, 107–109, 112, 240, 311
- presentness, 21, 23, 29, 37, 40–41, 43, 54, 72, 78–80, 88, 110, 118, 126, 146, 156–59, 161–63, 165, 175, 185, 189, 238, 248, 251, 259, 265–66, 278, 280–81, 287, 303–305, 311, 316–17, 320, 338, 345–46
- primitive temporal existents, 43
- primitive temporal relations, 40, 42, 44, 46, 72
- principle of bivalence, 323
- pure ego, 322
- reality, 18
- reductio ad absurdum, 27
- reductionist view, 42, 136
- reference meaning, 269–72, 276, 278, 283–84
- reference theory of indexicals, 279, 281
- relational predicate, 88, 96
- relational properties, 108, 139
- relational theory (view) of time, 9, 20–23, 276
- relationalist view of identity, 309–10, 317–19, 322–23
- relations, 107, 118
- resemblance theory, 45
- responsibility, 10, 300, 317–25. *See also* legal responsibility, moral responsibility
- Russellian theory (view) of time, 183–91, 199–202, 207, 209
- Russellian(s), 68, 185, 187, 191–92, 194, 199–200, 203–204, 208–209
- sameness, 20
- semantic content, 280, 284
- sempiternal things, 232
- sentence token, 253–54, 257–58, 269, 271, 284. *See also* tensed sentence token
- sentence-type analysis, 253–65
- simultaneity, 53, 109, 124, 140–41, 154, 299
- simultaneous with, 9, 19, 21, 51, 56, 109, 194, 235, 287, 311
- space and time, 20, 21

- spatial antirealism, 117
- spatial change, 42
- spatial relations, 22
- spatial series, 22
- Special Theory of Relativity, 141
- static block view (of time), 118–19, 136, 231, 235
- S-theory (spacelike or static theory of time), 344–45, 347–49
- straw man fallacy, 239
- string theory, 120
- substance(s), 21, 151, 312–13, 316, 318, 321
- substantialist view of identity, 297, 309–10, 316–19, 321
- substantival view of space-time, 146
- succession, 19, 24–25, 39, 41, 44, 53–54, 80–89, 104, 118, 149, 157–58, 160, 178–80, 188, 212, 232, 239
- temporal anaphora, 93, 95
- temporal becoming, 9, 17–19, 26, 54–56, 59–61, 71, 77, 89, 101–107, 112, 117–18, 123–27, 129, 145, 147, 154–55, 158, 227–28, 235–37, 239–41, 251, 265, 303, 305
- temporal being, 111
- temporal change, 22, 42–43, 77–78, 85, 154
- temporal entities, 9, 154, 299, 311
- temporal experience, 177
- temporal facts, 9, 10, 266
- temporal indexicals, 46, 248, 257–58, 265, 271, 279–81, 286
- temporal individuals, 21, 248, 314
- temporal judgment, 235
- temporal language, 18, 235, 281
- temporal objects, 111
- temporal particular(s), 111, 124–26, 190–92, 194, 208
- temporal parts, 178, 298–99, 303–307, 312–13, 316, 318–19, 323–25, 345, 348–49
- temporal passage, 40, 51, 57–59, 61, 71–74, 153, 160–61, 166, 227, 274, 303–304, 307
- temporal predication (predicates), 159, 186
- temporal presence, 107
- temporal priority, 139
- temporal properties, 27, 29, 41, 43, 73, 102, 158–59, 185–86, 195, 197, 230, 245, 247, 251, 303, 306, 311
- temporal reality, 19, 278, 281
- temporal relation(s), 18–19, 21–26, 30, 41, 43–44, 46, 52, 61, 67–68, 73, 84–87, 90–92, 94–95, 104, 106, 111–12, 118, 123, 131, 139–40, 149, 154, 157, 159, 161, 163, 166–67, 175–76, 189, 193–203, 235–36, 239, 247, 252, 269, 271, 287, 299, 305, 311, 317, 339, 341–43, 347
- temporal sequence, 110
- temporal series, 22–23, 211
- temporal solipsism, 104
- temporary intrinsics, 77–79, 313, 315
- tense, 29, 67–68
- tensed actual worlds, 89
- tensed beliefs, 177, 217, 265, 282–83, 285–86, 348
- tensed copula, 60, 338–39
- tensed discourse, 265
- tensed exemplification, 165, 311
- tensed fact(s), 27, 44, 79, 86–87, 104, 112, 119, 175–76, 217, 245, 247–48, 251–52, 255, 260, 265, 268, 278, 281, 284–86, 317, 248
- tensed judgments, 266
- tensed language, 346
- tensed predicates, 24, 29, 42, 120
- tensed property (properties), 24, 30, 42, 44, 71, 79, 92–93, 139, 157, 251, 260, 320, 338, 345–46
- tensed proposition, 85
- tensed representation, 119
- tensed sentence token (type), 276–77, 342
- tensed sentence(s), 161, 175–76, 230, 245, 249, 252–53, 255, 258, 261, 265, 268–72, 278, 282–83, 285, 287
- tensed statements, 139
- tensed theory (view) of time, 120, 219,



