Delineating A- and B-Time:

Against the Indistinguishability of the A- and B-Theories

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The candidate confirms that the work submitted is his own and that appropriate credit has been given where reference has been made to the work of others.

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Abstract

This essay sets out to refute the indistinguishability thesis (**IT**), which states that there is no substantive disagreement between the metaphysics of the A-theory of time and its alleged antithesis, the B-theory of time. It begins with an overview of the dichotomies historically taken as defining the contrast between A-time and B-time. Part I appraises **IT**'s success at undermining the first of these, the dichotomy between *tensed* and *tenseless* time, which is interpreted as the dispute between a metaphysics comprised solely of temporary (temporal) facts and one comprised solely of permanent (temporal) facts. It is argued that (a) **IT** fails to evidence any intertheoretical equivalence, and (b) there exists an alternative position that does succeed in deflating the permanent-temporary fact contrast. Part II then appraises **IT**'s success at undermining the second defining dichotomy of A- and B-time, i.e. as a dispute between *dynamic* and *static* models. The at-issue content here is whether time contains 'passage' or 'transition'. After addressing some terminological concerns, two arguments to establish that all conceptions of time tacitly accept transition are pacified: one claims that without transition temporal extension would be indiscernible from spatial extension, the other claims that without transition we would be 'stuck at a given time'. The latter half of Part II demonstrates that the 'stuck' counterfactual is coherent but ambiguous between theories of persistence, which when probed further implies another point of distinguishability between A- and B-time in their respective ways of coping with persistence-related challenges. The account set forth in Parts I and II actively excludes an increasingly prevalent view called presentism – Part III vindicates this dismissal by arguing that presentism is insufficiently motivated, on the grounds of its being causally unintuitive and, although ontologically more parsimonious, no more theoretically virtuous than vying doctrines.

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List of Abbreviations and Key Theses

Abbreviations

IT: Indistinguishability Thesis

ID: Independence Denial

MS: Moving Spotlight Theory

GB: Growing Block Theory

Key Theses

Indistinguishability:	There are no distinct A-/B-features, just temporal features.
Independence denial:	There are distinct A-/B-features, but they are not separable into independent models of time.
Reflexive-simultaneity:	All events (times) are present at the moment they occur.
Self-presentness:	All times are present when they are present, not when they are past or future.
A-/B-feature distinguishability:	A-features and B-features are genuinely distinct.
A-/B-feature inseparability:	Time has both A-features and B-features; any theory that represents time as being comprised solely of A- or B-theoretic features is incomplete.
Truth-conditional permanence:	For any true proposition, p, p corresponds to a permanent fact iff the truth-conditions of p are constant.

Truth-maker permanence:	For any true proposition, p, p corresponds to a permanent fact iff the truth-maker(s) of p remains constant.
IT1:	All theories accept temporal transition.
IT2:	There are no other significant differences between A- and B-time.
The 'stuck' claim:	It is conceivable that we should be stuck at a single time if time did not pass.
Temporal parts doctrine:	Objects and events persist through an interval by virtue of having constituent parts located at each of the times comprising that interval.
Incompatibility:	Pastness, presentness, and futurity must be incompatible with one another.
Totality:	Every object capable of instantiating a tensed property must instantiate all three.
Causal significance:	Changes in temporal properties must be causally significant.
Relational existence:	(Causal) Relations entail the existence of their relata.
Strong presentism:	Nothing exists that is not present.
Weak presentism:	Only non-temporal things exist outside of the present.

Chapter 1

Introduction and Summary

1.1. The A- and B-Theories of Time

This essay sets out to refute the indistinguishability thesis (IT), which states that there are no metaphysically significant differences between the A-theory of time and its supposed competitor, the B-theory of time. To embark on such a project, we need to begin with at least some notion of the character of each theory. Having been the subject of discussion within the philosophy of time for so long, each has a varied catalogue of incarnations, and the debate itself is divisible into distinct historical phases. Certain of these incarnations are instrumental to comprehending the modern discussion, and the historical phases during which they appear supply the context for most of the claims examined herein. The best way to get a provisional handle on A- and B-time, and the challenge against their delineation, is to survey their development briefly.

1.1.1. Genesis: Time Series

In 1908, J.E. McTaggart put forth an argument intended as proof of the unreality of time. In it he distinguished between series of temporal positions, or 'moments'. McTaggart names the ordering of moments in terms of being future, present, past, further past, and so on, the *A-series.* Another way of ordering moments is by the relations of earlier than, simultaneous with, and later than – McTaggart calls this the *B-series* (1908: 458). With these in mind, the proof of the unreality of time, in much condensed form, runs as follows.

The A-series is essential to time because without it time could not involve change. The reason time could not involve change without an A-series is that the B-series consists only of permanent relations: if a moment *t1* is earlier (later) than another moment *t2*, then *t1* will always be earlier (later) than *t2*. Contrariwise, moments ordered along the A-series change continuously from future to present, from present to past, from past to further past, et cetera (ibid.: 459-461). So, A-series change is necessary for time. But McTaggart also has it that A-series change is inherently self-contradictory, since any moment is past, present, and future, and these are incompatible determinations (ibid.: 468-469). He then goes on to

accuse those inclined to point out that these A-series positions are occupied relative to some other time of falling into an infinite regress of higher-order time series.

McTaggart's argument suggests a few ways of characterising the difference between his time series. The A-series is *tensed*: the operative concepts being those of pastness, presentness, and futurity. The B-series, in contrast, is *tenseless,* in that it makes no use of these concepts to order moments. Another way to capture the difference highlights the fact that A-positions change, whereas a moment's B-position never changes. We may therefore say that the A-series is *dynamic* and the B-series is *static*. Perhaps a third way of drawing the line between McTaggart's original descriptions is to say that the B-series is *relational*: a moment's position is defined in relation to those that flank it. For example, the event of Christ's birth occurs 480 years later than the Battle of Thermopylae and 1066 years earlier than the Battle of Hastings. Generally, then, the B-position of one event can be fixed approximately by stating its relation to events in other positions on the time series, and more exactly by enumerating those relations. If two events occupy the same B-series position their relation is one of simultaneity. The A-series, on the other hand, is *non-relational*, as events are said to be simultaneous if and only if they are both present, or have the same degree of pastness (futurity).

1.1.2. Eliminability and Translation

Following McTaggart's distinction between time series, and in light of Russell's analysis of change without A-determinations, doubts were raised over whether or not the A-series was really necessary for an account of time. Some maintained the B-series alone was sufficient; their opponents regarded the A-series as indispensable but disagreed with McTaggart over its being inherently contradictory. Thus emerged a theme in the literature on time that did not challenge its reality as such, but rather questioned what was needed to characterise that temporal reality – A-time versus B-time.

As noted by Le Poidevin (1998: 28) and Smith (1993: 8), the guiding inquiry for this phase of the debate was whether tensed propositions could be eliminated altogether, and replaced with tenseless translations of equal expressive capacity. It is important to emphasise that this endeavour largely prioritised the tensed-tenseless contrast and focused on the meaning of tensed propositions. (The thesis I refute here is *not* a challenge to the distinguishability of

two purely semantic theories, one tensed and the other tenseless. That is, by A-time and B-time is meant something other than whether tensed propositions can be translated into tenseless propositions.)

1.1.3. Truth-Conditions

The translation method of undermining the A-theory encounters difficulty when it comes to tensed belief – the sort of beliefs we have about how the world is 'now'. Tensed beliefs, unlike their tenseless translations, incite us towards action and emotional responses. Taking a famous example from Prior: when one exclaims 'Thank goodness that's over!' following the abating of a backache, this doesn't mean 'Thank goodness the conclusion of my backache is 10am on 15th March' or 'Thank goodness the conclusion of my backache is simultaneous with this utterance' (1959: 17). At least in these respects, tensed thought seems entail something over and above tenseless propositions.

Some B-theorists saw fit to abandon the translation method, conceding irreducibly tensed propositions, but maintained irreducibly tensed *facts* could still be eliminated. The way to do this is by giving entirely tenseless truth-conditions for tensed propositions. If all tensed propositions have tensed truth-conditions, then the fundamental facts of the world can be given without making reference to past, present, or future. I say more about this in Part II, but for now I simply want to point out that truth-conditional approach adds another dimension to the tensed-tenseless dichotomy. No longer is the disagreement understood as a purely semantic contrast but one about the *metaphysics* underlying A-time and B-time.

1.1.4. A-Time, B-Time, and Indistinguishability

So far we have seen two of McTaggart's time series develop into independent and diametrically opposed views of time, whose metaphysical underpinnings may be characterised by the dichotomies below.

A-time	**B-time**
Tensed	Tenseless
Dynamic	Static
Non-relational	Relational

Contemporary discussion now recognises a more varied list of views under each title, and indeed a family of hybrid views that fits completely into neither column. Naturally, this brings with it a host of further issues to muddy the water vis-à-vis the traditional distinctions in the table above. These might arise from disagreements within the same camp: among A-theorists, for example, the most contentious choice is whether to accept presentism. Presentism is an ontological thesis that states only present things exist, but not all A-theorists agree with presentism. If A-theorists are defined by their tensed metaphysic, both presentism and tensed alternatives pass for genuine A-theories. Yet, ontologically speaking, the non-presentist seems to have more in common with the B-theorist who accepts past and future entities. Other issues threaten the distinction between A- and B-time more directly. For instance, if B-theorists can successfully account for change tenselessly, then the static-dynamic dichotomy, as defined above, no longer applies.

It is a legitimate question whether the putative distinctions between A- and B-theorists still hold their own against the sophistication of modern theories, and even if they do, we should expect the boundaries will need to be redrawn in light of new developments. It is therefore necessary to engage with any challenges to these distinctions and refine our conceptual divisions in such a way as to maximise accuracy. This includes taking seriously proposals that their inadequacy stems from the fact that A- and B-time actually describe one and the same thing, i.e. that they are indistinguishable.

Just such a proposal has been advanced by Clifford Williams, an erstwhile B-theorist now convinced that there is no substantive difference between the metaphysics of A-time and that of B-time. Over the coming chapters, I will be arguing that that this indistinguishability thesis is untenable. It fails to undermine the tensed-tenseless dichotomy and the dynamic-static dichotomy. Moreover, some of the claims put forward by Williams actually suggest a difference he fails to consider: how receptive A- and B-time are to different accounts of persistence.

1.2. Methodology

I mentioned in the last section that there is an increasingly vast collection of views that might be classified as A-theories, in addition to those hybrids that evade unitary classification. Such diversity is the product of choices about orthogonal issues in the

philosophy of time which I am unable to settle here. Although at times I employ terms to match the familiar discourse, my characterisation of the A- and B-theories leaves the following questions open:

- *Are instants abstract or substantival?*
- *Are tenses properties or positions?*
- *If properties, are they instantiated by instants, objects, or both?*
- *Are the most ontologically basic individuals events or substances?*

As I have said, the answers to these questions produce different versions of the A- and B-theories. Since it is not my aim to argue for the truth of any particular A-theory, B-theory, or hybrid theory, I must refute the indistinguishability thesis with some degree of neutrality between the numerous incarnations of each. Otherwise, my defence of the distinctions risks becoming too restrictive to be fit for purpose. However, not all accounts of time are created equal, and it would be impermissible to make allowances in my argument for problematic versions of any of theory. So while I abstain from supporting the truth of any one theory, I do denounce those that are heavily disadvantaged, such as presentism.

Another methodological decision I have made is to discount the non-relational characterisation of the A-theory. Though this may be an accurate description of the traditional way of construing tenses as temporal positions, it is possible that absolute presentness be defined as a global-simultaneity or privileged space-time foliation. This view of the present is inherently relational. Thus, I restrict my discussion to the fist two dichotomies only.

1.3. Overview of the Thesis

In Part I, I expand upon the tensed-tenseless dichotomy by defining it in relation to temporary and permanent facts, reminiscent of the truth-conditional phase of the preceding debate. Chapter 2 argues that to undermine this tense-tenseless distinction there must be some evidence of intertheoretical equivalence. I then scrutinise Williams' remarks on ontological privilege and temporary facts, which fail to provide any demonstrable support for the equivalence of A- and B-time. I conclude that when empirical evidence is absent, such that intertheoretical equivalence must be shown a priori, the task is exceedingly difficult and unlikely to succeed. This puts **IT** at a disadvantage. **IT** has a *de facto*

monopoly on deflationism when it comes to the A- and B-theories, as no alternative positions have so far been articulated. I sketch an alternative view, independence denial (**ID**), on which A-time and B-time are not indistinguishable, but nor are they incompatible. Unlike **IT**, **ID** is not incumbered with the difficult task of proving equivalence. There are other reasons to prefer it too.

In Chapter 3, I put this compatibilist alternative to work by using it to highlight the deflationary implications of several prominent hybrid positions. In particular, I show that Growing Block Theory and Moving Spotlight Theory must satisfy the same criteria as **ID** for their own internal consistency. Effectively, this means **ID** profits from support given to these hybrids and does so without having to prove a difficult A-/B-equivalence claim, as **IT** did. Overall, then, if it is deflationism one wants, then **IT** is not the best way to go about it.

In Part II I turn my attention to the dynamic-static dichotomy, which is seen by Williams as the primary target of **IT**. The thought here is that if A-time and B-time both contain temporal transition, then they cannot be distinguished as static and dynamic accounts. I begin by acknowledging a terminological difficulty with transition, before going on to appraise two arguments supposed to establish, as an independent truth, that all time contains transition. In Chapter 4, I confront the first transition argument, which depends on the counterfactual claim that if time did not contain transition, temporal extension would be indistinguishable from spatial extension. I reinforce the stance that this is not the case.

In Chapter 5, I move on to the second transition argument, which depends on the 'stuck' claim: without transition, we would be stuck at a time. Against other commentators, I argue that this is a perfectly intelligible claim. Making its true aspect explicit, I dispel the alleged contradiction misattributed to the 'stuck' claim, explaining the error in regarding it as logically impossible. Therefore, we ought not reject the second transition argument on the grounds of an unintelligible premiss.

In Chapter 6, I argue a more successful way of removing **IT**'s threat to the dynamic-static dichotomy is to demonstrate how the 'stuck' claim cannot be an independent truth. In doing so, I also uncover another difference between A- and B-time pertaining to their receptiveness to opposing theories of persistence. This is achieved in three steps: step one is to show how accepting the 'suck' claim cuts across the debate around persistence; step

two is to show B-time is strengthened by the adoption of perdurantism; step three is to show the A-time is significantly weakened by perdurantism. Given the importance of this conclusion, I close the chapter by extending my account this difference to cope with another view on persistence. Chapter 6 closes with a short summary of Part II.

My refutation of **IT** and account of this further distinction is not designed to be consistent with presentism. I think presentism is an unattractive doctrine, but given its increasing prevalence in the literature this dismissal must be justified. In Part III, I make the case that presentism lacks initial motivation, which is especially apparent when looking at causal relations. Chapter 8 draws attention to the limits of presentism's common-sense reputation. I argue that while a presentist ontology may best accord with common sense, the presentist metaphysic as a whole enjoys no special common-sense advantage over its rivals, due to dialectical constraints on the available accounts of causation.

Chapter 9 demotivates presentism even further by showing how its quantitatively more parsimonious nature is not a theoretical virtue. I argue that presentism's sparse ontology, though more advantageous with respect to negative existential statements, actually disadvantages presentism when these data-sets are substituted for causal statements.

Part I

Tensed and Tenseless Time

In the introduction I referenced Clifford Williams' allegation that there is no difference in the respective metaphysics of the A-theory and the B-theory. In the first half of Chapter 2 I shall be arguing that Williams' attempt to introduce a deflationary stance into the metaphysics of A- and B-time falls short of the standards necessary to support his particular brand of deflationism. That is, I argue the scheme to undermine the A-/B-debate with a charge of indistinguishability requires more than he has managed to provide, focusing especially on his arguments concerning temporal privilege. Not only are there deficiencies in the indistinguishability thesis (**IT**), but there is an alternative way of subverting the tensed-tenseless dichotomy. My second aim of the chapter, then, is to depart from Williams' original thesis by outlining another iteration of deflationism which, contra **IT**, embraces genuine difference between putative A-/B-features. This alternative, independence denial (**ID**), operates by refusing the interreducibility of A-/B-features while maintaining that both are required for a complete account of time. **ID** offers an initial advantage over its predecessor as it does without the difficult equivalence claim.

Chapter 3 address the question of why the view should be taken more seriously than has so far been realised. The answer is well-established hybrid metaphysics – Moving Spotlight and Growing Block – are implicitly committed to **ID**. If this is right, then another benefit of **ID** is that deflationism can profit vicariously from persuasive arguments set forth by these mixed theories, thereby allaying concerns of ad hoc-ness and allowing deflationists recourse to deep-set criticisms of the A-/B-dispute. All this, we shall see, is a great deal more than could be bought with **IT**.

The most significant upshot of the hybrid theories' implying **ID** is that deflationism can overcome a prevalent way of cashing out the A-/B-debate, viz. the dichotomy between tensed and tenseless facts. Be this as it may, I must admit at the outset that it takes for granted the notion of objective passage. But since my primary ambition is to deter those sympathetic to deflationism away from **IT** with a more attractive option, minor drawbacks are acceptable. In sum, Part I aims to buttress the conditional claim that *if one accepts*

*objective passage, then **ID**-deflationism with respect to tensed and tenseless facts is preferable to **IT**-deflationism*.

