ABSTRACT

OVERCOMING THE PRESENT

By

Christian C. Weede

May 2015

We should reject presentism as the most intuitive theory of time. Prima facie, presentism might seem intuitive due to our perception of time. However, if presentism accurately represents the metaphysics of time, then presentism entails some counter-intuitive results regarding events, truths about the past, and temporary intrinsics. I argue that presentists can only allow for the present to be instantaneous, and then only at the cost of losing events as ontological entities. I argue that an ersatz B-series of times is viable only at the cost of losing the special metaphysical status of the present. Finally, I argue that the claim that propositions are true simpliciter is inconsistent with the claim that propositions are not eternally true. Given these problems, we can see that presentism has some strongly counter-intuitive entailments.

OVERCOMING THE PRESENT

A THESIS

Presented to the Department of Philosophy

California State University, Long Beach

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts in Philosophy

Committee Members:

Cory Wright, Ph.D. (Chair)
Marcy Lascano, Ph.D.
Matthew Davidson, Ph.D.

College Designee:

Amy Bippus, Ph.D.

By Christian C. Weede

B.A., 2011, California State University, San Bernardino

May 2015

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

All things considered, we should reject presentism as the most intuitive theory of time. A common intuition is that the present time is somehow metaphysically privileged. The future is yet to be, while the past is gone; now is the only time that is real. Presentism is a philosophical theory of time that reflects such intuitions. For a presentist, past and future times are not real. While this theory might be close to our perception or experience of time, presentism has some consequences that might be counterintuitive. For example, suppose that certain truths supervene on an object (or objects) in the world. Call such objects *grounds*.[1] However, if the past is not real, then objects that are wholly in the past cannot be real. So, if we think there are truths about the past, such as 'the Royal Library of Alexandria was constructed in the 3rd century BC', then the Royal Library cannot serve as the ground for that truth. Since the Royal Library was completely destroyed and is wholly in the past, there is no concrete object in reality to serve as a ground for truths about the Royal Library. Henceforth, I will refer to this problem as *the grounding objection*. Given the grounding objection (and other objections to presentism that I will discuss in detail below), presentism might not seem so intuitive after all.

---

[1] Note that events will count as a subvening base.

I will argue that presentism is a highly problematic theory, paying special attention to the specious present, events, grounding, and temporary intrinsics. In what follows, I will make certain assumptions about what a presentist might be willing to commit to. One such assumption is that presentists are willing to allow events in our ontologies. If a presentist is willing to deny that events have a place in our ontologies, then she will most likely not find the section on events very convincing. I will also assume a realist stance on truth-value for the remainder of this paper; if a proposition is relativized to a quadruple (a ordered group of coordinates including the three dimensions of space and the fourth dimension of time), then the truth-value of that proposition is objective and eternal. Further, I will assume for the rest of this paper, that presentists are willing to accept that the grounding relation is the best way to understand truth and it's relation to the world.

I will begin section two by introducing some different theories of time (A-theories, B-theories, presentism, eternalism, growing block theories, and moving spotlight theories), some of the consequences of those theories, and one of the best arguments for each theory. Then I will discuss three-dimensionalism and four-dimensionalism (as this will be important in my discussion of temporary intrinsics). Finally, I will discuss how some of those theories seem to naturally fit together (such as eternalism and four-dimensionalism) as well as the theories that seem strange to pair, but do not result in any incoherence.

In section three I shall make my arguments against presentism. I will discuss some obstacles that any theory of time must contend with. The obstacles are: whether

the present is specious or instantaneous, the ontological status of events, grounding truths, and temporary intrinsics. I will argue that if the present is the specious present, then the present is a span of time which includes past and future times within the present time. Since a presentist does not admit that past and future times are real, she must either give up the specious-present, or give up the A-theory of time.

Alternatively, a presentist might decide to reject the specious present and accept that the present is instantaneous. However, if the present is instantaneous, then she cannot admit entire non-instantaneous events in her ontology. One way around this problem might be to say that—like objects—events are wholly present over time. But if events are wholly present over time, then the first note of a concert would be simultaneous with the last note. A second option might be to accept that there are no events; events are simply Platonic objects or mental constructs. However, if events are Platonic objects, then they are eternal. Yet, events seem to have limited duration. They begin at a time and end at some later time. So, perhaps we should think of Platonic events as event-types or universals, and particular events as event-tokens or instantiations. However, Donald Davidson makes a strong argument against understanding events as such. Davidson's argument is that when conceiving of events in such a way, we lose the ability to draw what should be valid inferences. A third option would be to accept that only present temporal parts of events are real.

Another problem for presentists arises when we try to ground truths about the past. Assuming that one accepts that certain truths supervene on their grounds, a presentist faces difficulties when trying to account for truths about objects or events that

are wholly in the past. Returning to the example of the Royal Library, since the Royal Library is itself no longer present, it cannot serve as a ground for any truths about the Royal Library. Since supervenience is a relationship that is similar to entailment,[2] history texts or other documents cannot serve as grounds for truths about the Royal Library. After all, it is possible that such documents could be falsified or inaccurate. One way that presentists have sought to avoid this problem is by claiming that entities can have past-directed properties. For example, the world (as it is now) has the property of *being such that the Royal Library was built in the 3rd century BC*. Call these presentists *Lucretian-presentists*.

However, there are a number of objections to this response. One objection comes from Theodore Sider (2001), who claims that Lucretian presentism is a "cheat" in that past-directed properties point away from their instances; such properties are hypothetical and hypothetical properties should not serve as grounds. Sider argues that only categorical properties should be admitted into our ontologies, because categorical properties describe what objects are actually like at a fundamental level. Hypothetical properties, on the other hand, do not describe objects at a fundamental level. For example, suppose that my desk (at a time, t_1) has the property of *being painted black*. Now, suppose that I strip the paint, and repaint it brown at some later time (t_2). After the repainting (t_3), my desk will have the property of *being painted brown*. However, if the Lucretian-presentist is correct, then it will also have the property of *being such that it*

---

[2] Suppose that *x* entails *y*. If *x* is true, the truth of *x* guarantees the truth of *y*. Similarly, suppose that some property *q* supervenes on property *p*. If some object has the property *p*, then that object is guaranteed to have the property *q*.

used to be painted black at t_3. The property of *being painted black* (at t_1), and the property of *being painted brown* (at t_3) are both categorical. At t_1, we could have looked at the desk and seen that it was painted black. Likewise, at t_3, we can look at the desk and see that it is painted brown. However, assuming that I did a very good job stripping all of the black paint off of the desk at t_2 and there is no irrefutable evidence of the desk having been painted black at some previous time, *being such that it used to be painted black* does not seem to describe my desk as it is at t_3. The Lucretian-presentist might respond by claiming that, at t_3, the table has the property *being such that it was painted black*. However, unlike an eternalist, a Lucretian-presentist cannot analyze such past-directed properties into its having an earlier temporal-part that is painted black. So, there must be some account of how the Lucretian-presentist can analyze such properties.

Thomas Crisp (2007) responds to the grounding objection by positing an ersatz B-series of times. Such times are supposed to serve as grounds. However, Matthew Davidson argues that even if Crisp's response bypasses Sider's objection, there is still a problem of shifting-truthmakers. I will argue that Crisp's response does not adequately deal with the grounding objection. By positing an ersatz B-series of times, Crisp does not seem to address the grounding objection at all. In other words, the grounding objection has force because a presentist must account for what *in the world* makes truths about the past true. If times are nominalistic, then there are no times to serve as grounds. On the other hand, abstract objects do not lose or gain intrinsic properties; they have the same intrinsic properties that they have always had, and always will have. If times are abstract objects, then times are eternal and unchanging. Thus, a time that has the intrinsic

property of *being past* will always have, and has always had the property of *being past*. It could not have had the property of *being present* or *being future*. For an A-theorist, properties such as *being present* are fundamental, whereas relational properties such as *earlier than* are derivative. If properties such as *being past* are relational, then they are not intrinsic.

A response might be to claim that times do not have these intrinsic properties of *being past* or *being present*. We might view times as universals that can be instantiated. If so, then what gives the present its metaphysical privilege might be a relational property held between a universal and its instantiation. However, if we treat times as universals, I think that we run afoul of a similar problem to the one Donald Davidson poses for treating events as universals. If we treat times as universals, then we lose the ability to draw certain inferences that should be valid.

The final problem for presentists that I will consider involves temporary intrinsics. Objects have properties at different times that—were they held simultaneously—seem to come in conflict with one another. For example, suppose that there is a computer; call this computer "Alice." Alice is constructed, and at "birth" has only an i5 processor. Alice serves her operator's purposes for a while, but soon her operator removes the i5 processor and upgrades to an i7 processor. After the upgrade, Alice has only an i7 processor. So, Alice seems to have properties that, when held simultaneously, are in conflict; Alice has only an i5 processor, and Alice has only an i7 processor.

One idea that a presentist might endorse, is that objects are wholly present over time; present objects have all of their parts located in the present. So, the problem is that Alice has an i5 processor (but no i7 processor) as a part at one time and an i7 processor (but no i5 processor) as a part at another time. If an object is wholly present over time, then so are all of that object's parts. Thus, it would be simultaneously true and false that Alice has only an i7 processor. Some philosophers seek alternate solutions by claiming that propositions like ⟨Alice has only an i7 processor⟩ are true *simpliciter* (Zimmerman, 2006); it is true relative to nothing else. If we suppose that the present has a special metaphysical status and an object that is present has certain properties, propositions about properties exhibited by present objects are just true from a certain temporal perspective without any qualification (Zimmerman, 2006: 421). The claim seems to be that if a proposition such as ⟨Alice has only an i7 processor⟩ is the object of a propositional attitude at t_1, and Alice is present at t_1, and Alice has the property of *being an object that has only an i7 processor* at t_1, then that proposition is true without qualification from the temporal perspective of the person who has that propositional attitude at t_1. However, this seems to suggest that propositions are true or false relative to a time or temporal perspective. If a specific time or temporal perspective plays a role in determining the truth value of a proposition, then that proposition is true relative to a time or temporal perspective. If propositions are true relative to a time or temporal perspective, then they are not true simpliciter.

