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The Problem of Temporary Intrinsics

by

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ABSTRACT: In this thesis I survey two theories of change that are supposed to meet the Problem of Temporary Intrinsics. Finding both to be inadequate and prone to the objection that they do not allow for genuine change I turn to analyzing the origin of the Problem of Temporary Intrinsics in eternalist theories of time. I argue that by discarding eternalism for presentism the Problem of Temporary Intrinsics can be overcome.

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Introduction

Paul Weiss proposes that the ultimate aim of philosophy is the expansion upon and articulation of the common conceptions and distinctions possessed by every human being. It is the point of view from which the man of common sense scoffs at Berkeley's subjective idealism and Sextus Empiricus' radical skepticism. It is embodied and most clearly expressed in general propositions true of everything that is (Weiss 1967, p. 1-5). The problem is that the process of articulating them can sometimes lead to conflict between them. The art of the philosopher is the further articulation of these principles in a coherent scheme that either demotes one or the other, or shows by some third principle that the apparent contradiction is resolvable. This thesis has been conceived in this light, aiming to articulate a way through a contemporary metaphysical debate, the Problem of Temporary Intrinsics, that stays true to both contested intuitions.

The Problem owes it's origin to the apparent tension between principles about identity and persistence through change. One of the firmest convictions of common sense is that there are at least some objects that persist through time despite undergoing changes. Call this the Principle of Persistence. An unripe banana resting in a fruit bowl becomes ripe over a few days. A human being grows in height and weight from childhood to adult, changing dimensions and proportions as they do so. A hot fireplace poker pulled from a roaring fire cools to room temperature over the course of a few minutes. In all these cases we regard it is irrefutable that the things in question, though different in some respects

(ripeness, height, temperature) from themselves at another time, are still the same object they were at an earlier time. This is the conviction upheld by the common sense principle of persistence, that a thing can undergo a range of changes, though not *any* change, while remaining the same thing.

Another principle, equally as firmly held, is that of the Indiscernability of Identicals (hereafter Leibniz' Law). If A and B differ in no properties, then they are identical ($P(x) \Leftrightarrow P(y)$). Mark Twain and Samuel Clemens, though referred to be different names, are the same man, possessing all the same intrinsic properties; they are materially identical. Mark twains liked to smoke a pipe if and only if Samuel Clemens likes to smoke a pipe. The same biconditional dependence applies to every property. The subject is one and the same despite being referred to by different expressions (Armstrong 1989, p. 2-3).

It is important at this point to expand upon what will be a central notion in this thesis, that of an intrinsic property. What is an intrinsic property? It is what we are discussing when we are thinking about the real changes undergone by a thing over time. An intrinsic property is intantiated independently of any external existence. It is ontologically independent of other existents outside of that object in which it is instantiated. These are the qualities of a thing that it brings into a new situation. Consider Mark Twain at his typewriter writing *The Adventures of Huckleberry Finn* in 1884. To consider Twain by himself we would disregard the clothes he wore, whether he was smoking a pipe or not. We would retain his bodily position as bent-shaped, the color of his hair, his age, his blood type, his height (when

standing) and his mass, along with a myriad of other properties. These are the qualities that a Mark Twain duplicate would possess, though its surroundings might be radically different.

Intrinsic properties are distinguished from relational properties. A relational property is a property borne by a thing to something external to it, being ontologically dependent on that external thing. In our hypothetical example Twain is sitting a foot away from his desk, wearing a jacket, smoking a lit cigar. These are the properties that can be changed without changing the intrinsic properties of Twain himself. Sitting two or two hundred feet away from his desk would not change his blood type, nor would that fact change his hair color or mass. Simply put, relational properties are properties had by virtue of standing in a relation to some other thing. Consider the property of "being admired by Theodore Roosevelt". Mark Twain's internal properties, his 'essence' and 'accidents' in an older manner of speaking, are not affected by this relationship. Though knowledge may have an indirect effect on a person's well-being and intrinsic properties (say, by leading to their beheading when a crime they committed becomes known) it in itself has no direct effect on the intrinsic properties a thing has.

The difficulty comes when we want to hold both principles, that of Persistence and that of the Indiscernibility of Identicals, together. Leibniz' Law seems to prohibit anything from surviving a change of intrinsic property. It is absolutely certain that things can and do change their intrinsic properties - Twain can stand

up and walk about the room, grow or cut his hair, and acquire plaques on his lungs from tobacco smoke. If we take Leibniz's Law strictly, very few things would survive from moment to moment, least of all human beings, in a manner we understand. How then can we maintain the identity of things when they clearly undergo changes of property? This is the germ of the Problem of Temporary Intrinsics.

The solution to the dilemma is to figure out some way of describing and explaining the changes undergone by things over time. Time being the most important element here, metaphysicians have proposed two different types of theory to explain the changes of intrinsic property over time. Both are compelling treatments of the problem but suffer from a common flaw: in their ontological picture of the world nothing undergoes genuine change. The universe they purport to describe is a static one. If change is absent from the picture, it is not clear how their purported solutions solve the Problem of Temporary Intrinsics.

This thesis is a survey and evaluation of the debate between perdurantists, who posit temporal parts to explain the persistence of things through changes in intrinsic properties, and their opponents who reject temporal parts as extravagant metaphysical objects and propose alternative theories of change, the endurantists. Specifically it is concerned with the commitment of those two theories to eternalism about time, the theory that the past, present, and future all have equal reality. In this essay I will, after a survey of the eternalism inspired theories,

investigate an alternative theory of time, presentism, that both avoids the Problem of Temporary Intrinsics and allows for genuine change.

Much of the debate centers around David Lewis' proposals about temporal parts and intrinsic properties in his *On The Plurality of Worlds*. Lewis' argument is that Leibniz' Law forces us to accept, with respect to a thing's undergoing a change of its apparently intrinsic property *P*, one of three mutually exclusive alternatives:

1. Perdurantism: reject endurantism so that the part of a thing that is *P* is distinct from the part of the thing that is *not-P*

2. Relational Endurantism: Deny that there are any intrinsic properties (endurantism with non-presentism)

3. Presentist Endurantism: Hold that a changing thing currently possesses the property *having-been-P* and *now-being-not-P* (endurantism with presentism)

Lewis dismisses (2) for denying the existence of intrinsic properties, a metaphysical commitment he feels we are entitled to strong intuitions about. He dismisses (3) for denying what he takes to be common sense, that we have both a past and a future. By process of elimination he claims that perdurantism provides us the best way to accommodate Leibniz Law and persistence (Lewis 1986, p. 202-204). I have more to say about Lewis' dismissal of Presentism in section 4.4

I begin in Chapter 1 with an perdurance theories and how they are supposed to provide a solution to it, along with the nature of the No Change Objection against

temporal parts. In Chapter 2 I survey relational endurantism and how it proposes to solve both the Problem of Temporary Intrinsics and the No Change Objection, and show how it runs into its own problems, including its own version of the No Change Objection. Then, in Chapter 3 I consider eternalism, the common link between perdurantism and endurantism, examining why it is commonly supported and how it carries with it, in addition to the problems of endurantism and perdurantism, its own set of problems that in turn afflict both theories of persistence developed in light of it. In Chapter 4 will cover presentism and how it provides a way out of the debate, avoiding the pitfalls of eternalism while allowing for genuine change.

Conditions

On issues of ontology some metaphysicians favour sparse ontologies, making do with as few postulated entities as possible, even when this does violence to our shared view of the world. This is the drive behind eliminative materialism, seeking to dispose of any status for mind and thought in a naturalist/physicalist paradigm. Similarly, metaphysicians since McTaggart[2] have, when they found it difficult to account for the passage of time, been willing to jettison the notion of a changing present in favor of a logically simpler model of static time without passage. This is not an approach I favour. If we are sufficiently committed to the existence of a factor of reality to have a highly developed and nuanced vocabulary for talking about it, combined with complex attitudes towards it that are reflected in our use of that language, then it is something we should try to preserve in our

ontology. Again, the main desire in this thesis is to stay true to both Leibniz' Law and the Principle of Persistence without demoting one or the other.

One consideration for judging between different ontologies of time and change is whether it is more acceptable to multiply entities (by accepting temporal parts) or whether it is better to allow modified properties (either relations to times or the presentist's changing tensed properties). As will become clear, my own predilection is towards modifying properties rather than adding entities, and trying to keep those properties as basic as possible. This I think is both parsimonious and truer to our sense of the world. Our thought and interactions towards the world are towards a multiplicity of beings exemplifying differing properties over times, things that can be and are familiar to us because of their persistence. For example, I favor talking about the pasts of a thing by reference to its presently possesses properties (past-properties like *was-P*) rather than by proxy with previous stages that possess equal reality with the objects of our immediate experience, as perdurantism does.

Trenton Merricks (1994), writing an overview of the debate, proposes several conditions for any theory of changing objects. The purpose of the conditions is to make clear what things we want to preserve in a theory of change. Merricks claims that they are close to our most basic intuitions about the nature of changing things, and as many as possible must be included in a theory that claims to capture change theoretically. This is how I will be using them in what follows, taking them as the basic intuitions against which the competing theories of perdurantism,

endurantism, and presentism will be compared. Merricks desiderata seem to me to capture most strongly what we mean when we speak about something as persisting through time and change. I do not utilize all of them, since some, like his concerns over producing semantics for changing objects, are outside the scope of this essay, which is much more concerned with the things themselves rather than with semantics for talking about them.

(C1) A solution should allow for the exemplification of non-time-indexed and non-relational properties - This is an important first consideration. Objects must possess some properties that are not time-indexed and/or relational. Why? Because there must be some properties which make it possible for the object to possess other properties. These are commonly called essential properties - they make it possible for the thing to have the non-essential properties, whether intrinsic or extrinsic, that it does have. Consider an animal. It can have any of a range of different masses and properties, but it must be a certain kind of object to have them - a physical object. Without this essential property the animal would not be able to possess the subsidiary properties and those that follow from them, like dispositions and relations. In order to bear a distance-from relation to a physical object a thing must itself be a physical object.

An additional problem for such theories is that they entail the existence of time as a thing separate from the existing object, needed as one part of the instantiation relation. Such a commitment to Platonism or substantivalism about time is one that many metaphysicians would prefer to avoid. In a debate that is going to

involve multiplication of either entities or properties the goal must be to avoid multiplying them beyond necessity.

(C2) A solution should deny that it is possible for an object to exemplify incompatible properties - This desideratum is a basic logical requirement; nothing is ever red and white all over at the exact same time, though many things are different colours successively over time, or are different colours on different extended spatial parts. Examination of claims to the contrary always reveal that the person making the claim is either mistaken or not being specific enough in their description.