- 227, 230–31, 235, 237, 245, 251,  
266, 268, 281, 287, 303–304,  
306–307, 335, 345. *See also* A-theory
- tenseless change, 178
- tenseless copula, 338
- tenseless date theory, 275
- tenseless existents, 131
- tenseless facts, 61, 87, 90, 138, 176,  
211–12, 215, 218, 245, 252, 254,  
256, 297
- tenseless language, 346
- tenseless sentence token, 273
- tenseless sentence(s), 19, 176, 248,  
269–72, 275, 283, 287, 338, 342
- tenseless theory (view) of time, 216,  
218–19, 227–30, 245, 249, 251–53,  
272, 276, 281, 287, 298–99, 335–36,  
339. *See also* new tenseless theory of  
time
- tenseless truth conditions, 256, 261, 272,  
274, 279. *See also* truth conditions,  
world-indexing truth conditions
- tenser/detenser debate, 19, 31–34, 40,  
46, 71, 77, 136, 212, 255, 278, 335
- "Thank Goodness," 83, 119, 177, 184,  
215
- things, 178
- time, 17, 26, 32, 40, 51–52, 78, 101, 112,  
123–24, 129, 145–46, 148–49, 151,  
153, 156, 158, 177, 235, 247, 311,  
343
- absolute, 20, 21–23, 125, 154–55. *See  
also* tensed (time)
- creationist view of, 124
- direction of, 20–23, 165–66, 175, 179.  
*See also* intrinsic direction (of time)
- dynamic (tensed), 132, 136, 140–41
- experience of, 9
- moment-creationist view of, 124
- movement of, 202
- phenomenology of, 117
- pure passage of, 41
- relational. *See* relational theory (view)  
of time
- tensed, 21
- tenseless, 23
- travel, 130–31
- unreality of, 117, 129–30, 158–59,  
335. *See also* McTaggart's paradox
- time-indexed properties, 314, 316
- token-reflexive account (of time),  
160–61, 176–77, 217, 245–47,  
252–57, 261, 265, 269, 272–73, 284,  
287, 296
- token-reflexive meanings, 286
- token-reflexive truth condition, 273,  
275, 297
- translatability, 19, 255, 272
- truth at a time, 138
- truth conditions, 40, 261, 266–70, 273,  
275, 287, 297. *See also* tenseless  
truth conditions, token-reflexive  
truth conditions, world-indexing  
truth conditions
- truth predicates, 103
- truth *simpliciter*, 138
- truthmaker, 268, 270, 284, 311, 315, 317
- unreality of tense, 120
- unreality of time, 60–61
- verbal tense, 25
- wholly present, 313, 319–23
- world-indexed B-sentence, 277
- world-indexing truth conditions, 276–77

"Nathan Oaklander has for many years been the most indefatigable and effective developer and champion of the new – and true – tenseless theory of time. . . . This book is an invaluable collection of [Oaklander's] major papers on the topic, . . . a formidable armory of arguments for the tenseless theory, and against its rivals, in both its ontological and its semantic aspects. . . . [A]n indispensable guide to the recent history of work in the philosophy of time."

—D. H. Mellor  
Emeritus Professor of Philosophy at Cambridge University

"What emerges very strongly from these essays is a conviction that significant and exciting metaphysical results can be extracted by a careful and rigorous attention to the nature of temporal language and a deep sense of the human relevance of the philosophy of time, as evidenced by the subtle connections drawn here between time, experience, identity, and freedom. . . . [A] testament to Oaklander's place at the forefront of contemporary metaphysics."

—Robin Le Poidevin  
Professor of Metaphysics, University of Leeds

"[S]erves beautifully as both an up-to-date reference as well as an introduction to the ongoing debate between 'tenser' A-theorists and 'detenser' B-theorists. Not only does Professor Oaklander herein offer the latest version of the 'new' B-theory of time, of which he is a chief architect, but he outlines a 'newer' B-theory of language that may well untangle the riddle of how tensed language may be essential to daily life."

—V. Alan White  
Professor, University of Wisconsin–Manitowoc

"[A] sustained defense of the new B-theory of time and a penetrating critique of a range of A-theories of time. . . . [A]n impressively coherent and unified work constituting one of the most complete and thorough defenses of the new B-theory to appear in recent years."

—Heather Dyke  
Senior Lecturer in Philosophy, University of Otago, New Zealand

L. Nathan Oaklander is a professor of philosophy and former chair of the Department of Philosophy at the University of Michigan–Flint. He is the author or editor of numerous books on philosophy and the problem of time, including *Time, Change and Freedom* and *The Importance of Time*.

ISBN 1-59102-197-9



9 781591 021971

**Prometheus Books**

59 John Glenn Drive  
Amherst, New York 14228-2197

[www.prometheusbooks.com](http://www.prometheusbooks.com)