Chapter 2

Two Deflationary Approaches

Here are two incompatible routes to the deflationary conclusion that the A-/B-debate is ill-conceived.

Indistinguishability (IT): There are no distinct A-/B-features, just temporal features.

Independence denial (ID): There are distinct A-/B-*features*, but they are not separable into independent models of time – i.e. there is no A-/B-*time.*

2.1 Indistinguishability

Let us begin with an exposition of Williams' brand of deflationism verbatim:

> My aim… is to get at what really differentiates the two theories. What we shall find, however, is that there is no coherent way of stating what this is. (1996: 371.)

And elsewhere:

> My aim has been to come up with a formulation that distinguishes A- and B-time… There doesn't seem to be any formulation that does these things. It is natural to conclude that, despite their seeming differences, A- and B-time are not really different. (Ibid.: 88.)

Williams takes as the foundation of his argument the supposition that some sort of 'passage', 'transience', or 'transition' is essential to time. Further, he claims that without this transition there could not be temporal extension (ibid. 80). This being the case, both the B-theory and the A-theory must count transition amongst their doctrinal obligations, as must any other proposed theory of time. Clearly what is meant by these passage-related terms is important, and the suggestion that transition is essential to time, as well as for extension, is an extremely controversial premiss. For this reason, I defer any discussion of the matter to Part II; I mention it here only to note the exact context in which Williams' remarks appear. Setting transition aside for now, then, I want to show in much shorter order that, even allowing these foundational claims, Williams cannot deduce indistinguishability.

Williams' stratagem revolves around the first deflationary position that essential features of A- and B-time are metaphysically indistinguishable. The purported upshot for the debate is

that A-/B-theorists have just been talking past one another about the very same features. The task incumbent on the indistinguishability theorist is thus to demonstrate not that one theory or the other is wrong, but that there is in fact only a single, A-/B-neutral option when it comes to identifying the necessary element comprising time's character. Obviously, this neutrality necessitates an equivalence claim involving those features identified on A-time and those on B-time.

In practice, though, establishing intertheoretical equivalence a priori, without stumbling into question begging territory, turns out to be exceedingly difficult. This is illustrated by the failure of Williams' attempt to refute the idea that A-theorists believe in the privilege of certain events/times, whereas B-theorists do not.

> (a) On this construction of the contrast between A- and B-time, then, in A-time certain events [times] would stand out or be unique in a temporal way, whereas in B-time no events [times] would stand out, *qua* their temporality, and none would be unique, again, *qua* their temporality.
>
> It is hard to see, however, how these senses of privilege distinguish A-time from B-time. For in B-time, events stand out or are unique in a temporal way by virtue of their occurring at a specific time. And in A-time, no events stand out or are unique since all are present – not now, obviously, but at different times. So either events are privileged in both A- and B-time or events are not privileged in either A- or B-time. (1996, 378.)

Williams is saying here that if the privilege of events (times) consists in their being present, then all times are privileged. The reason for this is that all events (times) are, at some point or other, present. Specifically, they are present *at the moment they occur*, i.e. relative to themselves - call this reflexive-simultaneity.

Reflexive-simultaneity: All events (times) are present at the moment they occur.

It is not difficult to see how a B-theorist would assent to **reflexive-simultaneity**, since I have made explicit use of a B-relation in presenting it. But is it acceptable to the A-theorist? By simply recasting the doctrine in A-friendly terms we can see immediately that it is. To say that all events (times) are present when they occur means just that for any event (time) E, it was, will be, or is the case that E is present when E is present and not past or future – call this self-presentness.

Self-presentness: All times are present when they are present, not when they are past or future.

Putting the point like this, the triviality of the doctrine is apparent. Whether couched in A- or B-theoretic terms, **reflexive-simultaneity**/ **self-presentness** is an indisputable truism. Williams' argument then proceeds as follows: if, as the A-theory maintains, events (times) are privileged in virtue of their presentness, then all events are privileged in virtue of the truth of **self-presentness**. And since **self-presentness** is equivalent to **reflexive-simultaneity**, the A- and B-theories cannot take this feature to characterise their disagreement. Having provided that equivalence claim, all that remains is to explain away the semblance of conflict. (Perhaps B-theorists have rejected talk of privilege because, according to the truism above, presentness is ubiquitous, and this discredits the uniqueness inherent in the notion of privilege.)

At once, however, we can object that the truism captured in **self-presentness** is decidedly not what that A-theorists having in mind when they postulate, and not what B-theorists mean when they deny, a privileged set of events (time). Despite **reflexive-simultaneity** being a genuinely A-/B-neutral feature of time, it is not the extension of the A-theoretic concept of privilege. For A-theorists there is, and for B-theorists there is not, a set of events (time) that is present *simpliciter* – without reflexive qualification. Moreover, what makes this set of events (time) privileged is that it alone is present. So, whilst B-theorists can accept the account presented in quotation (a), any A-theorist would reject Williams' use of the term privilege in the quotation as inappropriate due to its picking out the wrong feature of time, viz. self-simultaneity, as opposed to absolute presentness.

Williams anticipates this response:

> (b) It will not do to respond here that in A-time it is not true simply that all events [times] possess presentness, and that what is true about A-time is that a slice of events [times] possesses presentness *now.* The trouble with this response is that it makes B-time unintelligible. What would it mean to say that in B-time events [times] do not possess presentness now, but at some other time? (Ibid.)

Williams claims that the idea of an event (time) possessing presentness exclusively at some other time is unintelligible, but it is only unintelligible if presentness is again taken to be

qualified by a reflexive reference in the first place. This is because the truism *x is present when x is present* obtains no matter when x is present. So to say some event is present relative to itself not now, but at some other time, is clearly nonsensical - events and times are always (and invariably) reflexively-simultaneous. But this is exactly what the A-theorist denies is meant by presentness, opting instead for a single, unfixed extension of the term. To say that times do not exhibit presentness now, but at some other time, can be easily made sense of by the A-theorist with the additional stipulation that only one set of events (times) is present at once. Although Williams thinks that he can block the A-theorist's objection by relying on the unintelligibility of an event's not possessing presentness *now*, this locution is patently ambiguous between the two senses I have been describing. The use of 'presentness' suggests a continuation of the notion of **self-presentness** which has a maximal extension, but the use of 'now' suggests something with a single extension. Of course, an event or time *could* satisfy both, provided both were legitimate commitments of the theory. But the issue is that B-theorists accept the former and deny the latter, whereas A-theorists would accept the latter and the former, and this just the kind of substantive dispute the equivalence claim is supposed to eliminate. Given this, I can think of no reason to believe that there is any affinity between the A- and B-acceptable notions of privilege, other than Williams' saying this is so.

As a second instance of the difficulty of establishing indistinguishability claims, and a basis for the comparative plausibility of other deflationisms, let us examine another of Williams' attempts to undermine the distinction between A-features and B-features:

(c) [It is said that] B-statements express permanent facts and A-statements express changing facts. The permanent facts are on a par with each other, all being equally real, but the changing facts are not on a par with each other just by virtue of their change.

This way of expressing the difference between being and not being equally real, however, distorts the difference between A- and B-time. If A-time consists only of changing facts and B-time consists only of permanent ones, then the difference between A- and B-time would be the difference between something dynamic and something static. And this difference is not a difference between two theories of *time.* B-time does not consist just of permanent facts; it consists also of transition between the events that make up the facts, and this

> transition makes B-time 'dynamic', in a sense, of course, that differs from the dynamic character of A-time. (Ibid: 395.)

The onus is on the indistinguishability theorist to deliver proof that it is a mistake to identify the salient feature of time as exclusive to the A-/B-theory; however, it is difficult to see how Williams' point can be taken as satisfactorily taking anything controversial and exposing it anew as an equivalence between the two theories. Setting aside the connection with the dynamic/static dichotomy for a moment, the main issue with (c) is that it renders indistinguishability an impossible hypothesis. By acknowledging an objective contrast between permanent and changing facts, Williams embeds a distinction that many A- and B-theorists would happily recognise as their characteristic partition. I suspect the reason he deems this distinction to be innocuous is that it is plausible *both* permanent facts and changing facts are essentially part of the inventory of temporal facts, so any theory of time must account for both. Now this might be a more promising avenue to deflationism, one I will develop presently, but is it indistinguishability?

To see why it is not, recall that for **IT** to be viable there must be some typical feature of controversy that that can be disclosed as A-/B-neutral with an identity claim. It follows that in order to establish A-/B-neutrality vis-à-vis permanent and changing facts, one of the following equivalence claims would have to hold.

(c1) Permanent facts = changing facts.

(c2) A-theoretic permanent facts = B-theoretic permanent facts, and changing facts must be explained away.

(c3) A-theoretic changing facts = B-theoretic changing facts, and permanent facts must be explained away.

(c4) A-theoretic permanent facts = B-theoretic permanent facts, and A-theoretic changing facts = B-theoretic changing facts.

The equivalence in (c1) renders the contrast between present and changing facts spurious, but this is clearly not what Williams has in mind since he retains the distinction throughout quotation (c). The equivalence in (c2) and (c3) is established only between permanent facts or changing facts, but again this is clearly not what Williams intends because both are

supposed to be essential to time. The closest claim to that in Williams' passage is (c4), which is a conjunction of two equivalence claims: A-theoretic permanent facts = B-theoretic permanent facts, and A-theoretic changing facts = B-theoretic changing facts, but unlike (c1) permanent facts ≠ changing facts. Yet even (c4) is negated, *qua* strict equivalence claim, by the puzzling suggestion that there is a basic difference between B-theoretic dynamism and A-theoretic dynamism made in the final sentence of (c). Therefore, **IT** cannot follow from the proof Williams claims to have provided in virtue of lacking any equivalence claim for the necessary temporal features.

Now that is not to say the rest of the argument is irreparable – if Williams were right about transition being a necessary feature of time, then the permanent/changing facts dichotomy might still be vulnerable by adopting **ID**. But my intention here has been to emphasise the inherent adversity faced by schemes to establish theoretical indistinguishability. When dealing in characteristics as well-developed as those utilised by A- and B-theorists, the burden of proof for indistinguishability claims is especially high since the equivalence of those characteristics must be proven. That, at least, is one lesson to be learned from the foregoing exegesis; another is that alternative routes to deflationism are available, to which I now turn.

2.2. Independence Denial

In this section I want answer the following questions: Is there an alternative to indistinguishability? And how does the alternative pose a deflationary threat to the A-/B-dispute without intertheoretical equivalence? My proposal, laid out here and to be supported in Chapter 3, is that deflationists ought to substitute indistinguishability for independence denial, which I define as the conjunction of two theses.

(T1) **A-/B-feature distinguishability –** A-features and B-features are genuinely distinct.

(T2) **A-/B-feature inseparability –** Time has both A-features and B-features; any theory that represents time as being comprised solely of A- or B-theoretic features is incomplete.

Whereas **IT** proceeded by attacking the identification of any temporal features *qua* exclusively A-theoretic or B-theoretic, **ID** embraces the presence of genuinely A-/B-theoretic

elements in the underlying metaphysical picture. On this view, A-theorists are not mistaken in thinking there are (e.g.) tensed properties or an objectively privileged instant. Similarly, B-theorists are not mistaken in thinking that (e.g.) time is extended beyond the present, or that each time is equally real. For this reason, **ID** has an immediate appeal over its deflationary predecessor: there is no requirement that we make any radical revisions to the familiar A-/B-theoretic characteristics. In consequence, **ID** is unconstrained by the same difficult standards of proving equivalence we saw **IT** fail to meet in the previous section.

By itself, A-/B- feature distinguishability (**T1**) offers nothing in the way of deflationism; it is A-/B-feature inseparability (**T2**) that drives **ID**'s criticism of the tensed-tenseless dichotomy. This is because inseparability puts a compatibilist spin on the usual antithetical way of understanding what divides the two. On this view, A-theorists are not only right in identifying certain features of time, but also in holding that certain A-features are essential to time's constitution. Likewise, not only are B-theorists correct in identifying certain other features of time, but these B-theoretic features are similarly essential elements of time's constitution. The mistake, according to **ID**, is believing that time can be composed entirely of one or the other.

Now it is important to be cognisant of the limits of **ID**, and so I must stress the following caveat. **ID** makes no pretence of being able to resolve the issue of precisely which A- or B-features comprise time – and as a negative thesis, nor should this be expected. It is consistent with **ID** that there will remain points of friction; that is, where it might seem that some peripheral part of the B-theory is discordant with some part of the A-theory, and such cases do indeed qualify as substantive disagreements. Nor does it claim A-/B-theorists are totally accurate in giving their descriptions of A-/B-features, for slight revisions may be needed to harmonise the two. But this is not equivalent to the choice between outrightly incompatible theories. Instead, the deflationary effect of **ID** on the debate is to remove the adversarial mode of conducting the dialectic by allowing both to play an indispensable role in our best metaphysical theory. This is especially effective in the context of undermining the same dichotomy targeted by Williams in (c) – where the tensed and tenseless juxtaposition is cashed out as the incompatibility of permanent and temporary temporal facts. Recall from the introduction that this is a very prominent way of characterising the disagreement between the two theories, and if **ID** can undermine it, as I believe it can, then

ID appears a much more compelling position than **IT**. In what follows, this tensed-tenseless fact dichotomy will be the primary focus of my deflationist attack.

As it stands, my presentation of **ID** is not robust enough to do serious philosophical work. To the end of refining the view, it is possible to derive criteria from the constitutive theses set out above. Here are three:

(i) From (T1): tensed/ tenseless facts are not interreducible.[1]

(ii) From (T2): tensed/ tenseless facts are not contradictory.

(iii) From (T2): a theory admitting pluralism about temporal facts offers clear advantages over those that admit only one or the other.

Criterion (i) is a necessary condition of A-/B-feature distinguishability. Some B-theorists have been willing to concede that tensed propositions are ineliminable objects of temporal thought and speech, but have rejected the crucial inference that there must therefore be corresponding tensed facts about the world. [2] They defend this rejection of tensed facts by arguing that the truth-conditions of tensed propositions can be given entirely in tenseless terms. If they are correct, then what we commonly recognise as tensed facts would not be part of the fundamental picture of the world, and the B-theory would be true. The same applies to the A-theory, in that if tenseless facts could be given exclusively tensed truth-conditions then the A-theory would be true. Thus, for there to be two genuinely irreducible temporal components comprising the underlying metaphysics, neither one must be explanatorily prior to the other.

Criterion (ii) is a necessary condition of A-/B-inseparability. If time is in part both A- and B-theoretic, then it follows that those A- and B-theoretic elements must be compatible, otherwise the full metaphysical picture could not be a coherent one. This has the effect of circumscribing the sort of doctrines that each camp can retain as canon; for example, an

[1] The term interreducibility is not intended to imply a symmetry between related theories because B-theorists only claim that A-facts are reducible to B-facts and A-theorists claim that B-facts are reducible to A-facts, which are asymmetric reductions. But in this context interreducibility is understood disjunctively – *either* one is reducible to the other *or* vice versa.

[2] Acknowledgement of irreducibly tensed propositions has been a standard feature of the 'new' B-theory, as focus shifted away from the translational method of eliminating tense to the truth conditional method. Recognition that the B-theory needs irreducibly tensed propositions to account for things like tensed beliefs goes back to at least Mellor's 1981.

extreme interpretation of presentism holding there to be no B-relations whatever is inadmissible by criterion (ii), because it excludes one of the only points of consensus amongst all B-theorists.

Criterion (ii) is necessary but insufficient for A-/B-inseparability because non-contradiction does not by itself imply inseparability, so there needs to be good reason for asserting our best theory of time will include both A-features and B-features. If the only motivation is to salvage deflationism from the problems of **IT**, then that good reason is lacking. Criterion (iii) aims to make up for this by pointing to some positive arguments in its favour. I will not dedicate much space to proving (iii), for as we are about to see, **ID** is implied by some well-established and familiar hybrid theories. This being so, **ID** has recourse to some persuasive arguments for pluralism about temporal facts to satisfy (iii) that are familiar virtues of hybrid theories.

Let us summarise the story so far. First, I examined Williams' attempts to prove intertheoretical equivalence with respect to the privilege of times and permanent/temporary facts. The failure in both instances to establish **IT**'s central equivalence left deflationism in a very weak position. I then articulated an alternative deflationist view, **ID**, that did not require problematic intertheoretical equivalence, leaving it in comparatively better standing. In the next chapter, I will argue that the criteria for **ID**'s constitutive theses coincide with those tacitly accepted by hybrid approaches to A- and B-time, and that **ID** profits from the key benefits thereof. In light of this, even deflationists would be better off without **IT**.

Chapter 3

Hybrid Theories and Deflationism

This chapter proceeds as follows. First, I introduce the relevant hybrid positions: Growing Block and Moving Spotlight. Then I argue that the commitments of these hybrids imply the satisfaction of criteria (i) and (ii) because they adequately accommodate both tensed and tenseless facts without reduction, which is precisely what is needed to motivate **ID**. We shall see that so long as there is objective passage, the reconciliation of permanent and temporary temporal facts grants **ID**-deflationists advantages in overcoming the stubborn difficulties for the A- and B-theories outlined in the next chapter, thus satisfying criterion (iii).

3.1. Moving Spotlight and Growing Block

Moving Spotlight Theory (**MS**)[3] and Growing Block Theory (**GB**)[4] both subscribe to the following:

(iv) Times other than the present exist.