(C3) A solution should allow for genuine change of the sort found when an object exemplifies a property at one time in one way and lacks it at another time in another way - This is the important idea of "real change" that Geach and other presentists are insistent upon. To say of a thing that it changes is to say that it lacks its previous property *simpliciter*. The property has truly *ceased* to exist, not merely been shuffled off to a still existent past. It applies also to concerns about the existence of entities bearing the properties as well. To say that someone is dead is not to say that they merely occupy different times than the present but to say that they no longer exist, in the same way that future people do not exist. It is this that motivates my own advocacy of presentism as a solution to the problem of change in the fourth chapter of this work. Both perdurantism and non-presentist endurantism are not viable options because of their neglect of this condition, the neglect being a natural consequence of their eternalism. One of the challenges

advocates of presentism face is how to account for the truth of propositions about past existents, something that eternalists can do easily. Much of the fourth chapter deals with how presentists meet those objections. I have more to say about the subject of genuine change in section 1.2, where I discuss the No Change Objection against perdurantism.

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Chapter 1 - The Problem of Change And Temporal Parts

In this first chapter I will discuss the nature of perdurantism (four-dimensionalism) and how it claims to solve the Problem of Temporary Intrinsics by positing the existence of temporal parts at time instants, the sum of instants making up the life of an object. Then I will discuss the main objection levelled against perdurantism, that its temporal parts describe a static universe without genuine change. I leave aside considerations of the link between eternalism and perdurantism till the third chapter.

Recall that our dilemma stems from our dual commitment to both the Principle of Persistence (that at least some things persist through time while undergoing change) and the Principle of the Indiscernibility of Identicals. As in all contests between competing principles, the options are to either drop/modify one or find a third principle to unite the two opposed ones.

An extreme option would be to accept there is a real paradox, take Leibniz' Law as primary, and abandon the Principle of Persistence, denying that anything really persists through change. This would be to make change a property of the whole of existence rather than of the things of which we ordinarily predicate changes. This would be an ontological theory in which everything that exists at one moment is instantaneously replaced by a successor at the next moment, and so on. Spread out through time are a series of distinct existents that, since they differ in property, are separate, non-identical beings. When we say a fruit changes from unripe to ripe over the course of a day it is not the same fruit we are discussing, but two

(actually very many) completely separate things that we conjoin mentally, successive existents without real connection. Such a heavily Heraclitean/Humean view has little to recommend it. The immediate objection to such a view is that it has to posit minds as somehow outside of the natural order, observers of a process of flux that they then conjoin into continuous objects an events. For if the minds are in nature, and doing the conjoining, the question arises what makes them the same minds from moment to moment? Even the formation of the sentence or thought would be accomplished by separate and wholly distinct minds with only a miraculous continuity between them, the continuity of nearest resemblance. An instantaneous mind observing the unripe stage of the banana, would not be the same mind as that which perceived the ripe stage, it yellowness, other than the fact that it happens to believe (falsely) it saw an unripe banana at an earlier date, its claim to continuity through time for itself being illusory. Such continuity of belief through time would be miraculous, requiring a transcendent power such as God to effect the connections, ensuring that each distinct entity follows from a previously existing distinct entity. Such views that do not rely upon God still import the notion of continuity through change into their accounts, placing the unity of objects over time in such properties of mind as the transcendental unity of apperception. Such a theoretical position is only a more complicated way of stating that "it just is so" rather than an answer to the question how things persist.

A more moderate approach is to expand upon the identity involved, whether via time-indexed parthood or via relational properties. The perdurantist approach is to appeal to temporal parts to preserve the intrinsicality of intrinsic properties.

Perdurantists claim that it is not enough for something to possess incompatible intrinsic properties by merely having them at different times. Something else must be brought in to explain *how* it is possible for the persisting thing to possess those properties without being in fact two distinct things or producing a contradiction. These extra factors are, for the perdurantists, *temporal* parts. Temporal parts are motivated by the observation that objects can simultaneously possess contrary properties by having those properties located in separate spatial parts. For example, a chessboard can be both white and non-white (e.g. black) by having those colours as properties of its squares. Predicating whiteness and non-whiteness of the chess board is a partial predication, a reference to parts of the chessboard rather than the whole chessboard. According to the perdurantist, this is closely analogous to how things persist over time. The perdurantist denies that anything is ever totally present at a point in time except for a part of an entity, a temporal part, in the same way no macro object is totally present at any point in its volume but is present by having a spatial part at that point. In this way a perduring object is not so much a single three dimensional objects as it is a series of objects conjoined along the time axis, like a line of squares on a chessboard alternating between white and black. Each part is its own entity but they are conjoined to make a whole.

For a perdurantist, or "four-dimensionalist", persisting objects are a lot like stories about those objects. As the stories have parts corresponding to their beginning, middle, and ends, with stages for each incident, so the objects themselves have parts corresponding to the parts of the stories. The world is conceived by

perdurantism as being made up of stages. The smallest stages are instantaneous characterizations of a thing at a time, which can be built up into larger and larger stages through composition. Thus there is an instantaneous part of a person at midnight on his fourteenth birthday, a larger stage made up of that entire day, and a larger section corresponding to the persons entire adolescence, and from there to their entire life from conception until death (Sider 2003, p. 1-5). For the perdurantist there are many such objects, many distinct stages, which are then united into a larger thing. These considerations allow the perdurantist to answer C1, the exemplification of non-time-indexed and non-relational properties, as well C2, the denial that it is possible for an object to exemplify incompatible properties. C1 is met because the temporal parts are distinct, real objects, with intrinsic properties, and they themselves do not change. An entity composed of temporal parts changes through time by having different parts with different intrinsic properties. C2 is met because the objects exemplify only one of the complimentary properties. The banana has a temporal part which is green coloured when it is unripe, and a temporal part which is yellow when it unripe. The entity banana, consisting of all the life stages of the banana, is only derivatively and specifically yellow and green, the yellowness and greeness being possessed in its parts and not entailing a contradiction if it were either simpliciter. C3 is partially met - the banana exemplifies the property of greeness in one way (by having a part at a time with that property) but lacks it in another way, but these parts both exist in the simpliciter sense, merely being time separated. The

condition could be completely met if it were the object itself, not a part of the object, having and then lacking the property simpliciter at different times.

1.2 The "No Change" Objection to Temporal Parts

The single strongest objection to perdurantism is the No Change Objection. To say that a thing has incompatible intrinsic properties at different times by possessing temporal parts at those times seems to no more allow for genuine change than, to return to a previous example, does a chessboard's possessing black and white squares. To speak of the chessboard 'changing' from black to white is loose talk, not at all what we mean when we say a thing really (temporally) changes. A chessboard, and by extension a perduring object, possesses all its parts as coexistent, as a spatiotemporal whole. We speak of a chessboard ‘changing’ from part to part because we, temporal beings, move our attention or focus from one part of the chessboard to another across a stretch of time. Our experience is momentary and constantly altering, thus our experience of the chessboard changes while the chessboard itself remains unchanging. The same loose talk infects all our talk about static objects “changing” from part to part. Consider a road that is paved in town but gravel in the country. The road is perceived to change while we travel along it, but is in itself a coexistent whole. This manner of referring to differences between the parts of a thing as ‘changing’ is derivative from our experience of temporal succession and change.

Unpacking the point about our experience of change as a model of change itself, we get the following criteria of *genuine change*. *x* is an instant of genuine change if and only if:

i. *x* takes time to occur, with temporal separation between its stages, and

ii. *x* entails the mutually exclusive existence of those stages

(i) points out that no change can take place at an instant. This prevents incompatible properties from coexisting at the same time and producing contradiction (being F and not-F). Each moment is distinct from all the others. There is still a risk of contradiction if we want to attribute the contradictory parts to the same thing across different times, insisting on the different stages being coexistent. (ii) is the most vital point here, as real change requires that the previous stage cease to be. If the stages of a thing all existed as a four-dimensional whole then we would have an equivalent to our 3-dimensional chessboard, with the pieces being parts of a larger whole. The presentist insists that it is the presently existing stage of the thing that *is* the thing, that it is not a part of a whole. Our experience is of unique, non-repeating, moments that mutually exclude each other. Time, the presentist claims, is like this, each moment being a unique existent without partner existents, replaced by new moments in an endless succession. The past exists by being contained within the presently existing things (in a manner I will explain in Ch. 4 on Presentism) and the future exists in the endless replacement of the present moment by new contents.

Three metapysicians, Mellor (1981), Geach (1972), and Simons (1987) have provided versions of the No Change Objection against perdurantism, of which Mellor's version is the most succinct. Mellor accepts that change is definable as a thing having incompatible real properties at different times. Suppose that some thing *a* has a pair *G* and *G** of such properties at two different times, *t1* and *t2*.

(1) *a* is *G* at *t1*

(2) *a* is G* at *t2*

(1) and (2) are the basic claims we want to assert, preserving the identity of *a* through its changes. If *a* has these incompatible properties by having them assigned to separate parts *Pa* and *Pa** then, Mellor claims, this is only apparent change, since it really consists in

(3) *Pa* is *G* at *t1*

(4) *Pa** is *G** at t2

where, $Pa \neq Pa^*$. That is, the 'change' is really two different entities, *Pa* and *Pa**, possessing the properties. Different entities differing in their properties do not amount to change when one is later than the other and both are parts of something else. Real change requires the *same* entity to be the possessor of the incompatible properties, as in (1) and (2) (Mellor 1981, p. 110-111).

Lewis, in a reply to Lowe over a related issue, acknowledges that perdurantists must admit this feature, but does not accept that it entails there is no change. For

the perdurance theory it is not the thing as a whole that possesses the changeable intrinsic properties but the temporal parts. The whole has the property only relationally, by having a part with the property. Because Lewis is determined to preserve truly intrinsic properties, and does not believe that endurantism with its relationalist properties can achieve this, he accepts this criticism (Lewis 2000, p. 66).

Geach levels an objection similar to Mellor's against four-dimensionalism. He thinks that the view is untenable because it not only abolishes change by reducing change to "mere variation of attributes between different parts of a whole" (Geach 1972, p. 321) but also abolishes time, which he claims is dependent on real change. Geach also believes that the arguments for four-dimensionalism are untenable outside of the consequences of banishing change and time. I will cover Geach's arguments on this subject at the end of this essay when considering presentism.