A presentist might push back and claim that if the present is all there is, then there is no need for relativizing propositions to temporal perspectives. In other words, there is

only one temporal perspective: the present perspective of the observer. Thus, if a proposition is presently true, then it is true simpliciter. However, if we assume that the theory of special relativity is true, then there is no such thing as absolute simultaneity between two observers; what is present for me, might be one second into the future for another observer. Thus, even if the truth-value of a proposition is not relative to a temporal perspective, it is relative to the observer. If the truth-value of a proposition is relative to an observer, then it is not true simpliciter.

Further, even if a notion of truth simpliciter is unproblematic, it misses the mark with respect to what is at the foundation of the problem of temporary intrinsics. Suppose that propositions from temporal perspectives can be true simpliciter without being eternally true. Solutions to the problems associated with temporary intrinsics and presentism are supposed to address how it is that a presentist can account for change in objects. A presentist can claim that ⟨Alice has an only i7 processor⟩ is true simpliciter from a temporal perspective, but can she account for the change that Alice underwent when the i5 processor was replaced with an i7 processor?

CHAPTER 2

THEORIES OF TIME AND THEORIES OF PERSISTENCE

In this section I will outline the different theories of time most commonly endorsed by contemporary philosophers. I will discuss A-theories vs. B-theories, presentism vs. eternalism, and the growing block and moving spotlight theories. In my discussion I will give a brief example of some of the consequences for each theory, as well as one of the arguments for each theory. Then I will address the difference between three-dimensionalism and four-dimensionalism, as this will be relevant to my discussion of temporary intrinsics. Again, I will discuss some of the consequences of each theory, as well as the best argument for each theory. Finally, I will entertain some ideas about how the different theories match up (both the theories that seem to go hand-in-hand and those that seem opposed).

Theories of Time

A-Theories vs. B-Theories

The distinction drawn between the A-theory and the B-theory of time has its origin in John Ellis McTaggart's (1908) famous paper: "The Unreality of Time." The A-theory (or 'A series', to use McTaggart's terminology) divides times by the properties those times possess. For the A-theorist, there are objective differences between what is *past*, what is *present*, and what is *future*; past, present, and future are properties that a particular moment in time may possess. A moment in time may possess only one of

these properties at any given time, but may possess all three over a span of time. Further, time is understood as passing. For example: suppose that my clock is accurate and it shows that it is 3:05 pm on the twenty-fourth of March in the year 2014. As I type this sentence, the time '2014.03.24 15:06:00' has the property of being future. However, at the instant it becomes 3:06 pm, the time '2014.03.24 15:06:00' will no longer have the property of being future; it will have the property of being present. After some more time passes and my clock shows 3:07, the time '2014.03.24 15:06:00' will no longer have the property of being present; it will have the property of being past. If something has the property of being past (or present, or future), it has this property independent of any other particular (such as another time, event, or frame of reference).

Moreover, there are objective differences between what *is now* the case, what *was* the case, and what *will be* the case. The A-theorist holds that verbal tenses used in ordinary language are primitive and unanalyzable. Further, most (if not all) A-theorists hold that tensed natural language reflects a real metaphysical division between the present and the non-present. However, determining the truth values of sentences with tensed locutions requires that we assume a certain vantage point. Tensed locutions are those that make use of the words or phrases 'is', 'was', and 'will be'. Note that in a tensed locution, 'is' means 'is now'. However, in a tenseless locution, 'is' can be used to mean 'is now', 'was' or 'will be'. For example: if I describe an event, 'past' applies to that event if and only if it occurred at some time earlier than my description of it. In this sense, words like 'past', 'present', and 'future' are treated as indexicals. However, once we analyze a tensed sentence in terms of a tenseless sentence, the truth of the tenseless

sentence is fixed. For example, if I were to say 'it is raining now in Upland, CA', my utterance could be true or false depending on when I made the utterance and whether or not it is raining in Upland, CA. The word 'now' is indexical, so the time at which the speaker uttered 'now' plays a role in determining the truth-value of that utterance. If I said 'it is raining now in Upland, CA' at March 24, 2014 at 6:41pm, then my utterance would be false because it was not raining at that particular time in Upland, CA. However, if I said 'it is raining now in Upland, CA' at January 26, 2015 at 7:02pm, then my utterance would be true because it was raining at that particular time in Upland, CA. If we replace the indexical with a specific time, then the truth-value of the utterance with a specific time becomes fixed. If I were to say 'it is raining on March 24, 2014 at 6:41 pm in Upland, CA', then that sentence would be false no matter when it is uttered. The replacement of 'now' with a specific time removes the indexical and fixes the truth-value.

One reason for accepting an A-Theory of time is that it matches with how we experience the world. Time seems to flow past us, similar to how water flows past heavy rocks at the bottom of a river. We experience time as if it was passing us by. The present moment is only present for an instant, and then it becomes past. We do not experience the past directly, but we can recall memories about when a particular past time was present. Further, it seems like what is a future time (such as the time when I close my eyes and go to sleep) will become a present time (when I do so), and later (when I wake up) will become a past time. It is true that the event of closing my eyes at t_1 is earlier than the event of my waking at t_2, but according to an A-theorist, this is derivative of the properties of pastness, presentness, and futurity.

Perhaps a better argument for A-theories of time is made by Arthur Prior. According to Prior:

> One says, e.g. "Thank goodness that's over!", and not only is this, when said, quite clear without any date appended, but it says something which it is impossible that any use of a tenseless copula with a date should convey. It certainly doesn't mean that same as, e.g. "Thank goodness the date of the conclusion of that thing is Friday, June 15, 1954", even if it be said then. (Nor, for that matter, does it mean "Thank goodness the conclusion of that thing is contemporaneous with this utterance". Why should anyone thank goodness for that?). (Prior, 2009: 125)

A reconstructed version of the argument might look something like this:

> (AP1): Locutions with tenseless copula and a date cannot convey the same meaning as locutions with tensed copula and without a date.
>
> (AP2): If locutions with tenseless copula and a date cannot convey the same meaning as locutions with tensed copula and without a date, then tensed locutions express something that tenseless locutions do not.
>
> (AP3): If tensed locutions express something that tenseless locutions do not, then we cannot analyze tensed locutions in terms of tenseless locutions.
>
> (AP4): Thus, we cannot analyze tensed locutions in terms of tenseless locutions.

Prior seems to be claiming that the use of tensed locutions by A-theorists is superior to the use of tenseless locutions by B-theorists, because the meaning conveyed in our ordinary use of tensed locutions cannot be expressed using tensed locutions. For

example, suppose that I have a headache, but then later it passes. After it passes, I express relief by saying 'thank goodness that's over'. Prior's claim is that 'thank goodness that's over expresses some meaning that is not conveyed by the expression 'thank goodness that is over at 9:39 pm on June 24, 2014'; some information is lost when we try to analyze tensed locutions in terms of tenseless locutions.

It is unclear what meaning is lost when we analyze a tensed locution in term of a tenseless locution. If I were to hear someone say 'thank goodness that is over at 9:39pm on June 24, 2014', I might think they were acting strangely by providing such specific details, but if anything, *more* information is conveyed by tenseless locutions; there doesn't seem to be any loss of meaning. Not only do I know that an event is over, but I know specifically when it ended.

Perhaps what Prior is trying to explain is how the objective differences between times conveys the relief I feel when a headache ends, and these objective differences do so in a way that times that have no objective differences between them cannot. Only if I have a headache at a time which has the property of being present will I be suffering from the pain. If there is no objective difference between times, then it does not seem to matter whether a time is earlier than or later than any other. What matters is that I was suffering from a headache at a time that is no longer present, and thus the headache is no longer present.

However, assuming I have accurately represented Prior's intentions, I still find this line of reasoning unconvincing. A time having the property of *being past* is not what conveys the information that I am no longer suffering from the headache. Mentioning

that the headache is *over* is what conveys the information that I am no longer suffering from it. It is hard to see how adding information by using a tenseless locution entails the loss of meaning that Prior claims it does.

Contrast the A-theory with the B-theory of time. The B-theorist holds that times are relational. For the B-theorist, talk of the past, present, and future is relative to some other temporal location. For example: dinosaurs exist at a time *earlier than* the typing of this sentence, computers exist at a time *simultaneous with* the typing of this sentence, and (hopefully) my completed thesis exists at a time *later than* the typing of this sentence. These relations (earlier than, simultaneous with, later than) are relative to some other point in time. Given the relational thesis, B-theorists reduce tensed locutions to tenseless locutions.

One argument for B-theories of time concerns the rate of the passage of time. If time passes, then presumably it makes sense to ask how fast time passes. If it makes sense to ask how fast time passes, then presumably there is a coherent answer to that question. However, there does not seem to be any coherent answer to that question that provides us with any new information. Suppose that time passes at a rate of x seconds per y seconds. Any difference in the values of x and y would be absurd. It is incoherent to say, for example, that time passes at rate of thirty seconds per twenty seconds, or that time passes at rate of sixty seconds per ninety seconds. So the only possible answer would be to have the values of x and y match. However, to say that time passes at rate of sixty seconds per sixty seconds does not give us any insight into the rate at which time passes; no new information is given.