MS subscribes to a thick interpretation of (iv):

(v) All times, past, present and future, exist.

GB subscribes to a thin interpretation of (iv):

(vi) All past and present times exist, but future times do not.

Thesis (v) embodies an ontological view known as four-dimensionalism. The four-dimensionalist world is traditionally described as a 'block universe', extended through three spatial dimensions and one temporal dimension. According to four-dimensionalism, all times have ontological parity. Thesis (vi) represents a shorter, but similarly four-dimensional, spacetime block containing all and only those times in the past and the

[3] Prominent defences of Moving Spotlight Theory include Deasy (2014); Skow (2015); Cameron (2015); Miller (2017).
[4] Prominent Growing Blockers include Broad (1923); Tooley (1997); Perović (2019).

present. Theses (v) and (vi) can be thought of as the unchanging aspect of time, usually the reserve of B-theorists. A second common commitment of **MS** and **GB** is this:

(vii) There is a single privileged time identified with the present, and no time remains present permanently.

For GB, the role of a privileged time in (vii) is fulfilled by the shifting boundary of the block, which as it accrues spacetime slices successively renders the most recent addition the new present. For **MS**, the role of privileged time in (vii) is fulfilled by whichever time happens to fall within the spotlight's focus. A less metaphorical way of saying this is that some set of events or some single time instantiates the property of presentness - though scarcely more precise than (vii), this gives at least an idea of the basic form of **MS**. In either interpretation (vii) can be thought of as the changing aspect of time, usually attributed exclusively to A-time. Both hybrid theories are of relevance to **ID** because they must reconcile these two allegedly contradictory aspects of the world, viz. permanence and transience, in such a way that does not make either one redundant – this coincides with the satisfaction of **ID** criteria (i) and (ii). Let us see how.

3.2. ID Criterion (i): Pluralism about Temporal Facts

As the focus of this section is the dichotomy between tensed and tenseless facts, I must say something more about what they are and how these linguistic designations signify apparent differences in the respective metaphysics of the two theories. We can intuitively recognise the contrast in ordinary discourse: tensed facts can be expressed by statements containing tensed verbs, such as 'It was/ is/ will be raining', whereas tenseless temporal facts are usually expressed with a dyadic relational predicate associating an event with the appropriate date, such as 'It's raining is earlier than/ simultaneous with/ later than 18th June 1815' (where the copula is untensed). What do these ways of speaking divulge about the world? Even before McTaggart (1908), it had been acknowledged that tensed propositions are true only temporarily [5]– that 'It was raining' is true only after the event of its raining has

[5] Here is Peter Geach commenting on tensed propositions in medieval logic: "Such expressions as 'at time t' are out of place in expounding scholastic views of time and motion. For a scholastic, 'Socrates is sitting' is a complete proposition, *enuntiabile,* which is sometimes true, sometimes false; *not* an incomplete expression requiring a further phrase like 'at time t' to make it into an assertion." (Geach, quoted in Prior (1967:15))

been present, being false or indeterminate before the event is present, and false while the event is present. On the other hand, tenseless statements do not change their truth value; if true at any time, they are so invariably. Thus 'It's raining earlier than 18th June 1815' is true just in case the world is such that the event of its raining bears the invariable earlier-than relation to the date in question. This being the case, temporal facts can be categorised as belonging to one of two classes: temporary or permanent.

3.2.1. The Irreducibility of Temporary Facts to Permanent Facts

Based on the foregoing, many B-theorists[6] have claimed that temporal facts are exclusively permanent, because the truth-conditions of tensed propositions can be given without appeal to any changing facts. The reduction usually runs as follows: the statement 'It is now raining', expressed on 18/06/1815, is true just in case a token expression of 'it is now raining' is truthfully uttered on 18/06/1815. If the same statement is expressed the following day, 'now' picks out 19/06/1815 and the proposition being tokened is a different one with its own invariable truth-conditions, so no change occurs. This B-theoretic reduction depends on the principle below.

Truth-conditional permanence: for any true proposition p, p corresponds to a permanent fact iff the truth-conditions of p are constant.

The B-theorist claims that because tensed statements can be analysed indexically, tensed propositions uphold truth-conditional permanence and cannot therefore be temporary. However, B-theorists who opt for this reduction neglect the availability of another choice in determining permanence by alethic means:

Truth-maker permanence: for any true proposition p, p corresponds to a permanent fact iff the truth-maker(s) of p remains constant.

For propositions whose token expressions lend themselves to the indexical analysis - i.e. where the use of now picks out a determinate temporal position that features in the truth-conditions – truth-conditions are not the only way permanence may be conferred on true facts. The truth-maker of 'It is now raining', when uttered truthfully on 18/06/1815, is the

[6] This sort of reduction is typically characterised as *the new tenseless theory* – see, e.g., Le Poidevin (1998, 28). Its first articulation is found in Mellor (1981).

event of its raining occurring (tenselessly) on the date picked out by the utterance of 'now'. The truth bearer, in this case the proposition 'It is now raining', can have multiple truth-makers: distinct utterances may be made by independent speakers situated at different locations within the same time-zone, and provided it is raining at both locations, both qualify as truth-makers of the truth-bearing proposition. The crucial point, however, is that the truth-maker(s) does not change, which is to say that only those parts of the world that correspond to the propositional content – i.e. the date picked out by the indexical term and the relevant event - can make the proposition true. Those truth-makers will not change. The fact(s) that makes an indexical utterance true is permanent because it cannot then be the case that the proposition subsequently acquires a different truth-maker – nothing on the 19/06/1815 retroactively makes true anything tokened on the previous day.

At this point, it seems that the B-theorist has *a fortiori* two modes of reducing transient tensed facts to permanent tenseless facts. However, the trouble for the B-theorist is that not all propositions with an invariable truth value and invariable truth-conditions are permanent in this way. When it comes to invariably true indeterminate facts, it is possible that truth-conditional permanence be *un*accompanied by truth-maker permanence. Facts of this sort are unlikely to contain indexicals, and so are liable to evade detection by B-theorists engaged in the project of giving truth-conditions for 'now' propositions. However, one such fact, familiar from the previous section, precludes the possibility of a complete reduction of all temporal facts.

(d) There exists exactly one absolutely present instant.[7]

Using *N* to denote absolute presentness, (d) can be regimented as

(e) $\exists x\ (Nx)\ \&\ \forall y((Ny) \rightarrow (y = x))$

The fact expressed by (d) is a correlate of the hybrid theorists' doctrine (iv). The existential quantifier should not be interpreted as tensed, otherwise (d) would be open to an indexical paraphrase along the lines of 'There NOW exists exactly one…'. If this were the case, the proposition expressed in (d) would be determinate and the previous analysis would apply. To tense the quantifier is tantamount to expressing the proposition 'On [indexed date],

[7] The proposition should also state that what time is present perpetually changes; this has been omitted for brevity.

there exists exactly one absolutely present instant'. Clearly this is not a necessary condition of there being an indeterminate present instant, for it could be the previous or next instant that is present and (d) would still be true. To preserve the indeterminacy of the (d), therefore, the quantifier cannot be tensed.

Suppose now that (d), and therefore (e), is in fact true. Since the quantifier is tenseless it is just the case, irrespective of the time of utterance, that there exists exactly one absolutely present instant. The necessary and sufficient conditions for the truth of the tenseless proposition require that only a single indeterminate instant be present, so the truth-conditional analysis will be stated as a long string of exclusive disjunctions.

(f) $(\exists x\,(Nx)\ \&\ \forall y\big((Ny) \rightarrow (y = x)\big)) \leftrightarrow ((\mathrm{N}t_0)\ \veebar\ (\mathrm{N}t_1)\ \veebar\ (\mathrm{N}t_2)\ \veebar\ (\mathrm{N}t_3) \ldots (\mathrm{N}t_n))$

Because the disjunction on the right side of the biconditional in (f) continues across all instants, every possibility is already encapsulated, which means (f) cannot change and thereby entails truth-conditional permanence. But unlike the B-theoretical analysis of indexical propositions, truth-maker permanence does not accompany truth-conditional permanence, despite the truth-value of (f) being invariably positive. For although indeterminacy is acceptable in the truth-conditions of (d/e), the actual truth of (d/e) depends on there being a determinate time that is actually present – and this isn't something that can be disjunctive. The reason why it cannot be disjunctive can be illustrated using only two terms. Say the world spans only two instants, t_0 and t_1. When instant t_0 is present, the truth maker of (d/e) is

(g) $Nt_0\ \&{\sim}Nt_1$

But when t_1 becomes present, (g) ceases to be the truth-maker of (d/e) and gets replaced by

(h) $Nt_1\ \&{\sim}Nt_0$

As with the example of 'It's now raining', truth-maker permanence does not rule out multiple truth-makers – both (g) and (h) are indeed truth-makers for (d/e), but never simultaneously. So in our two instant world, just as any extended world within which time passes, propositions *about* time passing such as (d/e) cannot exhibit truth-maker permanence, even though they exhibit truth-conditional permanence.

Is this a contradiction? I see no reason to treat it as such; different alethic apparatuses yield different results vis-à-vis the sorting of true propositions into permanent and temporary classes. So long as a single conceptual apparatus doesn't produce the result that a fact is both temporary and permanent, why can't a proposition belong to both? It is only problematic on the attempt, made by B-theorists, to reduce all temporary facts to permanent facts, because then one becomes embroiled in the difficult task of deciding which alethic standard ought to be taken as more fundamental. Both truth-conditional and truth-maker analyses are used extensively across metaphysics, and to decide between them is an unenviable labour that I do not think worth undertaking merely to preserve the reduction, especially when there is a case to made for pluralism about temporal facts.

Now of course all of this is conditional on there being objective passage, and a B-theorist is highly unlikely to accept any statements about passage such as (d). But that is a challenge to the core doctrine of **MS** and **GB**, and not one I need to defend against in order to divulge their implicit commitment to **ID**. Whether or not hybrids are in fact right about the matter of an unfixed objective present is orthogonal to my current purpose. For insofar as hybrid metaphysics are sound, they ought to resist the total reduction of temporary facts to permanent facts. And since it is not obvious that they are unsound, we are some way to showing deflationists would be better-off replacing the obviously troublesome **IT** with **ID**. Yet this is only one half of the story.

3.2.2. The Irreducibility of Permanent Facts to Temporary Facts

To complete the satisfaction of criterion (i), I must also show that it is problematic to perform the converse (A-theoretic) reduction viz. from permanent facts to temporary facts. The simple answer to this is that the A-theorist cannot guarantee the temporal ordering of events will remain constant without appealing to permanence.[8] Consider two events *e1* and *e2*, where *e1* occurs first and *e2* occurs at some subsequent time. Further, suppose that both events are instantaneous, which ensures that no part of *e1* overlaps with *e2*. For the B-theorist, this order can be maintained by appealing to the permanent fact that *e1* stands in the invariable earlier-than relation to *e2*. (Or similarly by the fact that *e2* stands in the

[8] The criticism originates with Mellor and was recounted by Le Poidevin (personal correspondence); a slightly modified version is to be found in his (2007), p.51.

invariable later-than relation to *e1;* which we choose is insignificant.) Now even accommodating, as hybrid theorists do, an objectively progressive present, *e1* will remain earlier than *e2* irrespective of which time is in fact present.

Using the *N* operator as before, with the addition of *P* /*F* as past/ future tense operators respectively, and P'/F' to indicate further past/further future, the A-theorist can also give a disjunctive analysis of the proposition '*e1* is earlier than *e2*'.

(i) *e1* is earlier than *e2* iff $(Fe_1 \ \& \ F'e_2)$ V $(Ne_1 \ \& \ Fe_2)$ V $(Pe_1 \ \& \ Ne_2)$ V $(P'e_1 \ \& \ Pe_2)$

Now let us stipulate that *e1* is in fact present and *e2* is future, as per the second conjunct in (i). As time progresses *e1* inevitably becomes past. What then secures the third conjunctive fact that *e1* is past and *e2* is present, instead of (e.g.) the fact that *e1* is past and *e2* is also past? Without appealing to the permanent relational fact that *e1* is earlier than *e2*, the A-theorist cannot explain the requisite constancy to preserve the order of events. It should be noted this presupposes that such relations hold between events in the first place. A presentist, for one, might simply deny any past or future events existed to stand in cross-temporal relations, let alone acquiesce in the desiderata that such relations must remain constant. But this worry is by the way; for another central commitment of hybrid theorists is their four-dimensional ontology. And since events do stand in permanent relations within the block, the Growing Blocker or Moving Spotlighter will have to accommodate this fact. With this, I submit, criterion (i) is fully satisfied.

3.3. ID Criterion (ii): The Now-Now Objection

We saw in the previous section how hybrid metaphysics coincided with the satisfaction of criterion (i). Next I want to demonstrate how hybrid metaphysics face the same task of having to defend the compatibility of tensed and tenseless facts, as is required by **ID** criterion (ii), with a case study. Craig Bourne (2002) claims one instance of incompatibility is that from the hybrid theorist's use of two senses of 'now' follows an unacceptable epistemic result. If times (including objects and persons occupying them) other than the present are real (v), and which time is objectively present constantly changes (vii), then how can anyone be certain of their belief that the time they occupy is present? How do we justify the natural compulsion to think that we are at the edge of the block or illuminated by the spotlight – surely *our* now is *the* now? To illustrate the point, consider the following. At this moment

you think you are present, and in 1815 Napoleon thinks he is present; but if both of you exist, and there is indeed an objectively present (unfixed) moment, how can you know that you are right and he, along with all other inhabitants of the past, is wrong? The probability of judgemental error is even greater for **MS** than it is for **GB**, since the additional commitment to real future times requires not only that all past persons are mistaken in their belief, but likewise all future persons.

To see why the problem is peculiar to hybrid theorists, Bourne invites a comparison with presentists and B-theorists. For presentists, the knowledge that you are present is secured by the rejection of (v) – no times other than now exist, so your very existence guarantees your presentness and Napoleon's having ceased to exist guarantees his pastness (2002: 361). For B-theorists, the knowledge that you are present is secured by the rejection of (vii) – no time is privileged, and the condition under which any self-declaration of presentness is true consists in nothing more than simultaneity with the token expression of that present tensed utterance (ibid.). Thus Napoleon is equally as epistemically justified, and by this definition equally correct, when he proclaims himself present in 1815 as you are when uttering 'I am now present '. Making the semantic connection with metaphysics explicit, the point can be put like this. The presentist's reply points to the changing fact about what time is objectively present as the only truth-maker of now statements, whereas the B-theorist's reply is to isolate the permanent relational fact as the salient truth-maker. But since both solutions entail a choice between the rejection of (v) or (vii), each of which is essential to hybrid theories, the response is unavailable to **MS** and **GB**. It follows that hybrid theorists must concede that we are most likely wrong in our judgements that right now is the objective present – it very probably is not now now.

The diminutive likelihood that, amongst the vast quantity of equally extant times, we (our present selves) alone are currently located at the singularly privileged one seems discouraging for **GB** and **MS**. Furthermore, if the now-now objection is decisive, this also counts directly against my claim that hybrid metaphysics satisfy deflationist criterion (i), because the truth-making of now statements is only possible on *either* the presentist's changing but unextended ontology, *or* the B-theorist's extended but intransient ontology. The force of this objection, however, can be diminished on the grounds that epistemic concerns are not conclusive means of attacking the compatibility of (v) and (vii). For this

reason, I endorse a response to the now-now problem conceived by Perović (2019), according to whom the starting intuition that we are right about being present now fails to respect the perspectival limitations of those within the four-dimensional block, assumingly imbuing the utterer with out-of-block omniscience (2019: 635).

The first step in the response is to agree that it is not possible to reject either sense of 'now' as illegitimate because doing so would undermine the proposed metaphysics of hybrid theories. Thus, pace Bourne, hybrid semantics must include both of the following uses of now:

(j) B-now – The B-theoretic analysis of 'now' as indexical, picking out the time of the token expression.
(k) A-now – The A-theoretic analysis of 'now' as picking out whichever time is objectively present.

But as Perović emphasises, the utterance 'It is now now' is therefore liable to four possible interpretations:

(l) It is B-now B-now
(m) It is B-now A-now
(n) It is A-now B-now
(o) It is A-now A-now (Ibid., 633.)

(l) and (o) are trivially true, whereas (m) and (n) are only true when B-now and A-now actually do coincide. But while this is all perfectly statable in hybrid semantics, anyone who utters 'It is now now' can be epistemically justified only in asserting (l) and (o). She can be certain of (l) because (l) is a tautologous fact that requires nothing more than the utterer to know she means by B-now. She can be certain of (o) for a similar reason: because the knowledge of which particular time is objectively present is unnecessary for the tautological fact that the objective present coincides with the objective present. However, any knowledge of (m) and (n), Perović says, be it true or false, is reserved for those who have an omniscient perspective of the entire block – which of course neither you, nor Napoleon, nor anyone in the future has (2019: 635). So, in answer to Bourne's objection, hybrid theorists can dismiss the epistemic concern in the same way the B-theorist can: you know you are correct in your assertion that it is now now because your usage, and that of all others in the

block, is indexical – i.e. will be true under tenseless truth-conditions that contain as relational terms the time of utterance (although the second occurrence of 'now' is redundant). That is not to say that you cannot *state* that your current spatiotemporal location is at the edge of the block, or illuminated by the spotlight, but the chances of your assessment being true are slim; and if you just happened to be correct, then you would not be epistemically justified in concluding this to be the case. In sum, the intuition that we ought to have any epistemic guarantee of our own objective presence mistakenly assumes that both permanent and temporary facts are accessible to all, when only the first are.

