Ersatzer Presentism and the Limits of the Modal Analogy

James Darcy

A thesis submitted for the degree of Master of Arts (Philosophy)
University of Otago
Dunedin, New Zealand

August 19, 2013
Abstract

Presentism, the position that only present objects exist, is taken as the commonsense view of time, capturing our everyday temporal beliefs. However, presentism is also faced by a number of well-known objections. One of the most damaging of these is the grounding objection, which shows that the presentist is unable to account for contingent past truths. A recent strategy deployed by the presentist to counter this objection is to adopt a view known as ersatzer presentism. This ersatzer picture holds that times are abstract objects, and uses these abstract times to ground past truths. It draws on the structural similarities between time and modality to construct a temporal analogue of actualist realism about possible worlds. In this thesis, I argue that ersatzer presentism is unsuccessful as an account of time, as it cannot adequately represent a temporal series. I will reformat an argument originally made by Lewis (1986), against actualist abstract accounts of worlds, which shows that the ersatzer presentist cannot distinguish between an ordered series of abstract times which genuinely represents the past and one which does not. This inability to distinguish between an accurate and an inaccurate series means that ersatzer presentism has not provided an account of the grounding of past truths. The failure of ersatzer presentism has important implications for the analogy between time and modality, particularly in regards to the distinction between temporal and modal ordering relations.
Acknowledgments

I am grateful to my supervisors Heather Dyke, Zach Weber, and Raamy Majeed for the invaluable guidance they provided throughout the writing of this thesis. Thanks also to Sam Baron, for reading an early draft, and Paul Broadbent, for our always helpful trips to the whiteboard. I am also indebted to the Otago Philosophy Department and the Alan Musgrave Scholarship in Philosophy for the opportunity to write this thesis. Most especially, thanks to Jess, whose love and support made all of this possible.
“You can never quarantine the past.”

- ‘Gold Soundz’ by Pavement (1994)
# 1. Introduction

Chapter Summaries
Methodology

# 2. Presentism 101

## 2.1 Introduction

## 2.2 Presentism Defined

### 2.2.1 Presentism and the Opposition

## 2.3 Time, Space, and Modality

### 2.3.1 Eternalism and the Spatial Analogy

### 2.3.2 Presentism and the Modal Analogy

### 2.3.3 The Import of Analogy

## 2.4 The Grounding Objection

### 2.4.1 Presentism and the Supervenience Principle

### 2.4.2 Temporal Recombination

### 2.4.3 The Grounding Objection Restated

### 2.4.4 Presentist Responses

# 3. Ersatzer Presentism

## 3.1 Introduction

## 3.2 Crisp’s Ersatz B-Series

### 3.2.1 Crisp’s Ersatz Earlier Than Relation

### 3.2.2 The Ersatz Present and Series Membership

### 3.2.3 The Ersatz B-Series Response to the Grounding Objection

## 3.3 Bourne’s Branching Ersatz Series

### 3.3.1 Ersatz Times and the Branching Topology
3.3.2 The Branching Response to the Grounding Objection 52
3.3.3 Ersatzer Presentism Restated 58
3.4 Ersatzer Presentism and Appropriate Explanation 60

4. The Limits of the Modal Analogy 65

4.1 Introduction 65
4.2 The Magical Presentist 66
  4.2.1 The Ersatzer Presentist as Magician 67
  4.2.2 David Lewis vs The Magicians 70
  4.2.3 Selection as Internal 72
  4.2.4 Selection as External 74
  4.2.5 The Problem for Presentism 80
  4.2.6 Avoiding the Problem? 87
  4.2.7 The Primitives Response 91
4.3 Time and Modality Reconsidered 95
  4.3.1 Temporal Ordering as Ontologically Significant 96

5. Conclusion 101

References 103
1. Introduction

Presentism is a metaphysical doctrine about time which holds that only present entities exist. It is an interesting position because, on the one hand, it is deeply intuitive and comprehensively accords with our everyday experience of, and attitudes towards, time. As Zimmerman (2008) writes, “It is simply a part of commonsense that the past and future are less real than the present” (p 221). On the other hand, it faces a number of serious objections, which has led to a growing literature on presentism. In fact, the viability of presentism has become one of the central issues in the philosophy of time (Tallant 2013). The aim of this thesis is to show that a recent formulation, ersatzer presentism, fails as an account of time.

The relationship between our commonsense temporal beliefs and the need to respond to serious objections leaves the presentist in an interesting dialectical situation. Often in responding to objections, the presentist, including the ersatzer presentist, is left defending highly counterintuitive beliefs. This leaves the presentist supporting commonsense temporal beliefs via counterintuitive beliefs elsewhere. The presentist must hold that, on balance, the benefits of maintaining commonsense temporal beliefs outweigh the cost of counterintuitive responses to objections.

Generally, the problems that lead presentism in a counterintuitive direction come in one of two flavors: scientific or philosophical. Scientific objections, most often from contemporary physics, aim to show that presentism is incompatible with our best scientific theories of the world. For instance, one might argue that presentism is incompatible with special relativity. Presentism depends on a notion of absolute simultaneity which is denied by special relativity. Since special relativity is a well confirmed scientific theory we should
abandon presentism. This type of argument is found, for example, in Rietdijk (1966), Putnam (1967), Mellor (1998, p 53-57), and Sider (2001, p 42-52). Often, this argument from special relativity is portrayed as a definitive refutation of presentism.

Presentist responses to this argument fall broadly into compatibilist or incompatibilist camps; these distinctions are drawn from Wüthrich (2010). A compatibilist account aims to show that we can actually formulate presentism in a way compatible with special relativity. For instance, Bourne (2006) offers a compatibilist account which agrees that there is no empirical notion of absolute simultaneity, but proposes that we adopt a metaphysical notion of absolute simultaneity based on the logical relations between propositions. As presentism is a metaphysical theory this notion of simultaneity is all that is needed to maintain the view.

The incompatibilist on the other hand agrees that presentism and special relativity are in fact incompatible, and aims to argue that this is not in itself a good reason to deny presentism. For instance, Monton (2006, 2011) argues that special relativity should not be taken as refuting presentism because special relativity is false. Special relativity is not a feature of our fundamental physics, as it is subsumed by general relativity. Furthermore, general relativity is also false. The irreconcilable conflict between general relativity and quantum mechanics means that both theories will eventually be reformulated into some larger theory of quantum gravity. It also just so happens that there are theories of quantum gravity, namely fixed foliation quantum gravity, which appear to be perfectly compatible with presentism (2006, p 265-266). The lesson Monton would have us draw is that conflict with special relativity is not enough, in itself, to refute presentism. Wüthrich (2010) contains a useful summary of presentist approaches to the problem from special relativity, while arguing that all such attempts ultimately fail.
There are also a number of philosophical objections to presentism, which aim to show that the presentist metaphysic leads to some unpalatable or damaging consequence. For example, the objection from cross-temporal relations argues that presentism leaves us unable to account for relations between times. A natural account of relations holds that for a relation to be instantiated both of its relata must exist. Since there are no non-present objects, there can be no cross-temporal relations. This is especially problematic in regards to causal relations, as it certainly seems clear that past objects and events cause present objects and events. Since maintaining presentism means denying that there are cross-temporal relations, and thus causal relations, we should reject presentism. This sort of argument is considered in Bigelow (1996), Sider (2001, p 25-35), Davidson (2003), and Crisp (2005), for example. This is just one of the many philosophical objections leveled at the presentist position. Markosian (2004) and Bourne (2006, p 70-134) provide useful overviews of these problems from the presentist perspective.

Ideally, I would to like explicate many of the philosophical and scientific objections to presentism but due to constraints of space I can only give the necessary detail to a particular objection. In this thesis I will focus on the *grounding objection* to presentism. I do this for a number of reasons. First of all, this objection is one of the most damaging philosophical objections to presentism. A second reason for focusing on the grounding objection is that it serves as one of the motivations for adopting ersatzer presentism, the particular version of presentism which is the focus of this thesis.

In its roughest form, the grounding objection, also known as the truthmaking objection, runs as follows. Take an obvious past truth, like ‘Abraham Lincoln was president of
the United States.’ This proposition is, plausibly, true in virtue of the way the world is.\textsuperscript{1} However, there does not seem to be anything that presently exists which can serve to make this proposition true. Without something to ground the truth of this proposition, it cannot be true. Since the presentist holds that only the present exists, they are committed to claiming that a proposition like ‘Abraham Lincoln was president’ is, strictly speaking, false.\textsuperscript{2} This claim is problematic, however, for two reasons. Firstly, presentism is taken to be the commonsense view of time, but a denial of past truths is a significant blow to our commonsense notions of the past. The presentist position is motivated by concerns of commonsense, and so should be in the business of maintaining intuitive temporal beliefs. While it may be natural to the man on the street to hold that only the present exists, I doubt many non-philosophers would subsequently accept the fact that there are no past truths. If presentism results in a denial of such commonsense temporal beliefs, then presentism begins to undercut the sorts of temporal beliefs that were meant to motivate the view in the first place.

Second, there is a concern about the empirical adequacy of maintaining that all claims about the past are false. Most physical sciences make claims about the past. To hold that there are no past truths means that wide swaths of science are not just entirely false, but also misguided. Why bother with geology, for instance, if it is in principle impossible for any claims about the past to be true? As Lewis (1991) wrote in regards to mathematics, “I’m moved to laughter at the thought of how presumptuous it would be to reject mathematics for philosophical reasons” (p 59). It is equally presumptuous, I think, to reject science for purely philosophical reasons. These concerns should give the presentist good reason to take the

\textsuperscript{1} The grounding objection can also apply to future truths, but for ease of use I will focus on past truths throughout this thesis.

\textsuperscript{2} Some, such as Sider (1999) and Markosian (2004) accept this conclusion and argue for notions of past propositions which, despite their falsity, are in the ballpark of truth or are quasi-true.
grounding objection seriously. If the objection is correct, then presentism results in an unacceptable consequence and should be rejected as an account of time.

Ersatzer presentism responds to the grounding objection by positing a series of abstract objects which serve as present existents that can ground truths about the past. These abstract objects are meant to give the presentist all of the tools of non-present times without any ontological costs or violations of the motivating commonsense intuitions. Now, there are those, Melia (1995, p 223) for instance, who take the acceptance of abstract objects to be a blow to commonsense and an ontological cost not worth paying. The ersatzer presentist approach, however, is pitched only at those already willing to countenance abstract objects. This fits into the dialectical tension between motivating commonsense and counterintuitive results. Ersatzer presentism aims to maintain our commonsense temporal beliefs, but does so in a counterintuitive manner, by postulating a series of abstract objects to serve as non-present times.

What makes ersatzer presentism especially interesting is that it draws heavily on the analogy between time and modality. Many philosophers, for instance Fine (1977), Zalta (1987), Markosian (2001, 2004), and Cresswell and Rini (2012), have stressed that there are deep similarities, both logical and metaphysical, between time and modality. Ersatzer presentism takes this analogy to the furthest extent to date, employing a move directly from the playbook of the actualist realist about possible worlds. Many actualists, like Adams (1974), Plantinga (1976), and Stalnaker (1976), have construed possible worlds as abstract objects, so as to reap the benefits of possible worlds without violating an actualist ontology. Ersatzer presentism is the direct temporal parallel to this modal position. This means that the success or failure of ersatzer presentism could tell us something important about the analogy between
time and modality. In examining ersatzer presentism, then, I will also consider whether the failings of the view point to a limit on the analogy between time and modality.

**Chapter Summaries**

I'll begin by outlining a more general definition of presentism in Chapter 2. The definition I will offer defines presentism in terms of quantification. This definition of presentism is important as it does not, in principle, rule out the existence of abstract objects. I will also address complaints that presentism is a trivial position and situate the view within the wider debate in the philosophy of time. I will end the chapter by first discussing the spatial and modal analogies to time, focusing in particular on the presentist analogy to modality, before introducing the grounding objection in detail and briefly considering some presentist responses. The aim of this chapter is to provide the necessary framework to understand ersatzer presentism within the debate surrounding presentism more generally.

Chapter 3 is focused on explicating ersatzer presentism. I will begin by outlining in detail the two major formulations of ersatzer presentism, due to Bourne (2006) and Crisp (2007), and argue for a combination of these views that I take to be the most plausible version of the ersatzer presentist position. The final section of this chapter will consist of a response to some existing criticisms of ersatzer presentism, in particular the ‘appropriate explanation’ objection. I argue that by stressing the analogy to modality the presentist can consider these objections non-starters. This puts the analogy between time and modality in a more important position than proponents of ersatzer presentism ordinarily suppose.

Chapter 4 will present an argument against ersatzer presentism which aims to show that the view is untenable as a conception of time. This argument is a refitted version of an objection against actualist realism about possible worlds originally made in Lewis (1986). It
shows that ersatzer presentism is unable to distinguish between a genuine series of abstract objects, which correctly represent the past, and an inaccurate series of abstract objects, which do not correctly represent the past. The primitive relations employed by the ersatzer presentist provide no principled means to distinguish a genuine ersatz series. This means that ersatzer presentism has not provided an acceptable base for the grounding of past truths. Moreover, I think this points to an important limit on the analogy to modality. In particular this argument serves as a response of sorts to Cresswell and Rini (2012), in that it gives reason to believe that there is some important ontological difference between temporal and modal relations.3

The main goal of this thesis is, again, to argue that ersatzer presentism is unsuccessful as a presentist account of time. A strength of my argument is that it does not depend on criticism of the counterintuitive nature of the abstract times posited by the ersatzer presentist. I argue that ersatzer presentism fails, even if we grant that the cost of abstract times is worth the benefit of maintaining commonsense temporal beliefs. I think that this failure can exemplify the failings of presentism in general. However, I do not take myself to have conclusively shown this. Instead, I aim only to argue against a particular version of presentism and consider some implications of its failings. This is what makes ersatzer presentism so interesting - those implications include the analogy between time and modality.

3 An staunch defender of the analogy between time and modality might hold that the failing of ersatzer presentism serves not as a lesson for the analogy, but for ersatz accounts of worlds. The actualist ersatzer, in offering an analysis of counterfactuals for example, may face the same problem as ersatzer presentism in distinguishing ordered series of worlds. I will focus on the analogy between time and modality in this thesis, but either way the failure of ersatzer presentism has important implications.
Methodology
A brief note here on methodology. In the interest of clarity I want to be explicit about the commitments at play in my discussion of presentism. Throughout this thesis I will take as given two broader metaphysical commitments, and three constraints for any successful presentist account of time. The first of these broader commitments is the view that a metaphysical theory is ontologically committing. If one’s theory depends upon or postulates some entity, then an ontological account or explanation of that entity is needed. This ontological commitment may also be implicit. That is, even when a theory does not explicitly endorse some type of entity it may still be implicitly committed to such an entity. I take this to be the broadly quantificational approach to ontological commitment, following Quine (1953).

Secondly, I will be committed to the view that truth depends upon the objects that exist and the fundamental properties and relations they instantiate; truth is grounded in the world. More specifically, I will be committed to the view that truth supervenes on existent objects. As Lewis (2001) defines the account, “For any propositions $P$ and any worlds $W$ and $V$, if $P$ is true in $W$ and not in $V$, then either something exists in one of the worlds but not in the other, or else some $n$-tuple of things stand in some fundamental relation in one of the worlds but not in the other” (p 612). That is, there could not be a difference in what is true, without a difference in the objects that exist or the fundamental properties and relations they instantiate. I will refer to this view, following Crisp (2007), as the supervenience principle. It is defended in Bigelow (1996) and Lewis (2001), and used to motivate the grounding objection to presentism in, for instance, Sider (2001, p 35-42), Keller (2004), and Crisp (2007). The

---

4 It is worth noting that truthmaking commitment and ontological commitment may not be one and the same, see Schaffer (2008).
The main reason for supporting this account of truthmaking is that it is a significantly weaker principle than many opposing accounts, such as that advocated by Armstrong (2004). Since this is the weakest principle on offer, it can serve to form the basis for the strongest grounding objection to presentism. If presentism cannot even escape the weakest form of truthmaking on offer, then the view is in serious trouble.

The three constraints for presentist accounts of time are drawn from Bourne (2006, p 14-15, 39). I’ll use these particular constraints for two reasons. First of all, they are straightforward and intuitive. The failure to meet them would be intuitively costly for any presentist account of time. Secondly, and more importantly, Bourne (2006) provides one of the standard accounts of ersatzer presentism. This means that ersatzer presentism is formulated to explicitly meet these constraints. Ersatzer presentism’s failure to meet such constraints means the view would fail by its own lights. The first of these constraints is that a presentist account should maintain our ordinary temporal talk. As Bourne writes of presentism, “it must preserve our views about which statements are true and which false” (p 39). Presentism is motivated by commonsense intuitions about time. As such, it should do its utmost to accept the truth and falsity of temporal claims at face value. The second constraint is transparency. A presentist account to Bourne “should be transparent, both with regard to the things postulated, the nature of those things, and any other mechanism involved” (2006, p 15). In responding to the grounding objection, then, the presentist should provide a clear account which does not rely on any unexplained entities or mechanisms. The third, and final, constraint is an explanatory one. Any presentist account must be able to explain, for instance, why certain claims about the past are true and others false. Bourne stresses that “in the case of a theory that says our common-sense views are correct, it should give us an account of
how it is possible for intuitive truths to be true” (p 15). It is not enough to claim that certain past propositions just *are* true. Presentism, as the commonsense view, must offer an account of *how* that proposition is true. The explanatory and transparency constraints are very closely related.

Presentism, once properly explicated, fails because it cannot adequately meet the above conditions. The dilemma is that the presentist must account for the truth of our ordinary temporal talk without violating their own austere ontology. The presentist must provide an explanation as to how they maintain the truth of a statement such as ‘Abraham Lincoln was president’ without committing themselves to non-present objects. I think most attempts fail to adequately meet the requirements of the supervenience principle. Ersatzer presentism aims to meet the requirements of the supervenience principle, but in doing so, violates the presentist constraints laid out in Bourne (2006).
2. Presentism 101

2.1 Introduction
My morning cup of coffee no longer exists. I mean this not in the sense that the coffee is gone, though I did drink it. Rather, the moment of time which included my morning cup of coffee no longer exists. I can’t retrace my steps and go back to that moment of time. Our temporal interaction with the world is built around the fact that the present is special, and different from the past and future. This intuition about time, and the special nature of the present, serves as a primary motivation for presentism, a metaphysical account of time. For instance Bigelow (1996) writes, “Nothing exists which is not present. I say that this was believed by everyone, both the philosophers and the folk, until at least the nineteenth century...and it is still assumed in everyday life even by philosophers who officially deny it” (p 35). Markosian (2004), on the other hand, invokes that famous person on the street, writing, “I endorse presentism, which, it seems to me, is the ‘commonsense’ view, i.e., the one that the average person on the street would accept” (p 48). The commonsense, intuitive nature of presentism plays a central motivating role.