Simons argues, similarly to Geach and Mellor, that there is something bizarre in a perdurantist ontology, something that must be considered guilty until proven innocent. He relates it to the alien nature of a process ontology that would takes events and time-slices (occurrents) as primary beings over continuants (Simons 1987, p. 126). Simons denies that occurrents (temporal parts) can undergo real change, insisting that this privilege belongs only to continuants (substances). He utilizes McTaggart's example of a fireplace poker to make this clearer. A fireplace poker in a fire is hot at one and cold at one end. Though this is a complex state of

affairs it does not constitute change. It is not change, as the occurences do not claim the same part of the poker. Genuine change would also occur if the hot end of the poker itself cooled to room temperature, rather than by proxy through the possession of gradually cooler temporal parts. Simons denies that the distribution of properties over temporal parts, which deflates the true contrariety present in real change, constitutes real change (Simons 1987, p. 135) These are all challenges to perdurantisms claim to fulfill C3, that a thing change by having a property in one way at one time and having a different incompatible property at a later time. The important part of C3 is the insistence that it is *the* thing itself, not some part, proxy or stand in, that has the property. Perdurance theorists cannot meet this condition. The temporal parts themselves do not change, nor does the entity composed of them.

These three objectors all focus on the problem coming from the eternalist commitment of perdurantism. The persisting object is taken to be a whole composed of temporal parts. Change is not treated as an actual occurrence in a uniquely existent, altering present but as an index of variation between parts of that whole. More concretely stated, if an object is complete in all its properties, including its whole time span, then it is unchanging. Change requires incompleteness and genuine becoming to be real.

Deeper issues to do with the nature of time and the reality or unreality of tensed existence are at stake, and will ultimately decide the issue (Heller 1992, p. 701). That this is the case can be seen from the writings of the two most prominent

perdurantists. Sider acknowledges the influence of eternalist theories about time in his commitment to perdurantism, so much so that he devotes a whole chapter of his Four Dimensionalism to attacking presentism (Sider 2003, p. 11-52). Lewis, in his On The Plurality of Worlds, mentions presentism as one solution, alongside endurantism and presentism, to the problem of temporary intrinsics, and rejects it as untenable (Lewis 1986, p. 202-204). They both do this because of the intimate link between eternalist theories and both perdurantist and endurantist theories of change. If there exist real times beyond the present, and objects do not persist through time by literally moving through that time in the way they move through a three dimensional space over a span of time, then something needs to be said about how they exist at those times. If true passage, the actual coming to be and ceasing to be of instants in an absolute sense, is denied then the only option is to have the objects existing timelessly at those times, as either spatiotemporal worms composed of temporal parts or via 'whole presence' endurantism. Otherwise contradictions and paradoxes result due to the changes undergone by beings.

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Chapter 2 - Endurantism: Relations To Times

In this chapter I will review endurantism, the second of Lewis' three proposed means of dealing with the Problem of Temporary Intrinsics. First I outline what endurantism is and how it differs from perdurantism. Then I consider how it responds to the Problem of Temporary Intrinsics, discussing how it treats intrinsic properties as relations of properties to times and proposes a notion of 'being wholly present' in opposition to the perdurantists presence via parthood. Next I consider objections to endurantism, particularly one by Rodriguez-Pereyra that endurantism falls prey to its own version of the No Change Objection. I then detail another version of endurantism, adverbialism, which claims to be able to skirt this problem by modifying the possession relation, making it relative to times, and not the properties themselves. I argue that it runs into many of the same problems with an additional infinite regress problem of its own. Both views are examples of relationalistic endurantism, relativizing some part of the property possession relation to accommodate an eternalist metaphysics of time.

Endurantists conceive of a thing's persistence through time as a matter of its being "wholly present" at any time that the thing exists. Considered most simply it is the negation of the theory of temporal parts whereby a thing is only every partially present. Lewis, though not a proponent of the theory[3], provides a good description of it. A things enduring through time "corresponds to the way a universal, if there are such things, would be wholly present wherever and whenever it is instantiated. Endurance involves overlap: the content of the two different times has an

enduring things as a common part" (Lewis 1986, p. 202). A thing enduring through multiple times overlaps those multiple times.

The endurantist claims that what are commonly held to be intrinsic properties are in fact relational properties to times. Relational properties do not threaten the intrinsic identity of a thing across time. Thus a thing can be identical across time by possessing all the same intrinsic properties at each of those times, varying only in relational properties. If relational properties are construed as identical or analogous to external relations then the way this works is clear: I am not changed intrinsically as I sit in my chair though outside my window many people are walking back and forth, changing their positions relative to myself. As my identity is preserved over time though my surroundings change, so my identity is preserved even though my relational properties change, since my essential intrinsic properties are unaffected. If I change my shape (an intrinsic property, according to Lewis) by standing up or sitting down then I am not really intrinsically different, just bearing a different relation to a different time.

Without recourse to temporal parts the endurantist solves the problem of intrinsic change in eternalism by relativizing properties to times. Instead of regular predicates for intrinsic properties like "x is F" the relationalist endurantist substitutes time-indexed properties such as "x is F at *t*". With this substitution the endurantist changes the description of temporary intrinsics from

(1) *a* is *G* at *t1*

(2) *a* is G* at *t2*

To

(5) *a* is (G at t1)

(6) *a* is (G* at t2)

This relativization allows for the exemplification of what would seem to be contradictory properties by the same object (C2). A banana can be both green and yellow by being *green-at-t1* and *yellow-at-t2*. Further, the thing endures through time by existing through multiple times, overlapping them. One way to imagine this in the case of a person (though this is only an illustration) would be the persistence of a Cartesian soul through the changes in the parts of its physical body. It is unmodified while its connection to the world undergoes many changes, forming a locus for the connection and disconnection of many temporary properties.

Lewis' objection that relationalism does violence to our commitments to the intrinsicality of certain types of properties is clearly seen to be borne out here. One way of framing such an objection is to say that it is not at all clear what such relational properties could be if they are supposed to encompass things like colour, shape, and other temporary intrinsics. The relation "x is F" seems intuitively simple, so basic it could not be reduced to anything other than its two elements (its substance, *x*, and property, *F*) and the relation between them.

Possessing a property at a time would then seem to be a matter of relating this relation to a time:

(x is F) at *t1*

Put another way, having the property is prior to having it at any particular time. The time a property is borne seems to be external and accidental in a way that having the property is not. The property could be the same property if borne at different times. A bananas being green could have been possessed at different times if it had been harvested earlier, or if the conditions of its ripening were changed. It would still be the same greeness of an unripe banana. Lewis believes that "we are entitled to firm intuitions" about what is and is not an intrinsic property in large, ordinary things, like cats, furniture, and persons. He is willing to allow that in the subatomic realm it is "up for grabs" whether properties belonging to the existents in question are relational or intrinsic. The point is that, with the perdurance theory, we have a good (to Lewis' mind) explanation of how properties can be intrinsic and changing, which means that we can hold onto our intuitions about intrinsicality (Lewis 2002, p. 69).

Mellor responds to this objection to this objection by arguing that relating properties to times entails very little. First, it is undeniable that when properties are ascribed to a thing, a time must generally be either specified or understood for the ascription to be definitely true or false. In our day to day affairs we understand that a claim usually is time relative. "Barack Obama is the president of the United States" is true in 2010 but false in 2004. The full claim, Mellor insists, would be

"Barack Obama is the president of the United States in 2010"[1]. These ascriptions of time pick out the part of the world we are to look in to find the truthmaker for the proposition. Second, the truth of the ascription does not depend on how the thing or time is specified. That is, the ascriptions are referentially transparent. "Barack Obama is the president of the United States" is made true by his *being* the president of the United States at the time in question. Third, for any ascription '*x* is F at *t*' to be true both the object *a* and the time *t* must exist. There must be, given that time must be included in our picking out of contingent propositions, a time for the object to exist and have the property at. (Mellor 1981, p. 113-114).

Against Mellor's first point I reply that times, despite being referred to in our discourse, are metaphysically unnecessary. Two reasons guide my thinking on this issue. First, Mellor and other relational endurantists treat times as necessary for changes when the argument can be made that change is what is necessary for there to be time. If we are right to demand some minimal difference in order to assert non-identity and thus true distinctness, as we must do if we are to distinguish any two things, there must be something different *in* two times to make them different.

Secondly, to hold that times exist by themselves implies the possibility of empty times. An empty time is a time either with no object in it or where no object changes. In an eternalist framework they would be static portions of space-time, without difference between their time slices. They are unnecessary brute facts not necessary to explain anything. Barring any explicit reason to consider the

[1]I am substituting Barack Obama for Mellor's example.

existence of empty times, it makes more sense to reduce time to the changing things. In this perdurance theory has a definite advantage over endurance theory, as the existing temporal parts *make* the times at which they exist. Presentism can also deal with this problem, as presentists can base the present moment on the activities of the existing things rather than a separate time dimension that can be filled or unfilled. These two theories eliminate empty times.

The relationalist is making the radical claim that it is the two place relation that is derived (Van Inwagen 1990 249-250). Following up on Mellor's suggestion Van Inwagen claims that all contingent things exist at times, and the reference to times must be included in a full description. So far this is similar to Mellor's argument above. To speak of the thing with the property itself is merely to disregard the time index for convenience, like when we call a historical personage a philosopher and neglect to mention that they were a philosopher only from the time they were a young adult to their death. Why can it not be the same for temporary intrinsic properties, even for properties a thing happens to have for its entire life, being related thusly to all the times at which it exists?

The main argument against this attempt to claim the three place relation is more basic than the two place is to point out the conceivability of a changeless universe, perhaps consisting of a single mereological simple, or of a mereological whole whose parts are incapable of being separated and bearing different relations towards one another and to the whole they compose. Such a universe would be best described by one place predicates, any reference to times being excessive.

Indeed there would be no 'time' whatsoever, time being dependent on there being changing things to be kept track of. Here is a case where the more controversial Principle of the Identity of Indiscernibles would certainly seem to hold - nothing distinguishes one time in this universe from another, so time plays no role in specifying it totally. I grant that this conceivability is not a knock down argument, but it is useful for identifying one's prejudice regarding what needs explaining: is change the extraordinary fact that needs explanation and accounting for, or is stasis the extraordinary fact? Again I refer back to Simon's objection to temporal parts and, more generally, process based ontologies: there is something alien to common understanding about them, to base being on becoming rather than vice versa (Simons 1987, p. 126). Something must *be* in order to *become*.