It is hard to imagine that Bourne's is the only instance of alleged incompatibility raised against the hybrids' pluralistic commitment to tensed and tenseless facts, but it suffices as evidence that **GB** and **MS** are indeed faced with the task of satisfying criterion (ii) of **ID**-deflationism. That is, the now-now objection exemplifies a sort of problem shared by hybrids and **ID**: they must respond to difficulties brought about by accommodating both permanent and temporary facts. In this case the worry is an epistemic one, others may be metaphysical in nature; but insofar as these worries are consequences of incorporating both A- and B-theoretical elements into the same account, any concern for the hybrid is of equal concern to the **ID-**deflationist.

3.4. ID Criterion (iii) and Taking Stock

I began by arguing that the route to deflationism via **IT** was obstructed by the seemingly insurmountable task of proving intertheoretical equivalence. I then argued that the criteria for establishing the deflationist alternative, **ID**, aligned with those needed to make hybrid. This being so, **ID**-deflationists can avail themselves of hybrid metaphysics to undermine the dichotomy between tensed and tenseless facts – understood as the claim that temporal facts are entirely permanent or temporary. Throughout, I have taken for granted that objective passage is necessary to time. Before I go on to show that this is sufficient grounds for substantive dispute between A-/B-theorists, I want to conclude the current chapter by making good on my earlier claim that **ID**-deflationists can profit from this affiliation with hybrid theories, thus satisfying criterion (iii). With this brief outline of the benefits of **ID**, I complete my case for the claim that if it's deflationism one wants, then **IT** is not the way to go about it. Below are some pressing issues for A-/B-theorists that hybrids, and therefore **ID**-deflationism, are able to overcome.

The Problem of Cross-Temporal Relations

Presentist A-theorists are faced with the challenge of accounting for relations that apparently obtain across time. Relations such as truth-making, causation, and persistent identity all seem to obtain between present persons/events and past persons/events, yet how can this be if only the former exist? This is not an issue because hybrid theories, and therefore **ID**, forbid presentism in favour of a four-dimensional ontology on which past persons/ events do exist. (I treat the problem in greater detail in Part III.)

The Problem of Passage Phenomenology

Miller (2019) has recently drawn attention to a popular challenge typically levelled against B-theorists. Summarily, the argument says that the best explanation for our experiencing passage as phenomenal content is simply that there is objective passage (2019: 95). For hybrid theorists, of course, passage – in some form or another – is essential to time. Convictions about our temporal phenomenology and its best explanation can be left completely intact by emphasising this element.

The Problem of Temporary Intrinsics

There is a problem raised by David Lewis (1986) against endurantism, generally thought to be a consequence of A-time, which asks how it is possible for anything to exhibit incompatible properties at different times if it lacks temporal parts. Lewis tells us that unless we are prepared to deny temporary intrinsics altogether, or become radical presentists, then we must opt instead for temporal parts, which like the B-theory require a four-dimensional ontology (1986: 204). For hybrid theories, or at least for **GB**, presentness need not be conceived as an intrinsic property to be had and then lacked by objects or times. Instead, the present can be identified with the boundary of the block, which can in turn be defined relationally.

These are but a few of the virtues of hybrid theories, and it is equally true that they face other difficulties. Both topics lie beyond the purview of this chapter. But I hope that they nonetheless provide some insight into how **ID** stands on much firmer ground than did **IT** vis-à-vis deflating the tensed and tenseless dichotomy. The next question to be answered is whether IT can deflate the dynamic/static dichotomy by establishing temporal transition as

a commitment of all theories of time. If successful, this has considerable influence on the findings of Part I, since it may be that deflationism can be achieved by focusing **IT**'s attack on the dynamic-static dichotomy. As a final remark, I will emphasise that I do not endorse **ID** - nor should this chapter be taken as its defence. Rather, all I set out to show was that it can be successful given the right (hybrid) conditions, and this makes it the superior deflationism.

Part II:

Dynamic and Static Time

In part I we saw that if the A- /B-division is defined as a disagreement between tensed and tenseless theories of time, i.e. over whether temporal facts are permanent or temporary, then **ID** is the comparatively more successful version of deflationism. I prefaced that discussion with the caveat that it assumed temporal transition, which is a point of such controversy that it requires independent consideration. Part II takes up this issue. Arguably, whether time passes is more fundamental than whether time is tensed or tenseless, since the passage of time might be thought necessary for temporary facts. However, temporal transition is of great importance in its own right because it defines the other dichotomy often taken to underlie the A-/B-dispute: dynamic versus static time. Thus, while the results of this second part may not be entirely unconnected with those of the first, I shall treat the question of whether **IT** can succeed at conflating A- and B-time vis-à-vis time's passage as a freestanding issue.

Let us say that dynamic time contains transition, and static time does not. Before going any further, 'temporal transition' needs to be defined. In his exposition of **IT**, Williams has always maintained 'flow', 'shift', 'transition', 'go through times', etc. are synonymous.[9] However, these are very loaded terms, and there's reason to think that, rather than there being no substantive differences between A-transition and B-transition, any differences that are in fact present might get suppressed by this choice to treat the terms in question synonymously. This a good point to introduce a popular distinction between change and passage. The B-theory, it could be held, only needs to account for the diachronic change of objects, without incorporating any notion of passage over and above this change. The A-theory, on the other hand, incorporates the passage from future to present to past as a core doctrine. By operating under terms that are defined neither in themselves, nor by contrast to one another, but simply as converging on our intuition of temporal passage, Williams invites immediate objections from B-theorists who have employed a concept of transition similar to that of change and contrast it with A-theoretic passage.

[9] "Throughout I shall be using 'flow', 'shift', and 'transition' synonymously." (Williams, 2003:75)

Take Oaklander's R-theory for instance. It is a non-A-theoretic account of time, with one of its defining features being the denial that time really passes (in the sense just described above). It differs from the familiar McTaggartian B-theory only by its Russellian conception of relations, according to which two place relations are inherently asymmetric – the relation always being *from* one relatum *to* the other – and in this way transition is implied between relata (Oaklander, 2012). On the R-theory of time, then, transition is allegedly incorporated without anything like passage, legitimising the following complaint:

> Williams correctly recognizes that transition is essential to both our experience and reality of time; that it is known ostensively and that it involves a primitive temporal relation (2003: 89), but he mistakenly argues that there is no difference between these two kinds of transition since he misunderstands A-time as countenancing R-relations…[I]f we treat temporal relations as R-relations then one might think that adding temporal properties or some other form of A-change to the R-series is redundant and problematic since transition is already grounded in the R-relation. (Oaklander, 2012:10.)

So for B-theorists like Oaklander, transition cannot be the all-encompassing temporal concept Williams' synonymy implies. That being said, perhaps Williams' decision to treat all transition uniformly amounts to a thesis in itself. For B-theorists have been accused of gratuitously purging this 'fuller' notion of passage from an ontology on which passage can be freely accommodated. This is precisely what Deng purports to show is the case with the respective B-theories of Mellor and Falk (see Deng, 2010: 745-749). Moreover, those B-theorists who define transition by contrast to passage might similarly be accused of taking for granted a monolithic definition of A-passage, since exactly what this passage consists in is open to different understandings according to different A-theorists.

Going forward, I take 'transition' in the way Williams understands it. That is, as something conceptually indivisible into mere change and full-blooded passage, but encompassing everything usually associated with 'flow', 'shift', 'movement', etc. Furthermore, I suggest B-theorists refrain from prematurely objecting to this understanding of transition. For I am about to show that, even granting Williams' terminological choice, his two arguments for the necessity of temporal transition fail. (To anticipate the results of the next few chapters: the first of those failures depends on proving the conceptual independence of temporal

extension, which can be done without settling the question of defining transition; the second failure depends much more on the issue of persistence.)

Collapsing the dynamic-static dichotomy is the matter on which Williams has been most vocal, claiming first that all theories of time accept - explicitly or tacitly - that time contains transition:

> A-time is not the only kind of time with a claim to transiency. B-time, too, possess transition. To say this, however, is to raise the question of how B-time flow differs from A-time flow. What we shall discover is there doesn't seem to be any way to differentiate them. (Williams, 2003: 75.)

In lieu of any disagreement over temporal transition, there are no other significant differences between A- and B-time, hence they cannot be distinguished. There are two overarching theses at work here.

IT1: *All theories accept temporal transition.*

IT2: *There are no other significant differences between A- and B-time.*

Both **IT1** and **IT2** are needed to deduce indistinguishability. Setting aside the definitional issue, why should B-theorists, many of whom have been quick to denounce temporal transition,[10] acquiesce in this first claim? Here is Williams' riposte:

[I]t is a conceptual truth that time flows. This is a background assumption to reflection on time, a control belief that tells us what any concept of time must include… neutral in that it does not decide between rival theories of time. Whatever theory one advances must contain the concept of flow. (Ibid.)

Williams then supports the alleged conceptual truth of **IT1** with the following two arguments:

Transition Argument 1

P1) If there were no temporal transition, temporal extension would be indistinguishable from spatial extension.

[10] For example, D.C. Williams' (1961) 'The Myth of Passage'.

P2) Temporal extension is distinguishable from spatial extension.

C) Therefore, there is temporal transition. (2003:79)

Transition Argument 2

P1) If there were no temporal transition, we would be stuck at one time.

P2) We are not stuck at one time.

C) Therefore, there is temporal transition. (Ibid.:78)

The coming chapters will be devoted to demonstrating that both arguments fail. As regards the first, I concur with other commentators that there are means of distinguishing temporal extension from its spatial counterpart without appealing to time's passage. As regards the second, I argue at length that the first premise should not, as some have recommended, be dismissed as nonsensical but that it is decidedly not the independent claim Williams supposes it to be. Instead, it indicates another significant point of distinction between the A- and B-theories, therefore falsifying **IT2**.

Chapter 4

The Transition Argument 1: Extension

P1 of the first transition argument states that *If there were no temporal transition, temporal extension would be indistinguishable from spatial extension.* Here is Williams making the point:

> The basic truth about temporal extension is that it would not be what it is without temporal transition. The concept of the former contains the concept of the latter. It is a mistake to think that the former could exist without the latter. (1996: 80)[11]

The target of this attack is the commonplace description of B-time as being composed of instants of equally real times, which is sometimes expressed as their being 'spread out'. If it were not for temporal transition then a privileged observer, unconstrained by the contingencies of human temporal perception, would have a perspective on the totality of temporal existence much like that of spatial extension. That is, the temporal extent of any person or object would be seen in much the same way we are able to see the complete spatial extent of a metre rule, with the first millimetre being just as much in front of us as the last and all those in between. This comparison with space is intended only as an analogy, and although B-theorists help themselves freely to the analogy, they do not claim that times are spread out in *exactly* the same manner as spatial points are spread out, i.e. such that the two extensions are entirely indistinguishable. According to P1, however, denying temporal transition amounts to following the analogy to the letter by removing the only conceptual distinction between temporal and spatial extension.

Burley has complained that the charge is ill-founded, resting upon the erroneous presupposition that spatial extension is conceptually prior to temporal extension. Once it is

[11] The point is made again in his (1998: 383), but this time with regard to the relations needed to make up temporally extended objects: If there were no transition in B-time, then the time relations would cease to be time relations. They would not relate events or moments of time if there were no transition between the events and moments. This becomes evident when we contrast the time relations with spatial relations: the difference is that in the time relations there is transition between the terms of the relations, whereas in spatial relations there is no such transition between the terms of the relations.

understood from the outset that there are distinct kinds of extension, there is no longer any reason to think of temporal extension merely as spatial extension plus transition (2006: 414). I concur that this is basically the correct response to P1 – there is no reason why spatial extension should be regarded as the more conceptually basic of the two. Instead of beginning with two extensions, it might be that we have a prior notion of extension *simpliciter*, and this bifurcates into spatial and temporal extension. Whichever is preferable, both options raise the secondary issues of *why* we ought to recognise multiple concepts of extension and *how* they differ in kind. As to the question of why, the answer is straightforward: both A- and B-theorists agree to there being some difference between space and time, so there is nothing objectionable about treating the distinguishability of spatial and temporal extension as a consequence of that initial division. There may well be some who wish to deny any difference between space and time, but we would be hard pressed to find any such conviction among those who, like A- and B-theorists, propose a standalone theory of time.

As to the question of how, if not by transition, spatial extension differs from temporal extension, Burley suggests "the first of these consists in a spreading out in three dimensions of space whereas the latter consists in a spreading out along the one dimension of time" (ibid.). Unfortunately, this distinction between space and time *qua* individual dimensions doesn't immediately preclude transition from being identified as the salient distinguishing feature of time. For the indistinguishability theorist may emphasise the point that what distinguishes time from space is that time is the dimension of change and space the dimension of mere variation.[12] A semi-conductive poker, for instance, may simultaneously be hot at one end and cold at another as it exhibits variation across its spatial extent, but the poker cannot be completely hot and completely cold simultaneously – for this to be the case there must have been genuine change in the poker. By saying that there is a tangible difference between the spatial and temporal dimensions, and the difference consists in change, it is open to the indistinguishability theorist to ask why the change that distinguishes the temporal dimension should not supervene on a change in time itself, i.e. on temporal transition? After all, transition from future to present to past is just the sort of

[12] The distinction is made by be theorists themselves, see for example Mellor (1998: 87).

change that the A-theorist deems best to characterise the temporal dimension, why should the B-theorist be any different?

I think the indistinguishability theorist's challenge can be resisted but the response is a difficult to formulate, not due to any shortage in suitable articulations of the space/time delineation, but because which one of those ways is best to draw the line between concepts of extension depends largely on what is permitted by the particulars of each version of the B-theory, in addition to settling further orthogonal questions about the nature of time and metaphysical issues beyond. Take for example a B-theorist who is both a causal realist and believes that causes always precede their effects. The B-theorist in question can easily distinguish time from space in such a way as to characterise extension differently along each dimension. First, causal precedence can be used to define temporal order, allowing for an objective asymmetry in time from earlier to later, to which there is no direct correlate in space. Any temporally extended object would then have an objective direction along the time dimension and lack this direction along any of the three spatial dimensions – hence we arrive at an explanation of how temporal extension differs from spatial extension grounded in the antecedent demarcation of space and time.

The above is just one of many possibilities, too numerous to include here. But the only point needed to answer the indistinguishability theorist is this: the lack of any universal (B-theoretic) mode of demarcation is no reason to lose confidence in there being viable ways of doing so. The fact is that both A- and B-theorists can agree that time differs from space by virtue of being the dimension of change, without claiming that change must supervene on temporal passage or a change in time itself. Moreover, as the example above shows, there may be further ways to set the two dimensions apart that are consistent with, but do not depend upon, time's association with change. Whatever the case may be, it is difficult to regard the P1 of the first transition argument with anything but scepticism. Even if P1 were allowed to pass, P2 would surely be repudiated with similar reasons given against Williams' decision to define transition as a unitary concept. Thus, the first strike to **IT1**. Next let us move on to the transition argument 2.

Chapter 5

The Transition Argument 2: Being Stuck

For quick reference, here is a reminder of the transition argument 2:

P1) Without transition, we would be stuck at one time.

P2) We are not stuck at one time.

C) Therefore, time contains transition.

For P1 to be meaningful, we must be able to make sense of the notion of being stuck at one time. Henceforth I will refer to this as *the 'stuck' claim.*

The 'stuck' claim – It is conceivable that we should be stuck at a single time if time did not pass.

Against the 'stuck' claim Deng complains, "the notion of being 'stuck at one time' is strictly nonsensical, since it implies that one can be at a given time for some time.' (Deng, 2010: 743.) The simple criticism here is that there is no literal analogue of being 'stuck at one time', a phrase which is but a continuation of metaphorical descriptions of passage being something that 'flows', such as a river or a cinema reel projected as a film. It is natural to think such terms accurately capture our experience of time's passing, but the parity between a torrent of water or film reel and the passage of time can be readily dispelled by consideration of the fact that when water ceases to flow and a film is paused, one can sensibly ask, 'For how long has it been stopped?' This is a meaningful question as it can be given a precise answer that is both quantifiable and verifiable: 'The water/ film reel has not moved for an hour', for instance. But the same cannot be asked with respect to the cessation or absence of time's passing. No comparable answer may be given because the dimension along which we define our metric of duration, be it by seconds, hours, days, etc., depends on passage of the very thing whose cessation or absence we are trying to measure. In a word, duration requires passage to be intelligible, but passage is explicitly denied in the antecedent of P1. The nonsensical threat of being stuck at one time incites Deng to denounce the stuck claim as unable to 'serve as an undisputed and meaningful premise in an argument for including transition in the B-theory.' (Ibid.)

What I intend to show first is that, irrespective of the metaphysical weight it is intended to carry, the notion of being stuck at a time is certainly not nonsensical because it does not imply one can be stuck at a time for some time. My method for this first step will be to demonstrate that the term 'being stuck' ought not to be taken as referring to some durational phenomenon. In the attempt to explain away the semblance of duration, using tools from the philosophy of language, I provide three insights into how our grammatical system and habitual usage obscure the aspect of this locution. Following my defence of the stuck claim, I offer a slight modification to the second transition argument that avoids such nonsensicality charges.