Perhaps a better argument is the argument from special relativity (see Putnam, 1967). According to the special theory of relativity (STR), there is no such thing as absolute simultaneity. In other words, a particular moment in time is relative to the location of the observer. If STR is true, then it does not make sense to speak of the objective difference between what is present (temporally), and what is past. For one observer, an event may be present. Yet, for another observer, that event may be past. There is no objective fact about what is temporally present to all observers. Further, if a particular moment in time is relative to the location of an observer, then it is false that an event has the property of pastness (or presentness, or futurity) independent of any other particular. That an event has one of these temporal properties *is* dependent on another particular (the spatial location of the observer).

Presentism vs. Eternalism

The two dominant theories of time are presentism and eternalism. Presentism is a version of the A-theory of time. Perhaps the best way of understanding presentism is:

(P) presentism is true $=_{df}$ all and only those entities that are real are present entities.

So, if presentism accurately represents the metaphysics of time, then the present time is the only time that is real.[1]

The present has special metaphysical status similar to the actual world having special ontological status in theories of modal actualism (see Sider, 2001; Davidson,

[1] Note that the term 'real' is often used to mean mind-independent. However, in this paper, we shall discuss at least one theory that takes past and future times to be abstract objects. So, for the purposes of this paper, all and only those entities that are either concrete or instantiations of abstract objects, are real.

2003). According to modal actualism, possible worlds are not real, whereas the actual world is real. If some possibility becomes actualized, then it becomes real. Similarly, for the presentist, the future is not real, whereas the present is. If some future becomes actualized, then it becomes real. However, what is present is only present for an instant of time, and then it becomes past and is once again irreal. One of the consequences of P is that objects that are wholly in the past are no longer real. To use an example mentioned in the introduction, the Royal Library of Alexandria is no longer real.

One of the arguments for the acceptance of presentism is given to us by Dean Zimmerman. He argues that presentism is simply common sense (Zimmerman, 2008: 221). By 'common sense' he means 'that which is accepted by most sane individuals as obviously true' (Zimmerman, 2008: 221).

(ZP1): If we want to avoid extreme skepticism, we must accept that some things are obviously true.

(ZP2): We want to avoid extreme skepticism.

(ZP3): We must accept that some things are obviously true.

(ZP4): For something to be considered commonsense, it must seem obvious to almost everyone.

(ZP5): If something seems obvious to almost everyone, then believing in that thing attains a positive status.

(ZP6): If believing in something has a positive status and there are no convincing arguments against that belief, then it is reasonable to accept the belief.

(ZP7): Presentism seems obvious to almost everyone.

(ZP8): Believing in presentism has a positive status.

(ZP9): There are no convincing arguments against presentism.

(ZP10): It is reasonable to believe in presentism.

Zimmerman argues that if we wish to avoid becoming extreme skeptics, we must be willing to believe things that seem obviously true. Acceptance of presentism as being part of common sense gives presentism a positive status. Once presentism has a positive status, then its plausibility rests on arguments against presentism (all of which Zimmerman thinks are unconvincing).

Perhaps the best argument for presentism is the 'thank goodness that's over' argument (see above in the section on A-theories). The relief I feel after a headache is in the past is due to the headache no longer being real. The headache is wholly in the past, and as such a mental representation of the headache (such as my memory of it) is incapable of causing real physical pain.

Contrast presentism with eternalism. Presentists insist that only the present time is real; past times and future times are irreal. Eternalism is the theory that all times are equally real. Thus the past and the future are real just as the present is real. Typically, eternalists are B-theorists, but this is not always the case. An example of an A-theorist-eternalist would be someone who accepts the moving spotlight theory. The moving spotlight theory is the theory that past, present, and future times are all real, but that the present time has some other metaphysical privilege that sets it apart from past or future times.

Compare eternalism with a Lewisian account of possible worlds. For Lewis, possible worlds have the same ontological status as the actual world; all worlds (possible and actual) are concrete regardless of which world we occupy. Similarly, for the eternalist, the past, present, and future are ontologically on a par, and are real regardless of which time is phenomenologically perspicuous. One of the consequences of eternalism is that past and future objects are real just as present objects are. Thus, Socrates is just as real as Barack Obama. The reality of Socrates might seem strange, but perhaps not if we view temporal locations as analogous to spatial locations (more on this below in the section on four-dimensionalism). Just as objects that are spatially distant from us might be unobservable, objects that are temporally distant from us might be unobservable as well.

One argument for eternalism is that it has simple solutions to problems that might arise for presentists. For example, assume that certain truths supervene on reality. Call this assumption: 'the grounding relation'. One challenge for a presentist who accepts the grounding relation is to account for truths about the past. Consider the proposition *s*: ⟨Aristotle was Plato's student⟩. If s is true (presumably it is true), then what makes it true? If we accept the grounding relation, then truths about the world and its members supervene on reality. So, in order for *s* to be true, there must be something in reality that 'Aristotle' refers to. However, if presentism is true, then Aristotle is no longer real, and so the truth of s does not supervene on reality. For an eternalist, Aristotle is real; he is just temporally distant from us. So an eternalist has no problem with the truth of *s* supervening on reality.

Granted, a presentist might simply see this as reason to reject the grounding relation. However, one of the supposed reasons to endorse presentism is that it seems intuitive (or common sense). But, the grounding relation certainly seems intuitive too. Further, some presentists endorse a theory called Lucretian presentism. Typically, Lucretian-presentists believe that the world has past-directed properties such as *being a place where Aristotle was the student of Plato*. So, the grounding relation alone might not be the best reason to endorse eternalism. Perhaps a better reason to endorse eternalism is that it closely resembles the picture of space-time as it is described by our most current and widely accepted theories in physics.

Growing Block Theory and Moving Spotlight Theory

Two of the less popular A-theories of time are the growing block theory and the moving spotlight theory. The growing block theory is the theory that the past and the present are both real, but the future is not. This theory is an A-theory because its supporters hold that there are objective differences between the past, present, and future. While the past and present may both be real, the present sits at the cutting edge of reality; the present is the ever-changing point in time when what was future becomes real. So, while there is no ontological difference between the past and the present, the objective difference between the past and the present is that the present does not bear the relation of precedence to any real time.

The growing block theory is not as popular as presentism or eternalism, but it has had some well-respected philosophers as supporters. The theory originated with C.D. Broad and has received more recent support from Trenton Merricks. Perhaps the best

argument for the growing block theory is that it allows us to ground past truths more elegantly than presentism, while still leaving the future open in a way that doesn't involve the densely populated ontology supported by Timothy Williamson. Further, contrary to what some presentists might believe, the growing block theory seems closer to what I think people would describe as common sense.

Even less popular than the growing block theory is the moving spotlight theory. The moving spotlight theory is the theory that all times are equally real, but the present is highlighted in some special way other than being real. The moving spotlight theory is unique in that it is an A-theory of time, yet it also entails eternalism. So, while the past, present, and future are all real, there are objective differences between them. The difference is not one of existence or reality, since that would collapse the theory into presentism (Sider, 2001: 17). The present has some sort of metaphysical privilege that is not shared by the future or the past. However, it is not clear what this privilege is. Some take this privilege to be unanalyzable and primitive (Sider, 2001: 18). So, it would seem that the objective differences between the past, present, and future are just that the past has been (but is no longer) highlighted, the present is highlighted currently, and the future has not yet been highlighted. In other words, the present is only different in that it has the property of *presentness* (whatever that may be).

Perhaps this special metaphysical privilege can be explained in a different way, though (see Williamson, 1999). Timothy Williamson claims that only present objects have spatial properties; past and future objects are not located anywhere in space. Further, future objects have no qualities such as shape, mass, or color. Similarly, when a

present object becomes a past object, it loses all such qualities. One of the consequences of Williamson's moving spotlight theory is that we have past (and future) objects that exist but have no spatial properties. So, it is hard to see how a moving spotlight theorist can claim that 'I had an enormous cheeseburger for lunch' is true. At the very least it is odd to say that something with no spatial properties is enormous.

Perhaps the best argument for the moving spotlight theory is that it allows us to ground truths about the past (although, in a very strange way), while allowing us to make sense of why the headache I had yesterday exists but is no longer painful. The headache has some sort of past-oriented property such as *having been painful*, which is in some sense a relation to the property of *being painful*. Being painful is a matter of having the property of *being painful* and not some relation to the property of *being painful*. Thus, since the headache no longer has the property of *being painful*, the headache no longer concerns us.

Theories of Persistence

Three-Dimensionalism vs. Four-Dimensionalism

Three-dimensionalism and four-dimensionalism are not theories of time, but rather, they are theories of objects and how they persist. The debate between three-dimensionalists and four-dimensionalists is based upon how objects persist through time. Three-dimensionalists typically (but not universally) see time as a dimension that is not analogous to space; while objects may have spatial parts, objects do not have temporal parts. However, some three-dimensionalists do accept temporal parts of things other than objects, so claiming that space and time are not analogous is not a necessary condition for

three-dimensionalism. For example, some three-dimensionalists accept that events have temporal parts. Further, three-dimensionalists typically agree that objects *endure* through time. In other words, whole objects exist throughout intervals of time. So, one way of explaining three-dimensionalism is that three-dimensionalism is the theory that objects (or continuants) are wholly present at each moment of their existence. For example, according to a three-dimensionalist, when I look outside my window and see a tree, I am not seeing merely a temporal part of an object, even though only certain spatial parts are visible to me. The tree, at each moment that it exists, exists in its entirety.

Perhaps the best reason to accept three-dimensionalism is that three-dimensionalism seems intuitive. It seems to accurately represent how we perceive the world around us. It is strange to think that when I observe an object, that only part of the object exists at the time of observation. Even if I can only observe certain spatial parts at any given time (e.g. no matter which side I stand on, the opposite side is not visible to me), I have no trouble believing that the unobserved parts of the tree are there, nonetheless. Since we do not perceive objects as four-dimensional spacetime worms, it seems reasonable to think that objects exist in their entirety at each moment that they exist.