Presentism holds that only present entities exist (Markosian 2004, p 47). It is contrasted, for instance, by eternalism, which holds that the past, present, and future are all equally real (Sider 2001, p 11). In this chapter I will begin by defining presentism more fully, specifically in terms of quantification. I will then situate presentism within the wider debate in the philosophy of time, contrasting it with eternalism in particular, and outline two structural analogies which often come into play in the philosophy of time: the eternalist analogy to space and the presentist analogy to modality. Finally, I will present the grounding objection to
presentism and survey some initial presentist responses. The purpose of this chapter is to provide a framework through which to understand ersatzer presentism.

2.2 Presentism Defined
Presentism is a relatively straightforward view. All objects which exist are presently existing. As Hinchliff (1996) puts it, “the only things that exist are things that presently exist” (p 123). The idea is to capture the distinct differences between the past, present, and future by granting a privileged position to the present. As Sider (2001), who is no friend of presentism, admits, “Though I think presentism ultimately must be rejected, its guiding intuition is compelling: the past is no more, while the future is yet to be” (p 11). This guiding intuition is what motivates the presentist. It won’t do to simply give the present a privileged experiential position; our feelings about the past and future run much deeper. The present is privileged in an ontological sense, because the past and future are not real in the same way as the present.

This can be made more precise if we think of presentism in terms of quantification, or the objects we can quantify or count. The presentist could quite easily hold that existence is limited to present objects. When it comes to which objects exist the only ones we can quantify over are those that are present. Thus, if we were to cast an unrestricted net over existence we would only pull back presently existing objects. Markosian (2004) notes, “if we were to make an accurate list of all the things that exist - i.e., a list of all the things that our most unrestricted quantifiers range over - there would be not a single non-present object on the list” (p 47). A similar definition is defended in Crisp (2004, p 18-19).
This fits with a presentist definition of the present offered in Zimmerman (1996), Craig (1997), and Merricks (2007) for instance. On this account the present is simply equivalent to existence. As Zimmerman (1996) urges, “There is no advantage for the presentist in distinguishing between being present and existing...to be present just is to be real or exist” (p 117). The present, in this case, would exhaust existence. An object is present if it exists, and exists if it is present. So, presentism would be defined as the view that our most unrestricted quantifiers range only over the present, where the present is simply defined as existence.

There is a serious problem for this definition though, as it in principle rules out the existence of abstract objects. An abstract object is typically thought to lack spatial or temporal location (Rosen 2012). This means that abstract objects by definition cannot be present, since to be present requires temporal location. The believer in abstract objects, however, would certainly commit to the view that our most unrestricted quantifiers range over such objects. By limiting the scope of our most unrestricted quantifiers to the present we eliminate abstract objects from consideration. Similarly for the definition of the present as existence. If an object is present just in case it exists, then abstract objects cannot exist as they cannot be present. This definition is unacceptable for the purposes of this thesis, as ersatzer presentism depends on the existence of abstract objects. If the definition of presentism rules out abstract objects, then it also rules out ersatzer presentism.

Crisp (2004, p 16) seems to acknowledge that there may be confusion as to the status of abstract objects, but in the end simply claims that he uses ‘exist’ in a way that is concerned

---

5 Different definitions of the present are offered, for instance, in Crisp (2003), where the present is conceived as a particular type of mereological sum, and Markosian (1993, 2004) where the present is defined as a combination of existence and the instantiation of a certain monadic property of presentness (2004, p 61).
only with concrete objects. It is better, I think, to avoid any ambiguity in the definition of presentism. As such, in this thesis I will use the following definition of presentism, taken from Baron (2011):

**Presentism:** Everything present falls within the scope of our most unrestricted quantifiers, while nothing past or future falls within their scope.

This definition captures all of the intuitive appeal of the more rough edged definition of presentism as it eliminates past and future objects from our ontology. In doing so, however, it does not in principle rule out the existence of abstract objects, which have no temporal location. A quantificational account of presentism also nicely fits the approach to ontological commitment outlined in the methodology section of the Introduction. This definition also leaves open how we define our intuitive sense of the present.

Another benefit of this definition is that it avoids the triviality complaint, which holds that presentism is either trivially true or obviously false. Similar versions of this complaint are raised or discussed in Callender (2000), Sider (2001, p 15-17), Crisp (2004), and Meyer (2005). Take the basic statement of presentism: only present objects exist. The triviality complaint trades on the ambiguity of ‘exist.’ If we read ‘exist’ as present tensed then presentism amounts to the view that only present objects exist now (Crisp 2004, p 16). This is trivially true, and if presentism is simply a statement of such a trivial fact then it should not be taken seriously as a robust metaphysical view. Conversely, if ‘exist’ is read tenselessly then presentism amounts to the view that only present objects exist at all times. This, however, is obviously false as there are clearly non-present things which existed (Crisp 2004, p 16-17). So, regardless of how we read ‘exist’, presentism is either a trivial truth or an obvious falsehood.
By defining presentism in terms of quantification, however, we avoid any ambiguity in the term ‘exists.’ Claiming that ‘exists’ needs to include non-present objects is to say that our most unrestricted quantifiers need to range over non-present objects. This, however, is precisely what presentism denies (Wüthrich 2009). The presentist interprets quantification, “to have narrow range such as to exclude anything that is non-present” (p 443-444). The position that presentism is obviously false is actually just a denial of the definition of presentism in disguise. It may turn out that our most unrestricted quantifiers should range over non-present objects, but this is exactly what is at issue. Properly defined, then, presentism avoids the triviality complaint.

One final note on formulating presentism. Many, such as Bergmann (1999) and Markosian (2004), hold that presentism is, if true, necessarily true. Others, for instance Crisp (2003) and Bourne (2006), hold that the presentist need not commit to this stronger claim. I tend to agree with the latter view. Presentism has enough of a hill to climb if it is contingently true, so I will assume the weaker claim for the remainder of this thesis. Also, there may be good reasons, following Gödel’s arguments about time, that presentism could not be true in all possible worlds. See Bourne (2006, p 204-224) for discussion.

2.2.1 Presentism and the Opposition

With this definition of presentism in mind, it can be helpful if we situate the view amongst its opponents. The main alternative to presentism is eternalism. The eternalist view of time is that past and future objects are just as real as present objects. That is to say, past and future objects have the same ontological status as present objects. So, to again use the language of

---

6 Due to space constraints I will leave aside the growing block view of time in this thesis. The growing block view holds that the past and present are real while the future is not, and represents a middle ground between eternalism and presentism. Recent defenders include Tooley (1997) and Forrest (2004, 2006).
quantification, past, present, and future objects all fall within the scope of our most unrestricted quantifiers. The eternalist holds that Nebuchadnezzar II, the White House, and a future moon base all have the same ontological status. As Sider (2001) writes, “Reality consists of a four-dimensional spatiotemporal manifold of events and objects - the so called ‘block universe’” (p 11). The idea here is that the universe is a big ‘block’ made up of events and objects, and that no slice of this ‘block’ is special or privileged. Instead past, present, and future objects are all equally real; they all exist as members of this ‘block universe’. The block is four-dimensional because it consists of the three dimensions of space and the single dimension of time. A four-dimensional model of the world, such as offered in Minkowski (1908), treats time as a space-like dimension. Time and space are simply the dimensions that structure the manifold of objects, though there are differences in how they are represented in the model. Defenders of eternalism include, for instance, Mellor (1998) and Sider (2001, p 11-52).

Presentism and eternalism are strikingly different in terms of ontology. The presentist limits quantification so as to exclude past and future objects, while the eternalist holds that past, present, and future objects all fall within the scope of our most unrestricted quantifiers. The eternalist holds that the existential quantifier ranges over far more objects than does the presentist. To the presentist, the present is ontologically special. The present is real, while the past and future do not exist. For the eternalist, being present is indexical. ‘Now’ is indexically special, rather than ontologically special. When I say that an object is present I simply mean

---

7 This is the standard formulation of eternalism. A closely related view is the moving spotlight conception of time, which holds that past, present, and future are equally real but that there is an objective present. A recent defense of this view is Skow (2009). In this thesis I will focus on standard eternalism.

8 Some commentators, for instance Callender (2000), hold that the presentist and eternalist don’t really disagree and are just talking past one another. Sider (2001 p 15-17, 2006) and Miller (2013) offer useful responses to this worry.
that the object is in my current temporal location. On this analysis, ‘now’ is analogous to ‘here.’ All of our experiences occur in the ‘now,’ in the same way that all of our experiences happen ‘here.’ We do not view spatially distant objects as any less real, and similarly we should not view temporally distant objects as any less real. Abraham Lincoln is just as real as Barack Obama, he is just temporally distant from our current temporal location. As Miller (2013) put it, in the not so distant past, “Just as Singapore exists, despite not existing here in Sydney, so too dinosaurs exist, despite not existing now in 2011” (p 346).

This leads to a second major difference between presentism and eternalism: the tension between a dynamic and static conception of time. The presentist picture of time is dynamic. The present changes. That is to say, time passes as objects come into and out of existence. Miller (2013) writes, “The totality of events that exist changes as time passes, so that a different set of events comes into existence as each new present moment comes into existence” (p 346). This dynamic change is an essential feature of the presentist picture. The eternalist picture of time, on the other hand, posits a static block universe in which there is no temporal change. That is to say, there is no change in the objects that exist, or the moment that is present. The present cannot change, because there is no sense of a metaphysically special present. There are just different temporal locations indexically designated as the ‘present’ or ‘now’.

This distinction between static and dynamic conceptions of time can also be cashed out in terms of the famed distinction between the A and B Series presented in McTaggart (1908). An A-series is a temporally ordered series of objects which contains genuine temporal features such as presentness. This type of series is dynamic as it involves a change in the present. The presentist endorses this type of A-theory of time, as they hold that this dynamic change
is an essential temporal feature. A B-series on the other hand is a temporal series of objects ordered by relations such as earlier than and later than. To say that some object is past is simply to say that the object is earlier than present objects, without appealing to any temporal properties. This series is static, as the block of objects does not involve any change in the B-theoretic relations between its members. The eternalist endorses this type of B-theory of time.

Presentism and eternalism differ ontologically and in regards to the dynamism of time. These considerations should make clear why presentism is taken as the commonsense, intuitive view of time. It captures features of our everyday temporal experience in a way that eternalism does not. Eternalism asks us to accept that dinosaurs and future moon colonies exist just as birds and the Empire State Building do, they just don’t exist now. This is highly counterintuitive. Dinosaurs, after all, are dead and gone. The eternalist also denies the dynamic passage of time, a key feature of our temporal phenomenology. It certainly seems as if time flows and changes constantly, but this is denied on the eternalist account. The intuitive nature of presentism puts it, at least in the initial calculation, ahead of eternalism.

A few issues arise here worth mentioning. For one, there are a number of eternalist accounts of temporal phenomenology as well as arguments aimed to show that our so called ‘experience’ of passage may not track an objective feature of the world. See for instance, Paul (2010), Skow (2011a), Maclaurin and Dyke (2013), and Prosser (2013). Second, there are numerous arguments which aim to show that the very notion of the passage of time is unintelligible. For instance, there is a large literature based on a challenge from Smart (1949)

\[9\] A commitment to a dynamic conception of time is an essential feature of the presentist picture. It did not feature in my earlier definition of the view because presentism is one of a number of dynamic accounts of time. The growing block view of time and the moving spotlight conception of time both qualify as dynamic, or A-theoretic, accounts of time.
to provide an adequate account of the rate at which time passes. See Markosian (1993), Price (1996), Maudlin (2002), Olson (2009), Phillips (2009), Tallant (2010), Skow (2011b) and Prosser (2013) for discussion. These issues are beyond the scope of this thesis, but the presentist commitment to a dynamic conception of time raises important concerns for the position.\(^\text{10}\) The distinction between presentism and eternalism serves as an excellent starting point for discussion of the role of analogies in the philosophy of time. This discussion of analogies is especially important in regards to ersatzer presentism, which relies on an analogy between time and modality.

### 2.3 Time, Space, and Modality
A key feature of the debate in the philosophy of time is the deployment of various structural analogies. To say that two entities, or realms of debate, are structurally analogous is to say that at the fundamental level the two entities appropriately map onto each other. If two positions are structurally analogous then certain features of one position should map onto similar features of the second position. Time is often taken to be structurally analogous to either space or modality. In this section I will outline the role that these analogies play in the philosophy of time, specifically, how analogies to space and modality figure in the formulation and understanding of presentism and eternalism.

---

\(^{10}\) Two further commitments often associated with presentism, but beyond the scope of this thesis, are to tense and endurance. The presentist, as a species of the A-theory, is often taken as committed to the reality of ‘tense’ in a metaphysically loaded sense. For discussion of the role of tense in the philosophy of time, see Markosian (1992), Zimmerman (2005), and Dyke (2013). The presentist is also often taken as committed to the endurance thesis of persistence. The endurance thesis holds that an object persists through time if it is wholly present at successive times. See Markosian (1994), Hinchliff (1996), Zimmerman (1996), Merricks (1999, 2007 p 137-142), Sider (2001), and Crisp (2003) for discussion of the relationship between presentism and the endurance thesis.
2.3.1 Eternalism and the Spatial Analogy
Eternalism is characterized by an ontological thesis and the denial that time is dynamic. The ontological thesis holds that past, present, and future times all exist; they are ontologically on par. The anti-dynamism of the eternalist is a denial that there is a changing present. Instead, the relations which hold between times hold eternally, and the present can be characterized indexically. The present as an indexical, which picks out our current temporal location, is directly analogous to the way ‘here’ picks out our current spatial location. As Sider (2001) puts it, “Just as distant places are no less real for being spatially distant, distant times are no less real for being temporally distant” (p 11). Abraham Lincoln, despite his temporal distance, is no less real than I am; in the same way the White House, despite its spatial distance, is no less real than I am. Further, there are no changes in spatial properties. The distances between points of space hold eternally. This connection between time and space can be clarified further by thinking in terms of spacetime. As I’ve mentioned earlier in section 2.2.1, in the four-dimensional model offered in Minkowski (1908) time is seen as a space-like dimension. In this setting we can only speak of spacetime, rather than time and space as distinct entities. The eternalist analogy to space makes use of this close connection to explain and make sense of the nature of time.

The structure of spatial and temporal relations, on the eternalist picture of time, are fundamentally analogous. I say eternalist picture of time because this analogy is one which the presentist should be wary of accepting. If the ‘present’ is all that exists, and ‘present’ is analogous to the indexical ‘here’, we are left with a result in which the presentist must hold that only ‘here’ exists. This local existential bias seems unacceptable in the case of space. For the eternalist, time and space are just different dimensions with the same structure in our four
dimensional block universe. Taylor (1955) contains a useful summary of various ways in which temporal and spatial notions can be translated into each other.

### 2.3.2 Presentism and the Modal Analogy

For the eternalist, the spatial analogy comes quite easily. If the present is an indexical term and all other times are equally real, then it quite naturally follows that time would have a parallel structure to space. The analogy between time and modality is less clear. Its roots lie in the structure of modal logic and the use of a possible worlds semantics. The analogy is drawn out even further in the metaphysics of modality. Typically, for reasons I will discuss below, it is the presentist who most fully endorses the modal analogy. Indeed some philosophers, such as Markosian (2001, 2004), hold that one of the defining features of the debate between eternalism and presentism is that the eternalist holds that time is structurally analogous to space, while the presentist holds that time is structurally analogous to modality.

As Markosian (2004) points out, “One of the main similarities between time and modality has to do with the similarities between modal logic and tense logic...in particular, the way the tense operators function just like modal operators” (p 61 ft 24). The idea here is simple enough, a temporal operator, such as the past operator P, functions in an equivalent way to a modal operator, such as the possibility operator ♦. A temporal operator serves as a way for the presentist to make sense of temporal talk, despite the lack of commitment to the existence of past and future objects. A sentence about the past, such as ‘Abraham Lincoln was president of the United States’, is, to the presentist, a complex sentence containing the present tensed sentence ‘Abraham Lincoln is president of the United States’ within the scope of an operator. So it would look something like, P(Abraham Lincoln is president of the
Modal operators function in a similar way and, like the temporal operator, are often taken as primitive.

However, if we aim to flesh out these primitive operators, both temporal and modal logic, strikingly, will typically employ the same type of semantics. Modal logic’s use of a possible worlds semantics is directly paralleled by temporal logic’s use of a semantics of times. Worlds and times play functionally equivalent roles in the respective discourses. A presentist could adopt such a semantics so long as it does not employ non-present times. Take a statement using the past operator such as $P(Abraham Lincoln is president)$. This proposition translates to, ‘At some time it has been the case that Abraham Lincoln is president’. A proposition using a modal operator functions in the same way. Take a statement such as $\Diamond(Mitt Romney is president)$, which translates to, using a possible worlds semantics, ‘At some possible world it is the case that Mitt Romney is president’.

The role of times and worlds on this account is to provide a semantic index by which certain sentences are true or false (Cresswell and Rini 2012, p 8-9). A time in this case provides an index via which we can judge the truth or falsity of the statement ‘Abraham Lincoln is president.’ Even more striking is that this indexical semantics for temporal and modal operators functions independently of the nature of the index (p 8-9). In other words, we can provide a semantic account of modal and temporal operators in terms of worlds and times, while remaining agnostic as to the intrinsic natures of the indices. This is important, because it illustrates that the similarities between time and modality are purely structural. The account does not rely on any prior metaphysical assumptions about the nature of worlds or times, instead it relies on the more general structural features shared by time and modality. Even more interestingly for the presentist, if we put this agnosticism aside then the closeness
of worlds and times grows. Fine (1977) and Zalta (1987) have shown that, if construed as abstract objects, worlds and times can have the same construction, which is an even stronger claim to sharing the same functional role. On these accounts, times and worlds are similar types of abstract objects.

Moving from the logical relation between time and modality into the metaphysics of modality, we run into more parallels. Presentism and eternalism have ontological equivalents in the metaphysics of modality: actualism and possiblism. As Sider (2001) succinctly puts it, “Presentism is analogous to modal actualism, according to which reality consists only of actuals. The opposing position in the philosophy of modality, possibilism...is analogous to eternalism” (p 11-12). Actualism is the view that there are no non-actual objects (Menzel 2012). A possibilist, on the other hand, is happy to admit non-actual, or merely possible objects, into their ontology. Consider a modal claim such as, ‘There could have been a flying bear.’ Now, there are no flying bears. That is, no flying bears exist in the actual world in the same way that, say, horses exist. On the other hand, it makes perfect sense to claim that had evolution worked out differently flying bears could have existed (Menzel 2012). A possibilist holds that flying bears could have existed because there is a merely possible object which is a flying bear. The actualist denies that there is this merely possible object, and must look elsewhere for an account of the truth of this modal claim.

Just as the presentist denies the existence of non-present objects, so too does the actualist deny the existence of non-actual objects. Actualism and presentism share the same austere approach to ontology. Furthermore, they are both taken to be the intuitive, commonsense positions in their respective debates. This close metaphysical similarity between presentism and actualism means that the presentist has good reason to accept the analogy
between time and modality. Despite these similarities, the eternalist may be less willing to accept a close analogy between time and modality, the reason being that the sort of robust possibilism analogous to eternalism is a deeply counterintuitive position. It results in holding that flying bears exist in the same way that horses and normal bears exist. With the exception of Lewis (1986) most philosophers have found this to be an ontological bridge too far. This is a nice result for the presentist, as it puts them in league with the commensense view in the philosophy of modality. Markosian (2001) takes this difference to be a clear metaphysical dividing line between presentism and eternalism. He writes:

> [The] presentist should say that his position is basically defined by the insight that there are important metaphysical similarities between time and modality, and important metaphysical differences between time and other dimensions...[This] is simply a part of his basic metaphysical outlook (p 626).