Aside from the "occultness" of having basic 3-place predicates for what were held to be temporary intrinsics, there is another cost to be borne by a relationalist endurantist. That is that it commits us to the existence of times as things separate from the things in time (Heller 1992, p. 697). This Platonism about time may be acceptable, but it opens up more consequences than a non-revisionary metaphysics may want to accept such as the possibility of empty times without any existent things in them. Empty times (as mentioned above) and other related fallout from temporal Platonism would need arguments independent of the endurantist/perdurantist debate. Once again, larger questions about time seem to need to be settled before a definitive verdict in the debate can be given. Perdurantism, by contrast, is free of these commitments, especially if time is conceived of as highly analogous to space. As stated above, the existence of a

temporal part *is* the existence of a time, with no need for non-dependent *times* for the temporal part to exist in. Relationalism about time and space is easily capturable in perdurantism. Substantivalism about space and time can also be captured, but that is a larger debate. One of the advantages of perdurantism is that it can remain agnostic between the two positions.

Mellor claims that the need for the *t* variable in the relation need not prejudice us for or against the existence of times separate from events in time (Mellor 1992, p. 114). This point addresses Heller's criticism of relationalists and adverbialists for positing times as things existing separately from the events in time. Though Heller, in his third point, claims that both the thing and the time must exist for the relation and property ascription to be true, this need not entail the existence of empty times. Even this posits an odd thesis, that though the times are transcendent they map exactly onto the beings in time, with no empty times or gaps.

Having covered attacks on relationalist theories about the nature of changing properties, and the problems about positing times as separate entities from entities in time, it is time to consider a much more serious objection. Rodriguez-Pereyra argues that relationalism falls prey to its own version of the No Change objection. Given that relationalism was in part posited to deal with the No Change objection facing the perdurantist solution to temporary intrinsics, this a major criticism. His argument is as follows:

(1) True change is the having of incompatible properties or relations at different, existentially exclusive times

(2) Relational theories of change make all changes into relational changes

(3) A relational change can only be a change if it is borne towards the same object at different times (example: "being north of S at t1" and subsequently "being south of S at t2")

(4) Distinct times are distinct entities, thus the possession of properties at distinct times by the entity are relations borne to distinct, not the same, times.

Therefore, (5) Relational theories of change does not allow for true change (Rodriguez-Pereyra 2003, p. 192).

What Rodgriguez-Pereyra is pointing out here is an extension of the objection made by Heller against what he held to be common misunderstandings of 4D ontology by endurantists, though Rodriguez-Pereyra is not a four dimensionalist. The endurantist is committed by his theory to the existence of real times independently of things in those times. This needs to be the case so that properties can have relata to which they are related. This very commitment means that the changes that endurantists describe are no changes at all. A relational change is a change in the relations between two things. If Bill and Sam are friends on Tuesday and enemies on Wednesday, then they have gone through a relational change. It is genuinely change because the two are, intrinsically, self-same. If Bill is sitting at noon and standing at one o'clock, and the two times are distinct entities, then there is no genuine change, but two relations borne to two different things.

Why hold that change requires a certain kind of temporal difference in possession, when opponents of presentism deny this? Temporal difference in possession is important because without temporal difference there are simply two different objects without an identity connection between them, and no change. There is no change if there are simply two beings, equally as real as one another. For real change to occur the same object bearing different properties at different times, not stand-ins for the object. More than temporal differentiation there is a need for existential exclusivity – the past moment, which was present, ceases to exist completely once the new moment comes to be. Recall the point about the origin of our common talk about change in static objects earlier in this thesis – we have a loose way of talking and conceptualizing deriving from our experience of sequential time that we apply to objects with differentiated parts. Our experience of the partially paved, partially gravel road changes as we move along it through time – our experience is genuinely changing. Since the road is in two parts, one paved, one gravel, we say (loosely) that the road changes from paved to gravel by applying our changing experience to an object that is not changing. Our first-person experience of change is the root of all our loose talk of change in static objects. This is why I insist with Rodriguez Pereyra on (1), that true change is having incompatible properties or relations at different times.

Chapter 2.2 Adverbialism

Endurantists wanting to preserve the true intrinsicness of intrinsic properties have another option in an eternalist ontology, that of modifying the possession relation

rather than the property. Instead of having properties like "is (G at *t*)", where the property is stated as inherently relational, the adverbialist argues that time modifies the possession relation: x (is-at-t*)* G (Haslanger 1989, p. 120).

This is an altogether different kind of property possession. It is not the *simpliciter* possession insisted upon by Lewis and other perdurantists, and it is not the modified properties of endurantist relationalism. Instead, adverbialism is akin to adverbial modification of regular sentences. "Robert runs" is a fine English sentence, but not completely descriptive. Missing in the simple sentence are the details present in the full situation - Robert will run at a particular speed, either slowly or quickly, to somewhere, from somewhere, for some reason. Any concrete situation described by the proposition "Robert runs" will also have all the details left out.

The same applies to the possession of properties by substances. The full description of the situation must include the time at which the property is borne. X is G in a Monday-way, while X is F in a Tuesday-way (Hawley 2004). This is similar to the defense of relationalism by Mellor, that predication of properties to contingent concrete existents must include the times at which those properties are borne, thus establishing the order of spatiotemporal events.

The primary objections to adverbialism are similar to common objection to both perdurantism and relationalism - the postulation of odd metaphysical facts to account for change (Lombard 2003, p. 169). With perdurantism the objection is to temporal parts, new and unfamiliar objects in an ontology, not to mention the fact

that the postulation of these parts seems to make change impossible. The objection to relationalism is to the strangeness of saying that what are commonly taken to be intrinsic properties are in fact relational properties. Again, the proposed solution also seems to make change impossible. To adverbialism the objection is to messing around with the seemingly straightforward notion of intrinsic property possession. If *x* is F intrinsically it doesn't seem like there is anything else to say about it other than perhaps the time at which F is a property of *x,* and that time location seems to be external to the possession.

A second objection is brought by Lombard against relating states of affairs (property possessions by objects) to times via the relation of obtaining. Lombard claims that this produces an infinite regress of the following form:

(1) State of affairs, *s*, obtains at *t*

(2) *s*'s obtaining obtains at *t*

(3) the obtaining of *s*'s obtaining obtains at t

(4) ...

The cause of this regress is the insistence of adverbialists like Lowe that 'at *t*' be treated as a genuine adverb modifying a verb, and that time should not be treated as a relatum of some relation. Adverbial modifications, like the verbs they modify, must be specified by the times that they occur. For example, if the time at which someone is sitting must be specified, then the time at which they are sitting

stiffly, comfortably, nervously, etc. must also be specified. If that adverb happens to include a time, then a regress certainly follows. This is a strength endurantist relationalism has over adverbialism - once the relation to *t* is defined, that is the end of the matter (Lombard 2003, p. 178).

The most basic problem for adverbialism is the same as that for relationalism. Both are open to Rodriguez-Pereyra's objection against relativization of properties (or in this case instantiations) to times. The relativization brings with it the need for independently existing times, and the times are distinct entities. A being can only change its relations towards the same entity, not towards subsequent ones. Therefore both relationalism and adverbialism cannot support real change. This means that both types of endurantism cannot meet condition C3.

A sharp eyed critic will note that both relational and adverbial endurantism do not seem to map onto the chessboard analogy as well as perdurantism does. Perdurantism, with its temporal parts, seems more amenable to comparison to the chessboard with its black and white squares. Barring all the other problems that I have demonstrated non-presentist endurantist theories have, can they escape the No Change Objection?

I answer no. The problem is that the relationalist or adverbialist is still committed to eternalism about time, which is the real target of the chessboard analogy. The enduring object is not changing, but possesses all its relational properties as a complete whole. It does not acquire them through a process of growth. Recall the point from 1.2, that real, genuine change requires that its subject be existentially

incomplete. A presently enduring object possesses at any time only a handful of the properties it will have over the course of its life, both intrinsic and relational. Its properties at any time are *simpliciter* properties, products of its existence in the present. It will, through changes, gain past-properties while it possesses presently, but these are not the simpliciter properties that make up the intrinsic nature of the entity now.

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Chapter 3: Eternalism

In this chapter I analyze how the Problem of Temporary Intrinsics owes its origin to the eternalist theory of time. The problem, in fact, is caused by commitment to eternalism. By privileging all times as equally real the question of how a thing persists through time becomes pressing. I discuss the nature of eternalism and how it informs both perdurantism and endurantism, being both the origin of the problem and the grounds for their respective solutions. I next discuss why eternalism is an attractive theory for many metaphysicians, and how its acceptance can come to be seen as necessary to those who accept McTaggart's arguments against the reality of time *simpliciter*, an argument which Mellor modifies in his own work to be an argument against the existence of real tense and thus presentism. No eternalists deny the reality of time, but all deny the reality of a privileged present moment. I follow this summary by discussing some of the advantages that follow from eternalism before discussing its costs, which I consider to be fatal.

Our consciousness of time is of endless becoming or passage. A bird's flight begins in a corner of our vision, passes the center, and exits the other side, each moment succeeding the other and not overlapping. Once the moments perceived have passed they are unrecoverable except through memory. One way of capturing this viewpoint logically is to say that there is something metaphysically significant about the tenses we use in language. Tensed statements like "x was F", "x is F", and "x will be F" pick out truly different domains of being. It is natural to

speak of the present as existing, of the future as yet to be, and the past as either non-existent or of a different type of existence than the present. Time is ceaselessly coming to be out of the potential future and passing away into the irrecoverable past.

Eternalists hold that this common picture of the passage of time is an illusion. They claim that the privileged existence we naturally extend to the present moment over against the past and future is illegitimate, and can be disproved by metaphysical argument. It is easy to see how such a metaphysical position generates the Problem of Temporary Intrinsics. If the past, present, and future all are real in the same way, then when viewed timelessly, where the timeless view encompasses the totality of all existence, an object has multiple actual temporal locations, and it possesses different intrinsic properties at those locations. If predication is treated without reference to times then a contradiction is indeed generated. "A is F" at t1, and "A is not-F" at t2. "A is F" cannot be true if "A is not-F" is true, and vice versa. The only way out from within this framework is to index properties to parts at those temporal locations, or to relativize either the property possessed or the relation of possessing it to the time at which it is possessed. As we've seen, all three options come with attendant costs that a non-revisionary metaphysics ought to be wary of bearing. A large part of that cost is having to explain common phenomena like our sense of the greater reality of the present over the past and future as well as the intuition that the future is open and not yet set while the past is fixed.

Why would anyone opt for eternalism, given its production of this neglect of one of the most basic features of our consciousness, the true passage of time? A major historical reason for the acceptance of the view is the apparent soundness of McTaggart's argument against the A series, the reality of flowing, dynamic time.