When speaking of four-dimensionalism, it is important to distinguish between types of four-dimensionalism. One type of theory is that objects are four-dimensional. If four-dimensionalism is a theory of this type, then it is one that supports the conclusion that objects persist through time and four-dimensionalism is something that nearly everyone agrees upon. However, if four-dimensionalism is a theory about *how* objects

persist through time, then there is significant disagreement. For the purposes of this paper, my attention will be devoted to theories about how objects persist through time. Four-dimensionalism is sometimes formulated as the theory that the dimension of time is analogous to the dimension of space; just as objects can have spatial parts, objects can have temporal parts. In other words, objects are spread out in space, and similarly, objects are spread out in time; four-dimensionalists usually describe objects as *perduring* through time. Typically, four-dimensionalists view objects as four-dimensional spacetime worms. However, some four-dimensionalists endorse a stage-theory in which continuants are comprised of multiple counterparts (similar to counterparts as described by David Lewis, but within the same world). These counterparts are each stages of a continuant. Temporal parts are slices of the object or continuant that can occupy varying spans of time. Given that some three-dimensionalists have argued that no clear definition of a temporal part is given by four-dimensionalists, Theodore Sider attempts to clear up the confusion. Sider first stipulates the principle of overlap:

> (PO) If *x* and *y* exist at *t*, but *x* is not a part of *y* at *t*, then *x* has some part at *t* that does not overlap *y* at *t*. (Sider, 2001: 58)

Second, Sider stipulates that in his definition of a temporal part, 'exists at' is analogous to 'is located at', and not to the logician's existential quantifier. With Sider's two stipulations in mind, he gives us a definition of a temporal part: "*x* is an *instantaneous temporal part* of *y* at instant $t =_{df}$ (1) *x* exists at, but only at, *t*; (2) *x* is a part of *y* at *t*; (3) *x* overlaps at *t* everything that is a part of *y* at *t"* (Sider, 2001: 59). Given his definition of a temporal part, Sider gives us the following formulation of four-dimensionalism:

"necessarily, each spatiotemporal object has a temporal part at every moment at which it exists" (Sider, 2001: 59).

Put more simply, four-dimensionalism is the theory that objects that exist for longer than an instant have temporal parts. These objects occupy multiple points in spacetime; they persist through perdurance. Instead of an object having all of its parts at any time that it exists (like an endurantist or three-dimensionalist would claim), an object may have different parts at different times. For example, suppose there is an object that comes into existence at t_1 and is destroyed at t_5. Call this object: "Barry." Suppose further, that Barry is green at t_1 and t_2, but Barry is purple at t_3 through t_5. If four-dimensionalism is an accurate representation of how objects persist, then Barry is the object that exists from t_1 through t_5, and Barry has temporal parts that are green (at t_1 and t_2) and temporal parts that are purple (at t_3 through t_5).

One argument in support of four-dimensionalism is that it solves the problem of temporary intrinsics more simply and elegantly than three-dimensionalism. The four-dimensionalist can account for change over time (such as an object having the property of *sitting* now, while having the property of *standing* earlier) by simply claiming that the property of *sitting* is instantiated by a different temporal part of the object than the temporal part that instantiates *standing*. Presumably, the three-dimensionalist has some answer to the problem of temporary intrinsics. However, given the indiscernibility of identicals, if *a* is identical to *b*, then *a* and *b* will have all the same properties. Given that an object is wholly present at each moment that it exists, it should instantiate all of its properties at each moment it exists. So, the three-dimensionalist will have to provide

some account of how an object that has the property of *sitting* at one time is identical with an object that has the property of *standing* at another. One way that this problem might be solved would be to claim properties such as *sitting* are not intrinsic properties.

Mixing and Matching

Clearly we can see that certain theories are diametrically opposed; one cannot be a presentist and an eternalist. However, while some theories are traditionally advocated in conjunction, some theories that seem strange to pair do not result in incoherency. Most commonly, three-dimensionalism is paired with presentism, while four-dimensionalism is paired with eternalism. Three-dimensionalism and presentism fit neatly together because they allow for objects to be wholly present (provided that we can make sense of what it means to be wholly present) at the present time; every part of my computer is real right now in the present. Four-dimensionalism fits neatly with eternalism because objects spread out in spacetime have temporal parts that are equally real; past and future temporal slices of my computer are a part of the whole object that is my computer which is spread out over equally real locations in time.

Two theories that might seem strange to pair are three-dimensionalism combined with eternalism. However, there is nothing incoherent about merging three-dimensionalism with eternalism. The three-dimensional-eternalist could claim that objects are wholly present at each time they exist without being spread out in time. Understood in this way, the relation of object to temporal location will be a one-many relation (see Sider, 2001: 69–70). The difficulty with this combination is one that is not limited to the combination. What is problematic is defining three-dimensionalism; but

this is a problem for any three-dimensionalist, not just the three-dimensional-eternalist. So, as long as three-dimensionalism is coherent, so is three-dimensional-eternalism.

Another two theories that might seem strange to pair are four-dimensionalism and presentism. However, four-dimensionalism and presentism can be supported together without resulting in incoherence (Sider, 2001: 71). What seems strange is that only temporal slices of objects can be said to be real. The four-dimensional-presentist cannot admit whole objects into her reality, since objects are spread out in time, but only the present is real. If only the present is real, then only temporal slices that are present are real. So, the temporal slice of my computer that was real thirty seconds ago is no longer real. Similarly, the four-dimensional-presentist cannot admit future slices of my computer into her reality until they become present slices of my computer. While this might seem like a strange consequence, it is not incoherent. After all, some philosophers do not admit of composite objects at all, claiming that there are only indivisible mereological simples with regard to spatial locations. It is possible that there are only indivisible mereological simples with regard to temporal locations as well. However, it is hard to see how the four-dimensional-presentist can claim that there are temporal *parts*, since using the word 'parts' presupposes that there is some whole that the parts are part of. Perhaps the temporal slices could be understood as the only objects that are real, and that whole objects are merely abstracta.

CHAPTER 3

THE OBSTACLE COURSE

Specious Present vs. Instantaneous Present

With regard to temporal locations, the expression 'the present' can be understood in at least two ways: the *specious* present and the *instantaneous* present. The phrase 'specious present' was made famous by William James (1890), and is commonly understood amongst philosophers to mean: that which we perceive to be the present time. The specious present is a span of time and is not instantaneous. It is because it is a span of time that the perceived present is specious.

The question arises as to whether the presentist is committed to the specious present, the instantaneous present, or if either option is viable. Suppose that the presentist were to accept the specious present as the present. One problem might be that the specious present is of variable duration. It might seem to be only a few seconds, or it might seem to be several minutes long. Since the specious present is of variable duration, we will encounter different accounts of the span of time that the present encompasses. For example, suppose that span $x = \{t_i, t_j, \ldots, t_n\}$ and during span x Jake perceives the present to last for 3 seconds while Suzy perceives the present to last for 5 seconds. Suppose further that Suzy sneezes at t_i. During span x there will be a two-second duration of time in which the sneeze is present to Suzy, but not to Jake. Since only what is present exists, there is a span of time in which the sneeze exists for Suzy, but not for

Jake. Presumably the specious-presentist does not want to allow for ontology to be relative to the individual. However, the specious-presentist might have a solution. Perhaps the present is just the mean of all human accounts of the present. Let's say that the specious present lasts for 42 seconds. However, assuming the mean of all human perception of the present is anthropocentric. Now, instead of ontologies being relative to particular individuals, we have ontologies relative to particular species. Presumably this is a consequence that presentists would not want to endorse either. Pressing back, a specious-presentist might claim that we could take the mean of all accounts of the present from all species. However, the problem with taking any mean of accounts of the present is that we are taking a phenomenological approach the specious-present instead of a metaphysical one. If we assume that the specious-present is the mean of any set of observers, then the present *is dependent on there being observers*. According to the specious-presentist, the present is mind-dependent. Given that presentists believe that the present is real, this is a consequence that I don't think many presentists would be willing to accept.

Of greater concern, is that the specious-presentist position is inconsistent with an A-theory of time. The presentist's claims imply that past and future times do not exist. Since the specious present is a span of time, there will be times in that interval that are past and times that are future. The specious-presentist might respond by saying that since what is meant by 'the present' is 'the specious present', past and future predications do not apply to any segment of the present; there are earlier and later times within the specious present, but not past and future times. However, most presentists assume an A-

theory of time, in which tenseless relations such as ‘earlier than’ or ‘later than’ are derivative of tensed properties such as ‘being past’ or ‘being future’. Recall that A-theorists hold that ‘past’, ‘present’, and ‘future’ are properties of times that are possessed independent of any other particular. So, the specious-presentist must either reject that presentism is an A-theory of time, or they must reject that the present is the specious present. If a specious-presentist were to reject that presentism is an A-theory, then it is unclear how they would be presentists at all since B-theorists maintain that there are no objective differences between times. Presentists hold that the present has the property of being real, while the past and the future do not have that property. The belief that the present has this objective difference which is held independently of any other particular is what makes presentism an A-theory. If the specious-presentist were to suppose a B-theory of time, then the present would be understood as being relational to other times; the specious-presentist would be giving up what makes the present metaphysically privileged. Further, a specious-presentist treats the present as subjective, whereas presentists claim that the present is objective. Note that I am not claiming that specious presentism is an incoherent theory of time. I am claiming that the specious-present is incompatible with presentism. If a specious-presentist were to reject the specious present, then they would not be specious-presentists. Though, perhaps a third option would be to accept the inconsistency. However, it seems unlikely that the presentist would want to take that route.