### 2.3.3 The Import of Analogy

This difference in metaphysical outlook does not mean that the presentist or eternalist denies any similarity between time and space or time and modality, respectively. Instead, it means that the metaphysical import of those similarities is denied. The eternalist, for instance, might acknowledge that there are a number of similarities between time and modality. However, they would deny that time and modality share the same fundamental structure, that time and modality are fundamentally alike. Similarly, the presentist might acknowledge that, given certain assumptions about indexicality, time and space share many similarities. Again though, the presentist would deny that time and space are fundamentally analogous. Fundamental structure runs more deeply than just similarities between positions in different areas. This similarity, as Cresswell and Rini (2012) explicitly state in regards to time and modality, means that, “If you are faced with an argument in the philosophy of modality, there ought to be a corresponding argument in the philosophy of time which has the same structure” (p xiv).
Cresswell and Rini are discussing logical structure, but they think that this logical structure is the key to advocating and defending metaphysical positions in regards to time and modality. The idea is that if time and modality are structurally analogous on the fundamental level, then there should be a direct mapping between the philosophy of time and the philosophy of modality. It is this strong sense of the analogy between time and modality, and the underlying assumption that shared logical structure has metaphysical significance, that is important for this thesis. The strong version of this analogy lends support to presentism, but it also opens up the view to a new range of criticisms from the modal realm.

This discussion of the role of analogy in the philosophy of time, in particular the analogy between time and modality, gives us almost all the tools needed to understand ersatzer presentism. In effect, ersatzer presentism aims to meet the strictures of the presentist ontology while drawing on the analogy between time and modality. In understanding ersatzer presentism, however, it is also necessary to understand the objections to which it is responding. The remainder of this chapter, then, will focus on outlining the grounding objection. The purpose of this outline is twofold. The main goal is to explicate the grounding objection, as it is responding to this objection that serves as a primary motivation for ersatzer presentism. The secondary goal is to give a brief survey of some other presentist responses to the grounding objection. Being clear on the other responses open to the presentist brings the advantages of ersatzer presentism into sharper focus.

2.4 The Grounding Objection
To set out the grounding objection, or the truthmaker objection as it is also known, let’s begin with an example. Take some contingent past truth such as, ‘Giant ground sloths roamed North America’. Since this truth is contingent (after all, giant ground sloths could have done
their roaming elsewhere) it seems plausible to hold that it is somehow grounded in the world. That is to say, there is something in the world that makes the statement ‘Giant ground sloths roamed North America’ true. It is here that we have a problem for presentism. The presentist holds, after all, that only present objects exist, but if that is the case then how is it that contingent past truths are grounded? As Crisp (2007) writes, “presentists face an uncomfortable dilemma: reject the principle that contingent truths need grounding or give up the obvious truths about the past...Neither option is attractive” (p 90). This in a nutshell is the grounding objection.

The overriding assumption here is that there are contingent past truths. The proposition ‘Abraham Lincoln was president of the United States’ is true, he really was president. It could have been otherwise though. William H. Seward could have won the presidency. When coupled with this assumption, three plausible commitments become inconsistent. These three commitments, taken together, entail that there are no contingent past truths, a conclusion that must be rejected. The three commitments are as follows:

1) Presentism: There are no non-present objects

2) The Supervenience Principle: Truth supervenes on existent objects

3) The Temporal Recombination Principle: The present could be as it is now and the past different

This is a combination of the formulations of the grounding objection found in Keller (2004) and Crisp (2007). Taken together these three commitments entail that there are no contingent past truths. The proponent of the grounding objection argues that since 2 and 3 are by far the more intuitive principles, we should deny presentism in order to save contingent past truths. These three commitments of course need more spelling out.
2.4.1 Presentism and the Supervenience Principle

The first commitment is presentism, which I've outlined in detail in section 2.2. The second commitment is the supervenience principle, which I touched on in the Introduction to this thesis. Again, I will focus on the supervenience principle because it is the weakest version of truthmaking on offer, and thus can form the strongest version of the grounding objection to presentism. A stronger account of truthmaking, such as advocated in Armstrong (2004), works just as well to cause trouble for presentism. See Rodriguez-Pereyra (2006) for a general discussion of different truthmaking accounts. If we are committed to the view that truth is somehow grounded in the way the world is, then a conflict with the weakest account of such grounding spells serious trouble for presentism.

According to the supervenience principle, what is true is based on the objects that exist and the fundamental properties and relations those objects instantiate (Lewis 2001, p 612). What is true supervenes on the arrangement of stuff that exists. The objects which exist, and the fundamental properties and relations they instantiate, serve as a supervenience base for the truth or falsity of propositions. If we have two worlds with the same existent objects and the same instantiated relations and properties, then the same things should be true in both worlds. On the other hand, if some proposition is true in one world but false in the other then there must be a difference in the arrangement of objects in the two worlds. Already, this raises a question for presentism. To the presentist, only the current arrangement of objects exists, and thus it is unclear what grounds past truths. It does not serve to show that past contingent statements are ungrounded until we add our third commitment, the temporal recombination principle.
2.4.2 Temporal Recombination
One might be wondering, however, if the supervenience principle really does raise much of a question regarding past truths. After all, there are plenty of objects which currently exist that seem well-equipped to do the job of grounding contingent past truths. North America contains the fossils of giant ground sloths for example. These fossils could serve as currently existing objects which, plausibly, allow us to ground a truth such as, ‘Giant ground sloths roamed North America.’ The temporal recombination principle holds that things in the present could be just as they are and the past different, and thus closes off this option (Crisp 2007, p 92). The idea here is that the world could be just as it is, the same arrangement of stuff, but the past different. It’s plausible to think that the world could be just as it is, same arrangement of stuff, and giant ground sloths might not have existed. After all, perhaps creationists are right and fossils are just tricks planted by the devil to dissuade us from the truth of the Bible, or something to that effect. As Keller (2004) puts it, “there is nothing about the present world, considered in itself, that rules out the possibility that the world sprung into existence five minutes ago, or that someone combed his hair with his left rather than right hand on a particular morning last century” (p 88). The issue is not whether it is plausible that the world could be just as it is and the past different; the issue is whether it is possible. The world being just as it is and the past different is logically possible. That possibility means that the presentist cannot take it for granted that truths about the past are contained in the present. The upshot here is that the current arrangement of objects in the world is not necessarily dependent on the past, which means that for the presentist the present time is completely untethered from what happened in the past.

Consider a contingent truth about the present, such as, ‘Barack Obama is president of the United States.’ This statement is true because it matches the facts on the ground, the
current arrangement of the world. There is an individual who instantiates a certain property and serves as the supervenience base for that contingent truth. ‘Barack Obama is president’ is true because Barack Obama is president. Now, take a contingent past truth like, ‘Abraham Lincoln was president’. What facts on the ground make that true? If the presentist is insisting that there simply is a necessary connection between past and present, then we need only look at the present arrangement of the world and we should find the right sort of supervenience base. There are plenty of objects, such as books and statues, which currently assert Lincoln’s presidency. The problem with these types of objects is that they are perfectly compatible with Lincoln not having been president. Nothing about these sorts of objects necessitates, in the appropriate way, the truth, ‘Abraham Lincoln was president.’ After all, ‘Barack Obama is president’ is true because Barack Obama is president, not because of the currently existing copies of *The Wall Street Journal* which bemoan his presidency. The main point here though is that the presentist cannot take the connection between past and present for granted. They cannot simply insist that such a connection is there. They need to give us an account of an appropriate and fundamental thing which can serve to ground contingent past truths. The current arrangement of the world does not prima facie contain the materials to maintain a necessary connection between past and present.

### 2.4.3 The Grounding Objection Restated

With these three commitments in mind we can more fully flesh out the grounding objection. Take two presentist worlds, one of them like our own in that Abraham Lincoln was president and the other in which William H. Seward was president instead. These two worlds have the

---

11 This concern may just be a particular version of the aboutness criteria of grounding raised, for instance, in Merricks (2007). I will touch on this aboutness criteria in section 2.4.4.
same present arrangement of existent objects. Thus, from the supervenience principle, there is no difference in which propositions are true at each world. From the temporal recombination principle, nothing in each world serves to necessitate the truth of any past contingent propositions. Given these three commitments, then, a past proposition such as, ‘Abraham Lincoln was president’ is ungrounded and cannot be true. So, despite the distinct pasts of the two worlds, there is nothing to account for differences in the truth values of past propositions. In other words, the present is not an adequate supervenience base for past propositions. If this is the case then we have a very good reason for denying presentism. There are contingent past truths, and presentism leads to a denial of this commonsense fact. This violates the commonsense constraint on presentism outlined in the methodology section of the Introduction. As the account of time motivated by commonsense, presentism must be in the business of maintaining our intuitive temporal beliefs. Presentism must account for contingent past truths by denying either the supervenience principle or the temporal recombination principle. In the remainder of this chapter I will briefly lay out some presentist attempts to rebut this objection.

2.4.4 Presentist Responses
Denying the supervenience principle is costly, as it gives up what seems to be the plausible and intuitive view that truth must be grounded in the world. This cost should give the presentist pause, due to presentism’s own commonsense motivations. There have been some presentists, however, who tackle this member of the inconsistent triad. For instance, Merricks (2007) rejects the supervenience principle, though its incompatibility with presentism is just one of many charges he levels at the view. A different tack is taken in Kierland and Monton
(2007) and Baia (2012), which offer differing attempts at formulating a presentist friendly version of the supervenience principle.

Another way to deny the supervenience principle would be to adopt a *Meinongian* approach to non-present objects. Keller (2004) characterizes the approach as follows, “The Meinongian presentist maintains her presentism by...accept[ing] that there are non-present things upon which truth supervenes, but den[ying] that they exist” (p 89). Hinchliff (1988) is taken as the classic defense of Meinongian presentism. The Meinongian denies that supervenience is limited to existent objects, and holds that past truths are grounded in non-present, non-existent objects. If one is already a Meinongian this route would be an obvious choice, but to become a Meinongian to save one’s presentism seems a costly move to make. Keller (2004) contains a useful overview of more substantive criticisms of the Meinongian presentist approach.

The presentist could also deny the temporal recombination principle. A common approach along these lines is to postulate some presently existing object, which can serve to ground past truths. This present object serves as a proxy of sorts for a past object. The most influential version of this approach is known as *Lucretianism*, or Lucretian presentism, and is defended in Bigelow (1996). According to this account the present instantiates numerous past and future tensed properties which serve to ground past and future truths. These tensed properties work for the presentist as non-present objects work for the eternalist. On this view, the contingent past truth, ‘Giant ground sloths roamed North America’ is grounded in the presently instantiated property *being a place where giant ground sloths once roamed North America*. Since these properties are presently instantiated, they do not violate the presentist ontology. The Lucretian approach amounts to a denial of the temporal recombination principle.
because, as Crisp (2007) puts it, “[the presentist will] think it impossible that a world should have the same past-tensed properties as ours but a different past” (p 93). The world could not instantiate the property having been inhabited by Isaac Newton unless it was in fact inhabited by Isaac Newton.\textsuperscript{12}

There are a number of criticisms of this Lucretian approach. One argument, advanced by Sider (2001), is that the properties postulated are ontologically objectionable. Sider draws a distinction between hypothetical and categorical properties, where “Categorical properties involve what objects are actually like, whereas hypothetical properties ‘point beyond’ their instances” (2001, p 41). Sider holds that we should not accept ontologies that are forced to adopt such hypothetical properties, as they are inherently ‘dubious’ (2001, p 40-41). The problem with this argument is that it merely states an intuition about ontological virtue without any argument as to why we have this intuition. It’s all well and good to mark a distinction between supposed categorical and hypothetical properties. To use that distinction in a dismissal of the properties employed by the Lucretian without more rigorous backing by argument is untoward.

A more recent argument, due to Sanson and Caplan (2010), spells out more explicitly what makes these Lucretian properties so ontologically troubling: they fail to provide a proper explanation for the truths they are meant to ground.\textsuperscript{13} Whatever a truth is grounded in must provide an appropriate explanation for that truth. Sanson and Caplan write, “Proper

\textsuperscript{12} A similar approach would be to ground past truths in presently existing haecceities, individuating properties of thisness unique to individual objects. So, although Charlemagne no longer exists, the haecceity of Charlemagne exists and would serve to ground truths pertaining to the King of the Franks. In the interest of space I won’t discuss this approach in detail. See Adams (1986) for a discussion on haecceities in regards to time, and Keller (2004) and Markosian (2004) for criticism of the haecceity approach.

\textsuperscript{13} Sanson and Caplan explicitly state that this objection differs from that offered by Sider. One key difference is that the hypothetical/categorical distinction causes trouble for more than just tensed properties, while the argument offered by Sanson and Caplan is limited to the case of time.
explanation requires more than mere supervenience: it requires that the supervenience base provide a proper explanation of the supervenient truths” (p 30). This requirement of appropriate explanation is related to, but not identical with, the requirement of aboutness advocated in Merricks (2007). Both accounts aim to limit the candidates that can serve to ground truths. In the interest of space, and because the appropriate explanation requirement is specifically formulated in regards to temporal intuitions, I will leave aboutness to the side in the remainder of this thesis.

The grounding of a truth requires more than a mere supervenience base. The truth of the proposition, ‘Barack Obama is president’ is explained by the fact that Barack Obama is president, not by the current arrangement of papers on my desk. As Sanson and Caplan put it, “We want the truth of a proposition to be explained by how things are in a fairly restricted part of the world” (p 26). The problem for the Lucretian is that their tensed properties do not seem to be an appropriate explanation for past truths. The truth of, ‘Abraham Lincoln was president’ is explained by Abraham Lincoln actually having been president, not a presently instantiated past tensed property. Any explanatory power of this past tensed property is gleaned from Lincoln actually having been president. Since these Lucretian properties lack the appropriate explanatory power, they are unsuited to play the necessary role in grounding past truths.

There is a final presentist approach worth mentioning that cannot be categorized as an explicit denial of either the supervenience principle or temporal recombination: Priorian presentism, advocated by Arthur Prior (1968a, 1968c). The central idea of Prior’s presentism is that propositions are naturally present tensed and there is no need for a present tense operator. He writes, “Whatever the proposition that \( p \) might be, the proposition that \( \text{it is (now)} \)
the case that \( p \) is the very same proposition as the proposition that \( p^* \)” (1968b, p 171). A past or future tensed proposition is simply a proposition, which is naturally present tensed, with the appropriate tense operator added. As Prior (1968a) puts it, “I mean, not only is pastness in all cases past presentness, but it is also in all cases present pastness, and similarly with futurity” (p 32). All propositions are present tensed, so even a past proposition is just a present proposition with a tense operator added. Since all propositions are present, they are all presently true. In other words, all true propositions are presently true. On this account there is nothing mysterious about how ‘Abraham Lincoln was president’ is true. Since all propositions are presently true, it is true in virtue of the present. Past and future tense operators are simply primitives added onto present propositions.

A problem with this view is that it lacks for ontology. It is difficult to accept that past truths are true in virtue of primitive tense operators. This difficulty comes down to the fact that this says nothing about what makes these propositions true (Bourne 2006, p 43). It seems puzzling to accept that ‘George W. Bush was president’ is true in virtue of a primitive logical operator, rather than George W. Bush himself. The story needs filling out, and seems to write away any problems with appeal to the structure of logical operators. As Bourne (2006) notes, “for Prior, there is nothing more to say about the nature of time than is said by a perspicuous tense logic” (p 43). It seems in this case, however, that more might need to be said before we settle for such primitives.

Again, I do not take the presentation of these views and criticisms to be exhaustive. The focus of this thesis is on the viability of ersatzer presentism in particular. This brief overview of available presentist responses, however, does gesture toward the advantages and central importance of ersatzer presentism. Like all of the above views, ersatzer presentism
starts with the intuitive appeal of presentism and moves in an initially counterintuitive direction in order to counter criticism. In the case of ersatzer presentism, that direction is the use of abstract objects to provide a supervenience base for past truths. The strength of ersatzer presentism, over competing presentist conceptions, is that this move is actually towards firmer ground. If we take the analogy between time and modality seriously, then relying on a metaphysical distinction drawn from actualism is not at all suspect. Relying on the analogy seems, at least *prima facie*, to give the ersatzer presentist the means to resolve the tension between the motivating intuitions of presentism and the counterintuitive moves needed to respond to objections. Furthermore, I think this relationship between time and modality gives the ersatzer presentist tools to respond to objections, such as the appropriate explanation requirement, that competing presentist views lack. This makes ersatzer presentism the best hope yet for the success of presentism in general.

In this chapter I have outlined a definition of presentism, explicated the analogy between time and modality, and presented the grounding objection to presentism. This discussion provides the necessary framework for a discussion of ersatzer presentism, which is the focus of the next chapter. This discussion of ersatzer presentism will rely especially on the grounding objection and the analogy between time and modality. The grounding objection provides the motivation for ersatzer presentism, while the analogy between time and modality provides support for the resources of the ersatzer response.
3. Ersatzer Presentism

3.1 Introduction
Presentism, despite its intuitive appeal, is faced by a number of serious objections, such as the grounding objection. Ersatzer presentism aims to counter these objections by postulating a series of abstract objects to serve as the supervenience base for past and future truths. Times, on the ersatzer account, are abstract objects which represent how things were, are, and will be. This conception of a time as an abstract object is not so odd if we consider the analogy between time and modality. Firstly, many, such as Fine (1977) and Zalta (1987), have argued that the structural similarities between worlds and times allow for the conception of a time as an abstract object. Secondly, presentism is the temporal equivalent of actualism, so options open to the actualist, such as abstract worlds, should be analogously available for the presentist. It is actually from this analogy that the presentist draws the term ‘ersatz’, repurposing the title Lewis bestowed on actualist rivals to his concrete modal realism (1986, p 136).

Though the analogy between time and modality has long been a subject of interest, ersatzer presentism has only been fully formulated in recent years. While brief mentions of ‘abstract’ or ‘ersatz’ times appear in Lewis (1986 p 204, 1988) and Hinchliff (1996) the idea is quickly dismissed. Hinchliff for instance dismisses an ersatzer account out of hand on the grounds that it is counterintuitive. He writes, “when we report that the candle existed at t and was straight at t, we naturally suppose that we have designated a time, not an abstract
representation of a time” (p 124). More recently the idea of the presentist adopting abstract times is mentioned, but not fully endorsed or explored in Crisp (2003), Davidson (2003) and Markosian (2004). It is in Bourne (2006) and Crisp (2007) that the ersatzer program is given its fullest explanation and treatment. In this chapter I will present a detailed picture of ersatzer presentism and prepare the ground for my subsequent critique of the position. First, I will detail the specific positions outlined in Crisp and Bourne, while arguing that the most plausible account of ersatzer presentism is committed to a primitively ordered linear series of ersatz times. Then I will outline some existing criticisms of ersatzer presentism and offer a brief response. This response draws heavily on the analogy between time and modality, specifically distinctions outlined in Adams (1974).