McTaggart distinguishes between different ways of conceptualizing time, and all philosophers since have utilized the same distinctions. The *A series* is the series of moments designated by being past, present, and future. Only one moment is ever present, and all other moments are defined by their relation to the present moment. The open series from the remote past up to but not including the present moment constitutes the unqualified past tense. The open series from the remote future up to but not including the present moment constitutes the future tense. Past, present, and future are incompatible attributes of both tenses and events. There is only one present moment, though the contents of that present moment change ceaselessly.

The *B series* is the series of dates and events ordered by prior, posterior, and simultaneous relations to one another. It is an alternative way of saying when an event occurred. It dispenses with the terms past, present, and future, only caring about the relations between temporal moments along a time line. This way of seeing time is similar to the time lines of historical events seen in newspaper articles and history books, or to a strip of motion picture film. For example, the Second World War lasted from September 1st, 1939 to August 12th, 1945, encompassing all moments of time therein. On a timeline of the twentieth century

it would be represented by a segment of a timeline, extending from the left to the right, located after the First World War but before the Cold War. Events within the Second World War, like the Invasion of Normandy or Reinhard Heydrich's death can be said to be simultaneous with it, taking place within its temporal span.

The greatest difference between the A and B series is that the attributes of the A series change while the attributes of the B series are static. Successive moments in the A series begin as future to the present, become the present by displacing the previous present moment, and then become past as they are in turn replaced. No event that has been present will ever be present again, being rendered irrecoverably past. The relations between events are ever changing. At the time of my writing this paragraph (July 2010) the Second World War began 71 years ago, and grows progressively farther from the present with each passing moment. The B series, by contrast, is fixed. September 1st, 1939, is a fixed distance of 71 years from September 1st, 2010, and remains so always.

Mellor's argument is the same as McTaggart's, with the difference that Mellor does not go on to deny the reality of time and change, merely the reality of the A series. He does this by pointing out a contradiction inherent in the A series itself. Mellor, unlike McTaggart, wants to do away with the metaphysical status of tenses as being marks of existence and non-existence, attempting in his work *Real Time* to show that the B-series is all that is needed to discuss all the facts that there are, though tense retains a pragmatic role in our discourse, one that is not completely reducible to the B-series.

McTaggart/Mellor's Argument:

Symbols:

P = past N = present ("now") F = future

e = any event P*e* = *e* is past N*e* = *e* is present F*e* = *e* is future

(1) Many A-series events are incompatible with each other (P*e* ⊢ ~N*e*, N*e* ⊢ ~F*e*, F*e* ⊢ ~P*e*)

(2) Events change their tenses, future events becoming present then becoming past

(3) Every event must have all A-series positions (Pe & Ne & Fe)

(4) But nothing can really have incompatible properties.

Therefore, (5) Nothing in reality has tenses [from (1) & (3)] (Mellor 1981, p. 92)

The immediate riposte to McTaggart/Mellor's argument is that no event has incompatible tenses at the same time. Events are first future, then present, and then past, with no overlapping of tense. Mellor responds by questioning when, in tensed terms, do things and events have their tenses. The proponent of tensed events wants to add another level of tenses onto the current ones. Say that an event *e* is future and will be present (FP*e*). Mellor asserts that for each additional level of tense added to the first there will need to be another level added to that, and so on ad infinitum (Mellor 1981, p. 95).

Eternalism has several notable advantages as a theory of time. It possesses a straightforward logical notation for expressing truths at times: (∃x∃t)(x is F at t). This is much simpler than the highly complicated constuctions of tensed temporal logic. For example, to state that a certain event occurred in the B-series is simply to state what date it occurred on, and for further information what events it was simultaneous with. For example, to state that Alexander the Great was victorious at the Battle of Gaugamela one need only specify that the battle was in 331 BC, during the span of Alexander's life (356-323 BC) or, alternatively, its relation to other events before simultaneous, before, and after. To state the same in the A-series requires specifying that the event, which was present, is now past: **PN(**Alexander is victorious at the Battle of Gaugamela). Stated literally, this is to say that "It was the case that Alexander was victorious at the Battle of Gaugamela". Even more tortuous constructions can be made. Consider a prophet who foresaw that Alexander was to win the Battle of Gaugamela (assume for the sake of demonstration that such prophecy is possible). Then it can stated now PF(Alexander is victorious at the Battle of Gaugamela). This can be literally translated as "It was the case that it would be the case that Alexander is victorious at the Battle of Gaugamela).

Perhaps most importantly, eternalism can easily address questions about transtemporal relations and truth conditions. If it is true that I, at 25, am shorter than my great-great grandfather when he was 25, then I need two truthmakers one of whom, myself, is taller than the other. Eternalism can easily account for this, with a temporal part or occupied time containing my grandfather at the same age.

The transtemporal relation to him is thus plainly true. I expand more upon this in the next section on presentism (4.0).

Chapter 3.1 The Costs of Eternalism

Eternalism's benefits come with major costs. First, it is contrary to our initial favouring of the present moment over all other times. Simply put, eternalism cannot encompass our attitudes towards the past, present, and future. Prior (Mellor 1981, p. 48) discusses the case of a person who is filled with dread because they know they have to go the dentist tomorrow, and are afraid that the appointment will be painful. They are fearful because the appointment is still to come, something that is drawing ever closer. After the appointment, they are no longer fearful, and can express relief, typically of the form "Thank God That's Over", the title of Prior's essay. If all times are equally existent, what accounts for our dread prior to the event and our relief afterwards? Eternalism is a description of only scientific, historical, metrical time, not the phenomenal time in which we live and which we naturally and rightfully privilege. If Lewis can claim that we are entitled to strong intuitions about what properties are and are not intrinsic in macroscopic objects I believe that we are even more entitled to our intuitions about the real passage of time.

Mellor's responds that the relief in the dentist case is not caused by the relative positions in time of the person and the event they dread but by their belief about the futurity or pastness of the event. It is because the person believes that the dentist appointment is in the past that they are relieved. They would be equally

relieved even if they were mistaken about the event being past. Belief is what causes the relief, not the actual position of the event. The truth of the pastness or futurity of the event relative to the speaker only determines whether there exists a defeater for that belief (Mellor 1981, 48-52).

To Mellor's response I reply that this response and the dentist case itself do not capture everything about our attitudes to past and future. I regret the death of my grandfather eighteen years prior to this writing not because I regret that we are not now simultaneous but because I regret that he no longer *exists*. This is certainly a function of my belief that he is dead simultaneous with the time I think of his death. We miss dead loved ones in a way much stronger than we miss merely spatially distant loved ones, like those in another country. Families of the Virginia colonists remaining behind in England would have missed their departed relatives, whom they would likely never see again, but nowhere near as much as they would have missed them were they dead. It may be that our attitudes are mistaken here and need clarification in the light of scientific theory, but I am wary of any theory that would reduce our common, species wide attitudes to absurdities.

Secondly, eternalism is rigidly deterministic. True facts exist about what a person does at every single date in their life, from beginning to end. So too there are facts about every single part of the universe. This need not be a problem for a metaphysician already committed to rigid determinism, but for any metaphysician who believes the universe may be partly indeterministic, requiring an open or branching future to account for the bivalence of future contingent truths. Even

more fundamentally than Aristotle's sea battle (De Interpretatione 9) are the actions of fundamental particles which, by the Copenhagen interpretation of quantum mechanics, requires there to be branching times to account for the results. While branches of time can exist in an eternalist conception of time, spread out like tree branches from a common source, the actual path of any thing through time becomes rigidly set. If it divides at a certain point and pursues different paths the thing ceases to be. 'What' the object is at it travels through different branches of time becomes a matter of pure stipulation. Now, this need not be a problem for the advocate of perdurantism, who can supply spatiotemporal objects to account for any branching, but it is an additional conceptual hurdle to accepting the eternalist metaphysics.

Most fundamentally, as I have been pointing out in relation to specific theories of change based on it, eternalism has no true change. Peter Geach elaborates this by claiming that in a sense eternalism is not even rigidly deterministic. A block universe like that posited by eternalists has no change on either a perdurantist or endurantist ontology. Things simply are one way, and then are another way in a different part (Geach 1971, p. 304). To support this argument Geach draws attention to changing states of consciousness. Even if the distinction we commonly draw between past, present, and future aspects of physical things is a fragmentary misperception of a changeless reality, it still remains true that we have uncombinable illusions as to which realities are present. Our childhood excludes our infancy, and our adulthood excludes our childhood. We must therefore, according to Geach, have these illusions not simultaneously but one

after another, and then "there is after all real time and real change" (Geach 305). Real change here is understood as a thing having a property and then lacking it *simpliciter* with a separation of time, without any mediation either by relationalized properties or by temporal parthood. Real temporal becoming, with things coming to be and passing away in a changing present, provides just such a domain for real change and for the flow of time.

Thirdly, and following from the second point, there is the question of the present. What makes the present we occupy "now" and not some other time? Why is it now and not the 18th or 22nd century? Mellor and other eternalists respond to this challenge by using token-reflexive truth conditions. Beliefs about what time is the present cannot fail to be true, because every time they occur their truth condition is fulfilled since they are simultaneous with the thinking of them. Plato can, in the 4th century BC, think that it is now the present, while I can think the same thing, and we are both right, according to the token-reflexive theorist (Mellor 1981, p. 53).

Bourne, a presentist, believes that the eternalists can answer the question satisfactorily with token reflexive truth conditions (Bourne 2006, p. 26) but I do not. I think that Mellor's response misses the point. The point is not about the truth conditions of claims about experience being present, the point is about experience itself. To withdraw to the plain of abstractions and truth conditions for propositions is to miss the phenomenological point of Geach's objection. If the present is not privileged in any sense, then it is an inexplicable brute fact that we

not only are at, consciously, the present moment we are at, but that we experience succession in our experience. More than that, there *is* a natural succession in our experience. Except when films of objects are run in reverse temporal processes do not reverse themselves - aging is in a single direction, erosion does not build mountains or seashores. Effect follows cause without jump or skip or reversion to an earlier period.

Geach believes that the only way experience in an eternalist cosmos could be saved would be to make that small part of it, the experience of conscious minds, truly moving and becoming, like an eye moving across a printed page of text. This is similar to the chessboard analogy outlined in section 1.2 above. The chessboard analogy drew attention to the loose talk we use when describing three dimensional wholes as “changing”, applying the changes in our experience produced by temporal succession of moments to the things experienced, when the things themselves are not changing. Geach’s point is that even if the universe is such a solid 4-dimensional block, the successive experiences of minds must still be explained by real becoming, as genuine movement through the 4-dimensional space. Such a view is objectionable because it is both an extreme form of Cartesian dualism and because it reduces the will to an "impotent chimera", a truly fatalistic picture of the cosmos (Geach 1971, p. 307). Even if there is branching time the transit of the mind through the branches would be random, not a matter of will. The experience of willing and acting, not to mention conscious experience itself, remains inexplicable in eternalism. More than inexplicable, time consciousness is not even considered in eternalist descriptions of the universe.