Before immersing ourselves in the finer details of my view, it will be useful to make its place within the wider argument explicit with a brief rationale for focusing on this matter. The point here, as before, is *not* to try and rescue the transition arguments; all contributors, excepting Williams, reject it. The issue lies with identifying exactly *how* the transition argument 2 gets it wrong. A key part of both transition arguments, and indeed of Williams' method more generally, is to withhold any assumption about which conception of time, the A-theory or the B-theory, is correct. That time contains transition, according to Williams, is supposed to be determinable independently of the A-/B-debate, and for this reason he chooses to present the transition argument's conclusion as a 'conceptual truth'[13] (1998:383). But by the end of the next chapter, we will have seen that Williams' attempt to support this conceptual truth is inherently skewed in favour of the A-theorist - and something cannot favour one theory over another without there being some substantive discrepancy between those contenders.

The upcoming discussion depends heavily on very particular usage of terminology that might be familiar to the reader from contexts in which its meaning is somewhat divergent from my own, hence a short prelude to define key vocabulary is needed. By *statement* I shall

[13] The term 'conceptual truth' may be rendered a misnomer by our prior rejection of the Transition argument 1, whose first premiss states 'without transition, temporal, extension does not differ from spatial extension'. This is the transition argument 1's first premiss is proven or falsified a priori, whereas that of the transition argument 2 depends on the phenomenology introduced in P2 ('we are not stuck at a time'). Having rejected the only argument with a conceptual premiss, even the success of transition argument 2 should not technically be regarded as a conceptual truth. It is, however, unimportant since all that makes a difference to the argument is whether the conclusion is independent, not its epistemic status.

mean an utterance or written sentence. By *term* I shall mean any constituent of a complete statement, be it a single word or entire clause. The statements of interest will usually involve *subjects* and *predicates*, predominantly combined in the form of verb-phrases. Subjects and predicates, as I employ them here, are linguistic in nature; they refer to persons, situations, objects, events, actions and so on, but are ultimately defined by their role in the statement.[14] I denote their non-linguistic referents by use of the term *phenomena*. It is important (especially for section 5.1.2) to stress that being a phenomenon does not imply actuality - phenomena merely have to be capable of being the referent of some denotive term to qualify as such. The term *event* is not employed as a term of art but according to its wider sense – not, that is, as an instantaneous ontological primitive, but as a general occurrence of unspecified temporal structure.

Second, it is possible to imagine two situations in which time may be described as being without transition: either temporal passage has always been absent, or the passage of time suddenly or gradually comes to stop. I do not know which of these Williams intended by 'without passage', but it makes sense to assume the 'stuck' claim applies to any lack of passage whatever. It is both to emphasise its non-linguistic nature and maintain neutrality between these two situations that I have opted for the admittedly cumbersome phrase *the phenomenon of absence or cessation of temporal transition* when referring to the situation of being stuck at one time.

5.1. Purging Nonsensical Implications

The first step to realising the difficulty with the second transition argument is demonstrating, contra Deng, that the 'stuck' claim is in fact meaningful. Deng states that the stuck claim is nonsensical because

(i) The notion of being stuck at one time

Implies that

(ii) One can be at a given time for some time (2010: 743)

[14] It does not matter for the current discussion whether the reference relation between linguistic terms and their referents is descriptivist (e.g. in the style of Frege) or causal (e.g. in the style of Kripke). Nor is it helpful to complicate matters by mediating the relation through propositions, such that the system assumes the structure of PHENOMENON – PROPOSITION – STATEMENT.

To reject (i) on the grounds of its implying (ii), (ii) must be both a genuine entailment of (i) and nonsensical. Though I will go on to argue that (ii) is not a genuine entailment of (i), I agree with Deng that (ii) is nonsensical. (ii) is not always nonsensical, but it becomes so if [at a given time] is understood as locating the subject to which that expression is affixed at a single instant. This is the case because there are ordinary situations that can be described by (ii). These are situations where the subject is located at an extended interval, such that [at a given time] refers to the subject's position along a time series and [for some time] refers to the temporal distance between the initial and final boundaries of that interval-position. In interval-based cases such as these, there would be no cause to repudiate (ii) for meaninglessness. Consider, for example, the brief life of an individual, I, who pops into existence at 5pm and back out of existence at 6pm (figure 1). In this case, it is accurate to say the individual is stuck at *a given time* (the interval from 5pm-6pm) *for some time* (sixty minutes). This individual is stuck because nobody can transgress the temporal boundaries of their existence, but their existence is not instantaneous. So the nonsensicality of (ii) only appears on the assumption that [time] refers to an instant, not interval. This is of particular import when analysing the implication from (i).

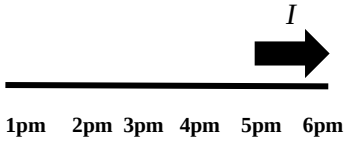

Figure 1: Timeline mapping the existential duration of an individual, I. This individual is at a time (5pm-6pm) for some time (one hour).

The expression [at a given time] in (ii) ostensibly derives from [at one time] in (i), which we now know must be instantaneous. Thus, to preserve implication of the former expression by the latter, we must acknowledge that [at one time] in (i) also refers to a single instant. The second expression conveying temporal information in (ii), [for some time], is clearly not instantaneous because [for some time] is semantically equivalent to 'over some sustained period' – but whence does this durational term derive? The only available explanation is that it is implied by the term [the notion of being stuck] in (i). However, I propose that that implicative relationship stems from an erroneous interpretation of [the notion of being stuck at a time]. Although it is not immediately apparent where the error lies in the formulation above, once the mistake is pointed out it will be a natural step to reject (ii) as a genuine entailment of (i).

For a comprehensive analysis of this alleged implication, I need to introduce some grammatical classifications and distinctions from the philosophy of language. *Tense* conveys

the temporal location of the subject or predicate, usually an event, relative to a point of reference – be it the time of utterance or other temporal location embedded in the content of the statement.[15] *Aspect*, on the other hand, conveys the 'internal temporal constituency of a situation' (Comrie, 1976: 3). That the phenomenon to which a term refers is, say, a process, and therefore has duration, falls within the domain of a statement's aspect and not its tense. (As proof of this, consider an arbitrary statement formulated in the present continuous: [I am walking]. By replacing the present continuous with the past continuous [I was walking], the internal temporal composition of the event remains that of a process and its durational constituency is preserved, despite the variation in tense.)

When terms referencing phenomena that would usually feature directly as predicative verbs instead occupy a sentential position other than that of the predicate, or require auxiliary verbs to become a complete predicate, they occur as *factive verbs.* The class of factive verbs includes gerunds and standalone participles, in addition to others with which we needn't be concerned for present purposes. When a verb occurs *qua* noun, as in [I like *reading*] or [*Queuing* is customary], the gerund is used. It is generally constructed by affixing *-ing* to the root verb. Gerunds are not as closely associated with conveying temporal information as other verb forms - including other nonfactives such as participles - and it is this capacity for expressing verbs while suppressing the usual temporal information that allows one to speak of phenomena, such as [reading] and [queuing], more universally. On the other hand, participles, which although by themselves are not predicative verbs, may be used together with auxiliaries such as [be] and [have] to compose various tenses and predicates. The present continuous, for one, is composed using a present-tensed auxiliary, [is], together with the present participle, which like the gerund results from affixing *-ing* to the root verb – e.g. [He is walking]. Now although participles are used in the *composition* of tenses, it is known from the distinction introduced in the previous paragraph that they communicate the *aspect* of the phenomenon to which they refer.

[15] Note that this is not a B-theoretic reduction of tense, such as was the subject of Part I. The characterisation I have given captures only the linguistic function of tense, it is still open whether the position given as a reference point corresponds to a B-series position, or one that is absolutely past/present/future.

Let us summarise the essential points of this discussion. There are two different verb forms germane to my forthcoming explanation: gerunds and (present) participles. Both are indicated in part by the same *-ing* grapheme affixed to a root verb, but where gerunds are used to suppress tense, participles are used in tense composition. Further to this, participles convey the aspect of the phenomenon to which the salient verb refers. The present participle in particular always conveys the progressive or continuous aspect, signifying the temporal constituency of its referent is durational.[16] All of the foregoing belongs to the standard regulations of English grammar, but one not so clear-cut question is whether it is also possible to infer the aspect of a phenomenon from its gerundive expression. Some verbs we know to be unequivocally processual, and the fact of their being so appears obvious, even from their gerundive occurrence. Such is the case with the following set of dynamic verbs:

Subject	*Predicate*	
[Playing cards] (GER)	[results in]	[poverty.]
[Reading] (GER)	[aids]	[insomnia.]
[Flying](GER)	[thrills]	[everyone]

One contributing factor to the aspectual transparency of these gerunds, formed from dynamic verbs, seems to be how well they mirror the present participle (which *is* certainly used to convey duration), not just regarding graphological features, but also in their capacity to fit seamlessly into the progressive/continuous, e.g.,

Subject	*Predicate*
[He]	[is playing cards.] (CONT/PROG)
[She]	[is reading.] (CONT/PROG)
[They]	[are flying.] (CONT/PROG)

[16] 'Durational' is not canon among any major theories of aspectual classes; rather, I employ it as a pan-theoretical umbrella term to include all aspects that require temporal extension over non-zero duration. Similarly, 'durationaless' includes those aspectual classes that do not require duration.

Indeed, some linguists have even gone so far as to suggest that gerunds with no overt subject retain some properties of the progressive (e.g. Seigel, 1998). This brings us to the first reason one might be misled into assuming [being stuck at a time] refers to a durational phenomenon.

5.1.1. Appearance of Synonymy with Semantically Relatable Dynamic Verbs (Reason One)

[Being stuck] is typically understood as a period of inability to move, as in the case of a river or cinema reel, and such frequent usage gives the impression that duration is 'built-in' to the notion itself. Just as with dynamic verbs, it therefore *seems* obvious that [being stuck] conveys that durational aspect, even in its gerundive form. Moreover, this belief that [being stuck] is obviously processual gets perpetuated if one tries to substitute [being stuck] for apparently synonymous descriptions, such as the verbs (involuntarily-) [remain] or [stay]. Both of these synonyms *are* obviously durational, and like those dynamic verbs above, their gerund mirrors their present participle exactly:

(a) [Remaining] [is a mistake]	(a*) [He] [is remaining] [at home]
(b) [Staying] [is the only option]	(b*) [She] [is staying] [with friends]
(c) [Being stuck] [is frustrating]	(c*) [He] [is being suck] [at the traffic lights]

There can be no doubt that the aspect of these related verbs is durational, but it *is* doubtful whether they are truly synonymous with [being stuck]. Unlike the transformation from (a) to (a*) and (b) to (b*), the move from (c) to (c*) sounds odd – (c*) is an infelicitous construction. I propose that the disanalogy is not incidental: [being stuck], as it appears in P1, is only pre-theoretically synonymous with the likes of [remain] or [stay]. Generally, a successful protocol for achieving greater levels of descriptive clarity is to elaborate on the initial formulation utilising other verbs that are closely related semantically. In this instance, applying that protocol means identifying others belonging to the semantic group of 'involuntary immobility' words. We are then inclined to invoke verbs such as [remain] or [stay] in the exposition of the phenomenon of absence or cessation of temporal passage, originally denoted by the term [being stuck], to get a clearer idea of that situation.

But where more scrupulous descriptions are required, such as for metaphysical analyses, the choice of reference must be of the utmost precision. The challenge, in the case of

describing a situation lacking temporal passage, is how to communicate involuntary immobility without also tacitly implying a temporally extended phenomenon. One method of doing so within the confines of English grammar is by selecting a verb semantically related to the likes of [stay] and [remain], but marking the difference by avoiding the class of dynamic verbs. A limit to the general descriptive protocol must then be recognised. In view of all this, the pre-theoretical synonymy reduces to a much vaguer affinity between the terms, since [stay] and [remain] are dynamic verbs which display the hallmarks of essentially processual phenomena, but [being stuck] seems to firmly resist this characterisation. Hence, under finer analysis, we are not entitled to assume these univocally durational verbs can be employed as faithful substitutes for [being stuck at a time]. Nor are we entitled to appeal to them in determining the aspect of [being stuck] as it appears in (i). The first reason for the error of believing [being stuck] is durational is placing excessive weight on the semantic relation of similar verbs, whilst overlooking the grammatical distinctions selected as a means of signifying distinction.

Elucidating the discrepancy between obviously processual verbs, whose gerunds alone suggest the continuous/ progressive aspect, and the occurrence of [being stuck] in (i) might go some way to accounting for the erroneous implication of duration, but there are additional tensions between our ordinary notions and their linguistic reference that further lend towards the aspectual obscurity of [being stuck].

5.1.2. The Aspectual Ambiguity of Stative-Gerunds (Reason Two)

The gerunds and present participles of processual verbs may strongly indicate a phenomenon's durational aspect, but when it comes to non-processual verbs, such as the stative verbs [hate] or [prefer], the matter is more complex because some statives are plausibly durational, whereas others are not. Here is Vendler making just that point:

> Verbs like knowing and recognizing *do not indicate processes going on in time, yet they may be predicated of a subject for a given time* with truth or falsity. Now some of these verbs can be predicated only for single moments of time (strictly speaking), while others can be predicated for shorter or longer periods of time. One reaches the hilltop, wins the race, spots or recognizes something, and so on at a definite moment. On the other hand, one can know or believe something…for a short or long period. (1967: 102, my italics.)

When stative verbs like [know] and [recognise] occupy the subject position, just as in the quotation above, they too assume their gerundive forms. But unlike before, the gerund alone cannot be appealed to in distinguishing between those non-processual verbs with duration, such as successive phases of knowing, and those non-processual verbs without duration, such as preferring. (Of course, one may *continue* to exhibit a preference for something, but this is not identical with the event of first having a preference, which is an instantaneous change of state.) Nor is it possible to invoke the previous test of formulating the progressive to ascertain duration, since stative verbs, unlike dynamic verbs, typically do not sound felicitous as present participles: [He is knowing] or [She is preferring], for instance.

Fortunately, where the aspect of an expression is pertinent to its content, the verb may appear in the vicinity of a modifying word or phrase – most commonly a temporal adverbial. Thus, despite their disposition to sound infelicitous when featuring in progressive/continuous statements, the following stative verbs are well-formed gerunds that nonetheless clearly reference durational phenomena.

Subject (GER) + Modifier (adv.)	*Predicate*	
[Knowing something [for years]]	[suggests]	[it will never be forgotten]
[Loving [for only a day]]	[is better than]	[never loving at all]

But modifiers are not always needed to indicate whether stative verbs are or are not durational in aspect. Given the causal theory of reference, for example, modifiers may seem superfluous. Imagine the following: a linguistic community comes to acquire the term [know] by repeated experiences of only instantaneous states of knowing. Among members of that community, [know] is naturally attributed a durationless aspect by virtue of conforming to the entirety of their collective experiences of knowing. This is so engrained in their pattern of speech that any statement akin to [I knew for an instant] sounds verbose, on account of the apparently redundant modifier. But does this community then regard the literal interpretation of the expression [knowing for years], where the modifier contradicts all of their actual experiences and subsequently derived notion, as denoting a phenomenon of similarly durationless aspect? Surely not, for the addition of an external modifier literally negates any preconception of the term in question, no matter how intimately it is

connected with their only familiar instantaneous notion of [knowing]. From this brief thought-experiment it is possible to devise the following maxim: where aspect is obscured by verb-form (such as statives in the gerund) but indicated by a connected modifier, the modifier is authoritative in determining aspect.

This maxim, natural though it may be in sentential analysis, cannot pacify those prejudices we have about whether certain states entail duration or not. This is especially so in sentences referring to merely possible phenomena, for if our actual experiences of [being stuck] only ever correspond to experiences of immobility *for some period of time*, then duration for us seems to be an inextricable feature of that general phenomenon – just as how to the imaginary linguistic community [know] is inextricably associated with an instantaneous state. (Recall in the introduction I said that phenomena need not be actual, only that they must be capable of being the referent of some subject or predicate.) But to take the term literally, as Deng suggests we do,[17] those prejudices must be subordinated to the information as it appears affected by the modifier. Whatever the inherent character of our prior notion of being stuck, the aspect of the phenomenon denoted by the expression [being stuck] is determined externally by the presence of the modifier [at a time], which as we are about to see delimits the nature of the denoted phenomenon to that of an instantaneous state. In sum, the second reason for the mistaken implication of duration is a confusion of the literal aspect of [being stuck at a time] with our actual experiences of [being stuck].

5.1.3. Failure to Recognise the Deictic Function of Modifiers (Reason Three)

Adverbials of any sort are defined by their functions at various levels. The title 'adverbial' itself refers to the role a grammatical unit plays in modifying the information encoded in the affected verb. More precise definitions serve to discriminate between adverbials according to the categories of information under their influence, such as the conspicuously labelled *adverbs of time* and *adverbs of place,* which may be phrasal or a single world, and appear in various syntactic formations.

Adverbs of place: [He is walking] [below.]

[17] "Simply put, the problem is that such comments are literally nonsensical since we do not literally have to get from time to time." Deng on interpreting the 'stuck' claim (2010: 743).

[At the northernmost point of the earth] [the man is alarmed.]

Adverbs of time: [He is walking] [for the Winter.]

[Between the hours of 12pm and 1pm] [the office is deserted.]