The ersatzer approach will only be acceptable to those already willing to accept the existence of abstract objects. For the purposes of this thesis I will assume the existence of abstract objects, and will not discuss arguments against their existence in any detail. For more discussion see Benacerraf (1973) and Field (1980, 1989) for classic nominalistic arguments against abstract objects in the philosophy of mathematics, and Burgess and Rosen (1997) for an overview of nominalistic arguments more generally. See Lewis (1986, p 81-86) and Rosen (2012) for discussion of how we should define the term ‘abstract object.’

---

14 Prior (1968b) advocates the use of representing propositions as a route for the presentist to quantify over non-present instants, and so can be seen as a forefather for the ersatz account of times. However, Prior’s account differs in the important respect that it does not attempt to replace non-present times with ersatz representations of times or to build an ersatz series of times. It is more akin to the actualist who is a modal primitivist rather than a possible worlds realist.

15 A somewhat related approach is offered in Bigelow (1991). The account, however, does not construe times as abstract objects but attempts to use possible worlds to make sense of the passage of time. While this is a mixing of time and modality, it is an appeal to a modal notion rather than an appeal to the analogy between time and modality.
3.2 Crisp’s Ersatz B-Series

Crisp (2007) defends a view that he calls the ersatz B-series. To Crisp, the focus of this approach is to provide a backing for a Lucretian style response to the grounding objection. Crisp wants to show that the presentist can analyze controversial primitive past and future tensed properties in terms of B-theoretic relations. In order to accomplish this task Crisp turns to abstract times, which are “a certain sort of maximal abstract object: intuitively, an abstract representation of an instantaneous state of the world” (p 99). More technically, Crisp defines a time in the following way:

\[
\text{x is a time iff x is a class of propositions S, such that S is maximal and consistent.}
\]

A time then is a representation containing all the relevant information pertaining to a temporal moment of the world. The class is maximal if “for every proposition \( p \), either \( p \) or its denial is a member” (Crisp 2007, p 99). To give a complete and exhaustive description of the world a class of propositions must include or exclude every proposition.\(^{16}\) A complete propositional description of our world for instance would include propositions such as, ‘There are horses’ and the denial of propositions such as, ‘There are unicorns.’ In effect every time makes a decision of sorts on the truth or falsity of every proposition. These classes also need to be consistent, that is to say it must be possible for every member to be true (Crisp 2007, p 100). A class of propositions, to qualify as a time, cannot contain any contradictory members.\(^{17}\)

\(^{16}\) Crisp does not commit to any particular view as to the nature of propositions. Bourne (2006) does commit to the view that propositions are “primitive abstract objects” (p 52 ft 6). I think this captures what Crisp has in mind, and I will assume this conception of propositions in the remainder of the thesis.

\(^{17}\) Crisp acknowledges two slight complications to this basic picture. First, if we accept arguments to the effect that there can be no set of all truths such as in Plantinga and Grim (1993) then the definition of a time needs to be amended to a more complicated, but still effective form. Second, if one adopts a neo-Russellian account of singular propositions, also known as existentialism, on which “singular propositions depend for their existence on the individuals they are about” then the definition of a time needs more tinkering (Crisp 2007, p 100). These changes, again, make the definition more complex but leaves it just as effective as before. I will leave these complications aside in the discussion to follow.
Crisp (2007) is also explicit about the type of propositions which can populate these maximal representations. This maximal class is made up of tenseless propositions. Crisp (2007) defines a tenseless proposition as “a proposition p such that it is possible to grasp or conceive of p without thereby grasping or conceiving of an A-property” (p 99). So, if there are tenseless propositions then we can make sense of a proposition such as ‘Socrates is sitting’ without an appeal to any A-theoretic properties such as being past or being future. This idea depends on the assumption that there are tenseless copulas, such as ‘is’, with no built in tense information (p 99). The ‘is’ in the above proposition would contain no tense information about whether Socrates instantiates the property of being seated in the past, present, or future. Crisp does not give any argument for the idea that there are tenseless propositions. The main reason for this lack of argument is his target audience. As he puts it, “My target here is the philosopher who doubts there are fundamental properties like being past, being present, and being future. Such philosophers are not likely to doubt the existence of tenseless propositions” (2007, p 99). Typically it is the eternalist who defends tenseless propositions, while the presentist argues against them. As such, Crisp’s wider position is pitched as a response to those who already accept tenseless propositions. Furthermore, not much hangs on a commitment to tenseless propositions. They fit nicely into the project Crisp has in mind, but even without tenseless propositions we can still have a coherent and effective version of ersatzer presentism with present tensed propositions and some loose guidelines. This is the approach taken by Bourne (2006) which will be explicated further below.

3.2.1 Crisp’s Ersatz Earlier Than Relation
So far, according to the ersatzer picture, we have a definition of times as maximal and consistent classes of tenseless propositions. These classes of propositions, which we should
think of as primitive abstract objects, serve as representations of the world at a temporal moment. The next step is to provide some sort of account as to how these times relate to each other. For this job, Crisp calls in the eternalist’s *earlier than* relation. The eternalist, recall, holds that times are ordered by an *earlier than* relation. Past times and objects do not have any special A-theoretic properties of pastness; instead they are simply part of a series ordered by this relation. Past events and objects on this account are past because they are earlier in the series than present objects or events, which are distinguished as *our* temporal location. So, a temporal series involving the ordered events X, Y, and Z is ordered as such because X is earlier than Y, while Y is earlier than Z.

The ersatz times are ordered in the same way, using an analogous relation to the *earlier than* relation employed by the eternalist. Crisp (2007) writes, “Abstract times, we can suppose, form an ersatz B-series, where an ersatz B-series is a series of abstract times ordered by a primitive *earlier than* relation” (p 102). The relation employed is simply a primitive analogue of the one employed by the eternalist. Just as the eternalist claims that times are ordered by a primitive *earlier than* relation, so too does the ersatzer. The only difference, of course, is that for the ersatzer this relation holds between abstract objects rather than concrete ones. The ordering structure of an abstract ersatz series of times though is the same as a concrete eternalist series. So a time, call it T₁, which contains the proposition ‘Lincoln is president’ is earlier in the series than the time, T₂, which contains the proposition ‘Kennedy is president.’ In other words T₁ bears an *earlier than* relation to T₂.¹⁸

It is a technical notion of the theory that abstract times are ordered by a primitive *earlier than* relation. As Crisp points out, this primitive is no worse than that posited by the

¹⁸ Note, we could also say that T₂ bears a *later than* relation to T₁. All that is needed to generate the ordered series of times, however, is one sort of primitive relation.
eternalist, writing, “Why should my *earlier than* relation be any more dubious than the eternalist’s B-theoretic *earlier than* relation on times, events, and the like? True, my relation links abstract times, hers links concrete times. But why think that is a demerit for my relation?” (2007, p 106). The relation used by the ersatzer presentist is just as primitive as the one used by the eternalist. It just so happens that one links abstract objects while the other links concrete ones. To Crisp, this should not be counted as a cost or objection against the view. Instead it should simply be accepted as a facet of the overall account.

One immediate issue with Crisp’s ersatz series of times, however, is that it seems to violate presentism. Since we have abstract times standing in an *earlier than* relation, we have things that are no longer present. We seem to have a direct conflict with the presentist doctrine against non-present objects. If an abstract time is genuinely *earlier than* the present, then ersatzer presentism fails to even get off the ground. This issue, however, is merely a confusion in terms. Crisp marks a distinction between what he calls present$_1$ and present$_2$ (2007, p 103). When the presentist says everything is present they mean everything is present$_1$. Present$_2$ refers to some specific member of the ersatz series which is picked out as correctly representing the world. Only members of the ersatz series can stand in the appropriate *earlier than* relation. So as Crisp puts it, “all times, no matter how much earlier or later than the present$_2$ time, are present$_1$” (2007, p 103).

This distinction between present$_1$ and present$_2$ is a bit ambiguous. The main issue is with the meaning of present$_1$. On one hand, the present$_1$ seems meant to capture presently existing objects, or what the presentist means when they say everything is present. This definition means that the present$_1$ would exclude ersatz times, as abstract objects do not have temporal location. On the other hand, present$_1$ is meant to encompass all of the ersatz times,
and so seems to stand in for our most unrestricted quantifiers. This confusion can be avoided by offering more precise definitions.

Firstly, the concrete present contains all and only presently existing objects. It is the concrete realization of some ersatz time. Second, there is a sense of the present captured by our most unrestricted quantifiers. This is what Crisp seems to have in mind when he claims that every ersatz time is present (p 103). In order for this quantificational notion to encompass abstract objects, however, it should be construed simply as existence, rather than present existence. The term present\textsubscript{1} is meant to capture these two distinct notions. Finally, there is the ersatz present, which is a certain member of the series of ersatz times. This is what Crisp calls the present\textsubscript{2}. I will use ‘concrete time’ or ‘concrete present’ to refer to the concrete realization of an ersatz time, and ‘ersatz time’ to refer to those abstract objects which can be present\textsubscript{2}, or ersatz present. The second quantificational notion also meant to be captured by the term present\textsubscript{1} will not feature much in what is to follow.

Another worry in this vicinity is simply based on the association of earlier than with temporality. After all, one of the paradigmatic properties of an abstract object is that it has no spatiotemporal location (Rosen 2012). To avoid any ambiguity, and to emphasize the abstract nature of the ersatz series I will refer to the earlier than relation employed by Crisp as an E-relation, which follows the terminology from Bourne (2006). The relation is still analogous to that employed by the eternalist, but this terminology just serves to draw a clear distinction between an eternalist and ersatzer series.

3.2.2 The Ersatz Present and Series Membership
With these issues behind us, we can ask what it is that designates a particular ersatz time as the ersatz present. In other words how is one ersatz time selected as the correct representation
of the world? Crisp (2007) writes, “A time is present \_2 \text{ iff } it is the true time, the time which has the property \textit{being true}” (p 103). The present \_2, recall, is that ersatz time which correctly represents the concrete present and thus contains all true propositions. This ersatz time is selected as true because it must bear some relation, say a makes true relation, to the concrete time which it represents. In other words, one ersatz time is ersatz present because it bears the appropriate relation to the concrete time. Only one ersatz time is selected as the ersatz present, so only one ersatz time stands in a relation to the concrete present. As the concrete present changes, new ersatz times are selected as the ersatz present.

So, we have a series of ersatz times ordered by the \textit{E-relation}. One of these ersatz times is the ersatz present, because it contains all true propositions based on the relation it stands in to the concrete time. One additional worry is that this ordered series of ersatz times does not seem exclusive enough to eliminate maximal and consistent classes of propositions which do not correctly represent the way the world was, is, or will be. For instance, there could be a maximal and consistent class of propositions which contains the proposition ‘Abraham Lincoln is a vampire hunter.’ This of course is a fiction; it doesn’t reflect the actual history of the world. The ersatzer presentist must give some account of why this ersatz time is not a member of the ersatz series. Crisp (2007) holds that there should be only one ersatz B-series, “but that it does not include all abstract times among its members. It counts among its members only \textit{some} of the abstract times - those that did, do or will represent the world” (p 104). The genuine series of ersatz times, then, includes only those members that are correct representations of the concrete time at some point or another.

To Crisp, which ersatz times are members of this ersatz series is simply a brute, contingent fact. He writes, “What abstract times get ‘hooked up’ by the \textit{[E-relation]}, on this
picture, is a contingent matter that varies from possible world to possible world” (2007, p 104). So, only some abstract, ersatz times are ordered by the genuine E-relation. This may seem an implausible, table-thumping type declaration, but it is far less damaging when we consider that the eternalist appears to be in a similar position. When pressed as to why concrete times come ordered as they do, the only genuine recourse for the eternalist, just as for the ersatzer presentist, is to claim that this is where explanation stops. In other words, “It’s a brute, contingent fact, on this view, that concrete times come temporally ordered as they do” (p 104). The eternalist is forced to concede that it is simply a brute fact that times are ordered as they are, and as such it seems far more plausible for the ersatzer presentist to make the same maneuver.

3.2.3 The Ersatz B-Series Response to the Grounding Objection
With this in mind, then, we can finally outline Crisp’s account of how the ersatzer presentist grounds contingent past truths. Recall that the stated goal of Crisp (2007) is to provide a framework in which Lucretian properties become less ontologically objectionable. On this account an ersatz time is past or future if it is earlier or later, respectively, in the series to the present ersatz time (p 105). Crisp elaborates further that, “a proposition \( p \) is past (present, future) iff \( p \) is included in a past (present, future) time, where \( p \) in included in \( t \) iff \( t \) entails \( p \)” (p 105). This definition is slightly unclear as classes do not, strictly speaking, entail anything. We can cash out the definition, however, in the following way. A proposition is past if it is a member of some class of propositions which stand in an E-relation to the class of propositions which correctly represent the concrete time. To say that a proposition is entailed by an ersatz time is to say that, were that ersatz time concretely realized, then that proposition could not fail to be true. Crisp uses this framework of past and future propositions to provide support
for Lucretian properties. On this view then, the “property being an x such that dinosaurs roamed x turns out to be something more like: being an x such that the proposition that ‘dinosaurs roam x’ is included in an earlier time” (p 105). The upshot here is that the Lucretian properties are grounded in the account of ersatz times. On the face of it, these properties are objectionably hypothetical. Once within the framework of ersatz times, however, they become far less objectionable. A contingent past truth, then, is grounded in a presently instantiated property. This property is instantiated because of a relationship between ersatz times and the concrete time.

One immediate problem with this approach arises due to this instantiation of the reformatted Lucretian property. The ersatz present is picked out because it correctly represents the concrete present. All the propositions that make up this ersatz time are true based on this concrete realization. So the ersatz present contains the true proposition ‘The proposition ‘dinosaurs roam x’ is included in an earlier time’ because the concrete present instantiates a property like being an x such that the proposition that ‘dinosaurs roam x’ is included in an earlier time. The issue is that this property implies that the concrete present is standing in a relation to some past ersatz time. For the concrete present to stand in an E-relation to any other objects, would be to accept that there are some non-present objects. In other words, it would be to deny presentism. The key thing to remember here is that we have a distinction between the abstract series of ersatz times and the concrete time. Only one ersatz time stands in any relation to the concrete time, that ersatz time which correctly represents the world and is selected as the ersatz present. The other ersatz times are earlier and later in the series than the ersatz present, but they do not stand in any relation to the concrete time. So, it cannot be the case that such a property can be instantiated on the ersatzer account.
The most straightforward response here is simply to drop any reference to Lucretian properties. Rather than grounding truths in Lucretian properties, which are instantiated via a relationship between the concrete present and ersatz times, the ersatzer should simply ground past truths directly in the ersatz times. The ersatzer presentist account provides all of the resources needed to ground past truths. A past proposition like ‘Abraham Lincoln was president’ is true in virtue of the inclusion of an appropriate proposition in some past ersatz time. Bringing Lucretian properties into the mix is simply redundant.\footnote{I do think that these Lucretian properties could be formulated in an acceptable way by making clear the distinction between truth \textit{simpliciter} and truth-at-a-time. However, without independent reasons for thinking such a formulation is necessary, there is no need to spend time on it in this thesis.} The ersatzer presentist should cut out the Lucretian middle man, and simply ground past truths directly in ersatz times.

So, in effect, the ersatzer presentist has denied the third member of our earlier inconsistent triad: temporal recombination. They have done so by putting into place a framework which gives them the machinery of eternalism without the ontological cost. The concrete past could not be different and the concrete present the same because there is an existent abstract object which correctly represents that concrete past. This implicit denial of temporal recombination is at work in both Crisp (2007) and Bourne (2006). With this in mind, we can move to an explication of Bourne’s account.

\subsection*{3.3 Bourne’s Branching Ersatz Series}

Bourne (2006) begins his account, in a similar fashion to Crisp, by taking a time to be a primitive abstract object constructed from “certain sets of present-tensed propositions” (p 52). Bourne has a particular type of present tensed proposition in mind, which he calls an \textit{unembedded proposition}. Bourne defines an unembedded present tensed proposition as a present
tensed proposition without an embedded tense operator (p 53). Recall, Prior (1968a, 1968c) holds that all propositions are naturally present tensed. A proposition such as ‘Socrates was sitting’ is actually a present tensed proposition such that it is equivalent to *It is now the case that* ‘Socrates was sitting.’ This is an example of an embedded present tensed proposition, since there is a past tense operator embedded within the proposition. To Prior, an ostensibly past, or future, tensed proposition is simply a present tensed proposition with an embedded tense operator. A proposition such as ‘Socrates is sitting’ on the other hand is unembedded in that it is present tensed and contains no past or future tense operators. By limiting the set of propositions to unembedded present tensed propositions we can ensure that a time represents only the instant it is meant to, and does not implicitly encode a representation with built in information about other times.20

Bourne (2006) also takes these sets of propositions to be maximal and consistent, holding that they offer a “complete, maximally specific, description of what is true at that time” (p 54). A time on this account contains more than a set of unembedded propositions though; it also contains a date. So a time is really an ordered pair containing a set of propositions and a date (p 54). The date serves to index each time within the series. Again, this means that the definition of an ersatz time differs in the accounts offered by Bourne and Crisp, but the essential structure of the ersatz series does not change. Despite the differences, both accounts boil down to sets of propositions which are meant to represent how the world was, is, and will be.

20 There are two respects in which Bourne (2006) and Crisp (2007) differ here. For one, Bourne constructs times as sets, whereas Crisp constructs them as classes. In the case of ersatz times, the distinction between sets and classes does not carry much weight beyond terminology; for ease of use I will refer to times as sets of propositions in the remainder of this thesis. The other immediate difference is that Bourne and Crisp construct ersatz times out of different sorts of propositions. Again, this makes little difference beyond terminology. In both cases the key feature is that we have propositions with no built in temporal information regarding other moments of time. These two differences do not change the structure of ersatz times in any significant way.
These pairs, containing a set of propositions and a date, are ordered by an E-relation. Bourne (2006) introduces the relation “in order for the ersatz time series to be structurally similar to a real time series” (p 54). He takes this relation to be a representation of how the real earlier than relation works to order spatiotemporal objects. Even though it is a representation, we can hold that the “properties of the E-relation match whatever we take to be the properties of the genuine earlier than relation” (p 54-55). Note here, we have another difference between the accounts offered in Bourne and Crisp. Crisp (2007) holds that the ersatzer’s E-relation is analogous to the relation used by the eternalist. Bourne (2006) on the other hand holds that the E-relation is a representation of a genuine earlier than relation. Again we have a difference in terminology. What is important here though is not whether the ersatzer relation is analogous to or a representation of the eternalist relation. What is important is that this relation serves to order times, as sets of propositions, in the same way that the eternalist orders concrete times. The ordering structure of an abstract ersatz series of times is the same as a concrete eternalist series. As mentioned earlier, in the remainder of this thesis I will use the term E-relation to refer to both Crisp and Bourne’s relations.