Einstein called this the “stubbornly persistent illusion” but I question whether it should be considered an illusion at all, especially when, as we shall see, presentism can do all the things eternalism does without calling this most fundamental phenomenological fact an inexplicable falsehood.

Fourthly, since there is no real change there can be no real causation in eternalism. Mellor attempts to use causation to fix the order of times, with prior events causing future ones. This is also an attempt to address the perceived flow of time but there is no reason to consider this true causation and not simply a brute fact. Causation implies some true influence of one thing upon another, without which the thing would have been different. This is most easily pictured in a presentist framework, where the presently existings things exhaust reality and instantaneous transfer of causal force between objects makes changes, enabling real becoming. Such a world can be rigidly deterministic, but causation involves the genuine coming to be of new things out of old, with real dependence relations. To speak of dependence within a block universe seems to be illegitimately importing the features of abstract objects like formal arguments utilizing logical dependence into a physical ontology. Such dependencies draw our attention to the origin of eternalism, to mathematical and scientific means of discussing time mistaken for time itself.

Even with these objections metaphysicians are still willing to embrace eternalism because of how compelling the argument against the A-series is. Geach, to head off McTaggart and Mellor's argument, provides a strong argument against the B-

series. Recall that the B-series is the series of temporally ordered events, ordered by the relations "earlier than", "later than" and "simultaneous with". The logic of such a series is built on the relation "simultaneous with". Geach claims the B-series is vastly more complicated than the A-series, and that it is definitely wrong to analyze claims of the simultaneity of events, A and B, in terms of a time *t* more primitive than them. The statement of simultaneity, "at the same time", Geach claims, does not involve any reference to an apparatus or technique for telling the time. On the contrary, our ability to construct times depends on our knowing primitive simultaneity questions to be true. This is dependent on our knowledge of the real present, and thus the A-series (Geach 1972, p. 311-312).

The real fault Geach finds with McTaggart's argument is its reliance upon events. Geach argues that events are not logically proper subjects, and can be paraphrased away with ease, simplifying our ontology to things rather than events and things. It is better, he writes, to express events with propositions rather than with name-like phrases. For example, "the death of Queen Elizabeth I" is more properly rendered as "Queen Elizabeth died", making clear that the true subject is not an event but a person (Geach 1972, p. 313). The logically proper way to represent the time order is via complex sentences whose subclauses *report* and do not name events, joined together by temporal conjunctions like "and then", "at the same time", "while". These conjunctions, being logical, are radically different in category than the necessarily relational terms of spatial ordering. Thus it can be clearly seen that there *is* a radical distinction between space and time, and that spatial predicates are not applicable to temporal ordering (Geach 1972, p. 315).

It is, Geach claims, an accident of pragmatic and common English that "at the same time", our common idiom for expressing simultaneity, seems to refer to a time. Simultaneous, Geach claims, is not a proper relation but a logical conjunction, a topic neutral transcendental concept. Being topic neutral, it belongs to logic and not to a special science, and cannot be disproved or altered by any experiment, especially since the use of this concept is what makes any experiment (which describe changes over time) understandable. No concrete experiment or event can overturn a concept necessary to the comprehension of the event in the first place.

How can eternalists respond to these challenges, especially the chessboard analogy and Geach's related "moving minds in 4D" criticism? Like Mellor, they can attempt to account for conscious experience by basing it on the accumulation of memories. An experiencing consciousness at t1 is different from experiencing consciousness at t2 because it possesses more memories. The problem is that the difference in memories is not enough. Without a means of distinguishing the obviousness of 'now' in our experience such descriptions are at best only partial. The reason, to repeat what was stated above, is that eternalism is a hypostatization of a model of time, and attributes to time features of the model rather than adapting its model to time. Our first, most basic knowledge of time is from our direct conscious experience. Because we possess memory and imagine we can imagine complete temporal processes as sums of their stages, as complete objects when we will never see all the stages together. The moments of which the sum is made are abstractions from experienced moments. In the process of abstraction,

the experiencing of them, their presentness, is removed. Though convenient for scientific purposes the model is not the thing, and leads to absurdities like those outlined above when the model is taken for the thing. It is thus a mistake to call our successive experience of time a "stubbornly persistent illusion". To call it stubbornly persistent is in fact to acknowledge its primary reality and that it exceeds the simplified models we use to discuss it.

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Chapter 4: Presentism

In this chapter I discuss presentism, the theory that all the things that exist are presently existing things. I begin by outlining the theory and discussing how it meets the Problem of Temporary Intrinsics by abandoning eternalism, the origin of the problem. I discuss several varieties of presentism, discussing their strengths and weaknesses. Then I discuss arguments against presentism and show how most are either groundless or can be adequately adressed. I conclude by showing how presentism is capable of meeting all of Merrick's desiderata. Rather than focusing on any one path I present a number of options from the literature to show that the resources exist for a substantial alternative to eternalism. It is important to discuss how presentism handles topics like relations and causation because arguments about these topics are used both to attempt to disprove presentism (as we saw above with McTaggart/Mellor's arguments against the A-series) and to argue that eternalism is a superior way of handling things. Since all varieties of eternalism are vulnerable to the No Change Objection and deny our common sense experience of the changing present, these additional factors clinch the argument in favor of presentism over eternalism.

Presentism is a theory of time claiming that only present existents are actual. There is no past or future in which other existents could be. Things in the present are denoted by the present tense. The things in the present come to be and pass away in an ultimate sense. Stated in terms of the Problem of Temporary Intrinsics, the only properties an object possesses are the properties it *now* possesses. The

Problem of Temporary Intrinsics does not arise for the presentist, as he has no troublesome existing past or future in which the contradictory properties could be instantiated in the same subject to produce the paradox. For more on why the Problem does not trouble the presentist see 4.4

Nor, for that matter, does McTaggart's argument affect presentists. McTaggart's argument is about tenses (past, present, future) applied to different times, and contradictions resulting from that. This is made possible by the simple fact that there is only ever one real time in presentism, the present moment. Without a past or future, no contradictions can result in the time ordering. The past and future for presentism are derivative of the present, and propositions about them are made true by present existents, as I outline below.

4.1 Varieties of Presentism

Craig Bourne identifies four varieties of presentism: radical, Priorian, reductive, and ersatz. Each theory has its own strengths and weaknesses. For this thesis I am primarily utilizing Bourne's outline of the presentist positions because it is the fullest treatment of the position I have found in the literature and handily addresses the problems confronting presentist ontologies, especially when combined with the ideas of Geach, Bigelow and Merricks. All the theories outlined hinge around the idea of truthmakers and truthmaking. If the present is to be all that exists, an account must be given of how to make statements about the past and future and how to reduce relations across times to facts about the present. Without accounting for how presentism handles this issue it would be hard to

argue for presentism over eternalism even with the No Change Objection. Presentism must be shown to be by far superior to eternalism.

The simplest variety of presentism is *Radical Presentism*. This theory denies that future contingents have truth values because it rejects the principle of bivalence, that there are things, future events, which have indeterminate truth conditions. The most famous example in the philosophical literature is Aristotle's example of tomorrow's sea battle in *De Interpretatione* 9. It is a fact now that tomorrow there either will or will not be a sea battle. In the course of time either one possibility or the other will be realized. Radical presentism rejects this since it rejects any status whatsoever to events that are to come. It also rejects the existence of the past. This immediately entails unwelcome consequences. Universally acknowledged true statements about the past like "Plato taught Aristotle," "the Allies won the Second World War," and "Nicholas II was Czar of the Russian Empire in 1910" are all made false by this theory. Bourne considers this a solid reason for rejecting radical presentism, as any decent theory of truthmakers for past events must have some way of making universally acknowledged truths about the past actually true (Bourne 2006, p. 40-41).

Priorian Presentism is a more complex theory than radical presentism. It allows for the truth of past tensed statements by locating their truth conditions in the present, the only place they could exist. Recall the time-function operators from the discussion of McTaggart's argument above, **P**, **N**, and **F**, meaning respectively "it was the case that," "it is now the case that," and "it will be the case that." Given

the commitment of presentism to the actual existence of only the present moment, the **N** operator is superfluous and can be left out; all predication and statement making is assumed to be about existents *simpliciter*, meaning only present existents (Bourne 2006, p. 42). Though it is not included, the **N** is always assumed. For example, in the statement:

"It was the case that Alexander defeated Darius III at the Battle of Gaugamela" (**P**p)

it is to be understood that the statement expressed in full is:

"[It is now the case] that it was the case that Alexander defeated Darius III at the Battle of Gaugamela (**NP**p)

To this formulation of the presentist position an immediate objection is raised: what makes these statements true? What are the truth makers for the presently true past tensed propositions? Bourne criticizes Prior for denying that anything more needs to be said in such cases. Truthmaking is necessary independently of the theory of truth. If Socrates, Plato, and Alexander are no longer around, and by extension no longer engaged in the *simpliciter* activities that make statements about them true, what then makes those truths so (Bourne 2006, p. 43)? The idea that truths about the past are made true by facts obtaining presently is vital to the full theory of truthmakers in presentism. Therefore this insight from Priorian presentism will be preserved, but will be elaborated in the following discussion.

Reductive Presentism can be dealt with swiftly, as it does not contribute significantly towards the overall drive of this thesis. Reductive Presentism is the position that what makes statements about the past true is the evidence for them that now exists. The only parts of the past that are real and thus have truthmakers are the one's whose effects are still present. Reductive presentism is closer to reductive presentism than to the fuller picture of presentism that Prior, Bourne and Merricks draw, and is subject to many of the same objectionss. Though truths about the past can be stated truly, it seems illegitimate and strange to reduce all that can be truly said of the past to those whose effects are still present now (Bourne 2006, p. 47). Though the theory does not strictly deny the past, it does violate our sense that there is more to be said about the events of the past than we or any finite beings are capable of saying. It also leads to a strange myopia about the past - if past occurrence B contributes strongly to our present situation, and it was in turn the outcome of occurrence A, but occurrence A is now exhausted, how does it make sense to say that there is nothing true to be said of B, or that the followable truths about the past simply stop at the beginning of A? This limiting of the truths about the past to what is now effective is illegitimate and unwarranted. If there are truths about the past, then they must all be true now. Again, the full account of truthmaking in presentism allows for all the truths about the past to be true, even if their effects are exhausted.