Perhaps it is better, then, for the presentist to accept the instantaneous present as the present. However, the instantaneous-presentist position is not unproblematic. If the

present is instantaneous, then we seem to lose many of the things we would want to be included in the present. Most presentists claim that objects are wholly extant at each present time (although, it is unclear how exactly this is supposed to work). What about events? Some events might be said to be instantaneous, such as an electron blinking out of existence. However, more likely it is that case that such events cover some span of time, albeit the span might be measured in microseconds. Even if we allow that some events are instantaneous, the vast majority of events do occupy some span of time. Consider for example: sports, concerts, games, weddings, birthdays, conversations, etc. Events of these types occupy some span of time. How can the presentist allow events like these into her ontology if only the present exists instantaneously?

Present Events

One solution might be to simply claim that there are no events that occupy spans of time. If one is unwilling to accept events into our ontologies, then the following section will be of no concern. My arguments will be directed at those who do wish to maintain that events are a part of our ontology. Alternatively, one might claim that events are Platonic abstract objects or nominalistic mental constructs. However, if events are abstract objects, then there is a problem with regard to causation. Presumably, we want to say things like 'World War II caused a resurgence in the economy of the United States' or 'the Rodney King verdict caused riots to break out in Los Angeles'. If events are abstract objects, then it is hard to see how something non-spatial can be a part of a causal chain.

Perhaps, a way to solve this incompatibility would be to say that Platonic events are event types, whereas events that we generally speak of are event tokens. For instance, there are eternal event types such as weddings, concerts, and birthdays; but specific event instantiations such as the wedding of Princess Diana and Prince Charles, The Freddie Mercury Tribute Concert, or Christian's 35th birthday are event tokens. Prima facie, this doesn't seem problematic, but consider some arguments that Donald Davidson made in response to Roderick Chisholm.

Chisholm advanced a theory of events as universals (Davidson, 2001: 183). However, Davidson made some compelling arguments against Chisholm. A fundamental aspect of Chisholm's theory is that some events are repeatable (Davidson, 2001: 183). For example, suppose that a concert is an event. Chisholm's theory is that the event is a universal, and that each time what ordinary people would refer to as a concert is held, it is an instantiation of that universal. However, Davidson has some interesting responses. Davidson points out that even if events are unrepeatable particulars, we can still make sense of someone saying 'the same thing happened again' (Davidson, 2001: 184). One way to make sense of it would be to say that macro events are comprised of smaller events. So, the macro-concert would be a macro event that is comprised of the discontinuous micro events that are each micro-concerts. In other words the macro-event would be the sum total of all of the micro-event parts (Davidson, 2001: 183). But then, as Davidson acknowledges, some cases will still be problematic. Consider the following statement: 'Jeff and Mary went to Disneyland in March, and Abe and Stella did the same thing in April'. It seems strained to say that the macro event *going to Disneyland*

resumed after a pause (Davidson, 2001: 184). However, Davidson thinks this is a problem with our ordinary language. "As Chisholm observes, our common talk is careless when it comes to identity: 'the same thing' often means 'something similar' or 'another' (Davidson, 2001: 184). Suppose I said 'Rita got married in January, and James did the same thing in March'. It seems obvious that the weddings of Rita and James are not a numerically identical event. Rita and James each had a wedding, but they did not have the same wedding. However, Davidson admits that this does not refute Chisholm's claim, it only shows that the theory of events as particulars allows for recurrence of events in that multiple events are similar to each other (Davidson, 2001: 184).

Davidson is not content with simply giving support to the plausibility of the theory of events as particulars; he argues that Chisholm's theory has significant problems (Davidson, 2001: 184–187). One such problem is identified by Davidson as the problem of adverbial modification (Davidson, 2001: 185–186). Davidson's theory can account for the valid inference from (1) 'Peter drove through London' to (2) 'Peter drove'; if events are particulars, then we can treat adverbial modifications in the same manner that we treat adjectival modifications (Davidson, 2001: 186). However, Chisholm's theory cannot account for the valid inference between (1) and (2), since (2) is a universal and (1) is an instantiation of (2). In order to draw the valid inference, Peter driving through London must be identical to Peter driving, and they are not identical because the latter is repeatable while the former is not (Davidson, 2001:186).

It might seem that Peter driving through London is a repeatable event as well. However, it is not meant to be a universal (even though one might interpret it as one). I

am using ‘Peter driving through London’ as a particular instance of the universal event: Peter driving. Granted, Peter might drive through London on multiple occasions. However, if we then treat ‘Peter driving through London’ as a universal, then there will be particular instantiations of Peter driving through London. For example, there will be an instantiation of Peter driving through London at 2 pm on May 15, 2012. So, if Davidson is right (and I think he is), then treating events as universals creates problems when attempting to draw valid inferences.

So, perhaps a presentist would want to treat events as particulars. An events-as-particulars-instantaneous-presentist could allow for temporal parts of events to exist at present times. This would be similar to four-dimensional-presentism mentioned above. Recall that a four-dimensional-presentist can only admit that present instantaneous temporal parts of objects are real. Similarly, an advocate of presentism who wishes to treat events as particulars cannot admit that events exist; only that present temporal slices of events do.

If we treat events as nominalistic, then there is a problem with locating events. When we speak of events, they have specific locations associated with them. For example, *the removal of my appendix* occurred at San Antonio Community Hospital in Upland, CA. If we treat events as concepts or mental constructions, then they seem to have no location in space. But, perhaps a presentist could claim that events themselves have no spatial location, but the objects involved in those events do. However, in some cases we might want to say that events serve as truthmakers or grounds (I will discuss more on truthmakers in the section below). For example *the Magna Carta having been*

signed might serve as a truthmaker for truths about that event. Consistent with some truthmaker theories, one might treat *the Magna Carta having been signed* as a state-of-affairs. However, states-of affairs that obtain are concrete. If we treat events as nominalistic, then what serves as the truthmaker for King John's signing of the document? King John, the pen he used, the document, or some combination thereof, are not enough. All of those things could have existed in a world where he didn't sign the charter. Moreover, if the present is instantaneous, then the formation of mental constructs is unavailable to presentists. Forming a concept takes time. Developing a mental construct is itself an event that takes up a span of time. Even remembering an idea is not instantaneous. Perhaps a Fregean or rationalist might claim that mental constructs have no duration, even if the psychological processes that apprehend them do. However, then we return to speaking of events as abstract objects outside of spacetime. So the instantaneous-presentist must have some account for how we can perform cognitive functions instantaneously, or remove nominalistic events from her ontology completely.

Perhaps the presentist could say that events are objects. However, regardless of the clarity lacking in claiming that objects are wholly present over time, it seems ludicrous to claim that events are wholly present over time. If events are wholly present over time, then the first note played at a concert would be simultaneous with the last note (as well as every note between the two). Further, some philosophers would argue that events are different than objects in that objects have relatively clear spatial boundaries but vague temporal boundaries, whereas events have relatively clear temporal boundaries

but vague spatial boundaries. However, four-dimensionalists would argue that objects and events are both spread out in spacetime. Further, objectless events are highly uncommon, as are eventless objects. So, even if they are different, events and objects seem to be linked in most cases.

Another option for a presentist might be to claim that events are tropes, or three-dimensional substances with tropes.[1] Suppose that events are tropes. Most (if not all) trope-theorists consider tropes to be simples. If tropes are simples and events are tropes, then events are simples. However, events can have events as parts. Thus, at least some events are complex. Therefore, not all events can be analyzed as tropes. On the other hand, if we allow that some tropes can be complex, then complex tropes cannot be wholly present over time. If we assume that events are three-dimensional substances (but not objects) with tropes, then we are left to wonder what type of substance World War II or the Rodney King verdict is.

Truthmaking and Grounding

There are many theories of truthbearers and truthmakers. The truthmaking relation is typically described in terms of truths being true in virtue of something. What that 'something' is varies across theories. For some it is states-of-affairs (see Armstrong, 2004), yet for others it is the way the world is (see MacBride, 2014). Similarly, what counts as a truthbearer differs from theory to theory as well. For some they are beliefs (see Russell, 1912), for others they are propositions (see Armstrong, 2004). Further, the

[1] Tropes are considered to be instances of properties that do not require universals. Trope theory is consistent with nominalism.

way in which the phrase 'in virtue of' is explained varies widely within the literature. To exhaustively list all of the truthmaker theories and the problems associated with them would go far beyond the scope of this paper. Instead, I will attempt to motivate theories of grounding in terms of some of the problems more commonly associated with truthmaking.

David M. Armstrong argues for a principle he calls truthmaker necessitarianism (TN); truthmakers necessitate those truths that they stand in the truthmaking relation to. Armstrong's reductio argument for TN is as follows:

> Suppose that a suggested truthmaker T for a certain truth *p* fails to necessitate that truth. There will then be at least the possibility that T should exist and yet the proposition *p* not be true. This strongly suggests that there ought to be some further condition that must be satisfied in order for *p* to be true. This condition must either be the existence of a further entity, U, or a further truth, *q*. In the first of these cases, T + U would appear to the true and necessitating truthmaker for *p*. (If U does not necessitate, then the same question raised about T can be raised again about U.) In the second case, *q* either has a truthmaker, V, or it does not. Given that *q* has a truthmaker, then the T + U case is reproduced. Suppose *q* lacks a truthmaker, then there are truths without truthmakers. The truth *q* will 'hang' ontologically in the same sort of way that Ryle left dispositional truths hanging… (Armstrong, 2004: 6–7)

A reconstruction of Armstrong's argument might look something like this:

> (TN1): Assume that truthmaker T does not necessitate the truth of *p*.

(TN2): It is possible that T exists and *p* is not true.