Given these definitions of a time and the E-relation, we have the basic building blocks of Bourne’s ersatz account. The ersatz temporal series is the set of ordered pairs, containing a set of propositions and a date, which are ordered into a series by an E-relation (2006, p 54). This leads to one odd consequence, since “according to ersatzer presentism, times are abstract objects, the present time is not something we inhabit” (2006, p 54). Since Bourne has defined a time as a set of propositions, those occupying the concrete world are not members of a time. Rather, we “inhabit the concrete realization of one, the present time...and ersatzer presentism is the view not that only one time exists but that only one time has a concrete
realization” (p 54). This distinction between a time, i.e. an abstract object, and a concrete realization is similar to the distinction drawn in Crisp (2007) between the present\textsubscript{1} and the present\textsubscript{2}. Keeping in mind that, to Bourne, the concrete present does not technically qualify as a time, I will use ‘ersatz time’ to refer to times, i.e. abstract sets of propositions, and ‘concrete time’, to refer to the concrete realization of an ersatz time in the remainder of this thesis.

3.3.1 Ersatz Times and the Branching Topology
The most distinctive feature of the account offered in Bourne (2006) is that ersatz times are organized into a branching topology. The idea here is that there is a single past branch and many future branches. This can also be described in terms of the $E$-relation. Bourne writes, “the $E$-relation is a one-many relation in the direction from the present to the future...but only a one-one relation in the direction from the present to the past” (p 55). One reason Bourne endorses this topology is that it maintains our everyday attitudes about the past and future. A branching topology “accounts for the platitude that the past is ‘fixed’ and the future is ‘open’” (p 55). This branching topology also makes sense of time’s asymmetric nature. The past and future, at least with regards to our attitudes and beliefs, are distinctly different. Branching time accounts for this asymmetry. Further, it allows the ersatzer presentist to easily differentiate past and future ersatz times. As Bourne puts it, “the branching-structure of times is an obvious way in which presentism can differentiate between past and future” (p 55). Future ersatz times on this view are those in which the $E$-relation is one to many, while past ersatz times are those in which the relation is one to one.

While it may be the case that a branching topology better captures our platitudes about the asymmetry of time and the openness of the future, it is not obvious that branching
is needed to separate the past and future. After all, it seems just as sensible to define past and future in terms of the members of the ersatz series standing in certain relations to the present ersatz time, as in Crisp (2007). Simply claiming that a branching temporal ontology is needed to separate past and future is not enough to motivate adopting such an ontology. Bourne (2006) does offer what seems to me a much stronger reason for adopting this structure, but buries it in a footnote. The idea is that branching time is not a topology that the ersatzer should adopt, but rather one they are forced to adopt. The reason, as Bourne puts it, is that “if we had a linear time, then it would be a mystery why the concrete world would conform to what future times represent as happening” (p 55-56 ft 8). If the ersatz series was linear, then the link between the concrete time and ersatz times would be necessary in a deterministic way. What happens in the concrete present would need to conform, necessarily, to future representations of the concrete present. The ‘openness’ of the future would be lost. If time is branching, however, then there is no need for any such necessary links. The ersatz times which are realized simply represent the world contingently. Since all possible future representations are included in a branching ontology, whatever happens or changes in regards to the concrete time is represented by some ersatz time. With this framework in mind, then, we can move to Bourne’s account of truth and, by extension, an account of how to respond to the grounding objection.

3.3.2 The Branching Response to the Grounding Objection
The program offered in Bourne (2006) for rebutting the grounding objection centers around the distinction between truth simpliciter and truth-at-a-time. These distinctions are originally drawn from Adams (1974), where an analogous distinction is drawn in the case of possible worlds. The distinction is outlined as follows: “Truth simpliciter is an absolute, not time-
relative, notion, whereas truth-at-a-time is time-relative: all propositions at a time are true relative to it, but only those propositions which are true at the present time are true *simpliciter*” (Bourne 2006, p 56). A proposition like ‘Abraham Lincoln is president’ is true relative to an ersatz time. That is, it is included as a member of some non-present ersatz time in the ersatz series, where the present refers to the ersatz time which correctly represents the concrete time. A proposition is true *simpliciter* if it is a member of the present ersatz time. In other words, a proposition is true *simpliciter* if it is a member of the ersatz time which correctly represents the concrete world. Since the ersatz present represents the current state of the world, these propositions are true directly in virtue of the concrete world. The proposition ‘Barack Obama is president’ is true *simpliciter* because it is a member of the present ersatz time, that ersatz time which is concretely realized. In other words, the proposition ‘Barack Obama is president’ is true because Barack Obama is president. The concrete present must bear some relation, again call it a *makes true* relation, to the ersatz present. A final point: to say that a proposition such as ‘Abraham Lincoln is president’ is true-at-a-time is to say that it is a member of an ersatz time, such that, were that ersatz time concretely realized then it could not fail to be true *simpliciter*.

There is, according to Bourne (2006), actually a second way in which a proposition can be true *simpliciter*. A past proposition can also be true *simpliciter* if it is actually *E-related* to the ersatz present. ‘Abraham Lincoln was president’ is true *simpliciter* because the appropriate proposition is a member of a past ersatz time that bears an actual *E-relation* to the ersatz present. Since there is a past ersatz time which contains the unembedded proposition ‘Abraham Lincoln is president’, and this ersatz time bears the appropriate relation to the ersatz present, we can say that the version of this proposition with an embedded tense
operator is true *simpliciter*. The thinking behind this idea is that only one past branch is accessible, because only one past branch represents the actual history of the world. As the ersatz times on this branch represent the world’s actual history we can say that they are true *simpliciter*, in addition to being true-at-a-time.\(^\text{21}\)

This is where dates, which index each ersatz time within the branching series, play a crucial role. Since concrete realization is a contingent matter, the date of an ersatz time ensures that ersatz times are ordered *properly*. The *E-relation* does the ordering but it is the date, which serves as a relational index, that guarantees they are ordered correctly in relation to other ersatz times. Since an ersatz time on Bourne’s picture is the ordered pair of a set of propositions and a date, the date ensures that all ersatz times are indexed properly amongst the plurality of ersatz times. While it is a contingent matter which ersatz time is concretely realized, it is necessary that the realization follows the ordering of dates. This guarantees that the realization of specific ersatz times, while contingent, maintain the truth value links between ersatz times. A truth value link, roughly defined, is the linkage which maintains truth values across times. So, if some proposition \(p\) is true at \(T_1\), it must be the case that at all times later than \(T_1\) it is still true that \(p\) was true at \(T_1\) (2006, p 41).

With this structure in mind we can see how the branching ersatzter presentist responds to the grounding objection. The truth of a past proposition such as ‘Abraham Lincoln was president’ is grounded in an ersatz time which bears an actual *E-relation* to the ersatz present. The ersatz present is that ersatz time which is true *simpliciter* because it is selected as correctly representing the concrete time. Since this past proposition is grounded in an ersatz time

\(^\text{21}\) On this account, a future proposition could be true *simpliciter* if it is included on all future branches. Since it is included on all branches, it could not fail to be concretely realized. This is an unnecessary complication for the current discussion.
which contains the appropriate unembedded proposition, it is also true *simpliciter*. So, on this account, the truth of past propositions is grounded in the relations between abstract objects. Again, we have a denial of the temporal recombination principle. The concrete present could not be as it is and the concrete past different because of the relations between existing ersatz times.

One issue with this account is that it faces the same problem of incorrect representations as Crisp’s account does. We could have a maximal and consistent set of propositions that does not match the history of the world because, say, it contains propositions about Lincoln the vampire hunter. A nice feature of the branching ersatz picture is that the response to this problem is rather straightforward. Say we have two ersatz times, one correctly represents the past history of the world and contains the proposition ‘Abraham Lincoln is president.’ The second does not represent the past history of the world and contains the proposition ‘Abraham Lincoln is a vampire hunter.’ The difference between these two ersatz times is that only the presidential time bears an actual E-*relation* to the ersatz present. While the vampire hunter time could stand in E-*relations* to other sets of propositions, it cannot ground the truth *simpliciter* of any past propositions because it is not actually E-*related* to the ersatz present.

It is the term ‘actual’ that is doing the work here, as Bourne notes, “the ‘actual’ here is not superfluous: it has a technical use” (2006, p 57). Bourne defines the term in the following way: “When I use the phrase actually ‘E-related’ I mean that there is a time which is E-related to the time that is true *simpliciter*, i.e. that is actually concretely realized” (p 57). Since only one past branch is accessible from the ersatz present, it follows that this accessible branch represents the actual history of the world. So, the ersatz times which are actually E-*related* to
the ersatz present are simply those past ersatz times which are accessible. By accessible here we mean bearing an \textit{E-relation} to the ersatz present. Recall, that this relation is one to one in the direction of past to present, or vice versa.

This leaves us with one more piece of machinery to install before having a complete overview of Bourne’s ersatz account. One worry Bourne considers, given the definition of actually \textit{E-related}, is how we can make sure that we have the appropriate truth value links between members of the ersatz series. We want to make sure that only one past ersatz branch is accessible, and eliminate other branches with similar ersatz times. For instance, say that the ersatz present is $T_3$ and that it was preceded by an ersatz series going back to $T_0$. When talking about the truth of a proposition at $T_2$ on this series, there is no difference in truth value links between the actual ersatz series and the ersatz series which begins with $T_{0*}$, an ersatz time which does not correctly represent the actual history of the world. What is needed is some sort of accessibility relation which eliminates these impostors. Bourne (2006) suggests that the easiest way to accomplish this task is to make an ersatz time an ordered triple, where the new member is a positional element. For a specific ersatz time this positional information “can be achieved simply by including the last time realized as the third element” (p 64). Ersatz times would then be governed by an accessibility relation, such that $T_2$ is accessible from $T_3$ iff $T_2$ is a member of the ordered triple that makes up $T_3$ (2006, p 64). This relation guarantees that only one series is accessible from the ersatz present. So, an ersatz time which contains the proposition ‘Abraham Lincoln is a vampire hunter’ is not accessible from the ersatz present, and thus cannot be true \textit{simpliciter}. This explains how inaccurate representations of the past are excluded from the genuine ersatz series.
There is a problem, however, with the accessibility relation, specifically what it means to say that an ersatz time was concretely realized. T₂ contains the positional feature that T₁ was the previous ersatz time to be concretely realized. To say that T₁ is accessible and actually E-related to T₂ is to say that T₁ was concretely realized. This is a claim about the past, however, and claims about the past must be grounded in ersatz times. So, in order for the claim to be true, on the ersatz account, there must be a proposition such as ‘T₁ is concretely realized’ included in some past ersatz time. This proposition is true-at-that time, such that were that ersatz time realized the proposition could not fail to be true simpliciter. There is, of course, an ersatz time which includes this proposition: it is T₁. This is not helpful though, because every ersatz time will include a proposition such as ‘Tₓ is concretely realized.’ All we have done is enter an explanatory circle. T₁ having been concretely realized is meant to differentiate the actual ersatz series. In order to make the claim that T₁ was concretely realized is true simpliciter, however, we need to make reference to the actual ersatz series. This means that there is no good reason for supposing at T₂ that T₁, which correctly represents the past, rather than T₁*, which does not correctly represent the past, was the previous ersatz time realized. The problem here is that the claim ‘T₁ was concretely realized’ is a claim about the past. On the ersatzer account any claim about the past is grounded in ersatz times. A claim about some ersatz time being concretely realized, then, cannot serve as an independent determination of the actual ersatz series.

To summarize, Bourne (2006) eliminates ersatz times which do not correctly represent the past by holding that they cannot be true simpliciter since they are not actually E-related to the ersatz present. The ersatz times which are actually E-related to the ersatz present are distinguished by an accessibility relation; only one ersatz branch of the topology is accessible.
This accessibility relation, however, is determined by the claim that certain ersatz times were concretely realized. Since the claim that an ersatz time was concretely realized is just a claim about a certain proposition being contained in a certain ersatz time, we are no closer to discovering why this privileged actual series is true simpliciter.

3.3.3 Ersatzer Presentism Restated
Trying to separate the ersatz times that actually represent the past, is going to take more than simply insisting that some ersatz times were concretely realized. Crisp (2007) initially flirts with the insistence that some ersatz times just were concretely realized, but backs out and instead relies on the insistence that it is a brute, contingent fact that a certain ersatz series represents the actual history of the world (p 104). Only certain ersatz times are ‘hooked up’ to the ersatz series via the appropriate E-relation. We are simply to take it as a primitive that certain ersatz times are members of the ordered abstract series while other are not. So the ersatz time with the proposition ‘Lincoln is president’ is a member of the series, while the ersatz time with the proposition ‘Lincoln is a vampire hunter’ is not.

This gives us a solution, but it does so by resorting to a primitive. To Crisp (2007) this primitive is not problematic at all, as he holds that the concrete eternalist is faced with the same sort of questions. It is simply a brute, contingent fact for both the eternalist and the ersatzer presentist that times come ordered as they do (2007, p 104). One consequence of this approach is that it makes the branching topology defended in Bourne (2006) completely unnecessary. If it is a primitive fact that some ersatz times are ordered by the appropriate E-relation while others are not, then we should simply limit ourselves to a linear structure. Since it is already a primitive, brute fact which ersatz times are members of the series, then there is no need to postulate future temporal branches. The E-relation would be one to one in the
direction of the past and future. This also means that we are forced to postulate a necessary connection between the series of ersatz times and the concrete realization. It is no longer a contingent matter which future ersatz times are realized. Instead, the concrete realization of future ersatz times must be deterministic. This cost comes, however, at the significant benefit of saving the ersatzer presentist account as a whole. Without adopting this primitively ordered linear structure, ersatzer presentism cannot separate those ersatz times that actually represent the way the world was, is, and will be. The distinction between truth simpliciter and truth-at-a-time, though, is still a concept worth maintaining. Propositions included in ersatz times that are members of the genuine ersatz series are true simpliciter. Those propositions included in ersatz times which are not part of this genuine series are simply true-at-a-time.

In summation then, the ersatzer presentist holds that an ersatz time is a maximal and consistent set of propositions. These ersatz times are ordered by an $E$-relation, analogous to the ordering relation used by the eternalist. One of these ersatz times is true simpliciter, as it is concretely realized. It correctly represents the concrete time, and so is selected by a makes true relation. Past propositions such as ‘Abraham Lincoln was president’ are true if the appropriate proposition, i.e. ‘Abraham Lincoln is president’, is a member of some ersatz time earlier in the series than the ersatz present. Finally, the topology of time is linear as it is a primitive fact that only certain ersatz times are members of the genuine ersatz series. This is the formulation of ersatzer presentism that I will refer to for the remainder of this thesis. With this in mind, I will consider some existing criticisms of ersatzer presentism in the final section of this chapter. I will urge the ersatzer to rely on the analogy to modality as a principled response to these objections.
3.4 Ersatzer Presentism and Appropriate Explanation

A central criticism of ersatzer presentism is the appropriate explanation objection presented in Sanson and Caplan (2010), and outlined in section 2.4.4. The challenge for the ersatzer, according to this objection, is more than simply providing a supervenience base. Whatever a truth is grounded in must be an appropriate explanation for that truth. This criticism can be put in more explicitly ersatzer terms. Take the E-relation that holds between ersatz times. For instance, T_Y is an ersatz time which represents yesterday, while T_N represents today, or ‘now’.

As Sanson and Caplan (2010) put it, “It seems to us that T_Y bears the being earlier than relation to T_N because the latter represents how thing are now, the former represents how things were yesterday, and yesterday was before today” (p 33). The proper explanation for why T_Y is earlier in the series than T_N is because the concrete time which T_Y represents is earlier than the concrete time represented by T_N. If this is the case then we cannot give an account of the explanatory power of ersatzer presentism without implicitly relying on concrete times. A past tensed proposition points to “facts about properties...once instantiated, not to facts about abstract times standing in a being earlier than relation” (p 35). The ersatz times postulated by the ersatzer presentist may provide a supervenience base. Unfortunately, these ersatz times fail to provide appropriate explanation. Since proper explanation is a key feature of grounding truths, especially with regards to past propositions, this is a good reason to reject ersatzer presentism.

The appropriate explanation objection to ersatzer presentism relies almost entirely on a powerful intuition about the truth of past propositions. This intuition, as Sanson and Caplan (2010) note, leads to what seems to be a disanalogy between modal and temporal cases. On an actualist account of modality, the possible can be treated in terms of actual
modal properties or abstract worlds without a conflicting intuition about appropriate grounding. Sanson and Caplan put this difference down to the nature of the past, writing, “the past, having happened, is able to assert its independence from the present in a way that the merely possible is not able to assert its independence from the actual” (2010, p 37). This passage, I think, opens the door for a plausible ersatzer response. The ersatzer presentist in my view should simply deny the intuition about appropriate explanation in the temporal case by doubling down on the modal analogy. The ersatzer presentist should hold that temporal reality must treat the present as fundamental and understand the past and future in terms of presently existing ersatz times.

An analogous position is developed in Adams (1974) regarding possible worlds. In picking out the actual world, according to Adams, we can adopt either a possibilist or actualist framework. Adams writes:

Theories...which I call possibilist...begin with the whole system of possible worlds and see the actual world first as a possible world, a member of that system. I propose to begin, instead, with the actual world, to treat talk about the system of possible worlds as a way of talking about a proper part of the actual world (p 224).

Adams holds that we need to adopt an actualist framework which does not presuppose the independence of possible worlds from the actual world. In other words, the actualist should not start with the whole plurality of possible worlds and then try to pick out the actual world. Interestingly, Adams actually defends a modal position directly parallel to ersatzer presentism, constructing worlds as sets of propositions. The ersatzer presentist should approach times in a similar way, and insist on a presentist framework for times. The present is fundamental, and other times have no independence to assert. If time is structurally equivalent to modality, and the appropriate explanation requirement does not apply in the case of modality, then the presentist can reject the explanatory criteria in the same way that the actualist rejects the
possibilist framework. The actualist should reject any account of modal truths that requires grounding independent of actual objects. Similarly, the ersatzer presentist should reject any account of past truths that requires grounding in objects or events independent of the present.

If we take the analogy between modality and time seriously, we have a principled reason to reject the appropriate explanation objection to ersatzer presentism. If time is fundamentally like modality, then there is no reason to suppose that any non-present times are needed for the proper explanation of past truths. A cost of this maneuver is that we seem to be denying a powerful intuition about the truth of past propositions. A strength is that this denial is made from an existing commitment to the shared structure of time and modality. Further, this allows the ersatzer to maintain that, by their own lights, they are providing a proper explanation of past truths. The ersatzer presentist account relies on a close analogy between time and modality. This commitment allows the ersatzer presentist to deny the objection from appropriate explanation.