Bourne's *Ersatz Presentism* desribes the present and other times by the use of two different categories of propositions: E-Propositions and U-Propositions. Times are constructed from sets of present-tensed propositions, similarly to Prior's method.

Prior constructs the present moment from the conjunction of all those propositions that are presently true *simpliciter.* Other times are made by the conjunction of all those present-tensed propositions that would be true at those times. Bourne alters this theory by distinguishing present tensed propositions with P or F (past or future) operators, which he calls E-propositions ('E' for 'embedded' tense operators) from those that do not have such tense operators, the U-propositions ('U' for 'unembedded' tense operators). A typical E proposition would be: "(N) It is now the case that (P) it was the case that (P) Socrates is sitting". The same content in a U-proposition would be: "Socrates is sitting." U-propositions are thus the most basic an make up the present (Bourne 2006, p. 52-53).

Ersatz presentism allows for pasts and futures by the use of ersatsz pasts and futures. It is not that no other times exist, but that only one time is concretely realized. These other times are constructed via maximally consistent sets of E-propositions, ordered by an 'earlier than' relation. The actual time is the time whose propositions are expressible by U-propositions, without the temporal modifiers (Bourne 2006, p. 54). It is the only one that is fully actual and not merely a potential description of states of affairs.

Bourne's theory is attractive in many ways, but becomes quite complicated, much like Priorian presentism. There is simpler means of truthmaking without dealing with complicated tensed propositions. Bigelow and Merricks propose that all past tensed propositions are part of present existents, both the current existents and the presently existing universe they jointly compose. These modifications do not

prevent Bourne's presentism from providing many good suggestions about how to avoid various pitfalls of presentism, because they are not completely dependent on his ersatz theory. Bourne's theory also has the unattractive feature that it does not capture real becoming in an intuitive way. Bourne's sets of propositions, if they are taken to be existents that become instantiated and then cease to be so, resemble something akin to the 'substance' view of time, with its positing of time as closely analogous to a substance like water, to which the obvious question can arise "just how fast does time flow?"

The Time Rate Problem is a common objection to presentism. If time passes, at what rate does it pass? It would seem to require a super-time in terms of which its passage could be measured, with a super-super-time to measure that, and so on ad infinitum. Eternalism, by contrast, in denying real passage, does not face this issue, as all times are existent. This is a viable objection only if time is conceived of substantivally, as a substance that passes a point at a rate. either fixed or variable, like a river flowing under a bridge.

This objection is avoidable if the substantival conception of time as a thing independent of what goes on in time is abandoned. The alternative is to tie the passage of time to the coming-to-be and passing-away of stages of objects, with mutual dependence between the existence of the times. If there is a time *x* then there must be an entity *y* at *x* which is coming into or going out of existence (Brogaard 2000, p. 345).

In summation I have presentism's position on truthmakers for past tensed statements: past tensed statements are truths about present existents. Presently existing things gain past tensed properties as time passes and they persist. The truths attach both to the things themselves and to the universe as a whole. For example, Columbus, when he lived, bore the property of "first Genoan to visit the Caribbean in 1492" while the universe has the property of "being the place where Columbus visited the Caribbean in 1492". Now I will examine how this “growing present” approach to truthmakers affects how presentism deals with transtemporal relations.

4.2 Transtemporal Relations (Reference and Causation)

One of the most common objections to presentism is the arument that it provides no home for universally acknowledged truths about the past and no means to account for causation.

Lewis objected to presentism with the pithy dismissal that it denies what 'everyone holds to be true', that they have a past and a future (Lewis 1986, 202). Is this a valid criticism? Lewis here may have had in mind the fact that we believe our statements about the past and future can be determinately true and false (for more on Lewis’ point specifically see section 4.4). This is one form of a common argument against presentism, the Argument from Relations. It seems that relations are existence entailing, requiring both their relata to exist for their truth to be made. Expressed in current metaphysical speak, all the terms of a relation need truthmakers. A proposition asserting that a given relation obtains is made true by

the existence of its relata. Thus an object *b*'s being between *a* and *c*, Between(*a*,*b*,*c*,) requires that all three terms exist for a statement about it to be true.

The presentist can easily answer this question for present existents like the objects on a desk or cities along a highway, but is hard pressed to answer when the objects exist at different times. If I am taller than my great grandfather at age 25, as in the example used above, then where is the truth maker for this, given that both my great grandfather *simpliciter* as a possible contemporaneous existent with myself and his now long past 25-year old life portion no longer exist?

Expressed in full, the Argument from Relations is as follows:

The Argument from Relations

(1) In order for a relation to hold between two (or more) things, those things all have to exist (All relations are existence entailing)

(2) Some relations hold between present things and non-present things.

Therefore, (3) Some things exist which are not present (Bigelow 1996, p. 37)

Bigelow grants that (1) is an a priori truth. Bigelow considers causation to be an emblematic example of an existence symmetric relation, requiring both a cause and an effect to exist to make claims about causation true. The common view is that cause must precede effect in existence. If there is no past in which a cause can exist, then it is impossible to account for causation. Given that causal

relationships are one of the most important relations to be accounted for in any ontology, presentism's inability to account for them would make it hard to argue that presentism is superior to eternalism. The Argument From Relations can thus be modified into the Argument from Causation:

Argument From Causation

(1*) Causation is existence symmetric

(2*) Some events are caused by events which are not present

Therefore (3) some causes are not present (Bigelow 1996, p. 40).

Bigelow denies the validity of this argument. He challenges claim (2*), arguing that a more nuanced understanding of causation does not allow for causes that are not present. Causation, properly understood, is not between events but between agents and is simultaneous. Causes and effects coexist in the present. (Bigelow 1996, p. 41).

To understand this notion of present causation it is important to put aside the Humean analysis of causation as distinct events organized as before and after without inherent connection and revert to an earlier, more nuanced account of causation. Medieval thinkers like Scotus and Aquinas distinguish between *per se* and *per accidens* causation. *Per accidens* causation is that where an agent contributes causal power towards an effect but need no longer exist when the effect is produced, the effect being carried along by a mediate agent. An excellent

example of this is our sight of the stars at night. The nuclear fusion within the star produces the streams of photons that propagate out through the interstellar vacuum, eventually finding their way to the upturned eye of we stargazers on Earth. The causal ordering here is *per accidens* because it is not dependent upon the continued existence of the star. If the star is far enough away it might have burnt out or supernovaed by the time it is perceived on Earth, the electromagnetic radiation from the star continuing to propagate outwards by its own force. Another example is that of sexual reproduction. A father is the cause of his grandson *per accidens* because the power of generation in the grandfather generated the father with his own power of generation, who then generated the grandson. This is not to say that the son is not dependent upon his grandfather in others ways, since he necessarily (modally) had to have the grandfather he in fact had, but this does not require the continuous existence of the grandfather. There is inherent connection between the stages.

Per se causation is best demonstrated through many present physical examples. An example favoured by the medieval Scholastics is that of a rock which is moved by a stick which is moved by a hand. The hand is the *per se* cause of the motion of the rock, and the causation is immediate - each link in the causal chain is directly moved/influenced by the previous link. If the hands movements stop, then the movement of the rock stops (Feser 2009, p. 69-72). The same applies to an animal moving its limbs, using its muscles to exert causal power on its joints, the muscles in turn being moved by chemical changes in their cells which are brought about by nerve impulses which are caused by brain activity and so on and

so forth. Presentists thus can account for causation through *per se* and *per accidens* causes, where all causation is via present action. *Per accidens* causes account for instances of past causes affecting the future, the means of affect being via mediate causes.

To deal with the larger Argument From Relations, to preserve the truth of statements about the past, transtemporal relations, and *per accidens* causation, Bigelow proposes using the already outlined theory of predicating past properties of present existents. Among those properties are the properties of "having been the world where *x*", where *x* can be filled with propositions about any past event like "The Achaeans sacked Troy" or "Leo Szilard conceived the potential for exponential growth in fission reactions". These provide truthmakers for past tensed sentences both monadic and two (or more) placed. (Bigelow 1996, p. 46). Thus the world grows richer over time, acquiring more and more properties as things come to be and pass away within it, leaving a mark upon it.

Bigelow does not address the issue, but the relations between these events can be established through the use of other tense operators between facts, the same ones that establish simultaneity and other temporal relations. Bourne provides a means to do this in his own treatment of presentism which is compatible with Bigelow's. The basic relations of the B-series, "earlier than", "simultaneous with" and "later than," can be captured by the use of the tense operators. Simultaneity is retained by the use of the present tense. That *p* and *q* are simultaneous means that they are both present: **N**(*p* & *q*). This is so even if they are past: **PN***(p* & *q*) establishes that

both *p* and *q* were simultaneous in the past. The relation of earlier than is captured by a similar device. If *p* was earlier than *q,* Bourne uses a similar device to construct this time **N**(*p* & **P**(*q*)), establishing that it is now the case that *p* and it also now the case that it was the case that *q* (Bourne 2006, p. 96-98)

Bourne, addressing this problem, believes that presentists should allow no other relations into their ontology other than spatial and causal (Bourne 3006, p. 95). He denies that other, non spatial and causal relations, like the relation of *taller than* borne by a present object to a now non-existent past object, are determinables, and thus they are not true relations (Bourne 2006, p. 96). The Taller Than relation, and other similar comparisons between past and present entities, can be fulfilled by the existence of facts, the relation being not a true relation between existents but a logical consequence of facts. The facts in question are **P**(My grandfather is six feet tall at age twenty-five) and **N**(I am six feet tall, and age twenty-five), and produce the fact that I am taller than my grandfather was at the same age. (Bourne 2006, p. 98).

For reference fixing Bourne utilizes the causal theory of naming, that after an initial ceremony the ability to name and pick out Socrates out of the facts of the world is passed on. After an initial 'naming ceremony' the users of the name present can then refer to Socrates, and pass on this ability to refer to others. In this way a historical name can be utilized by people living long after Socrates and all those who knew him directly have ceased to exist (Bourne 2006, p. 108). If causation is a simultaneous relation, as Bigelow holds that it is, then any use of

Socrates name in a conversation to refer to him is also a passing on of the ability to refer to Socrates.