Defining modifiers with such a vast range of suitable deployment by their functions ensures it is practically impossible to confine a given word or phrase to only a single category within the standard taxonomy of adverbial classes. As proof, let us examine a more complex sentence:

[Walking across the field,] [the boy lost his wallet.]

The main clause in this sentence is [the boy lost his wallet], which identifies the main verb affected by the fronted adverbial as [lost]. Plausibly then, the phrase [Walking across the field] may be interpreted as an adverb of place (he lost his wallet *in the field*), or as an adverb of manner (he lost his wallet *as he was walking*), but also as an adverb of time (he lost his wallet *when he walked across the field*). The point can be bolstered by the fact that if we are asked to convey only one of these implications, [Where/When/ How did the boy lose his wallet?], then the adverbial phrase in its original form [walking across the field] may be taken as a satisfactory and complete answer, regardless of which one of these questions is asked. The very same adverbial phrase suffices to convey location, time, and manner, in accordance with context. The crucial point here is that adverbials can be deictic – they may perform verb-modifications of various categories based on the context in which they appear, and this might also mean that a single modifier satisfies two or more adverbial functions simultaneously.

The third and final reason I suggest that the true (durationless) aspect of [being stuck at one time] may be obscured or mistaken is by failure to recognise that in (i), a dual adverbial function is satisfied by the single modifying phrase [at one time]. In the context of temporal position, the preposition [at] operates as an adverb of place. Let ‘a’ be an arbitrary subject and ‘F’ be a predicative verb of unspecified aspect. Then

[a is F [at t_1]]

describes a phenomenon *located* at time t_1, in much the same way as

[The girl is happy [at school]]

describes the location of the girl's happy state. Now although the preposition [at] is invariably relational, the modifier *in toto* is deictic because in the first sentence it refers to a temporal location and in the second it refers to a geographical location – its meaning is impacted by the context of the sentence. It is a consequence of employing modifiers in the context of a single temporal dimension that adverbs of place may also imply whether or not an even has temporal extension.

[a is F at t_1 & t_2&t_3]

[a is F only at t_2], i.e., [a is F at t_2] and [a is not F at t_1] and [a is not F at t_3]…

The phenomenon in the first sentence is self-evidently durational, it spans the interval t_1-t_3, whereas the second is an instantaneous state of a at t_2. [The notion of being stuck at one time] emulates the second of my examples above: [at one time] is a modifier that restricts the temporal location of any possible referent of [being stuck] to a single indeterminate instant, in turn entailing that there is no durational aspect of the term subject to its modification. It follows that *there is no durational expression at all in (i) to entail the durational qualification [for some time]* in *(ii).* It is rather a misinterpretation of this phrase that produces the [for some time] in (ii).

(i) The notion of being stuck at one time

No longer Implies

(ii) One can be at a given time for some time

But rather

(iii) One can be at a given time and unable to access a subsequent time.

The new addition is easily justified: if temporal passage is the movement from one time (instant) to the next, and being stuck means the inability for movement, then the time at which one is stuck is the only time accessible without movement. Of course, accessibility should not be taken to imply any intentionality because we do not advance in time of our own volition, but it is supposed to capture the modality of location – accessible times are

those where we *can be*. Before summing up, it will be useful to gloss the transition argument 2 with the results of this section.

The Transition Argument 2*

P1*) If there were no temporal transition, we would be at a given time and unable to access any subsequent time.

P2*) We are not at a time and unable to access subsequent times.

C) Therefore, time contains transition.

In this chapter I have argued that there is nothing in the expression [the notion of being stuck] that implies this refers to a durational phenomenon and that it does not therefore imply the nonsensical [one can be at a time for some time]. I have tried to explain away the inference of duration by demonstrating how the aspect of an instantaneous state may be obscured by features of grammatical regulation and habits of speech. Having divorced the problematic entailment from the notion of being stuck at a time, I see no further reason to regard it as nonsensical. That 'being stuck at a time' should refer to a phenomenon that is nothing beyond absolute stasis at a definite temporal location, rather than some ongoing process of absence, is a perfectly coherent idea. Why go to such lengths to vindicate the stuck claim? I believe that once its coherence is recognised, and it is subsequently permitted to feature as a meaningful premiss in the transition argument, it points directly towards an insurmountable tension between A- and B-theorists.

Chapter 6

Persistence

In the last chapter we saw that the notion of being stuck at a time implied one can be at a single given time but not be able to access any other time, and this is something that can at least be made sense of by A- and B-theorists alike. Rather than dismissing the 'stuck' claim as nonsensical, therefore, I believe IT's critic should insist that in order to determine whether it is plausible support for the conceptual truth of temporal transition, we must first decide on an endurantist or perdurantist conception of diachronic identity. And since this debate cuts across that of the A- and B-theorists, acceptance or rejection of Williams' justification already demands recognition of a significant difference between the two. Not only does this fail to justify the conceptual truth of temporal transition (**IT1**), it also contradicts the other main indistinguishability claim that there are no other significant differences between the theories (**IT2**).

For A-theorists, the 'stuck' claim serves to emphasise the virtue of their view as the one which better conforms to phenomenological data: we aren't stuck at a time, since we transit relentlessly into successively present moments. But for the B-theory, the notion of being fixed at a single moment is by no means alien to our actual situation in time - *a fortiori* it is an accurate account of how all objects, or at least components thereof, exist across time. The driving force behind these attitudes is a pair of antithetical doctrines relating to persistence: endurantism and perdurantism. In three steps, it is possible to preclude both the second transition argument and offer a new distinction for A- and B-time. Step one is to show that accepting the transition argument depends on whether one is an endurantist or perdurantist, i.e. on whether one accepts temporal parts (though a third option is considered later). Step two is to show that B-theorists ought to be perdurantists. Step three is to show that the A-theory is incompatible with perdurantism. If this is right, then the dichotomy of persistence will thus constitute a point of substantive disagreement in the A-/B-debate.

First, an exposition of temporal parts: you have been reading this chapter for some time, you are still reading it currently, and you will be for a short while longer. You, the

protagonist of my commentary, persist throughout the stages of reading just recounted. The person reading earlier is one and the same person who is reading now and will still be reading for the immediate future. It is a commonplace that identities of persons and objects alike persist so long as they remain in existence, but in what mode do they persist? One thought is that persisting objects are divisible into their constituent parts, having an individual part located at each of the times comprising the entirety of that object's existence. If objects persist in this segmentally individuated mode, they are said to have temporal parts.

Temporal parts doctrine: Objects and events persist through an interval by virtue of having constituent parts located at each of the times comprising that interval.

Believers in temporal parts are called perdurantists; it is a consequence of their defining claim that objects are only partially present at each (single) time they exist. Thus there is a part of you located at the time you began reading, a part of you located at this moment, and parts of you located throughout the coming moments of your reading. Opponents to temporal parts are called endurantists. Endurantists deny that objects are divisible into composite temporal parts and therefore deny that objects can be only partly present at multiple times. Instead, they insist that objects are wholly present successively. During the time of your earlier reading, for instance, all of you *was* reading, just as all of you *is now* reading and all of you *will be* reading.

6.1. Step One: The Antecedent Decision between Endurantism and Perdurantism

In light of the preceding discussion, P1* (reproduced below) provokes different responses depending on whether one accepts or rejects temporal parts doctrine.

P1*) If there were no temporal transition, we would be at a given time and unable to access any subsequent time.

The endurantist will happily accept P1* because objects are only ever entirely present successively, which means that any instant, *t*, at which an object, O, is present contains the whole of O. It is therefore impossible for O to be located across multiple instants unless it is first at t_1, then ceases to be at t_1 as it transitions wholly into t_2, then ceases to be at t_2 as it transitions wholly into t_3, et cetera. If this process were to stop, say at t_2, then O would

remain wholly at t_2, which is to say that all subsequent instants, such as t_3, would be inaccessible to O.[18] (The same goes *mutatis mutandis* for the case where time had not suddenly ceased to pass but had never transitioned in the first place.) So P1* goes hand in hand with endurantism. But the perdurantist, on the same modal criterion of accessibility, does not accept P1* because it is possible for O to be located at all times t_1, t_2 and t_3, by virtue of having a temporal part located at each. Thus, transition or not, all times are accessible to a persisting object that so happens to have a temporal part located at those instants. It is worth noting there is still a diminished sense in which O can truthfully be described as 'being stuck', since every temporal part of O is fixed firmly at its defining temporal location – if it were not, then then the temporal part would lose its identity O-at-t_n. But the point is that being temporally stuck is not a problem for the persistence of an object on perdurantism, whereas it precludes further persistence on endurantism.

So P1* is incompatible with the perdurantist account of persistence. But my connecting the transition argument with the dichotomous views on persistence does not hinge on its first premiss alone. Suppose there were a way of reconciling P1* with temporal parts doctrine, P2* still needs to be disambiguated to distinguish between an endurantist and perdurantist reading. On either interpretation, the result is that the lack of transition is only problematic for endurantists, although the proofs will be somewhat different. I will take them in turn.

P2end) We are not wholly at given time and unable to access subsequent times.

Endurantists will accept P2end because 'being stuck' does not accord with our phenomenological data: we, *qua* wholes, experience ourselves inexorably moving through time. But it remains for the endurantist to recognise that there might be scenarios where temporal transition is absent and P2end *would* be false, viz. even given the truth of endurantism, being stuck is still a *logical* possibility. Perdurantists will likewise accept P2end, but for very different reasons. They deny that anything other than instantaneous objects can be wholly present at any given instant - we are not instantaneous objects (and even if we were, the argument could be given with this anthropocentricity replaced by any other persisting object). Thus the perdurantist regards 'being stuck' as logically impossible given

[18] By 'remain' I do not of course mean to imply any process: just as in the previous chapter, this should be understood as O instantaneously enters a state of restricted temporal accessibility.

any persistence whatever. And this difference in their respective justifications for accepting P2end culminates in whether they may accept the conclusion of the transition argument:

C) Therefore, time contains transition.

For endurantists, C follows directly from the fact that there is no other way to account for the phenomenological data other than the movement of time itself. However, perdurantists ought to reject C as a non sequitur because a lack of temporal transition is not at all what motivates their acceptance of P2end. The source of the perdurantist's acceptance of P2end is the wholesale rejection of temporally extended objects ever being entirely present at all, so there is no reason to move from P2end to C – viz. no reason for the perdurantist to accept temporal transition. What about the perdurantist interpretation of P2*?

P2per) We are not partially at a time and unable to access subsequent times.

Endurantists will reject P2per on similar grounds as perdurantists reject P2end: it is part of their defining belief that no temporally extended objects have temporal parts. Thus for the endurantist, P2* cannot be interpreted as P2per – this fact has very little to do with the phenomenon of transition itself, but a prior rejection of temporal parts. Yet even for the perdurantist, P2per is unacceptable because it is false – the very basis of the parthood relation involves individual constituents of some larger whole, and if those constituents are individuated only by temporal location, a part cannot occupy earlier or later instants without thereby losing its identity as that temporal part.

Whichever premiss is attacked, then, the transition argument is clearly biased towards endurantism. If endurantism turned out to be an entailment of the A-theory, and perdurantism an entailment of the B-theory, then not only would the transition argument 2 be unacceptable to B-theorists, but there would be a greater division at the heart of the A-/B-debate that spells catastrophe for **IT**. Next, then, it is time to show why B-theorists are better off accepting perdurantism.

6.2. Step Two: Why Perdurantism Advantages B-Time

B-theorists have historically been ambivalent towards temporal parts: some have been willing to embrace the doctrine (e.g. Le Poidevin, 1991), others less so (e.g. Butterfield, 1985; Mellor, 1981). For the most part, I think there is a good case to be made for marrying

the B-theory to temporal parts. Yet we must also heed the following dialectical constraint. The transition argument 2 is supposed to show that all theories of time, even the B-theory, ought to accept transition. By claiming that the B-theorist should reject this argument because of its prior acceptance of perdurantism, I cannot then appeal to the rejection of transition in justifying the B-theorist's acceptance of temporal parts. To do so would beg the question against **IT**. Adherence to this constraint severely restricts the available arguments, but nonetheless leaves intact the most compelling reason to be found in the literature.

Before presenting this reason, I want to address a certain view that the B-theory and perdurantism shouldn't be linked. And since this view also evades mention of transition, it has the potential to cause problems for step two. The view goes like this: the B-theorist can analyse tensed sentences about an object's properties with alternative notations that omit reference to temporal parts, therefore, the B-theory can manage without temporal parts. The point is evident in the contrast between paraphrases of the tensed sentence 'a is now F'. The notation below is modelled on Butterfield's comparison of a Quinean perdurantist paraphrase with a Wilsonian non-perdurantist paraphrase of tensed sentences (1985: 38-39); a more recent version is constructed in Effingham (2012).

One option is to translate 'a is now F' by predicating F of some temporal part of a, a-at-t, yielding: *F(a-at-t)* – where t is the indexical time referent of 'now'. (Additionally, 'a was F'/ 'a will be F' can be expressed with the inclusion of another time variable in an earlier/later than relation to t_n.) But the same might be achieved, without loss, by the predicating F of a two place relation, in which a represents the whole of a and t_n is again the indexical time referent of 'now': F(a, t_n). (Once again, past/future can be easily incorporated with an additional time variable standing in the earlier/later than relation to t_n.) Since the latter offers an equally satisfactory translation of the former without mentioning a-at-t_n, temporal parts doctrine is not a stringent implication of the B-theory.

The issue with the above stratagem for rejecting temporal parts is that it takes the B-theory to be concerned primarily with form and translatability. The endeavour to provide alternative, non-perdurantist paraphrases of tensed sentences largely ignores some of the metaphysical issues that motivate the B-theorist to adopt temporal parts. As I noted in the introduction (p.2) this 'detenser' version of the B-theory accords with a certain phase of the debate between the A-/B-theories. Nevertheless, the indistinguishability theorist's challenge

is posed to the *metaphysics* of A- and B-time – not their translatory success. And although I am content to acknowledge that each of the above notations may be provided *qua* truth-conditions for a tensed 'now' statement, and therefore be brought to bear in some way on the underlying metaphysics of the B-theory, the fact that non-perdurantist truth-conditions can be given for tensed sentences does not *ipso facto* preclude other difficulties the B-theorist's metaphysic may incur as a result of excluding temporal parts – certainly not those relating to change.[19] (As a side note, it does show that there is no necessary analytical relation between the B-theorist's translation schema for A-sentences and temporal parts. This means that my forthcoming claims about the B-theoretic adoption of temporal parts should be taken as a matter of theoretical strengthening.) Hence, we arrive at the reason B-theorists ought to be perdurantists.

Unsurprisingly, the problem of change supplies the impetus for B-theorists to align themselves with perdurantism – it does so, moreover, without mention of temporal passage. The especial association of time and change can hardly be overstated; it is a given, therefore, that any viable theory of time must account for diachronic change, particularly in an object's intrinsic qualities. A well-known iteration of the issue is Lewis' problem of temporary intrinsics:

> Persisting things change their intrinsic properties. For instance shape: when I sit, I have a bent shape; when I stand, I have a straightened shape. Both shapes are temporary intrinsic properties; I have them only some of the time. How is such change possible? (1986: 203-4.)

Lewis goes on to offer these two answers to the problem.[20] His first solution: we might respond by pointing out that past and future times are ontologically inferior to the present. This solves the problem by denying that objects have any intrinsic properties other than those they presently exhibit. For example, if Lewis was sitting, is now standing, and will

[19] Although a translation of that general form would be employed by a B-theorist who held that properties were relations to times (cf. footnote 13). However, the point considered above is that alternative *translations* are available, not that alternative solutions to the problem of change that might yield such translations.

[20] Actually, a third option is considered: properties can be construed as relations to times. Just like Butterfield's example, this means instead of analysing 'a is f and then not f' as F(a-at-t1) and -F(a-at-t2), it is analysed F(a,t1) and -F(a, t2). The suggestion is quickly disregarded as 'incredible' by Lewis (1986:205). It was at one point endorsed by Mellor (1981) but later rejected (1998). Hawley (1998) also points out a number of difficulties with this option. I take this near-universal doubt about its viability to justify its exclusion from the central discussion of this chapter.

imminently sit once more, then Lewis only really exhibits the intrinsic shape-property *being straight.* That is to say, *being bent* is not an intrinsic property of Lewis' because he only sits at ontologically lesser (perhaps altogether unreal) times in the past and future. On the other hand, we might opt for the second solution of admitting temporal parts, whereby one can simply predicate incompatible properties of numerically and temporally distinct entities, Lewis-at-t_1/ Lewis-at-t_2…, whose aggregate we identify as whole-Lewis. (A popular way to think about this second solution is with an analogy to spatial parts: a poker that is hot at one end and cold at the other engenders no similar problem of incompatible intrinsic properties on account of its having distinct spatial parts, none of which is at once both hot and cold.)