Now, whether this is a good response or not is unclear, as the intuition of appropriate explanation is certainly very powerful in the temporal case. Perhaps the strength of the temporal intuition does in fact provide an important disanalogy between time and modality. However, simply pointing to a difference in our intuitions about two realms of discourse is not enough to fully demonstrate a disanalogy. Even if we accept this intuitive difference, there are still good reasons to accept the analogy. After all, noting the intuitive differences between time and space is certainly not enough to demonstrate a distinction which makes a difference. Leaning on the modal analogy gives the ersatzer presentist, at the very least, a plausible
response to the appropriate explanation objection. While it might not be very satisfying to the proponents of the objection, it does seem to get the job done for the ersatzer presentist.

Another concern, differing versions of which are raised in Rhoda (2009) and Mozersky (2011), is that the ersatz times do not provide an account of past ersatz times being concretely realized. Mozersky writes, “there is nothing to ground the truth that what once was present was once concrete” (p 134). Rhoda fleshes out this concern in terms of a ‘trace’ of the past. Ersatz times do not seem to be a result of the past objects to which they refer (p 51-52). What is really important is not giving some presently existing proxy for a past object, but some account of that past object and its relation to that proxy. The ersatzer presentist may have grounded past propositions, but they have given no account of the past having existed. Again, if we adopt the presentist version of the actualist approach presented in Adams (1974), then there is an easy response to this sort of problem. It is not true now, at the concrete present, that some past time is concrete. However, it was true at that past time that it is concrete. There is a proposition to ground that. For instance, the past ersatz time $T_1$ contains the proposition ‘$T_1$ is concretely realized.’ This grounds the past truth that $T_1$ was concretely realized. For the present to contain a ‘trace’ of the past just is for a certain proposition to be contained in a past ersatz time. Since the membership of the genuine ersatz series is a brute fact, we have no need to worry about other ersatz times which contain similar propositions. Assuming that more needs to be said is to deny the presentist framework which the ersatzer presentist has adopted. By doubling down on the modal analogy, the ersatzer presentist can, by their own lights, successfully respond to objections.

This doubling down points to an advantage of ersatzer presentism over other versions of presentism. As ersatzer presentism employs abstract objects in an analogous manner to the
actualist, they open up a realm of responses to objections not typically available to presentism. This close reliance on the analogy to modality, however, opens up ersatzer presentism to a new realm of objections, those drawn from the modal debate. It is this type of objection that is the focus of the next chapter.
4. The Limits of the Modal Analogy

4.1 Introduction
Ersatzer presentism responds to the grounding objection by positing an ordered series of abstract times that can serve as the supervenience base for past, and future, truths. The ersatzer presentist has a taken a move from the actualist playbook, using abstract times in the same way that the actualist employs abstract worlds. This fits the notion that time and modality share the same fundamental structure. Since they share a parallel structure, an argument made in the modal realm should have a structural analogue in the temporal realm. The ersatzer presentist, as I argued in the previous chapter, should take the analogy to modality as a fundamental tenet of their view.

This is interesting in that it also opens a new realm of criticism for ersatzer presentism. If the analogy between time and modality is as strong as advertised, then we should be able to formulate objections with parallel structure to particular modal and temporal views. In the case of ersatzer presentism we have a directly parallel modal view, a particular type of actualist realism about possible worlds. We also have a comprehensive objection brought by Lewis (1986) against this modal counterpart of ersatzer presentism. This objection can be formatted to also apply to ersatzer presentism.

In this chapter I will use this reformatted argument to show that ersatzer presentism is ultimately untenable as an account of time. First I will argue that ersatzer presentism is best seen as an analogue to a particular species of actualist realism about possible worlds, the view dubbed magical ersatzism in Lewis (1986). Then, I will outline the argument from Lewis (1986) against this magical ersatzism. Lewis’ argument can be reformatted against ersatzer presentism. This repurposed argument shows that ersatzer presentism cannot distinguish
between a genuine abstract series that accurately represents the past, and an inaccurate abstract series which does not correctly represent the past. This makes ersatzer presentism untenable as an account of time. The success of this analogous argument is interesting, as it could point to an important disanalogy between time and modality. The chapter ends with a consideration of the implications this distinction has for the analogy between time and modality. Specifically, I will argue that the failure of ersatzer presentism gives us reason to believe that temporal ordering relations are ontologically distinct from modal relations.

4.2 The Magical Presentist

Lewis (1986) famously argues for the thesis that the full benefit of possible worlds requires concrete modal realism. This concrete modal realism is to modality what eternalism is to time. The eternalist, after all, argues that to get the full benefit of temporal talk we must pay the price of concrete realism about other times. A key feature of support for this concrete modal realism is that actualist ersatz accounts of possible worlds fail to adequately represent the full range of possibility. One such view is magical ersatzism, which holds that possible worlds are abstract objects that primitively represent the world. Lewis argues that these magical ersatzers cannot even classify the relations used on their view without the position collapsing into mystery (1986, p 174-191).

This argument against magic ersatzism is particularly interesting because it is a modal position directly parallel to ersatzer presentism. The general approach of this argument can be used to show that the ersatzer presentist is unable to give an adequate account of how an ersatz series represents the history of the world. In this section I will first show that ersatzer presentism is best categorized as an analogue of magical ersatzism. Then I will give an
4.2.1 The Ersatzer Presentist as Magician
The ersatz realist about possible worlds proposes some type of abstract entity that plays the role of concrete possible worlds. Rather than argue against specific versions of this realism, Lewis (1986) distinguishes three general forms of ersatz realism based on their method of representation. The first of these is *Linguistic Ersatzism*, which proposes that an ersatz world is a set-theoretic construction of sentences that represent in the same way that a sentence represents (Lewis 1986, p 142). A world on this view is a maximal and consistent set of sentences. For instance, a world would represent a Nixon monarchy by containing a sentence such as ‘The United States is ruled by a Nixon monarchy.’ *Pictorial Ersatzism*, the second form of ersatzism, proposes a plurality of abstract objects which represent genuine concrete worlds in the same manner that a picture represents the world. This type of representation is an isomorphism. The abstract worlds are composed of parts which represent the parts of genuine concrete worlds (Lewis 1986, p 166). Finally, magical ersatzism is defined simply by its difference from the other two accounts of representation. Representation on this account is just a primitive relation between some abstract object and the concrete world. The magical ersatzer proposes abstract objects which simply do represent the world (Lewis 1986, p 174). The primitiveness of the representation relation makes magical ersatzism markedly different from the other two ersatzer programs. The name also makes quite clear that Lewis does not care much for this approach.

First things first: ersatzer presentism is not analogous to pictorial ersatzism. The sets of propositions employed by the ersatzer presentist do not represent in the same way as a
picture. There are points of similarity, however, between ersatzer presentism and both magical and linguistic ersatzism. On one hand, ersatzer presentism has a set-theoretic structure which seems to be a hallmark of linguistic ersatzism. On the other, the presentist employs a type of abstract object, propositions, which can be characteristic of magical ersatzism.

There are a number of reasons why the ersatzer presentist should be considered an analogue of the magical ersatzer. For one, Bourne (2006) explicitly acknowledges that the brand of representation employed on his view is the type of representation labelled ‘magic’ by Lewis (Bourne 2006, p 52-53 ft 6). Bourne, of course, rejects the charges that this representation is suspicious. A related point is that of all of the available species of actualist realism about worlds, ersatzer presentism is most closely analogous to the position defended in Adams (1974). Both views advocate constructing times and worlds, respectively, out of sets of propositions. Further, Adams is insistent that these sets of propositions should not be conceived of as representing linguistically (p 228). The position presented in Adams (1974) is probably best classed as a sort of magical ersatzism, as in Weatherson (2010). Even Divers (2002), who initially classifies the view proposed by Adams (1974) as in the linguistic vein, holds that if we take propositions as primitive abstract objects then the view is better classified as a sort of magical ersatzism (p 286). Finally, Meyer (2011) points out a number of differences between taking abstract times as sets of sentences or propositions. One of the main distinctions is based on “whether there are reasons to think that there is a language-independent fact about how many times there are” (p 53). The ersatzer presentist is committed to this language independence, just as the magical ersatzer is committed to the language independence of their ersatz worlds.
One worry with this characterization of the ersatzer presentist as a temporal magician is that the view relies on abstract objects which have an inner structure. In presenting magical ersatzism, Lewis (1986) holds that it explicitly rejects such a structural account. In giving a general definition of magical ersatzism he writes, “Let us suppose, then, that ersatz worlds have no relevant inner structure...They are not sets, so they have no members. They are mereologically atomic, so they have no proper parts. They are simples” (p 174). A strict prohibition on sets, such as what is outlined here, would obviously run counter to my characterization. Taking this prohibition strictly at face value, though, is to miss the point of Lewis’ characterization of the magical ersatzer. ‘Magician’ is a catch all term that refers to proponents of ersatz views which deploy a primitive representational relation between some type of abstract object and the concrete world. A true ersatz magician would deploy objects with no structure whatsoever. As Lewis (1986) acknowledges, however, there are no this-worldly magicians (p 182-183). Instead there are those who hold that possible worlds are some sort of maximal abstract objects, but give those abstract objects some sort of inner structure. They are non-descript ersatzers who are not explicit in the magic they practice. This is the case with Lewis’ characterization of Prior and Fine (1977) for instance (1986, p 183). The key is that the method of representation by which the selected abstract object represents the world is unexplained. This is precisely what we have in the case of ersatzer presentism. The ersatz present does not represent via some everyday notion of representation, such as how a picture represents. Rather, it represents the instantaneous state of the world by containing all true propositions. This is not mysterious but it also does not qualify as the more familiar types of representation deployed by linguistic or pictorial
ersatzism. For these reasons, I think ersatzer presentism is best thought of as a temporal analogue to magical ersatzism.22

4.2.2 David Lewis vs The Magicians

Lewis (1986) presents arguments against the magical ersatzer which focus on representation. He aims to show that no matter how we slice it, the representation of possibilities on the magic ersatzer account turns out to be perversely mysterious and magical. The magical ersatzer employs a plurality of abstract simples. Lewis writes, “ersatz worlds...are distinguished members of a broader class of abstract simples...I shall call them simply elements” (1986, p 174). These elements, whichever type of abstract object they might be, represent non-actual possibilities. One of these abstract objects is distinguished, as it correctly represents the concrete world. Thus, it is selected by the concrete world. Lewis elaborates, “the selection of elements depends on the concrete world, we may take it as a binary relation that the concrete world bears to whichever elements it selects” (1986, p 174-175). The terms ‘element’ and ‘selection’ are used in an effort of neutrality. On one hand, Lewis wants his argument to range across a broad spectrum of modal views and uses catch all terms. On the other, he wants to explicitly draw out the mystery inherent in the position. Using less neutral and more familiar terms, such as ‘states of affairs’ and ‘obtaining’ could make the point he is drawing less explicit.

The main thrust of Lewis’ objection comes from a straightforward question. He writes, “I want to know more about the relation whereby the concrete world ‘selects’ some

22 While I think that my characterization of ersatzer presentism as analogous to magical ersatzism is correct, one could still maintain that ersatzer presentism is more analogous to linguistic ersatzism. Not much hangs on this difference though, because the argument I will present against ersatzer presentism can, with some minor modifications, apply just as well to the ersatzer presentist who maintains that their view is akin to linguistic ersatzism.
elements...I ask: is selection an internal or an external relation?” (1986, p 176). This request is a subtle one. Lewis is not asking the ersatzer to define or explain the primitive selection relation they are employing. Instead, he is asking for a simple classification of the relation. As he puts it, “I am not demanding definition, only classification” (1986, p 176). A relation is internal when it holds because of the intrinsic natures of the related entities. The paradigm example is a similarity relation. A similarity relation between X and Y holds because of the intrinsic properties of the two relata. Any object with the same intrinsic properties as X would necessarily stand in this same relation to Y, and vice versa. We could also describe an internal relation as holding solely because of the two relata. A similarity relation between X and Y holds independent of any other relations that the objects stand in. An external relation on the other hand does not depend on the intrinsic natures of the related entities. That an external relation holds between two objects “is determined not by the intrinsic natures of the relata taken separately, but only by the intrinsic nature of the composite” (Lewis 1986, p 176). An external relation holds between two objects independent of their intrinsic properties. So, if X and Y stand in a certain external relation, it is not the case that an object which had the same intrinsic properties as X would necessarily stand in that relation to Y. The paradigm example of an external relation is a distance relation. If X stands in a distance relation of, say, 1 meter to Y, then it is not the case that an intrinsic duplicate of X necessarily stands in the same relation to Y. My desk is 1 meter from the office window. An intrinsic duplicate of my desk is not necessarily 1 meter from the window.23

---

23 This assumes that spatial location is not an intrinsic property. See Bricker (1993) for discussion of intrinsically and distance relations.
4.2.3 Selection as Internal
Lewis (1986) argues that regardless of how we classify the selection relation employed by the magical ersatzer, the view is ultimately untenable. Suppose that the selection relation is internal. It holds in virtue of some intrinsic properties of the selected element and the concrete world. Since the concrete world picks out one correct representation, that means “there is one element which, in virtue of its distinctive intrinsic nature, necessarily will be selected” (Lewis 1986, p 177). There is some element which is selected because of its distinctive intrinsic nature. This intrinsic nature matches that of the concrete world, in the sense that it correctly represents the concrete world. This actually tells us quite a bit about the elements involved. As Lewis writes, “there is a great deal of difference among [the elements]. The intrinsic natures available to them must be rich enough to permit enormous variation” (1986, p 177). In the plurality of elements, which are abstract simples, we must have enough variation for one of those elements to be selected. Since this selection is internal, the variation must be due to differences in the intrinsic properties of the elements.

This leads to a further question: what exactly are these variant intrinsic properties? We have a vast mosaic of abstract simples which represent the concrete world. One of those is selected in virtue of its intrinsic properties. It is fair to inquire here as to what the supposed differences between these abstract objects comes down to. The magical ersatzer could claim that the differences are down to representational properties. A certain element is selected, rather than other elements, because it has the correct representational property. If the concrete world contained a flying pig, then it would select an element which had a distinctive intrinsic property. This property is that of ‘representing a flying pig’ (Lewis 1986, p 178). This has not told us anything though. As Lewis puts it “The property that plays the role is: the property that plays the role. It is no use telling me by name what property it is, if it bears that name
exactly because it plays that role” (1986, p 178). Different elements are selected because they have different representational properties. The magical ersatzer has told us nothing about what these properties are, or how they work. Instead they have simply claimed that an internal relation holds in virtue of *some* property. There is no story about what type of property this might be, or how we could even have an acquaintance with this sort of internal relation. As Melia (2003) puts it, “we have no grasp on the properties that [the elements] have by which they do their representational work” (p 145).

This epistemological worry points to a deeper implausibility. Our grasp of an internal relation relies on some acquaintance with the intrinsic properties being related. For example, to have a grasp of the internal relation *larger than* we need an understanding of the property of *size* (Melia 2003, p 145). In the case of the magical ersatzer’s internal relation however, “the great majority of the ‘representational properties’ must lie entirely outside our acquaintance. Then it is a mystery how anyone could have understood the predicate ‘selects’” (Lewis 1986, p 178). This leaves us with an internal relation that is completely mysterious. If the selection relation is internal, then our grasp of it is completely different than any other internal relation. It is not just that the intrinsic properties employed by the magical ersatzer are beyond understanding, it is that some understanding of the intrinsic properties involved is necessary for us to grasp an internal relation. Supposing that the relation is internal means that “if the ersatzer has understood his own primitive, he must have done it by magic” (Lewis 1986, p 178). This is an epistemological worry that gives us good reason to suppose that the selection relation itself is not internal. Our understanding of internal relations depends on an acquaintance with the intrinsic properties involved. In the case of internal selection we have no ability to grasp the intrinsic representational properties
involved, and thus no way to grasp the relation of selection. Since, for the magical ersatzer, we do have an understanding of the selection relation, this relation cannot be internal.

4.2.4 Selection as External
This means that the representation relation must be external. The selection of a particular element is independent of any intrinsic properties of the element and concrete world. This eliminates the problematic ‘representational properties’ which made the internal relation so mysterious. We are left with a plurality of elements distinguished only by “their place in a relational system” (Lewis 1986, p 179). The problem in this case is not with some aspect of the selected elements, but with the external selection relation itself. Lewis (1986) has two criticisms to this effect. First of all, Lewis wonders how the ersatzer could possibly understand the use of this primitive external relation. As he writes, “So far as we are told, selection is not any external relation that is ever instantiated entirely within the concrete world...I wonder how such a relation ever can come within the reach of our thought and language” (1986, p 179). I can understand a distance relation because I am familiar with its instantiation in the concrete world. An external selection relation is never instantiated in the concrete world, which makes Lewis suspicious that we can make sense of such a relation.

This is similar to the criticism Lewis leveled at the internal conception of the selection relation, but here it packs much less punch. To grasp an internal relation requires an understanding of the intrinsic properties being related. This understanding of the relata is not needed in the case of an external relation. I can understand an external distance relation holding between two objects even if I have no grasp of the nature of one of the relata. There does not seem to be a good reason to be suspicious of this external relation. Further, as van Inwagen (1986) argues, these external relations are exactly the type of relations we make
sense of when it comes to set membership, and set membership is not something instantiated in the concrete world. If Lewis is right, then we cannot understand set membership. This functions as an especially effective *tu quoque*, as Lewis depends on a set-theoretical account for many aspects of his ontology, for instance, properties and propositions (Lewis 1986, p 50-69).

As van Inwagen mildly puts it, “That we do not understand set-membership entails that we do not understand much of classical mathematics, a hard conclusion to accept” (1986, p 210). The fact that the suspicion raised by Lewis entails such an unexpected and hefty cost is another good reason to believe that it is unfounded.24

The second problem Lewis focuses on is that the ersatzer depends on a magical sort of necessity. The selection relation employed by the ersatzer must be necessary. If an element represents a flying pig, and the concrete world contains a flying pig then, necessarily, that element is selected by the concrete world. It is this necessity that Lewis finds so objectionable. As he puts it, “What makes a relation external, I would have thought, exactly is that it holds independently of the natures of the two *relata*...But now we want the relation not to be independent of what goes on within the concrete world. How can we have it both ways?” (1986, p 180). The necessity involved is suspicious because it seems to conflict directly with the position that the selection relation is external. An external relation is meant to hold independently of the intrinsic natures of the related entities. In this case, however, the relation holds necessarily, and this necessity seems dependent on the goings on of the concrete world. In other words, this necessity means that the selection relation seems to function as an internal relation, dependent on the intrinsic natures of the relata, even though

24 This first criticism could also be construed as a case of epistemic double standards. Lewis has problems of his own in accounting for epistemological access to concrete objects which are spatiotemporally isolated from our world, see Lewis (1986, 108-115). It is unclear to me why Lewis sees our understanding of an external relation not instantiated entirely within the concrete world as *more* problematic than knowledge of concrete worlds spatiotemporally cut off from our own.
we are meant to take the relation as external. Either we no longer have a genuine external relation, or the necessity employed is somehow magical in a way that allows the relation to remain external. Either way, the selection relation is objectionable.