This covers truths about the past, but what about the other half of Lewis' dismissal of presentism, that it seems to conflict with our sense that we have a future? I do not believe that this is the case. We can *believe* that we have a future, but we are also aware of our own finitude and contingency, of the fact, even more basic than the fact that we could not have been or have been very different than we are, that we could at any moment cease to be. Our belief in our future continuity is much less grounded than our belief in our past. The existence of the past is established both through memory and through inference about the things around us, many of which bear evidence of having come to be at some time in the past and bear the marks of their persistence through time. This sense of pastness and contingency extends to all the finite beings of our awareness. Our sense that we continue to exist is made by memory, by our remembering times that were present and are now past, and that we are still the same person. What makes it the case that things can continue to exist and progress through time? These questions are outside the scope of this thesis, but I touch on them again in the conclusion as future grounds for research beyond the debate about presentism and eternalism.

Now that we have established how a presentist can deal with true statements about the past and transtemporal relations, how does she deal with change? Presentists have utilized several different theories. I present both Merrick's and Bourne's theories here for illustration purposes, but favor Merricks' solution based on the

property of “existing at a time” because of its versatility. Without multiplying times it allows for objects to be the bearers of their truthmakers, both the universe as a whole and its parts.

Bourne's ersatz presentism deals with the question by assignment of changing stages to different sets of propositions. Two distinct propositions, ordered by an earlier than statement to one another, can express the changes in things. This provides a complete description of a changing thing over time.

Trenton Merricks suggests an alternative explanation by introducing the property of "existing at a time". Existing at a time, he argues, cannot replace "exists" simpliciter, since exists simpliciter is embedded in the property of existing at a time. A thing can exist, but not exist at t, if t is some time when the object does not exist. Thus Columbus possesses the property of existing-at-1492, but (now) lacks the property of existing simplicter (Merricks 1994, p. 176). Bigelow would explain this same result by making Columbus-existing-at-1492 a property of the universe as a whole, one acquired at the time that "Columbus existing" was first present, and continued at every moment of that existence. So the universe possesses the properties (now) of Columbus-existing-at-1490, Columbus-existing-at-1491, and so on and so forth for all the times that Columbus existed in the past.

Objects not only exist at times, they also exemplify properties. Properties possessed by existents at times other than the present are possessed via time indexed properties. Thus Columbus possesses the property "first Genoan to map the Caribbean" at-t, when t is understood to be 1492. In 2000 I believed that

"Tony Blair is the Prime Minister of the United Kingdom". Now, I no longer believe that. Now I believe that "Tony Blair was the Prime Minister of the United Kingdom". Merricks' analysis, and by extension all presentist ontologies, allow for genuine change of properties, satisfying the first desiderata. This is because there is an ontological difference between the simpliciter properties "x-is-F" and the time-indexed properties "x-is-F-at-t". Genuine change requires temporal difference in the possession.

One obvious question for such an analysis is *when* an object possesses the property "being-x-at-t". Merricks answers that the trait is possessed timelessly, at all times that are not *t*. This is because whenever *t* is present, the object is x simpliciter. When *t* is not present, the object is not x simpliciter, but has the property "being-x-at-t". To further explain what he means Merricks utilizes an analogy to possible worlds, a strategy common among defenders of presentism. Times can be treated as possible worlds, understanding possible worlds as abstract sets of propositions that are maximally possible, detailing how a world could have been. Having existed and been actual, the past times are certainly ways that world could have been. Thus I can truly be five feet tall in world *w*, but six feet tall in the actual world, without contradiction. Similarly, traits can be had at times that are not the present without contradiction, since they are no longer existent (Merricks 1994, p. 178). This is a common trait of all varieties of presentism, that they treat both existence and property possession as simpliciter states of existent things. This position has the advantage over Bourne's ersatzer presentism in that it does not need to deal in complicated propositions to construct both the present

and other times. All factual statements about the present (facts expressed using the present tense) are statements about present existents, whether the particulars themselves or the universe as a whole, without the need to construct ersatz times out of sets of tensed propositions. For this reason I favor Merrick's theory of present possession of past properties over Bourne's ersatz presentism.

The reason for all the above detail about the mechanics of presentism is not so much to develop a fully worked out presentist theory but to show that the resources exist in the literature on presentism to provide a robust challenge to eternalism. Able to account for truthmaking, transtemporal relations, and causation, while being free of the No Change Objection, presentism can be seen to be a strong theory in its own right.

4.3 Lewis' Objection to Presentism

Here, close to the end of our discussion of presentism, it is worthwhile discussing Lewis' quick dismissal of presentism, that it "denies what everyone knows to be true, that they have a past and future" (Lewis 1986, p. 202). What does this amount to, given Lewis' commitment to perdurantism?

First, what is it to "have" a past and future? In the most basic sense this is possession, and exclusive possession. Every individual thing in the world, whether it is eternal or has come to be, has a unique individual past which no other object has. If it and a second thing diverge from a previously existing single existing individual, like an embryo that splits into twins or an amoeba undergoing mitosis, then it has a unique past from just after the division up the present.

A perduring object can be said to have a past and future in a relative sense. Any particular stage of it can be chosen as a "present" and the past and future defined in relation to that moment. In the sense of past and future a presentist is interested in, the perduring object doesn't have a past and future. It is ontologically complete, with all its properties and relations mapped out along its entire temporal span.

Do objects in presentism have pasts and futures? Yes. A presently existing object possesses a past, contained as properties of itself and its surroundings, to which reference can be made. By having gone through certain changes in its life history it has different properties than it otherwise would have had, both in a simpliciter and in a derivative sense. Furthermore, it is the object itself that *has* the properties in question and in an absolute sense, not a part of a whole that has a past and future relatively. It also possesses a future because it has potentialities that can be realized or unrealized. The realization of these potentialities will give it new properties and relations, which will in time become past-tensed properties. The future of a presentist object is undefined at present but it can still be said to have one, as temporal advance and change are ceaseless.

Presentism and perdurantism differ over the manner of "having" a past and future. Both retain the uniqueness of their objects pasts but disagree about the existential status of their futures. Perdurantism claims that the future of an object is already existent through not "present", while the presentist claims that the future of an object is potential and yet to be. Presentism does not deny that an object has a

future or a past, but insists that there is no need to postulate their existence as concrete things spread out in space and time outside of the present.

4.4 The Fate Of The Problem of Temporary Intrinsics

Can the Problem of Temporary Intrinsics arise in presentism? Recall that the problem has to do with how a particular object could remain identical while undergoing a change of its intrinsic properties. The issue occurs in an eternalist ontology of time because a persisting object will have multiple locations in spacetime, a stretch of existence through multiple time states. Our notions of identity easily support a thing remaining completely the same in its intrinsic properties over a stretch, but encounters a difficulty when it has to consider how a thing that is different from one point in a stretch of time to another could remain selfsame. Eternalists must provide some theory of identity for the persisting, changing object, either by relativizing properties to time instants or by constructing the object out of temporal slices, the sum of which are the self-identical object, with each slice being only a part of a whole. The theories are needed to reconcile the apparent being of two separate, distinct objects existing at different points in spacetime which differ but are supposed to be the same object. These two theories both are vulnerable to the No Change Objection, since they neglect the criteria of genuine change, real temporal distance and exclusive existence of the changing present state.

To understand how presentism meets the problem we must look at what it is for a thing to persist in presentism. To persist in presentism is to be existent in the

present, and to have past properties, past in a metaphysically different sense than that by which the properties of an object in eternalism are past. A persisting object in presentism is continually growing more complex as it acquires past-properties. In eternalism an objects properties are only relatively past to any time we denote as the 'present', the present moment being only a construction of ours and not metaphysically privileged. The past properties are either relativized to separately existing times, as in endurantism, or they are the properties of separate objects, in perdurantism. In presentism the present moment is all that there is, and the objects present *contain* in themselves their past, either individually or by the universe as a whole. There is only one object to be considered, one object with properties describing how it was in the past. Even if an object O changes from F to not-F in the present, it does not simultaneously possess the properties of *being F* and *not-F*. After the change it possesses the property of being not-F, while it gains the property *was-F-at-t(x)* (Bourne 2006, p. 125). Objects in the present are their own truth makers for propositions about their past states.

Thus we can see that presentism meets all of Merricks desiderata. It allows for the exemplification of non time-indexed and non-relative properties with its *simpliciter* properties of present existents (C1). It denies that it is possible for an object to exemplify incompatible properties at the same time (C2). The theory is an account of genuine change where objects have properties at one time (a relative time referred to by property of the present object) and lack them in another way, in an absolute, non-relative sense (C3).

The question about how objects *become* in the present, how they come to be and cease to be, is a topic much too large to be addressed here and is outside the scope of this thesis.

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Conclusion

The Problem of Temporary Intrinsics owes its origin to the prior commitment of metaphysicians to eternalism. Perdurantism and endurantism were proposed as possible solutions to the problems, accounting for how a thing could persist through changes to its intrinsic properties, either by temporal parthood or through treating intrinsic properties as relational properties to times. Both theories run into the same problem, that they allow for no genuine change. The fact that neither allows for genuine change originates in the same source as the Problem of Temporary Intrinsics, the commitment of both theories to eternalism. Presentism, which denies eternalism in favour of an ontologically privileged changing present, has no Problem of Temporary Intrinsics, since the past and future in which the changing objects could have their contradictory properties do not exist, and can accommodate genuine change. Presentism is able to accomodate both Leibniz' Law and the Principle of Persistence by disposing of the eternalist commitments that produces the paradoxes and contradictions that in turn need elaboration. Things persist through time by continuing to exist in the present, and can undergo changes of their intrinsic properties because they are the only existent things, becoming more qualitatively rich through each change as the previous state is preserved as past-tensed property; there are no past or future things to which they must be compared and equated. Presentism describes not a growing-block universe where present moments are being added on top of past temporal slices, but an enriching single moment, continually gaining new properties. Thus the

question of when the present is can be easily answered, since there are no other times that could be the present.

In addition to accounting for genuine change, the kind of we experience every second of our conscious lives, presentism can handle many of the metaphysical duties of eternalism like transtemporal relations and causation. By being able to handle these as well as accounting for genuine change and avoiding the Problem of Temporary Intrinsics, presentism proves itself to be a robust metaphysical option in its own right.

Several issues remain unresolved and I plan to make them the basis of future research. The most pressing are the two issue of existence and becoming. The presentist, in disposing of the block universe of the eternalist, is presented with a world of dynamic changes and occurrences, a world of real becoming. One major question that remains in what accounts for the contingency of existing things? Everything that exists could both have been different in many ways than it in fact is, and has no guarantee of continued existence into the future. We can make predictions about how long people will live and how long various human artifacts can endure the stresses of time, but it remains a fact that everything can cease to be. The question of contingency is really a question of what accounts for their existence. This is why I plan to progress from questions about time to questions about being and becoming, and move from the metaphysics of time into the study of ontology, of being qua being.