(TN3): It is likely that some further condition *C* must necessitate the truth of *p*.

(TN4): *C* must either be the existence of another entity U, or some other proposition *q*.

(TN5): If *C* is the existence of U, then T+U necessitates the truth of *p*.

(TN6): If *C* is some other proposition *q*, then either *q* has a truthmaker or it doesn't.

(TN7): If *q* has a truthmaker, then we run into the same problems as we did with *p*.

(TN8): If *q* does not have a truthmaker, then Truthmaker Maximalism (TM) is false.

Note that, for Armstrong, even though the world is comprised of contingent entities, the relation held between contingent entities and their respective contingent truths is one of necessitation; given some entity α and some true proposition *p*, if α is a truthmaker for ⟨p⟩, then α necessitates the truth of ⟨p⟩.

Armstrong also motivates TN in response to a problem with what he calls 'the entailment principle' and necessary truths (Armstrong, 2004: 10–12). According to Armstrong, the entailment principle is construed as follows:

(EP) Given truthmaker T and propositions *p* and *q*, if T is a truthmaker for *p*, and *p* entails *q*, then T is a truthmaker for *q*.

The problem with EP is that if *p* is a contingent truth, then it entails all necessary truths. Thus T is a truthmaker for all necessary truths. As Armstrong notes, EP robs us of an

explanation that provides relevant truthmakers for necessary truths (Armstrong, 2004: 11).

Armstrong also argues that the theory that truth supervenes on being (TSB) is inadequate as a theory of truthmaking as well. TSB was famously endorsed by John Bigelow (1996). As Bigelow describes the theory: '[…] there could not be a difference in what is true unless there were a difference in what exists' (Bigelow, 1996: 38). However, Armstrong claims that supervenience is not necessarily an asymmetrical relation; there is nothing in TSB that rules out being supervening on truth (Armstrong, 2004: 8). Further, Armstrong thinks that TSB does not give us enough information about the relevant truthmakers for truthbearers. If TSB is true, then the world could serve as the truthmaker for all truths. Armstrong is interested in a theory of truthmakers that employs *minimal* truthmakers. Minimal truthmakers are truthmakers which, if anything was removed from them, they would not serve as a truthmaker for the relevant proposition (Armstrong, 2004: 19–20). For example, suppose that the state-of-affairs in which I am sitting at my desk is the minimal truthmaker for ⟨Christian is sitting at his desk⟩. If the state-of-affairs were to change at all, then the truth of ⟨Christian is sitting at his desk⟩ would change as well. However, if the world was the truthmaker for ⟨Christian is sitting at his desk⟩, then there are many changes that could happen in the world without affecting the truth of ⟨Christian is sitting at his desk⟩.

However, TN is flawed as well. In the first place, Armstrong's argument for TN is supposed to be a reductio. Yet there are premises that are under suspicion. We can see that TN3 begs the question. Armstrong's argument is supposed to be an argument for

why truthmakers necessitate their corresponding truths. In TN3, Armstrong simply claims that it is likely that they do. If one is skeptical about TN to begin with, then it seems highly *un*likely that they will accept TN3.

Fraser MacBride notes a further flaw with TN. TN is supposed to solve the problem that Armstrong posed for EP, but TN seems to be just as vulnerable as EP. MacBride wrote:

> Even though this argument may be circular, does [TN] at least have the favourable feature that adopting it enables us to avoid the other difficulty that beset [EP], viz. over-generation? Not if there are things that necessitate a truth whilst still failing to be sufficiently relevant to be plausible truth-makers for it. If the necessitation relation is so distributed that it holds between any contingently existing portion of reality, e.g., an ice-floe, and any necessary truth, e.g., 2+2=4, then we shall be no further forward than we were before. So Armstrong needs to tell us more about the cross-categorial relation in question to assure us that such cases cannot arise (MacBride, 2014: 10).

MacBride points out that given TN, there is still the problem of contingent entities necessitating all necessary truths. TN does not provide us with the relevant truthmakers Armstrong sought to provide for necessary truths.

Given these problems with truthmaker necessitarianism (TN), many philosophers have resorted to adopting the weaker thesis: TSB (Davidson, 2013: 135).

(TSB) Truth supervenes on being.

TSB serves as the foundation for the grounding relation. Grounding is a relation between truth and objects. However, Frances MacBride describes grounding as the theory that given a true proposition *p* at world *w*, the fundamental features of *w* serve as the ontological grounding for *p*'s truth at *w*:

> (GR) A truth-maker *x* for a proposition *p* at *w* is something such that (i) *x* is fundamental at *w* and (ii) the truth of *p* at *w* is grounded in *x*. (MacBride, 2014: 19).

In what follows both Thomas M. Crisp (who argues for presentism) and Davidson (who argues against presentism) assume that TSB is true. So, following in their footsteps, I will assume for the rest of this paper that TSB is true as well.

Presentism and the Grounding Objection

In this section I will argue that if we accept a theory of grounding, presentism yields counterintuitive results. Recall the example of the Royal Library. A presentist faces the problem of grounding truths about the past. In his paper "Presentism and the grounding objection", Crisp addresses what he refers to as 'the grounding objection'. The grounding objection creates a problem for presentism. Specifically, if TSB or some variant thereof is true, then the objection is that we cannot ground certain truths about past. Remember that, for a presentist, only the present is real. So objects and events that are wholly in the past are no longer real.

Consider a proposition about the past:

> *r*: ⟨the Royal Library of Alexandria was constructed in the 3rd century BC⟩

Further, suppose that *r* is true. Unfortunately, the Royal Library was destroyed some time ago, so the Royal Library is no longer real. The problem for presentism is then: if the Royal Library is no longer real, then what is the ground for the truth of *r*?

As Crisp describes it, the grounding objection is dependent on two principles: the supervenience principle (SP) and the temporal recombination principle (TR). SP is Crisp's version of TSB:

> (SP) For any proposition *p* and worlds *w* and *w*∗, if *p* is true in *w* and not in *w*∗, then (a) according to *w*, something exists that doesn't exist in *w*∗ (or vice versa), or (b) according to *w*, some objects instantiate a fundamental property or relation that they don't instantiate in *w*∗ (or vice versa). (Crisp, 2007: 91)

Here Crisp seems to be elucidating TSB. According to SP, what is true in some possible world *w* is dependent on what objects exist in *w* or what fundamental properties are instantiated by objects in *w*. In other words, the truth of a proposition about a particular world supervenes on entities within that world. Return to our proposition *r* concerning the Royal Library; presumably *r* is true. However, the truth of *r* does not seem to supervene on what objects presently exist or on fundamental properties instantiated by present objects. If SP is true, then one would expect the truth of *r* to supervene on some object (the Royal Library). Since the Royal Library is no longer real, it cannot serve as an object for which the truth of *r* supervenes on. Our historical records cannot serve as objects for which the truth of *r* supervenes on either. After all, it is possible that the world could be exactly as it is in the present, even if the past had been different. Suppose that God created the world five minutes ago. The present could be exactly as it is

(including historical documents) even if the world was created by God five minutes ago (or so one might think). Thus, the Royal Library might never have existed, yet we still might have historical documents pertaining to the construction of the Royal Library. So, the truth of *r* doesn't seem to supervene on the objects that presently exist or the fundamental properties instantiated by present objects. Thus, either SP is false or presentism is. Since SP seems like it is obviously true, so much the worse for presentism (Crisp, 2007: 92).

However, as noted above, Crisp thinks that the grounding objection is reliant on *two* principles. The second principle is TR:

> (TR) Things could have been just as they are at present (same things presently in existence, same fundamental properties and relations presently instantiated) and the past have been different. (Crisp, 2007: 92)

Crisp thinks that the 'sensible presentist' should reject TR (Crisp, 2007: 92). The reason to reject TR is that it is incompatible with Lucretian presentism. Lucretian presentism is the theory that there are past- and future-tensed properties. For example, the world has the property of *being a place where the Royal Library was built in the 3rd century BC*. The Lucretian-presentist rejects TR on the basis that it is impossible that the world could have such past-tensed properties if the past had been different. So, if God had created the world five minutes ago, the world would not have the property of *being a place where the Royal Library was built in the 3rd century BC*.

Theodore Sider objects to Lucretian presentism, claiming that past-tensed properties are 'cheats' (Sider, 2001: 40–41). According to Sider, past-tensed properties

are hypothetical properties—properties that 'point beyond' their instances. Further, Sider thinks that hypothetical properties are irreducible to categorical properties—properties that involve what objects are actually like (Sider, 2001: 41). As Sider points out, '[t]he distinction between categorical and hypothetical is admittedly elusive' (Sider, 2001: 41). But, Sider's objection seems to be that properties like *being a place where the Royal Library was built in the 3rd century BC* are not properties that are about objects as they exist now. Such past-tensed properties indicate some way that the world *was*, not some way that the world *is*.