One possible response to Lewis’ argument is to hold that an external relation does not in itself preclude necessity. As Melia (2003) points out, a “necessary connection is not forbidden by the definition of ‘external’” (p 148). In order for Lewis’ argument to gain traction, the externality of the selection relation must be incompatible with the necessity needed by the magical ersatzer. However, we can make sense of external relations which also hold necessarily. For instance, say a room contains two jacket hooks 5 meters apart. Any two jackets on the respective hooks necessarily stand in a certain external relation, independent of any of the jackets’ intrinsic properties. Instead, they stand in such a relation because of their identity as the jackets currently hanging on the two hooks (p 148). The externality of the relation between the two jackets does not preclude that relation holding necessarily. Melia writes, “We might say that the fact that a relation is external tells us something about what qualitative possibilities there are...but that does not conflict with a view about what is impossible or otherwise for certain individuals” (2003, p 148-149). The problem with this account is that it means every relation is necessary in a weak and uninteresting sort of way. Claiming that any object which is 1 meter from another object is necessarily 1 meter from that object is practically a tautology. Furthermore, this is not the sort of necessity independent of external relations needed to show that Lewis’ criticism fails. Lewis explicitly states that the necessity he is suspicious of in the case of magical ersatzism is qualitative in nature (1991, p 38). The necessity at work in the case of the selection relation seems to be a result of the qualitative nature of the related entities, rather than mere identity. To show that
the necessary, external relation is not in itself suspicious, one needs to show that a relation can remain external while also being somewhat dependent on the qualitative properties of the relata.

A more effective rebuttal against this aspect of Lewis’ argument functions as another feature of the *tu quoque* offered by van Inwagen (1986). If set membership is an external relation, then how are we to explain the necessity of that relation? As van Inwagen, channeling Lewis, puts it, “Necessarily, if Tom and Tim exist, they belong to \{Tom, Tim\}. I ask: how can these connections be necessary? It seems to be one fact that Tom exists and another that he enters into a certain external relation with this set and not with that” (p 210). The idea here is that set membership seems to give us another instance of a necessary, external relation. Given the arguments from Lewis (1986) we should reject this relation as magical. This amounts to a rejection of set-theory, a bad consequence. This consequence, again, is especially problematic for Lewis as sets are a central tool for his own ontological project. Lewis (1991, p 35-38) actually concedes that the *tu quoque* is an effective one, and that his argument amounts to a rejection of necessary, external relations in the case of both worlds and sets. However, he does have a response in the cases of sets which relies on his conception of possible worlds. In essence, due to his conception of possible worlds, Lewis can offer a response which turns on a necessity not tied to qualitative properties. The cost of this is accepting concrete modal realism, however.

The dialectical situation here is a little odd. Lewis accused the magical ersatzer of employing a gerrymandered external relation which functioned suspiciously like an internal relation. The magical ersatzer, such as van Inwagen, pointed out that this type of relation is not at all uncommon and is needed to make sense of set membership. Lewis responds by
giving an account of set membership which employs a notion of necessity not reliant on qualitative properties. This account relies on an acceptance of modal realism. The issue is that one of the reasons for accepting concrete modal realism is that the benefits cannot be had cheaper elsewhere; they cannot be had by any ersatz accounts of worlds. However, it appears the only cost to accepting a magical ersatzer account is a necessary, external relation, a relation we already seem to make sense of in the case of set-membership. In effect, we have a stalemate. The magical ersatzer has the cost of accepting suspicious necessary, external relations, with the benefit of maintaining a modal selection relation as well as an account of set-membership. Lewis on the other hand also has the benefit of accounting for set membership, but with the cost of accepting concrete modal realism. Lewis (1991) writes, “In the case of abstract simple possibilities, escape can be had by accepting the doctrine of plurality of worlds. That’s much easier to understand, though not very easy to believe. This time, say I, the price is right” (p 36). The price for the actualist, however, is certainly not worth it. In order for the argument to be wholly successful we would need further reason to the effect that a necessary, external relation is problematic.

Lewis (1986) aimed to show that the selection relation employed by the magical ersatzer was objectionable. As it turns out, the magical ersatzer can hold onto an external selection relation for principled reasons. It is acceptable for the relation by which the concrete world selects an element to be necessary, primitive, and external. Despite this failure, the general approach outlined by Lewis is a good one. Since we can account for how internal and external relations function, we can gain insight into the function of the selection relation via classification.

25 The magical ersatzer also must accept a primitive notion of modality, a cost that Lewis points out for every ersatzer account. I will leave this aside, however.
It is this general approach that I will apply to ersatzer presentism. Start by accepting the primitives they have adopted. Then, classify the relations used by the ersatzer presentist in order to gain insight into the function of the relations. Once the relations have been classified, see if the view can still make sense of adequately representing the concrete time, without resorting to mystery or magic. I will argue in the next section that the ersatzer presentist cannot in fact adequately represent a temporal series. Once we have classified the selection and ordering relations used on the account, we are left without a principled method of distinguishing the genuine ersatz series from an inaccurate ersatz series. This failing is due to an added structural feature particular to time, namely the need to represent a series of times.

There is also a difference in presentation worth flagging between the argument offered in Lewis (1986) and my reformatted version. Lewis considers the selection relation as both internal and external, arguing that the relation is objectionable in both cases. In effect, Lewis presents the magical ersatzer with two equally problematic conceptions of the selection relation. I, on the other hand, will argue that the relations employed by the ersatzer presentist should be conceived of as particular types of relations, and will then consider the implications. As such, I only present the ersatzer presentist with one problematic conception of the relations employed. The main reason for this difference is that I think there is good reason to hold that the relations of the ersatzer presentist must be considered as external relations. Despite this difference, the argument I offer remains a reformatted version of the argument from Lewis. The main purpose of classification is to provide insight into the inner workings of the relations employed and reveal their objectionable nature. It is this approach that I will apply to ersatzer presentism. In the case of ersatzer presentism it just so happens
that the objectionability of the relations employed is that they are unable to do all of the work needed on the ersatzer account.

4.2.5 The Problem for Presentism
The first step in reformatting Lewis’ argument is to classify the relations used by the ersatzer presentist. Recall that a relation can be classified as internal, holding solely in virtue of the natures of the related entities themselves, or external, holding in virtue of the composite of the related entities. It is here that we have our first important disanalogy between the temporal and modal cases. The magical ersatzer requires a single relation, one of selection, while the ersatzer presentist requires both an \( E \)-relation and a makes true relation. The magical ersatzer need only select one world as actual. The ersatzer presentist on the other hand needs to select both a time as the ersatz present, and also have that ersatz time as a member of an ordered temporal series. Ersatzer presentism requires both an ordering relation between the ersatz times and a selection relation between the concrete time and the ersatz present.

The ersatzer ordering relation is meant to be analogous to the relation employed by the eternalist. For this reason, the \( E \)-relation is best characterized as an external relation, one that holds independently of the intrinsic properties of the related entities. It orders members of a series independent of their intrinsic properties. If \( X \) is \( E \)-related to \( Y \), then they share a relationship as members of a series. An object \( Y^* \), which shared all of the intrinsic properties of \( Y \), does not necessarily stand in an identical relation to \( X \). This fits with the idea defended by the ersatzer presentist that the ordering of the ersatz series is a brute, contingent fact. Since the ordering relation employed is external, the order of the members of the series is contingent. It is possible that they could be mixed up and moved around independent of any changes to their intrinsic properties. This contingency is important. Abraham Lincoln was
president, but it could have been otherwise. An internal ordering would not maintain this contingency in the same way that an external ordering does. This fits with a point made in Rhoda (2009) that internal relations between abstract objects are invariably necessary (p 52). An internal ordering relation between abstract objects would lack the needed contingency for a temporal series.

Another reason to suppose that the *E-relation* is an external ordering relation is because an internal ordering relation would make the ersatz times redundant. If the ersatz times were ordered by an internal relation, then that ordering would hold in virtue of some intrinsic properties. What sorts of properties might these be? They would need to be some sorts of *tensed properties* intrinsic to particular ersatz times. Ersatz times would be ordered as they are because they instantiate some tensed property. These tensed properties, however, are just the sort of properties proposed by the Lucretian presentist. If we already countenance such tensed, Lucretian properties, then there is no need to bother postulating ersatz times. In fact ersatzer presentism, at least in Crisp (2007), is explicitly formulated to avoid using such controversial properties.

A final reason in support of this characterization is based on the eternalist analogy between time and space. According to this analogy the temporal distance between two moments of time is analogous to the spatial distance between two points of space. This means that the *earlier than* relation between two moments of time is analogous to the distance relation between two points of space. A distance relation is the paradigm example of an external relation. As the *E-relation* employed by the ersatzer is an analogue of the relation used by the eternalist, it is fair to characterize it as external. So, according to ersatzer presentism the *E-relation* is a primitive, external relation.
The *makes true* relation should also be characterized as an external relation. This may seem odd at first blush, since truthmaking type relations are typically thought of as internal. Though the *makes true* relation is one of selection, it is still a relation that holds between the concrete world and propositions. Since relations that hold between the concrete world and propositions are typically internal, this seems, *prima facie*, good reason to characterize the *makes true* relation as internal. There are two problems with this characterization, however. The first was pointed out by Lewis (1986) and outlined above. Claiming that the ersatz time has some special representational property that differentiates it from other ersatz times makes the selection relation objectionably suspicious and epistemically problematic. Giving a name to the magic does not make it any less magical.

One might counter here that the objection raised by Lewis only gains traction if we are dealing with abstract simples. Lewis characterizes the abstract objects employed by the magical ersatzer as simples. This is what makes the representational property needed for an internal relation so objectionable. It calls for a plurality of abstract simples which differ only in some representational property. This is not the case in the construction of ersatzer presentism, as the ersatz times differ in the propositions they contain. A relation that holds between a truthmaker (the concrete world) and a truthbearer (some proposition) would hold only in virtue of the relata themselves. So, perhaps the ersatzer presentist could claim that there is a difference in the intrinsic natures of the ersatz times. This would allow for the relation to be internal.

The second problem, however, shows that even if this line of thinking is correct the relation must still be external. The *makes true* relation employed by the ersatzer presentist is partially dependent on the external relations of one of the relata. In order for ersatzer
presentism to have past ersatz times at its disposal, the selection must also take into account series membership. Only those ersatz times which are a part of the appropriate ersatz series can be selected as the ersatz present. The selection relation is taking into account more than just the ersatz present. It is meant to select the ersatz present as a member of the genuine ersatz series. This means that the selection relation is at least partially dependent on the external relations in which ersatz times stand. If this is the case, then the makes true relation cannot be internal.26

This leaves ersatzer presentism with another primitive, external relation. This external relation also needs to be necessary. If an ersatz time correctly represents the world, i.e. contains all true propositions, then it is necessarily selected as the ersatz present. This is the sort of necessity that Lewis (1986) found objectionable. It is also the kind of necessity that Bourne (2006) sought to avoid with his branching topology. This necessity is less suspicious than it initially seems, however, and so should not be viewed as a significant cost for the ersatzer presentist. So, we have classified the E-relation as a primitive, external relation, and the makes true relation as a primitive, external relation which also holds necessarily.

With the classification of these relations in mind, then, we can spell out, in a bit more detail, the selection of the ersatz present and the temporal series of which it is a member. Say we have three ersatz times. T1, T2, and T3 correctly represent the past, future, and present world. T2 contains all true propositions and is selected as the ersatz present because it correctly represents the current, concrete state of the world. In other words, T2 is concretely realized. However, T2 is also selected because it is a member of the appropriate series. In

26Technically, this selection relation should be defined as a function on the ordered pair which includes a set of propositions, i.e. the ersatz present, and an ordering relation, i.e. the E-relation. This technical definition makes no difference in the argument to follow, and so I will leave it aside.
order for ersatzer presentism to have past ersatz times at its disposal, the selection must also take into account series membership. $T_2$ is selected because it correctly represents the world and because it is a member of the ordered series organized by a primitive $E$-relation. Only those ersatz times which are members of the appropriate series qualify to be selected as the ersatz present. Which sets of propositions are members of this series is a brute, contingent fact. The concrete time selects only ersatz times which are members of the appropriate series. In other words, it selects only those sets of propositions which stand in the appropriate ordering relation. In effect, we have the necessary and sufficient conditions for an ersatz time to be selected as the ersatz present. Firstly, it must be a maximal and consistent set of propositions which correctly represents the world, i.e. contains all true propositions. Secondly, it must stand in the appropriate ordering relation to other ersatz times.

The ersatzer presentist must also exclude ersatz times which are false representations of the world. Sets of propositions come cheap. This means that there are numerous ersatz times which do not correctly represent the past, present, or future. The ersatz time which contains the proposition ‘Abraham Lincoln is a vampire hunter’ is not a member of the appropriate ordered series. Which ersatz times are members of the ersatz series is a brute, contingent fact. As Crisp (2007, p 106) points out, this brute contingency is similar to the type invoked by the eternalist.

The need to exclude inaccurate ersatz times leads to a serious problem for the ersatzer presentist, however. Suppose that we have three ersatz times which are members of the genuine ersatz series. Call them $T_1$, $T_2$, and $T_3$, with $T_2$ selected as the ersatz present. Now say that $T_2$ is also a member of an inaccurate ersatz series, ordered as $T_A$, $T_2$, and $T_B$. In this series, $T_A$ and $T_B$ include the proposition ‘There is a flying pig’, meaning they are inaccurate
representations of the past and future. $T_2$, however, remains an accurate representation of the concrete time. So this inaccurate series represents the temporal series of a world in which a flying pig exists, pops out of existence for a moment of time, and then pops back into existence. This sort of world is, at the very least, logically possible.\footnote{Insisting that this example is so implausible that the criticism is unable to get off the ground is not going to help. We simply need to replace the inaccurate proposition in $T_A$ and $T_B$ with some more mundane example. It draws out the same problem, though less starkly.}

The problem for ersatzer presentism is to offer an account of why the genuine ersatz series rather than the inaccurate series is selected. Both series contain the correct representation of the concrete present, $T_2$, which sits in a series ordered by an $E$-relation. The danger for the ersatzer presentist is that without a mechanism in place to explain the selection of the genuine series they cannot give an account of how past truths are grounded. Suppose that the ersatzer is unable to offer an account as to how the genuine series is selected, as in Figure 1 below. This means that ‘There was a flying pig’ is grounded in the same way as a past contingent truth, such as ‘Abraham Lincoln was president’. Past contingent truths are grounded in past ersatz times containing the appropriate proposition. If the selection of the genuine series is not distinguished, then there is an ersatz time, $T_A$, which is earlier in an ersatz series than $T_2$, the ersatz present, and contains the appropriate proposition to ground the truth of ‘There was a flying pig’. Of course, ‘There was a flying pig’ is false and ‘Abraham Lincoln was president’ is true. No one is disputing this. The problem for ersatzer presentism is that their account of the grounding of past truths does not, at least initially, rule out that there was a flying pig. This is a serious charge against the position. Ersatzer presentism aims to provide the resources needed to ground non-present truths. However, if ersatzer presentism grounds true and false claims about the past in the same way, then it has not
provided an adequate response to the grounding objection. Furthermore, this is a problem that arises due to the internal structure of ersatzer presentism. If this argument is correct, then ersatzer presentism fails as an account of time because it is internally implausible.

**Figure 1 No Distinction Between Accurate and Inaccurate Series**

This problem highlights the importance of classifying the primitive relations. By classifying these relations as external we clarify something about the function of the relations. This reveals the problematic nature of the relations of ersatzer presentism. Since we know how external relations function, there is no *prima facie* way that the relations invoked by the ersatzer can distinguish a genuine from inaccurate series, whether those relations are primitive or not. This also highlights why the selection relation must be considered external. If the *makes true* relation was an internal relation, then it would select the ersatz present, T₂, full stop. This means it would select all the series of which T₂ is a member, leaving the
ersatzer presentist without any means to distinguish the genuine series. The classification of
the selection relation as external is the only classification that gives the ersatzer any hope of
success.

One worry with this problem is that it is simply a conflation of epistemic and
ontological concerns. A lack of explanation as to the mechanism by which the genuine series
is selected does not in itself mean that there is no such mechanism. The issue with ignoring
the problem in such a way is that it violates the transparency constraint for presentist theories
of time outlined in the methodology section of the Introduction. Recall that a presentist
account of time to Bourne “should be transparent, both with regard to the things postulated,
the nature of those things, and any other mechanism involved” (2006, p 15). To leave the
mechanism of selection unexplained is to violate this constraint. Furthermore, an inability to
explain how the makes true relation selects the appropriate series is an inability to account for
the uniqueness of the temporal series. There is only one temporal series. An account of time
which cannot account for this in a principled manner is one that should be rejected.

4.2.6 Avoiding the Problem?
What are some possible replies the ersatzer could use to avoid this problem? There seem to be
three initial moves available. For one, the ersatzer presentist could claim that T₂ can only
stand in ersatz relations to the members of a genuine series. If T₂ its prohibited from being a
member of multiple series then the objection cannot even be formulated. This is an
implausible suggestion, however. T₂ is an abstract object that is not, in principle, limited to
any one series of such objects. There is no good reason to suppose that T₂ cannot stand in
relations to other abstract objects. Further, since the ordering relation is external, there is
nothing in the intrinsic nature of certain ersatz times that limits the ability of those abstract objects to stand in ordering relations.

A second, more plausible, suggestion is made by Crisp (2007). He holds that ersatz times such as $T_A$ and $T_B$ “aren’t members of...any ersatz B-series on account of the fact that they bear the $[E\text{-relation}]$ to no times whatsoever” (p 104). This puts a prohibition on any other ersatz times being ordered into an ersatz series by an $E$-relation. It is simply a brute, contingent fact that some ersatz times are members of an ordered series while others are not. The ersatzer presentist might also point out, once again, that this brute contingency is shared by the eternalist. For the eternalist, it is simply a brute, contingent fact that concrete times come ordered as they do. Similarly, it is a brute, contingent fact that ersatz times such as $T_A$ and $T_B$ do not bear the $E$-relation to any other ersatz times.

This, however, misses an important disanalogy between the brute contingency of the ersatzer presentist and the eternalist. According to the eternalist, it is a brute contingent fact how concrete times are ordered. It is not a brute contingent fact which times are ordered. In other words, the contingency of the eternalist ordering is not contingent in a way that excludes other candidates, the reason being of course, that there are no other candidates. The eternalist earlier than relation does not prohibit other concrete times from being members of the ordered series. It just so happens that there are no other concrete times which can be members of the ordered series. This is not to claim that, on the eternalist account, which times are ordered is necessary. Far from it, it is contingent which times are ordered. It is possible that the eternalist temporal series could have contained different concrete times. However, there are no this-worldly candidates which are excluded based on the brute,
contingency of the *earlier than* relation.\(^{28}\) On the eternalist account, the *earlier than* relation orders, but it does not privilege which concrete times are members of the series. The *earlier than* relation is simply an external ordering relation.