Normally the B-theorist would reject the first solution outright, based solely on the fact that it invokes an irreducibly tensed view of time, i.e. it relies on the incorporation of past, present, and future. But the deflationist would not allow this, for deflationists believe that tensed and tenseless facts are at least not mutually exclusive (**ID**) and at most completely indistinguishable (**IT**). By their own lights, however, deflationists must still concede that the B-theory is incompatible with the first solution because the first solution smacks of presentism[21]. Recall from the discussion in Part I that if deflationism with respect to the tensed/tenseless dichotomy is to be viable, then there must be irreducibly permanent facts – and this required at least a quasi-four-dimensional ontology on which past and present times were of equal ontological status (cf. Part I: 2.2). Without this, the B-theoretic part of the metaphysical picture would be completely absent. So to stand any hope of retaining deflationism regarding the other major A-/B-divide, the indistinguishability theorist must acknowledge that the B-theory is bound to the rejection of Lewis' first (presentist) solution, and thereby bound to the acceptance of his temporal parts solution.[22]

Now it is up for debate just which of the numerous versions of temporal parts doctrine the B-theorist ought to accept, but it is not an issue that need be probed here[23]; all that matters

[21] Though Zimmerman (1998) argues that Lewis' first solution only requires the weaker doctrine of 'taking tense seriously', which allows tense but rejects presentism.
[22] But wasn't IT a distinct variety of deflationism than ID? Yes, but there is still sufficient cause for *all* deflationists to reject presentism, which I defer to Part III.
[23] Le Poidevin (1991) distinguishes between the minimal, epistemic, and formal versions of temporal parts thesis, concluding that the B-theory need be consistent only with the first of these.

is that the strongest version of B-time is one that invokes temporal parts to deal with changing intrinsics, and B-theorists are therefore better off perdurantists.

Combining this with the result of step one: perdurantists cannot accept the transition argument, B-theorists should be perdurantists, and by transitivity, B-theorists should therefore not accept the transition argument. At this point it is worth pointing out that William's argument for the conceptual truth of temporal transition is no longer tenable, which strongly indicates that identifying temporal transition as the locus of A-/B-indistinguishability is likewise untenable. In the final step, I will go further and show that the persistence debate is not merely a threat to the transition argument, but to **IT** itself.

6.3. Step Three: Why Perdurantism Disadvantages A-Time

All that remains is to show that the A-theory is worse off with perdurantism. There are few who would deny that temporal passage is an essential part of the A-theory – just as well, the transition argument is supposed establish transition as an independent conceptual truth in the hopes of persuading B-theorists, not A-theorists. This being so, I will jettison the requirement of the previous section to avoid any suggestion that the A-theory's commitment to endurantism is a product of its prior acceptance of temporal transition.

One reason to think A-time cannot accommodate temporal parts is that they would preclude the sort of movement that can be achieved by variation in an object's A-properties alone. According to Oaklander, the problem is that although presentness can be exemplified by each part successively, '[O] itself cannot approach a future event by moving from one time to another since [O] (as a temporal whole) does not literally exist at any [single] time at which its parts do' (1992:80). For Oaklander's A-theorist it appears that objects to be able to move through A-time only when they are present. If objects have temporal parts, only the present temporal part, and not the whole object, can move. [24]

The first thing to note about this rejection of temporal parts is its justification, as given by Oaklander, is markedly presentist. That a *whole* does not literally exist at any times at which its parts do is correct, but to deny the object's existence altogether based on its being

[24] Carter and Hestevold give the following counterexample: the Crimean war is past and becoming further past, so why should we expect movement in A-time to occur only in the present? (1994: 272.)

partially unlocated at the present time is in effect to deny an object's existence on the grounds of its not being present – and that is archetypal presentism. So what we are left with is proof that presentism is bound to endurantism. But this reason for the A-theorists to reject temporal parts won't be acceptable to deflationists for the same reason as Lewis' first solution to the problem of temporary intrinsics was unacceptable to the B-theorist (cf. Step two): presentism is incompatible with the deflation of the tensed-tenseless dichotomy.[25]

So what use is the presentist rejection of temporal parts? It helps brings to the fore an issue faced by non-presentist, the resolution of which is made very difficult when trying to adhere to temporal parts doctrine. To see this, we need to focus on a certain virtue of presentism's strong central doctrine that only the present exists. If A-time is given this presentist interpretation, then there is absolute transparency on how the present differs from past and future: the difference is ontological. The presentist's insistence of an ontological contrast between the present and other times is what drives the suggestion that an object cannot exist if it has any temporal parts located at times other than the present, which in turn leads to the rejection of the object's temporal movement and the denial of temporal parts doctrine. But with presentism out of the picture, how do non-presentist A-theorists cash out the metaphysical difference between past, present, and future?

The challenge facing those non-presentist A-theorists is to give some substantive account of how present objects differ from past and future objects without denying the *existence* of any. A natural answer is that past, present, and future are temporal properties, instantiated successively by eternal objects. Philosophers often speak of presentness, pastness, et cetera, as properties, but to leave it at that makes the character of temporal properties too enigmatic for any respectable theory of time. For an appreciation of the general form these properties might take, it is instructive to cite some necessary conditions for tensed properties. At a minimum, tensed properties ought to meet the conditions below:

Incompatibility: Pastness, presentness, and futurity must be incompatible with one another.

Totality: Every object capable of instantiating a tensed property must instantiate all three. [26]

[25] Or, if we prefer to consider IT alone, presentism is unacceptable for the reasons given in Part III.
[26] The following third condition may be required: '**Order:** every object that exhibits the three tensed properties does so first by exhibiting futurity, then presentness, then pastness.' Order gets relegated

Causal significance: Changes in temporal properties must be casually significant.

Incompatibility ensures an object cannot be past, present, and future all at once – I take this to stand in no need of defence. **Totality** ensures that objects are not eternally present, which is a consequence of rejecting presentism; it also excludes bizarre scenarios in which objects are somehow eternally past, eternally future, or go directly from future to past (or vice versa). **Causal significance**, however, requires qualification. Its inclusion is intended to appease the powerful intuition that objects are in some way 'thicker' whilst instantiating presentness, and conversely that objects become more 'meagre' with the instantiation of pastness. Presentists easily account for that scruple with an ontological change, but how can the non-presentist A-theorist explain this? Not just any sort of properties will be appropriate here. For the loss of presentness in objects and events is signified by various perceptible changes – when a pen becomes past it can no longer be felt, the sunshine can no longer be seen, and the playing of a violin can no longer be heard – the non-presentist A-theorist needs tensed properties to be explanatorily sufficient for all of these. Now that is not to say that the acquisition and loss of tensed properties must be directly perceptible, or even physical, so long as they are causally significant to our intuition. I propose that because of **causal significance**, the non-presentist A-theorist loses out on the strongest candidate for interpreting tensed properties if she accepts temporal parts.

The properties robust enough to satisfy causal significance are scarce, the most plausible candidate being to identify presentness with instantiating the property of *being-spatiotemporally-located*.[27] Conversely, pastness would be identified with the property of *being-spatiotemporally-unlocated.* This view allows for genuine change, from the thickness of a present object to its meagreness as a past object, in a way that does justice to our intuition. Caesar, for instance, does not get written out of the book of existence – he remains the truth-maker of facts that involve him and the referent of associated singular terms - but nor is he sat in 49BC contemplating river crossings. The picture here is an attractive one in other ways too. Because past objects are spatiotemporally unlocated, for

to an optional condition because it depends on there being an asymmetry between past and future. While many would be content to uphold this, the issue is far too contentious to warrant the attribution of strong modality to the Order condition.

[27] The suggestion is developed in Megan Sullivan's 'Minimal A-theory' (2012).

instance, the non-presentist A-theorist is also well-placed to give an explanation of the determinacy of the past in terms of causal interactions being impossible between entities that are not spatiotemporally proximate. (Though this aside isn't a strict requirement of the view.)

The non-presentist A-theory I have described thus yields the following biconditionals for tensed properties:

(a) For any object O, O is present iff O is extant and O is spatiotemporally located.
(b) For any object O, O is past iff O is extant and O is spatiotemporally *un*located.

The first conjunct in each follows from the rejection of presentism's ontology, leaving the eternalist thesis that all objects always exist. The second conjunct in each follows from satisfying the **causal significance** in the way presented above.

Now recall temporal parts doctrine: any temporal part, O-at-t1, cannot exhibit the property of being spatiotemporally unlocated because its temporal location is, in addition to a means of individuation, also a tacit ontological designation. For temporal parts theorists, existence is ambiguous between existence simpliciter and existence at-a-time. All actual objects always exist *simpliciter* but they do not exist at all times, i.e. objects lack existence at-a-time only by virtue of lacking a temporal part being located at that time and not by lacking a temporal location simpliciter. The very existence of temporal parts therefore entails

(c) For any temporal part O-at-t, O-at-t is always spatiotemporally located.

We can see plainly that so long as objects are not always present (which is guaranteed by **totality**), (b) and (c) are incompatible. So while the non-presentist A-theory can answer **causal significance** by itself, the introduction of temporal parts results in an incoherent account, the temporal postulates of which are both spatiotemporally located and spatiotemporally unlocated. Evidently, then, no credible account of time can be founded on the combination of the non-presentist A-theory with temporal parts doctrine. Contrariwise, the B-theory relies on temporal parts for the best response to the problem of temporary intrinsics. This, I conclude, constitutes a substantive disparity between the A- and B-theory, and thereby contradicts **IT'**s claim that there are no other significant differences between the two.

6.4. Objection: An Overly Simplistic Account of Persistence?

To close this chapter I want to consider an objection. Endurantism and perdurantism are traditional antitheses in the study of persistence, but someone familiar with this area of temporal metaphysics might complain that my binary account is too simplistic. That is, it omits alternative conceptions of persistence, and in particular says nothing about the view known as stage theory. The objection should not be underestimated as a demand for mere comprehensiveness. Given the importance of persistence in reaching my conclusion that the A- and B-theories differ substantively on the issue of change and temporal parts, the very credibility of that claim stands or falls with the emergence of coherent alternatives to traditional perdurantism and endurantism.

Stage theory prevails among alternatives as the most developed, and the one most liable to create complications for my argument. None of these complications is intractable, though, and I believe that steps one through three can be bolstered by the integration of stage theory.

Stage theorists[28] accept a four-dimensional ontology along with temporal parts, but where they differ from perdurantists is in the ascription of identity. Whereas perdurantists are inclined to identify a whole object, O, with the aggregate of its temporal parts, O-at-t1, O-at-t2, and O-at-t3, stage theorists instead identify O with only a single temporal part - or *stage* – of O. By construing the identity relation as obtaining between O and a single momentary stage, rather than the mereological sum of O-parts, stage theorists share with endurantists the conviction that O is only ever wholly present. This might seem counterintuitive: if O is identical with a momentary O-stage, and stages are instantaneous, O must be instantaneous too. But then in what sense does O persist? To unpack this somewhat: there exist earlier O-stages and later O-stages, these O-stages must be related to one another in such a way as to form a continuous object, but *ex hypothesi* this is not by identifying O with their mereological sum. Nor may the distinct earlier and later O-stages be identical to each other, for then the principle that O is identical with an instantaneous O-stage would be violated by

[28] To my knowledge, stage theory first appears stated in Sider (1996; 2001) and is developed at length in Hawley (2001), various subsequent strands of the view have emerged.

the fact that O-stages are no longer instantaneous, but span the duration through which O persists.

The stage theoretic trick to getting around this conundrum is discriminating between rigid identity and surrogate relations for diachronic continuity. Identity proper is reserved for the relation of strict equivalence between O and a single O-stage. Identity is invariably a two-place relation – otherwise it might be 'chained' across all O-stages, violating the requirement that O be instantaneous - but precisely which O-stage is identified with O does vary:

At T1, O = O's T1-stage.

At T2, O = O's T2-stage.

At T3, O = O's T3-stage.

As for the surrogate relations for diachronic continuity, these may be any that guarantee an appropriate connexion among all the stages associated with O. (Sider (1996:7) likens the contrast between identity and diachronic continuity to the contrast devised by Lewis, in his answer to transworld-identity: just as individuals at accessible possible worlds are related as counterparts, but only strictly identical to themselves, so transtemporal stages are related as, e.g., temporal counterparts, being only strictly identical with themselves – i.e. with O.)

As an example, let us stipulate that O is a person, persisting through three contiguous instants. All O-stages can be said to stand in the person-relation to each other and O's diachronic identity is analysed, not as strict equivalence between O-stages, but as a three-place person-relation obtaining between all extant O-stages: *is-a-person(O-at-t1, O-at-t2, O-at-t3)*. It is noteworthy that these diachronic continuity relations need not be a single fine-grained relation such as the person example, which itself may be considered a complex amalgam of various more basic relations such as, e.g., a bodily-continuity-relation and a psychological-continuity-relation.[29]

[29] Perhaps the former might be broken down into more basic continuity relations based on physical attributes.

6.4.1. Step One Revised

With this basic introduction in place, it is time to examine the complications it causes for the three-step route to connecting the A-/B-division with persistence. The first complication pertains to step one, where it was argued that the transition argument 2* (reproduced below) is acceptable to endurantists but unacceptable for perdurantists.

> *The Transition Argument 2**
>
> P1*) If there were no temporal transition, we would be at a given time and unable to access any subsequent time.
>
> P2*) We are not at a time and unable to access subsequent times.
>
> C) Therefore, time contains transition.

Does stage theory fall on the side of endurantism in accepting the argument, or on the side of perdurantism in its rejection? With respect to P2*, stage theory aligns with endurantism in rejecting the second conjunct. We are at a time, to be sure, but a subsequent time is always accessible since at that subsequent time we will be identical with our subsequent stage, not our current stage. The agreement between endurantism and stage theory vis-à-vis P2* is inconsequential, however, since P1* fails to hold up for stage theorists.

The stage theorist's rejection of P1* mimics the perdurantist' s rejection of P1*: our being immovably fixed at single instant follows directly from our having fixed temporal parts at different times, and in this respect stages are no different from temporal parts. No matter whether time passes or not, so long as there exists a posterior stage at some later time, that time will be accessible when we come to be identified with its coinciding stage. Thus, the stage theorist has no reason to accept the transition argument 2*: stage theory is firmly on the side of perdurantism.

In sum, the presence of stage theory does not do damage to the sentiment underlying step one: it is still the case that the acceptability of the transition argument 2* depends on the antecedent choice between theories of persistence. However, the choice is no longer between two contenders. In light of this, a small emendation to the formulation of step one is necessary: *accepting the transition argument depends on the antecedent decision*

between endurantist and non-endurantist persistence. The introduction of 'non-endurantist' makes the claim inclusive of stage theory.

6.4.2. Step Two Revised

Another complication arises when we consider how it affects steps two and three, which associate perdurantism with the B-theory and endurantism with the A-theory. In principle, at least, Stage Theory seems every bit as good as perdurantism in aiding the B-theory to overcome the problem of temporary intrinsics – this isn't surprising, given the slightness of difference between parts and stages. Whether recognised as one or the other, temporal segments of a persisting object are by definition numerically distinct, and therefore evade problematic exhibition of incompatible intrinsic properties by a single object. Moreover, it is difficult to imagine a B-theory with anything other than a (at least partial) four-dimensional ontology, which is also guaranteed by stage theory. Now perhaps there are benefits of one over the other, but since none of them severely disadvantages the B-theory, my methodology compels me to admit both as viable options. I can think of no reason to resist this line of thought; therefore, I shall also amend the central claim of step two to *B-theorists are better off perdurantists or stage theorists*.

6.4.3. Step Three Revised

The final complication is that step three explicitly links non-presentist A-theorists to endurantism. Non-presentist A-theorists also believe objects do not go out of existence, so why can't non-presentist A-theorists choose to enrich that ontology with stages rather than enduring entities? The threat of such a combination is particularly acute because if stage theory were a tenable account of persistence for both (non-presentist) A-time and B-time, we would be forced to entertain the possibility that the A- and B-theory converge in their analysis of persistence. That is, there would not be the clear division that I claim constitutes a point of distinction between the A- and B-theories.

Is this concern well-founded? Initially, it seems possible that the two views complement one another as their combination would hold that objects are to be identified with instantaneous object-stages exemplifying presentness. This deals with the problem of temporary intrinsics in the usual fashion of attributing any incompatible properties to different object-stages, but also allows the A-theorist to attribute irreducibly tensed

properties to those stages. Fortunately, any danger posed by this combination of views is thwarted by the failure of stage theory to satisfy the necessary condition for the postulation of irreducibly tensed properties by the non-presentist A-theorist.

In section 6.3, I argued that once presentism is rejected, the A-theory has to answer questions about the character of tensed properties, such as how to distinguish them in a way that makes the present seem more real than the past. The best, and only, answer put forward by A-theorists was to explain this difference by appealing to the properties *being-spatiotemporally-located* (presentness) and *being-spatiotemporally-unlocated* (pastness). Temporal parts doctrine is inconsistent with this solution because temporal parts are necessarily always spatiotemporally located. In this respect, stages parallel temporal parts, viz. stages are four-dimensional entities that require a temporal coordinate. This is, at least, how stage theorists usually talk.[30] Hence, on the standard formulation, stages are never spatiotemporally unlocated and thereby inconsistent with the best version of the non-presentist A-theory. With this defence, step three can be extended to: *A-theorists are worse off being perdurantists or stage theorists.*

6.4. Review of Part II

Here again are the indistinguishability theorist's central claims with which I began:

IT1: Both A- and B-time accept transition

IT2: There are no other significant differences between A- and B-time

In Part II I have refuted both of Williams' attempts to support **IT1**. Chapter 4 concluded, pace Burley (2006), that transition was not needed to conceptually separate spatial and temporal extension. There, I also addressed concerns about the illegitimate conflation of temporal passage and transition, which gave rise to objections by B-theorists who discriminate between the B-theorists change-oriented understanding of transition, and the A-theorist's passage-oriented understanding of transition.