I appreciate Sider's concern, but given that the distinction between categorical and hypothetical properties is elusive, it is hard to pin down exactly what the objection is. However, I will attempt to clarify what I think the objection is. Sider argues that only categorical properties should be admitted into our ontologies, because categorical properties describe what objects are actually like. Hypothetical properties, on the other hand, do not seem to describe what objects are *actually* or *fundamentally* like. Hypothetical properties seem to describe what an object *was* like or *could be* like. For example, suppose that my desk (at a time, t_1) has the property of *being painted black*. Now, suppose that I strip the paint, and repaint it brown at some later time (t_2). After the repainting (t_3), my desk will have the property of *being painted brown*. However, if the Lucretian-presentist is correct, then it will also have the property of *being such that it used to be painted black* at t_3. The property of *being painted black* (at t_1), and the property of *being painted brown* (at t_3) are both categorical. At t_1, we could have looked at the desk and seen that it was painted black. Likewise, at t_3, we can look at the desk

and see that it is painted brown. However, assuming that I did a very good job stripping all of the black paint off of the desk at t_2 and there is no evidence of the desk having been painted black at some previous time, *being such that it used to be painted black* does not seem to describe my desk as it is at t_3. An eternalist has the option of analyzing properties such as *being such that it used to be painted black* in terms of temporal parts, i.e. there is a temporal part of the desk that is painted black, giving the desk, as it is now, the property of *being such that it was painted black*. However, a presentist does not have this option available. A typical three-dimensionalist-presentist does not accept temporal parts, and so she cannot analyze such past-directed hypothetical properties in terms of temporal parts. Even a four-dimensionalist-presentist does not have the option to analyze hypothetical properties in this way; for a four-dimensionalist-presentist the temporal part that has the property *being painted black* is no longer real.

Crisp also anticipates a different objection: even if a Lucretian-presentist is able to sidestep Sider's objection, the Lucretian-presentist has to explain how it is that properties such as *being past* are fundamental in the way Crisp needs them to be to respond to the grounding objection. If no objects presently exist to serve as an explanation as to why a particular proposition is true, then, according to SP, some fundamental property or relation must be the explanation as to why that proposition is true. Crisp's response is to posit an *ersatz* B-series of times. If times are ersatz, then they are either nominalistic representations of times, or Platonic abstract objects. Properties such as *being past* are analyzed in terms of primitive relations such as *earlier than*. Past times are abstract entities that stand in *earlier than* relations to the present

time (which is a concrete entity). Such relations are primitive even for the eternalist (Crisp, 2007: 102; Davidson, 2013: 146). So it seems that if primitive B-theoretic relations are 'cheats' for the presentist, then they are cheats for the eternalist as well (Davidson, 2013: 146).

However, Matthew Davidson has a different objection to Lucretian presentism. Davidson argues that Lucretian-presentists have the problem of *shifting-truthmakers*. Davidson characterizes the problem as follows:

> Suppose there's a cup named "Frank." At t1 Frank is red. So
>
> (1) Frank is red[2]
>
> is true at t1. Intuitively, (1) is made true by Frank's exemplifying the property being red. Suppose at t2 that Frank is painted blue. Then
>
> (2) Frank was red
>
> is true at t2. For the Lucretian, (2) will be made true by Frank's exemplifying the property having been red. The grounds for the truth of (2) is, like the grounds for (1), Frank's having a property. Suppose at t3 Frank is annihilated. (2) is still true, but suddenly its truthmaker switches to the world's having the property (or an abstract object's having the property) being such that Frank was red. This sudden shift in truthmakers is troubling, and it's not one the typical eternalist has to worry about. (Davidson, 2013: 141)

[2] Note That Davidson uses (4) and (5) in place of (1) and (2), respectively. To avoid any confusion, I used (1) and (2).

So, for a Lucretian-presentist, after the annihilation of Frank, (2) is made true by the world having a property *being a place where Frank was red at t1*. So at t1, (1) is made true by Frank and a property that Frank has (being red). At t2 (2) is made true by Frank and a property that Frank has (having been red). However, at t3 (2) is made true by a property the world has (being a place where ⟨Frank is red⟩ has the property of being past). The shift occurs because at t1 (1) is made true by Frank, whereas at t3 (2) is made true by the world and a property the world has (being a place where ⟨Frank is red⟩ has the property of being past). Davidson's objection is that neither (1) nor (2) seem to be *about* the world, they seem to be about Frank. But the presentist doesn't have Frank around to serve as a ground for (2) at t3. So it is worrisome that the ground for (2) suddenly and inexplicably shifts from Frank to the world at t3. Further, Davidson not only objects to the shift itself, but to what the ground shifts to. As Davidson points out, "…for the presentist, (2) is composed of an individual essence of Frank and the property *having been red*. How, then, is a proposition composed of these elements grounded by the world's having a property?" (Davidson, 2013: 142). Davidson's point here seems to be that truths about objects ought to supervene on the objects themselves, not just any object or the totality of objects. However, as Davidson mentions, TSB alone does not reflect this intuition, and so perhaps something stronger than TSB is need to capture these intuitions (Davidson, 2013: 142).

I think that Davidson's objection is quite clever and it poses a serious problem for a presentist (even one who adopts an ersatz B-series of times). However, I'm not willing to allow that Crisp has sidestepped one of the other objections to presentism.

Specifically, I'm not convinced that Crisp's *earlier than* relation is fundamental in the same way that an eternalist's *earlier than* relation is. Given that Crisp is willing to admit properties into his ontology, perhaps Crisp has in mind that times are Platonic entities. However, when thinking about possible worlds, the ersatzist has the advantage of stipulating that we are speaking of counterfactual ways that the world might have been. If we try to apply this model to times, then we arrive at something along the lines of: if t_1 were present, then ⟨p⟩ would be true. But what does the presentist have to differentiate between those times that were once present and those that never were present? Perhaps Crisp might respond by saying that times that were once present have the property of being once present. However, as abstract objects, they do not lose or gain intrinsic properties. It seems that if we allow Platonic times, then past times always have the property of *being past*, and that future times always have the property of *being future*. Thus, past and future times cannot have the property of being present. Looking, once again, at possible world models, modal actualists can avoid this problem by claiming that elements of a particular world have properties at times. For example, at possible world *w*3, object *x* has property *p* at *t*5. An extensive description of all of the objects and states-of-affairs and their time-indexed properties in a particular possible world could account for all of the properties of that possible world. Thus an ersatzist about possible worlds does not encounter the problem of abstract entities gaining or losing intrinsic properties. Such properties are just indexed to particular times. However, it is unclear that it is coherent to claim that times have properties indexed to particular times. So, even if presentists have some recourse in allowing Platonic entities into their ontologies, it is still

unclear how presentism can deal with the grounding problem. So, I don't think that Crisp has a clear-cut way of dealing with the grounding objection at all.

Perhaps Crisp might respond by claiming that times are universals, and that the present time is an instantiation of a particular universal. According to this interpretation, we have a B-series of abstract objects that are times. These times do not suffer from any loss or gain of properties because properties such as *being past* are not intrinsic properties of times. Properties such as *being past* are relational properties; these properties are held in relation to the presently instantiated time or to other times in the B-series. However, I think that positing that times are universals will be subject to an objection similar to the one that Donald Davidson makes against treating events as universals. Recall that, in treating events as universals, we encounter a problem when trying to draw a valid inference between 'Peter drove through London' and 'Peter drove' (the former being an instantiation of the latter).

Consider the following: 'the time t_1 is presently instantiated in the actual world', and 'the time t_1 is presently instantiated'. Since, under this interpretation, times are in a B-series, *earlier than* and *later than* relations are fundamental. As such, times are fundamentally ordered in a particular fashion, and so they are not repeatable *in the actual world*. However, it is plausible that times are repeatable *in possible worlds*. When we speak of the possibility of me sleeping at 7:21 am on Thursday, March 5, 2015 (instead of working on my thesis), we seem to be speaking of the possibility that I could be sleeping at a particular time in which I am not sleeping. In other words, we seem to invoke the same universal. To say that there is an alternate B-series of times for each possible world

seems to suggest two things. The first is that times are not universals. The second is that when we say 'it is possible that Christian could have been sleeping at t_1', what we are saying is that 'it is possible that Christian could have been sleeping at some other time'. The latter does not seem to capture the meaning expressed by the former. We want to say that it is possible that Christian could have been sleeping *at this particular time*, not that it is possible that Christian could have been sleeping *at some other time*. So, it is counter-intuitive to think that there is a unique B-series of times for each possible world. Given that there is only one B-series of times for all possible worlds, we cannot draw what should be a valid inference from 'the time t_1 is presently instantiated in the actual world' to 'the time t_1 is presently instantiated'. The reason we cannot draw that inference is because 'the time t_1 is presently instantiated' is repeatable *across possible worlds*; 'the time t_1 is presently instantiated in the actual world' is not repeatable.

As another possible response, it has been brought to my attention that perhaps the problem with time-indexed properties could be a problem for an eternalist as well. Suppose that we are eternalists. Wouldn't times within a concrete B-series of times be subject to the same problem—that the coherence of times having time-indexed properties is (at best) suspect? The short answer is 'no'. The reason that time-indexed properties are a problem for presentists is that presentists claim that there is some metaphysical privilege that the present has. Since presentism is an A-theory of time, this privilege is explained in terms of properties that the present has, that past and future times do not. If a presentist is willing to give these properties up, then there needs to be some explanation of why the present is metaphysically privileged. An eternalist, however, is not committed

to the present having special metaphysical status. Thus, an eternalist does require the present to have some property that other times do not have. For an eternalist, that which appears to be the present time might only be the result of our perception of time. Thus, for an eternalist, the present time needs no special metaphysical privilege, and thus needs no loss or gain of properties.

Temporary Intrinsics

In this section I will argue against presentism on the basis of the problems that arise with temporary intrinsics. The problem with temporary intrinsics revolves around theories of how objects persist through time. So, central to this discussion will be three-dimensionalism and four-dimensionalism. Since presentism is not inconsistent with four-dimensionalism, one might respond to the problem by adopting such a combination of theories. However, for most of this section I will address the problem with respect to the more common combinations: three-dimensionalism with presentism and four-dimensionalism with eternalism. The four-dimensional-presentist will still have problems concerning objects and persistence, but they will be different problems than the problem of temporary intrinsics.