The ersatzer presentist, then, cannot simply claim that the *E-relation* holds only between some candidates. For one, this simply misses the point of how external ordering relations function. An *E-relation* is an external relation which orders members of a series. There are all kinds of things that can be ordered using this relation that do not accurately represent the world. After all, Bilbo’s journey to the Misty Mountain was earlier than Frodo’s destruction of the One Ring. There is no sense in which an everyday external ordering relation privileges which relata can stand in it. Secondly, the ersatzer presentist is employing a relation analogous to that typically used by the eternalist. The *earlier than* relation employed by the eternalist does not in itself privilege which candidates can be members of a series. So the claim that inaccurate ersatz times, like \(T_A\) and \(T_B\), cannot stand in an *E-relation* is to both misuse a primitive relation drawn from eternalism, and to misunderstand the nature of an external ordering relation.

More generally, I think that this approach fails because it misses the point of the criticism. It is all well and good to hold that only the genuine ersatz series can stand in genuine *E-relations*. The problem is that we need a *principled reason* as to why the inaccurate series does not stand in these relations. Even if we accept that one relation is genuine, we are still left with a dilemma, based on the type-token distinction. Two ordered series may be ordered by different relation tokens, but they can still be ordered by the same relation type.

\(^{28}\) Strictly speaking, this is not quite true. In Minkowski spacetime there are numerous three-dimensional spatial hyperplanes along the time-like dimension which function as this-worldly concrete times. In effect, we can slice up the four dimensional block anyway we please. So, in a sense there are other this-worldly candidates for concrete times. However, the eternalist has no need to exclude such candidates. This is perfectly compatible with the point that the eternalist *earlier relation* does not privilege membership.
We can accept that the eternalist relation and the ersatzer presentist relation are different relations of the same type. After all, the ersatzer presentist does claim that they are analogous. Similarly, even if we accept that the genuine ersatz series and the inaccurate ersatz series are ordered by different token relations we should still accept that they are ordered by the same type of relation, an external ordering relation. This means that we still are owed a reason as to why one token is genuine, and is thus selected, while the other is not. Simply putting a prohibition on which ersatz times can stand in a genuine $E$-relation is, I think, not a route to safety for the ersatzer presentist.

A third and final attempt at ridding ourselves of this problem is to hold that only those ersatz times which actually represent the world can be selected by the makes true relation. The ersatzer presentist might claim that the genuine ersatz series is selected because it really does represent the actual history of the world. After all, why worry about ersatz times which posit flying pigs when all parties agree that there were, in fact, no flying pigs. As Crisp (2007) puts it, the genuine series, “counts among its members only some of the abstract times - those that did, do, or will represent the world” (p 104). This rather easily deflates the dilemma. The genuine series, rather than the inaccurate one, is selected because it is the genuine series. It is the series which accurately represents the history of the world.

In arguing that we should abandon a branching ersatz topology, I have already shown why such a view is untenable, but it is worth reiterating the point here. To say that some past ersatz time did represent a concrete present time is to say that it was concretely realized. The claim that an ersatz time, say $T_1$, was concretely realized is a past truth. A past truth must be grounded in an appropriate proposition which is a member of the genuine ersatz series. So, ‘$T_1$ was concretely realized’ is grounded in the proposition ‘$T_1$ is concretely realized’ which is
a proposition contained in the ersatz time \( T_1 \). This means that, were \( T_1 \) concretely realized, the proposition ‘\( T_1 \) is concretely realized’ could not fail to be true.

This has told us nothing about why the genuine series, rather than an inaccurate series, is selected. For ‘\( T_1 \) was concretely realized’ to be a past truth it must be contained in an ersatz time which is a member of the genuine ersatz series. If this is the case, then it is circular to maintain that the genuine series is genuine because it contains ersatz times which were concretely realized. After all, \( T_A \) contains the proposition ‘\( T_A \) is concretely realized’ as well. This, however, does not make the inaccurate series into a genuine one. Claiming that certain ersatz times were realized, or did represent the concrete present, is to make a claim about the past. In order to meaningfully make this claim, in a way which differentiates the series, we would need to make no appeal to the series itself being genuine. An easy way to do this would be to appeal to something like a concrete past time. This, of course, is not on the cards for the ersatzer presentist, as it is a denial of presentism.

4.2.7 The Primitives Response
These efforts to avoid the problem have run aground. There are two other options that I can see for the ersatzer going forward. Both entail that the ersatzer postulate a primitive as a counter to the objection. In both cases this primitive will be uninformative and \textit{ad hoc}. They also amount to an important departure from analogous modal positions, giving us more reason to be suspicious.

The first option would be to take the \textit{E-relation} of the genuine ersatz series as special in a primitive way. Rather than trying to account for why other times are excluded, the ersatzer could instead maintain that the \textit{E-relation} is external but that it has a special, primitive distinguishing property of some sort. The genuine ersatz series is selected because it is
ordered by the primitively genuine *E-relation*. The ersatzer presentist could claim that the genuine *E-relation* is, say, primitively temporal. Since the genuine ersatz series represents how things really were, are, and will be, it is temporal in a way that other ersatz series are not. The concrete present would select the series containing T2, the ersatz present, that is ordered by the *E-relation* that instantiates a primitive temporality property. The genuine series is temporally ordered, while the inaccurate series is not. This difference accounts for the selection of the genuine series rather than the inaccurate series. This temporality is a primitive of the ordering relation.

This primitive feature of the *E-relation* is far more suspicious than it initially appears. First of all, it is an *ad hoc* addition to ersatzer presentism. Second, a notion of primitive temporal relations that would distinguish the genuine ersatz series conflicts with our everyday notion of a temporal series. Take your favorite example from fiction. A series of events occurs in the *Lord of the Rings* trilogy. These events have all the markings of a temporal ordering. This seems to be a clear case where we have a temporal series that does not represent the concrete world. The ersatzer presentist would need to claim that this series is not *genuinely* temporal. An easy way to do this would be to claim that a genuinely temporal ordering relation can hold only between objects that represent the actual history of the world. This is not a claim that the ersatzer presentist can make however. Claiming that an ersatz series represents the actual history of the world in a way which differentiates it from an ersatz series that does not, is tantamount to claiming that it contains ersatz times which were, are, or will be concretely realized. The only way to make sense of this claim, in a non-circular way, is to appeal to a concrete past time. Taking the genuine *E-relation* as primitive in this way leaves us with a suspicious ordering relation that does not fit our everyday sense of *earlier than*.
The second of these primitive responses solves the problem of selecting the genuine series by holding that members of the genuine series have some special *genuineness* property. The external, *makes true* relation only selects ersatz times that have this *genuineness* property. The property is primitive, and only ersatz times that did, do, or will represent the concrete world can instantiate it. This approach strikes me as implausible due to its *ad hoc* nature. I am not alone in my skepticism. Crisp (2007) actually considers and rejects this sort of option. For instance, he writes, “Is it that there is some kind of primitive *actuality* property that distinguishes the one actual history from the infinity of merely possible histories? One hopes not: thus supplemented, the theory is starting to seem a tad baroque” (p 104). Even a major proponent of the ersatzer account finds this option implausible. Another problem with this approach is that there is no analogous need in the modal case for this sort of property. The ersatz world which correctly represents the concrete world does not need to instantiate any property of *genuineness*. Instead it is picked out because it correctly represents the concrete world. The actualist does not hold that the actual world is actual because of some special property it instantiates. Adams (1974) contains a useful summary of all the problems with an account of actuality that relies on a primitive sort of *actuality* property. Similarly for the presentist, the present is the present because that is all there is, not because it instantiates some special property.

This approach also seems to be a way to smuggle in the notion of claiming certain ersatz times were concretely realized. The ersatzer presentist cannot claim that certain ersatz times were or will be concretely realized, the reason being that we cannot make sense of this claim independent of the ersatz series. So instead, the ersatzer presentist claims that certain

---

29 All ersatz times are actual. To call the primitive property employed an *actuality* property, as Crisp does, could lead to confusion. For this reason I refer to such a property as a *genuineness* property.
ersatz times have a primitive property of \textit{genuineness}. What does this property amount to? Don’t ask! It is a primitive which is motivated solely to save the account from a serious objection. Now, this is not an argument against the position. All metaphysical views employ primitives of some sort. However, I think it is fair to point out how unsatisfactory this primitive is. The ersatzer set out to give an account of past and future times that did not violate their austere ontology. I have shown a way in which ersatzer presentism fails as a view of time. The ersatzer response is simply to slap an unmotivated primitive on the ersatz times they take as genuine and call the job done.

The arguments I have presented leave ersatzer presentism in an untenable position. The ersatzer presentist employs two primitive relations: the \textit{E-relation}, which orders the ersatz times, and the \textit{makes true} relation, which selects the correct representation of the concrete world. Both of these relations are best classified as external. However, these external relations give us no principled way to distinguish between the genuine ersatz series and an ersatz series that incorrectly represents the history of the world. Taking the \textit{E-relation} as a primitive seems to conflict with our notion of what qualifies as a temporal series. The option which is most likely to be successful simply takes the genuine nature of the correct ersatz series as a primitive. This may succeed, but it is \textit{ad hoc}, implausible, and rejected by even the most ardent ersatzer presentists, such as Crisp (2007). Worse, postulating such primitives seem to violate the constraints on presentist accounts of time outlined in Bourne (2006). In particular, the transparency constraint. The sort of primitives the ersatzer needs to postulate are problematic in that they allow the mechanisms of the account to function, but do so in an unclear, suspicious manner. It is one thing to claim that one abstract series is the genuine one. It is quite another to account for this with a \textit{genuineness} primitive.
This argument, then, has shown that ersatzer presentism cannot adequately represent the history of the world. It cannot distinguish between a genuine and inaccurate ersatz series without adding *ad hoc* primitives. This lack of a distinction means that there is no principled way to distinguish obvious falsehoods about the past, such as, ‘George Washington was King of Australia’, from past truths, such as ‘Abraham Lincoln was President of the United States’. This inability to properly represent the history of the world without objectionable primitives means that ersatzer presentism should be rejected as a plausible account of time.

### 4.3 Time and Modality Reconsidered

The previous section argued that ersatzer presentism cannot serve as an account of time. The series of abstract objects meant to represent a concrete time series is not up for the job. The failure of this account is especially interesting in that it allows insight into the analogy between time and modality, specifically in regards to the ontological significance of temporal ordering. The failure of ersatzer presentism comes down to an inability to separate a genuine series of abstract objects from an illegitimate series of abstract objects, a problem brought on by a need to represent a series of times. These issues show, at the very least, that more serious attention needs to be paid to the ontological significance of temporal ordering than is ordinarily supposed by the advocates of the analogy between time and modality.

In this section I will outline what I take to be the central lesson of the distinction between time and modality. Namely, that the arguments I have presented against ersatzer presentism give us good reason to suppose that there is an ontological distinction between temporal and modal relations. This serves as a response to remarks from Cresswell and Rini (2012) in regards to metaphysical distinctions between time and modality.
4.3.1 Temporal Ordering as Ontologically Significant

A number of commentators, for instance Lowe (1986), have held quite reasonably that the unique ordering of time serves as an essential differentiating feature between time and modality. Lowe writes:

> An important dissimilarity between temporal relations and relations between possible worlds consist[s] in the fact that the former put instants of time into a unique linear order not paralleled by any analogous linear ordering of possible worlds. In short, time constitutes a *dimension* in a way that possibility does not (p 195).

It is important for this dissimilarity that the notion of time’s linear ordering is independent of any reference to, say, the degree of difference between times (p 197). The idea is that the ordering of a time series is unique and independent of the content of each time. The eternalist block for instance comes ordered as it does without any need to reference the happenings at each time. In the modal case, Lowe holds, an ordering relation can only be formulated in terms of the content of each time. This independence serves to importantly differentiate a time series from a series of possible worlds. It is worth noting here, briefly, that Lowe should drop reference to linearity. Time is not necessarily linear. It could have a branching structure, such as argued in Belnap (1992), Belnap and Green (1994), or more pertinently for this thesis Bourne (2006). The focus of the dissimilarity in Lowe (1986) should be on independent, unique ordering without reference to time as a linear series.

The problem with this dissimilarity, as presented by Lowe, is that it lacks for argument. There are plausible candidates, such as an accessibility or similarity relation, which could serve to independently order a series of possible worlds. Lowe’s response to this suggestion is simply to claim that these relations are “at best merely a logician’s fiction” (1986, p 197). This glib response at best merely hides the problematic nature of Lowe’s position.
There is no argument as to why temporal relations are independent in a way that modal relations are not. In fact, ersatzer presentism gives us reason to believe that an independently ordered series of worlds is certainly possible. After all, it provides an independently ordered series of abstract times. If times are appropriately similar to worlds in terms of their construction as abstract objects, then it should be possible to order worlds in a similar way. Say, for ease, that we limit our ordered worlds to some smaller realm of logical space using the stipulation that the series consists only of worlds that contain Socrates.\textsuperscript{30} These worlds could be put into a unique and independent order using an \textit{E-relation}. The order of the series is a brute fact, and some worlds happen to stand in certain relations to other worlds. Now, this ordering is uninteresting as it does not give us any new information about Socrates for instance. Also keep in mind that this ordering is not temporal. It does demonstrate, however, that a unique, independent ordering is just as plausible in the case of worlds as it is in the case of times.

This example illustrates the central problem with Lowe’s argument. It gives us no reason to suppose that there is \textit{ontological significance} to the unique ordering of time. Cresswell and Rini (2012) make this point, writing:

Despite what some philosophers seem to have assumed...the claim of a structural parallel between worlds and times is not of course so strict as to entail that because there is a natural linear ordering of moments of time there must be an analogous natural ordering of possible worlds. For a start there are many different accessibility relations between worlds...The most that can be said might be that whereas modality includes many relations among worlds, temporal discourse ultimately depends upon just one - the earlier/later relation between times. But even if this should be so an argument would still be needed to explain why it should have any ontological significance (p 16, ft 19).

\textsuperscript{30} Feel free to account for the identification of Socrates with whatever notion of transworld identity or counterpart theory you prefer.
The challenge is more than just pointing out the natural ordering of time. It is showing that the ordering of time is ontologically significant. In the case of Lowe (1986), it is not enough to point to the unique and independent ordering of time. Worlds can be ordered in the same way, though it is far less natural. Cresswell and Rini (2012) also note, “Given that there are many senses of ‘necessary’ and ‘possible’, and given that each sense seems to have some structure, it might perhaps emerge that the temporal linear ordering is just a special case of modal accessibility” (p 16). The idea here is that without good reason to suppose that there is ontological significance to the temporal relations between times, we could simply view these relations as a species of modal relation. If this is the case, then even the uniqueness of the temporal relation, the fact that it is the only relation which orders times, does not really differentiate it from modal relations. The uniqueness comes down to the temporal relations status as a particular type of modal relation, rather than some ontologically distinct thing.

The point made by Cresswell and Rini is a good one. The fact that time has a unique ordering does not demonstrate any ontological difference between temporal and modal relations. What is needed is some demonstration that the uniqueness of the temporal relation itself, or the relations between times more generally, is more important than advocates of the modal analogy, such as Cresswell and Rini for instance, suppose. My argument against ersatzer presentism demonstrates just that. The ersatzer presentist cannot account for the uniqueness of the temporal series in a principled way. The failing of ersatzer presentism gives us good reason to suppose that there is an ontologically significant difference between temporal and modal relations. At the very least, this puts the onus on defenders of the analogy between time and modality to deflate this apparent distinction.
Ersatzer presentism takes the analogy between time and modality very seriously. It uses an approach to grounding non-present truths based on abstract objects drawn directly from the actualist approach to possible worlds. It can also lean on the analogy between time and modality to escape key objections, as I argued in section 3.4. That time and modality are fundamentally similar is a key aspect of ersatzer presentism. If time is fundamentally like modality, then temporal relations should not be ontologically dissimilar to modal relations. A similarity relation works equally well whether we conceive of worlds as abstract or concrete. This is not the case with the temporal relation earlier than in regards to a series of abstract objects. Due to the issue of inaccurate ersatz times, this relation can order times, but not in a way that leaves us with a unique determinate temporal series. Moving from ordering concrete times to abstract, ersatz times causes trouble for the earlier than relation. There is no analogous trouble for a modal relation. The upshot is this: the E-relation, the abstract version of the earlier relation, is not in itself enough to make a series of abstract objects temporal, as it orders and does not privilege. There is a feature of a concrete temporally ordered series that is not captured by a series of abstract objects. If there was no ontological difference between a temporal and modal relation, then this problem should not arise. Proponents of the modal analogy, then, owe either an account of why this supposed difference does not matter or a deflation of the prima facie distinction. The argument here is not aimed at showing that there are distinctions which demonstrate that time is fundamentally unlike modality. Rather, I want to demonstrate that the analogy to modality is more limited than those like Markosian (2004) or Cresswell and Rini (2012) ordinarily suppose. The analogy between time and modality may run deep, but it also appears to be more constrained and problematic than many have supposed. There are compelling reasons to accept the analogy between modality and time.
However, there remain important ontological issues to sort out for the advocate of this analogy. There are limits to the modal analogy.\textsuperscript{31}

\textsuperscript{31} Despite the shared logical structure of time and modality, there are important distinctions between them in regards to metaphysical structure. This coming apart of logical and metaphysical structure could point to deeper reasons not to read metaphysical similarity directly off of logical similarity. This may have important implications for views which advocate especially strong links between metaphysical and logical structure, such as the account defended in Sider (2009).
5. Conclusion

Presentism, despite its position as the commonsensical account of time, is faced with a number of serious objections. Foremost amongst them is the grounding objection, which holds that presentism cannot account for the truth of statements about non-present times. Ersatzer presentism aims to maintain the intuitive appeal of presentism while providing the resources needed to respond to the grounding objection. By postulating a series of abstract objects to serve as a supervenience base for non-present truths, the ersatzer presentist seems to have all of the benefits of non-present times with none of the costs to ontology or commonsense.

The primary focus of this thesis has been to argue that ersatzer presentism does not succeed as an adequate account of time. For the ersatzer presentist there is one ordered series of ersatz times which accurately represents the past, present, and future. However, there are also many ordered series which contain inaccurate representations. I argue, drawing on an argument from Lewis (1986) against ersatz modal realism, that the primitive relations employed by ersatzer presentism cannot provide a principled way to distinguish the unique, accurate ordered series. Without a means by which to distinguish the ordered series that accurately represents the past, present, and future, ersatzer presentism has not provided a plausible account of the grounding of non-present truths.

The failure of ersatzer presentism has important implications for the analogy between time and modality. In particular, it gives us good reason to believe that there are significant ontological differences between temporal and modal relations. This functions as a response to proponents of the analogy between time and modality, such as Cresswell and Rini (2012),
who hold that modal and temporal relations are not distinct in any disanalogous way. The failure of ersatzer presentism, then, puts an important limit on the analogy between time and modality.

The argument I have offered in this thesis is meant only to show that ersatzer presentism is unsuccessful. While this argument does not apply to presentism in general, I do think that it applies significant pressure. Ersatzer presentism is a recent and powerful version of presentism. By positing a series of abstract objects and leaning on the analogy between time and modality it has advantages that other presentist accounts seem to lack. The failure of ersatzer presentism, then, is a serious blow to presentism.
References


Baron, Sam (2011). *Presentism and Common Sense.* University of Sydney, dissertation.


*Journal of Philosophy* 52 (22), 599-612.


*Philosophical Studies* 51, 213-239.