The problems of temporary intrinsics pose obstacles for presentists. The problem is that at different times, an object will have different properties. However, for the three-dimensional-presentist, objects are wholly present at each time that they exist, and only the present time is real. Further, following the indiscernibility of identicals, to be and one the same object, that object must have all of the same properties. Since objects are

wholly present at each time that they exist, objects will have all of their properties at each time that they exist. So, assuming that I am the same object that my mother gave birth to nearly forty years ago, I will have all of the properties that I instantiated at birth. However, at birth I was 24 inches tall. I seem to have grown quite a bit since then, because I am now 74 inches tall. Yet, if only the present is real, and I am wholly present now, then I have some conflicting properties. *Being 74 inches tall* does not conflict with *being at least 24 inches tall*, but at my birth I was *at most* 24 inches tall. A presentist does not have the luxury of being able to say that I have different properties at different times, since only the present is real. So a presentist must account for this change in some other way.

One solution is offered by Dean Zimmerman (2006). Zimmerman endorses the idea that truths about me (and other objects) are true simpliciter. So, while propositions that seem to have some sort of temporal perspective are not true relative to every time, they are true simpliciter (Zimmerman, 2006: 421). So it is simply false that I have the property of being at most 24 inches tall, even if it was true when some earlier time was the present time. If we suppose that the present has a special metaphysical status and an object that is present has certain properties, propositions about properties exhibited by present objects are just true from a certain temporal perspective without any qualification (Zimmerman, 2006: 421). It seems that Zimmerman's claim is that, from a particular temporal perspective, certain propositions are true simpliciter. More explicitly, the claim seems to be that if a proposition such as ⟨Alice has only an i7 processor⟩ is the object of a propositional attitude at t_1, and Alice is present at t_1, and Alice has the property of *being*

an object that has only an i7 processor at t_1, then that proposition is true without qualification from the temporal perspective of the person who has that propositional attitude at t_1. For example, from my current temporal vantage point, I am sitting right now. So, ⟨Christian has the property of *sitting*⟩ is true simpliciter from my current temporal perspective. Thus, Christian does not have the property of *standing*, even though I was standing ten minutes ago. Thus, if we assume a temporal perspective when assessing the properties of Christian, then it is false that Christian has conflicting properties.

However, this seems to suggest that propositions are true or false relative to a time or temporal perspective. If a specific time or temporal perspective plays a role in determining the truth value of a proposition, then that proposition is true relative to a time or temporal perspective. If propositions are true relative to a time or temporal perspective, then they are not true simpliciter in the sense that is true "relative to absolutely nothing" (Zimmerman, 2006: 421).

A presentist might push back and claim that if the present is all there is, then there is only one temporal perspective: the present perspective of the observer. Thus, if a proposition is presently true, then it is true simpliciter. However, if we assume that the theory of special relativity is true, then there is no such thing as absolute simultaneity between two observers; what is present for me, might be one second into the future for another observer. Thus, even if the truth-value of a proposition is not relative to a temporal perspective, it is relative to the observer. If the truth-value of a proposition is relative to an observer, then it is not true simpliciter.

Further, Zimmerman's solution fails to address the real problem. Even if Zimmerman's notion of truth simpliciter is consistent, he doesn't give us an explanation as to how an object persists through change. He can claim that truths about present objects and their properties are true simpliciter, and truths about past objects and their properties were true simpliciter when that past time was the present time, but he doesn't explain what makes it the same object. Presumably, an object *x* is identical with object *y* if they share all and only the same properties. Yet, *being at most 24 inches tall* and *being at most 74 inches tall* are incompatible properties. So either the object that instantiated the property of *being at most 24 inches tall* is not the same object as the object that instantiates the property of *being at most 74 inches tall*, or Zimmerman's account fails to address the problem.

On a four-dimensional-eternalist account, I am a four-dimensional spacetime worm. As such, I have properties at times; so, I have the property of being at most 24 inches tall at t_1, and I have the property of being at most 74 inches tall at t_2. Regardless of the temporal context in which propositions about me are uttered, it is eternally true that I have the property of being at most 74 inches tall at t_2. So perhaps, a four-dimensional-presentist can appeal to temporal parts to explain the difference of properties. But, again, this fails to address the problem. Since only the present is real, at most, the four-dimensional-presentist can claim that a temporal part of me is real. The four-dimensional-presentist must give up the notion that objects are wholly present unless the temporal part *is* the object. But then, I am not an object, but a temporal slice of me is. While this might seem strange, it might be the best solution for a presentist to accept.

CHAPTER 4

WILD SPECULATION

Although presentism might not be as intuitive as it seems at first glance, perhaps the metaphysical theory has some value. One thing that seems to stand out as a problem for an eternalist is how to explain *why* is it we perceive time in the way we do. If presentism is true, then our phenomenological perception of time is explained by the metaphysics of time. However, if all times are equally real, then we are left wondering what makes us perceive time in the way we do.

One way to answer might be to think that our perception of time has something to do with an evolutionary adaptation. Perhaps perceiving all times at once would provide too much information for our brains to process quickly enough to survive. Being able to avoid tigers or to dodge cars careening out of control requires the ability to process information quickly. The more quickly our brains process information, the less efficient they are at processing large amounts of information. However, this is merely wild speculation. More likely, it is the case that presentism retains some value as a metaphysical theory of time.

CHAPTER 5

CONCLUSION

At first glance, presentism seems to be the most intuitive theory of time; it closely resembles the way we experience time. However, once we dive beneath the surface, some major problems appear. Given the problems with the specious-present, the instantaneous-present seems more appealing. Yet, the instantaneous-present leaves no room for non-instantaneous events in our ontologies. Grounding poses serious problems for presentism as well. Even if Crisp sidesteps Sider's 'cheating' objection, his theory is still vulnerable to Davidson's 'shifting truthmaker' objection, and to my objection that ersatz times either do not qualify as grounds, or are incompatible with presentism. Further, presentists must account for how it is that objects endure change over time. Zimmerman's solution involving 'truth simpliciter' seems at odds with the notion that truth simpliciter is true relative to nothing. Moreover, Zimmerman's solution doesn't account for change in objects; he doesn't address the problem of what makes something one and the same object even though it has different properties at different times. Given these significant problems, we should reject presentism as the most intuitive theory of time.

BIBLIOGRAPHY

BIBLIOGRAPHY

Armstrong, D. M. (2004). *Truth and Truthmakers.* Cambridge: Cambridge University Press.

Bigelow, J. (1996). Presentism and properties. *Philosophical Perspectives*, 30: 35–52.

Casati, R. & Varzi, A. (2010). Events. *Stanford Encyclopedia of Philosophy*. (E. N. Zalta, ed.). Fixed URL= <http://plato.stanford.edu/archives/spr2010 /entries/events/>.

Crisp, T. M. (2007). Presentism and the grounding objection. *Noûs*, 41: 90–109.

Davidson, D. (2001). *Essays on Actions and Events.* New York: Oxford University Press.

Davidson, M. (2003). Presentism and the non-present. *Philosophical Studies*, 113: 77–92.

Davidson, M. (2013). Presentism and grounding past truths. In R. Ciuni, K. Miller, & G. Torrengo (eds.), *New Papers on the Present—Focus on Presentism* (134–153). Munich: Philosophia Verlag.

James, W. (1890). *The Principles of Psychology.* New York: Henry Holt.

MacBride, F. (2014). Truthmakers. *Stanford Encyclopedia of Philosophy*. (E. N. Zalta, ed.). Fixed URL= <http://plato.stanford.edu/archives/spr2014/entries /truthmakers/>.

Markosian, N. (2014). Time. *Stanford Encyclopedia of Philosophy*. (E. N. Zalta, ed.). Fixed URL= <http://plato.stanford.edu/archives/spr2014/entries/time/>.

Mason, F. (2006). What is presentism? *Southern Journal of Philosophy*, 44: 107–128.

McTaggart, J. M. (1908). The unreality of time. *Mind*, 17: 456–473.

Mozersky, M. J. (2011). Presentism. In C. Callender (ed.), *The Oxford Handbook of Philosophy of Time* (122–144). Oxford: Oxford University Press.

Prior, A. (2009). Thank goodness that's over. In M. Rea (ed.), *Arguing About Metaphysics* (122–126). New York: Routledge.

Putnam, H. (1967). Time and physical geometry. *Journal of Philosophy*, 64: 240–247.

Russell, B. (1912). *The Problems of Philosophy.* New York: Oxford University Press.

Sider, T. (1997). Four-dimensionalism. *Philosophical Review*, 106: 197–231.

Sider, T. (2001). *Four-Dimensionalism: An Ontology of Persistence and Time.* Oxford: Oxford University Press.

Smart, J. J. (2008). The tenseless theory of time. In T. Sider, J. Hawthorne, & D. Zimmerman (eds.), *Contemporary Debates in Metaphysics* (226–238). Malden: Blackwell Publishing.

van Inwagen, P. (2000). Temporal parts and identity across time. *The Monist*, 83: 437–459.

Williams, D. (2008). The myth of passage. In T. Sider, J. Hawthorne, & D. Zimmerman (eds.), *Contemporary Debates in Metaphysics* (167–177). Malden: Blackwell.

Williamson, T. (1999). Existence and contingency. *Aristotelian Society Supplementary Volume: Logic and Existence*, 73: 181–203.

Zimmerman, D. (2006). Temporary intrinsics and presentism. In S. Haslanger & R. M. Kurtz (eds.), *Persistance* (393–424). Cambridge: MIT Press.

Zimmerman, D. (2008). The privileged present: defending an "A-theory" of time. In T. Sider, J. Hawthorne, & D. Zimmerman (eds.), *Contemporary Debates in Metaphysics* (209–225). Malden: Blackwell.

Zimmerman, D. (2011). Presentism and the space-time manifold. In C. Callender (ed.), *The Oxford Handbook of Philosophy of Time* (163–244). Oxford: Oxford University Press.