Chapter 5 defended the intelligibility of the transition argument 2 by vindicating its first premiss, which was charged with being nonsensical. I met this charge with an error theory

[30] See Hawley (2001, especially chapter 2) for an explicit endorsement of this.

of aspectual inference. By the end of chapter 5 I reformulated the transition argument 2 in a more perspicuous way that would evade the aforementioned concerns, but nonetheless remain faithful to the Williams' original.

In chapter 6, I used this new formulation of the second transition argument to demonstrate its dependence on certain views about persistence, and how those views are connected with the A- and B-theories. By putting forward the second transition argument, the indistinguishability theorist is forced to recognise yet another substantive point of disagreement between A- and B-time, thus falsifying **IT2**.

Part III

Demotivating Presentism

In Part I, I noted the success of **IT'**s deflationary competitor, **ID**, depended on the exclusion of extreme doctrines such as presentism (2.2). Since it is possible for presentists to do without B-relations altogether, at least in a non-derivative sense, the truth of presentism would entail the diminished appeal of **ID**.[31] In Part II, Lewis' first solution to the problem of temporary intrinsics was dismissed on the grounds that it implied presentism (6.2), as was Oaklander's claim that objects must move with the present (6.3). Again, if presentism turned out true then my account of how the A-/B-divide intersects the debate about persistence would be inaccurate. This final part aims to vindicate those earlier dismissals of presentism, by undermining two of its few initial motivations. In sum, I show first that understanding presentism as the 'common-sense' view of time leads down a path to unintuitive commitments in other areas of metaphysics. Unlike alternative A-theories, presentism coerces choices about causation, none of which is common sense, and affords presentism no especial advantage in terms of intuitiveness. In the Chapter 9, I argue that although presentism is more quantitatively parsimonious than vying ontologies, it is no more theoretically virtuous.

[31] By 'derivative B-relations' I mean relations obtaining between times on an ersatz B-series, as outlined in Crisp (2007), though this is a minority view.

Chapter 7

Causation and Cross-Temporal Relations

Let us start with the reason it is necessary for presentists to take a stand on causation and why they get saddled with a much-reduced choice of analyses. It has to do with the problem of cross-temporal relations, which emphasises that presentism's limited ontology struggles with past or future relata. The problem permeates to various sorts of relations, such as truthmaking: how can past tensed propositions like 'dinosaurs existed' ever be true if their truth-makers do not exist?[32] Another example is the reference of singular propositions: how can singular terms make direct references to past entities if these entities do not exist? The version of this problem I wish to focus on is how past events can be the causes of present events if the former do not exist.

The problem can be elucidated with a model scenario. Say we encounter a pair of events *e1* and *e2* such that *e1* is present only when *e2* is future, and only when *e1* is past can *e2* be present. Then according to presentism, as only present things exist, *e1* and *e2* never co-exist. Suppose further it is an absolute certainty that *e1* causes *e2*. The problem of cross-temporal relations prevents presentists from consistently making this causal connection because doing so would entail both that *e1* and *e2* exist *and* that one of them is not present – the first conjunct violates the putative condition that casual relations entail the existence of their relata, the second violates the presentist's core doctrine that only the present exists. To respond, presentists can deny one of the following:

Relational existence: (Causal) Relations entail the existence of their relata.

Past cause: Present events can be caused by past events.

Which of the two is to be rejected depends in part on a further disambiguation of presentism. I have so far maintained presentism is a strictly ontological thesis, so that it might be distinguished from other superficially similar A-theories. Yet even the core thesis

[32] The problem is sometimes referred to as 'the grounding objection' to avoid reliance on truth-maker theory.

‘only the present exists’ invites different readings. Under a strong reading, it delivers strong presentism.

Strong presentism: Nothing exists that is not present

Recently, though, presentists have pursued more modest interpretations of their central doctrine. The locomotive for this shift is a concern that fictional entities, numbers, and likewise non-temporal postulates are just outside the scope of intuitions that lend credence to presentism. Deasy’s definition below typifies this weaker interpretation of presentism:

> Presentism-Revised Definition: Many things – many ordinary objects – begin and cease to be over time. (Deasy 2017: 19.)

In a similar vein, others have urged that adopting ontological pluralism, according to which quantification has fundamentally both a temporal and atemporal sense, is the most seamless way to assimilate abstracta into the presentist view (e.g., Filomeno (2016)). The minutiae of these suggestions are unimportant; the observation evidences a trend away from strong presentism and licences recognition of a weaker presentism.

Weak presentism: Only non-temporal things exist outside of the present.

Where the options available to the strong and weak presentist differ, I will say so. However, both must respond to the problem of cross-temporal causation, and each response falls victim to demotivation.

Chapter 8

Presentism: The Intuitive Ontology

Presentism is surely the consensus outside of the philosophy room. The present exists, most will agree, whereas past and future do not. Indeed, Bigelow declares that until the emergence of challenges to the Newtonian conception of time, presentism 'was assumed by everyone everywhere' (1996: 35). Whatever the ultimate tenability of presentism, there is no denying that the majority of presentists and their opponents take it to be *the* intuitive view.[33]

The perspective articulated above has very occasionally been called into question. Torrengo (2017), for one, disputes that there is any single common-sense position, as pre-theoretical convictions might equally well be cited in support of eternalism. My aim in this section will be to widen the frontiers of this criticism. Rather than look towards the intuitive merits of competing ontologies, we can simply point out that what might be regarded in isolation as common sense can quickly come to lose that status by taking a broader view of the system into which it fits. And for presentism, this means examining whether its intuitive plausibility withstands the introduction of solutions to cross-temporal causation. (It will be of no use to protest there is no requirement to consider matters beyond temporal ontology, for as the problem of cross-temporal relations shows, presentism depends on these views about causation to confront major challenges.)

8.1. A Holistic Re-evaluation

Taking a more holistic view of presentism's metaphysic, I think, shows both of the presentist's answers to the problem of cross-temporal causation are discordant with its being a common-sense view. On one hand, to deny **relational existence** detracts from intuitiveness with the heavy-duty conceptual machinery needed to square causal reductionism. On the other hand, to deny **past cause** conflicts with an equally common-sense claim about simultaneous causation. I will take these in turn.

[33] Among those who explicitly attribute intuitiveness to presentism are Bigelow (1996:35); Ciuni, Miller, Torrengo (2013: vii); Ingram (2016: 2868); Markosian (2004: 48); Sider (2001: 11).

By denying that causation is a fundamental relation, the presentist can reject **relational existence** and therefore need not acknowledge past or future relata.[34] If not as a fundamental relation, though, how should we understand causation? Options abound in the literature: probabilistically, counterfactually, inferentially, and so on. But while all of them are in principle consistent with a presentist ontology, each is also incumbered with its own set of difficulties. In themselves these issues may be surmountable, but overcoming them often involves intricate and sophisticated additions – additions that are certainly excluded from common sense.

Some examples will help make the point vivid. Say the presentist opts for a counterfactual causal analysis: does this mean, as a consequence of adopting a limited temporal ontology, we should commit to Lewisian possible worlds? Perhaps, perhaps not; but it does mean that presentism becomes embroiled in a complex subsidiary issue about what sort of metaphysic underlies counterfactuals. Again, it is important not to become ensnared in thinking that giving any answer at all can be avoided here. We might initially ignore having to settle the exact nature of counterfactuals because our discussions about temporal ontology are restricted to more immediately influential factors, such as doctrinal consistency and direct evidence. But that doesn't mean that the system as a whole is indeterminate with respect to the nature of counterfactuals – at some point an answer will need to be given in order to achieve theoretical completeness. If that answer takes us far beyond the boundaries of common sense, then the ontological intuitiveness that presentists trade on quickly loses its value.

Similar remarks apply to presentists who opt for a probabilistic analysis of causation and complications linked to this reduction, such as problematic cases in which one less reliable cause pre-empts another potential cause that almost certainly brings about its effect (see Menzies (1996)).[35] These pre-emption cases involve the probability of bringing about an effect being lowered and not, as the standard formulation of probabilistic causation goes, being raised. Without delving into the proposed remedies for pre-emption, it is clear that

[34] Crisp indicates but does not pursue this response to cross-temporal causation in his answer to the grounding objection (2005:14).

[35] Menzie's demonstration involves two chains within a neural network, one reliable and the other less so. Pre-emption occurs when a neuron in the less reliable chain fires and inhibits the more reliable chain, thus bringing about the effect first and lowering its probability (1996: 88-89).

enabling causal analyses to deal with probabilistic anomalies is not going to be given to us by common sense.

Regularity theories, too, face their own issues that require us to transgress the bounds of common sense. This time, the problem cases are those in which two effects always follow a common cause, and one occurs slightly later than the other (see Mackie (1974)). The standard formulation of causal regularity relates two events as cause and effect if one occurs repeatedly after the other. But then epiphenomena, such as those emanating successively from a joint cause, are also included.[36] Now it might be given to us in common sense that cause and effect should be relevant to each other, but how to formulate a precise causal relevance condition to exclude all causal relations between epiphenomena is a is a matter demanding serious metaphysical contemplation.

These are all difficult questions, and they render the notion of presentism as the common-sense option a rather short-sighted evaluation. Ontological common sense is a *pro tanto* attraction of presentism, but it doesn't carry through to presentism *qua* fully worked-out theory of time. We might well be compelled to preserve the privileged status of the present, but the magnitude of its consequences within the wider metaphysical system ought to be borne in mind – especially when intuitiveness is cited explicitly as support for an already under-motivated view. It must also be remarked that even if one of these reductive analyses of causation turned out true, presentism would not thereby be exalted since it enjoys no advantage over its competitors in this respect: both the B-theory and the non-presentist A-theory appear consistent with all accounts of causation.

But many, including some presentists, take the choice to interpret causation reductively to be itself highly counter-intuitive.[37] Setting presentism aside for the moment, the resistance to reductionism has an air of simplicity about it. Causal primitivists enjoy a more straightforward picture than those who analyse causation in terms of something more basic

[36] Mackie's example involves two factories at opposite ends of the country. At 5pm, the northern factory's hooters sound, signalling the workers to leave. Whenever this happens, workers in the southern factory also leave. Regularity theories fail to distinguish between the incorrect connection, on which the sounding hooters in the northern factory cause the southern workers to leave, and the correct connection, their leaving because it is 5pm (1974: 81-82).

[37] Baron (2012), for instance, takes the view that causation should be both a fundamental and internal relation.

- at least this is true insofar as it overcomes the reductionist problems briefly outlined above. For presentists who share an inclination towards causal primitivism, the problem of cross-temporal relations can instead be answered by rejecting **past cause**. In essence, this is tantamount to accepting causal simultaneity. Why? If all that exist are present entities, and causation is a fundamental relation between existing entities (from **relational existence**), then causation relates only present entities. And since present entities are by definition simultaneous, it follows that causation is a simultaneous relation.

There are good technical reasons to reject cases of simultaneous causation, though it is not necessary to engage with them here.[38] When it comes to the demotivation strategy, suffice it to say that if presentism passes for intuition, then so too does the falsity of simultaneous causation. It is just as much a feature of common experience that we do not correlate simultaneous events *qua* cause and effect as it is that past and future events are ontologically inferior. The problem is that that these two bits of common sense are incompatible: presentism leads to simultaneous causation, which contradicts the belief that causes always precede their effects.[39] So again, taking a broader view of the picture presentism fits into, one of the intuitions must go.

Thus, a metaphysical system that adopts both presentism and causal primitivism offers no net-advantage in intuitiveness over one that forgoes a presentist ontology, since the preservation of one intuition is negated by the removal of the other. This only really applies to strong presentists, however, as the weak presentist can always invoke abstracta to do the work of putative causal relata. Abstracta aren't spatiotemporal, and therefore aren't temporally symmetric, so there's no obvious reason for weak presentists think causal relata are simultaneous. Abstracta also exist, though not at any spatiotemporal location, so it is possible for the weak presentist to accept **relational existence**. Do weak presentists evade my demotivation strategy? Not quite, but I shall say more about this at the end of the next chapter.

[38] I refer those who find this wanting to Le Poidevin (1991: chapter 6) and Mellor (1995: 220-223). Both deal with Kantian style cases of apparent simultaneous causation, such as when a weighty ball impresses a hollow on a stuffed cushion.

[39] Of course, this also precludes backwards causation, though it is impertinent to the discussion.

Chapter 9

Theoretical Virtue in Quantitative Parsimony

Hitherto I have focused the demotivation strategy on the intuitiveness of presentism. Now I turn to a second potential motivation for presentism: theoretical virtue. In this section, I take it for granted that theoretical virtue is legitimate ground for favouring one metaphysical theory over another. The virtue in question is quantitative parsimony, and it has been associated with presentism by Jonathan Tallant (2013).[40] After reconstructing Tallant's argument from quantitative parsimony, I show that it does not yield the result that presentism is the more virtuous doctrine.

Quantitative parsimony, according to Tallant, dictates that a theory is preferable to its rivals if it postulates fewer entities (ibid.: 689). (By contrast, qualitative parsimony dictates that it's preferable for a theory to postulate fewer *kinds* of entities.) Nobody would deny presentism is by far the lightest of available temporal ontologies, simply because it expunges anything that does not now exist. But presentism does not automatically take the title of most virtuous theory. For what makes quantitatively parsimonious theories more desirable is not the smaller number of entities as such, but that postulating fewer entities usually brings with it the satisfaction of other desiderata. Of these further virtues, Tallant isolates two:

(a) Syntactical simplicity: Theories benefit from being more syntactically simple.

(b) Exclusion of independently unincentivized claims: Theories benefit from not supposing additional claims for which we have independent reasons to believe obtain. (Ibid.: 693)

As regards (a), we are not provided with a rigid definition of syntactic simplicity. Tallant takes it that "a theory T is more syntactically simple than a rival, T*, if T is shorter than T*; easier to state than T*, and easier to manipulate than T*." (Ibid.: 694) It is an open question

[40] Though Tallant makes the association and uses presentism as a case study to argue for quantitative parsimony as a theoretical virtue beyond the sciences, he acknowledges his doctrine and data-set might be insufficient to sustain the quantitative parsimony as a virtue of presentism over competitors. I take my discussion above to support answer that uncertainty in the negative.

whether presentism is more syntactically simple than its rivals. It is also likely that syntactic simplicity will differ greatly between individual presentisms, hence the difficulty in assessing theories with respect to (a) is that we run the risk of being excessively restrictive in our construal of presentism or its rivals. But since Tallant stakes his argument on the assumption that presentist and non-presentists are of equal syntactical simplicity, we may continue without settling the matter here. He does, however, suggest that non-presentists lose out with respect to (b).

Before understanding why, it is worth underscoring the converse of (b) in circumstances such as temporal ontology, where the theories involved are contradictories. If we accept that T is more virtuous than T* because it excludes independently unincentivized claims, and this counts as motivation for T, then T*'s being less virtuous counts equally as its demotivation. Not only is it the case that we are encouraged towards T, but we are also *discouraged* from T*.

To see why presentism might be thought more virtuous, consider the following set of sentences, in which the first two are false and the remainder true.

S1: There are dinosaurs

S2: Caesar is dictator

S3: The Russian Federation is the largest state in the world

S4: Britain's monarch is female

The presentist and non-presentist agree on the truth of S3 and S4 since each makes reference only to a present entity and contains nothing factually objectionable. But the presentist regards S1 and S2 as false because there are no dinosaurs and there is no Caesar (or, for that matter, no relevant dictatorial position) presently in existence. The non-presentist, on the other hand, believes that past entities such as dinosaurs and Caesar do exist, albeit perhaps in some diminished capacity, and so regards S1 and S2 as strictly speaking true. But even B-theorists and non-presentist A-theorists do not go so far as to deny there that S1 and S2 are *usually* treated as false, which in turn demands further explanation.

That non-presentist explanation typically involves quantifier restriction, according to which the domain of existential quantification in sentence types such as S1 is usually read as delimited to the present (ibid.: 695-696).[41] The reason we usually take it as false that there are extinct entities is because there are no extinct entities *now*. But reading S1 with an unrestricted domain of quantification, i.e. over all times, it turns out true on a non-presentist ontology. Further, what the non-presentist is relying on for this explanation is not the familiar phenomenon of quantifier restriction as it occurs in spatial cases. The spatial case of quantifier restriction follows a declaration of sentence types like 'there are no dogs'. We do not take this to mean 'there are no dogs *simpliciter',* but rather 'there are no dogs in the immediate vicinity'. The difference between temporal and spatial quantifier restriction is that when the latter appears, it is usually recognisable by all parties: anyone will instinctively agree that 'there are no dogs' is true of the immediate vicinity whilst acknowledging that 'there are no dogs' is false *simpliciter*. But the temporal quantifier restriction employed in the non-presentist's explanation of S1 is unique, since the average language-user does not instinctively acknowledge anything more than a single temporal domain (the present) following tokens of 'there are dinosaurs'. To provoke any such acknowledgement, we must first convince them of eternalism. That *temporal* quantifier restriction does not occur outside of eternalism is important because it prohibits the non-presentist's secondary claim from being incentivised with appeal to the putative phenomenon of *spatial* quantifier restriction. Therefore, not only does the non-presentist have to provide an additional explanation for the falsity of S1 and S2, but to do so requires a supposition that is not itself independently motivated. As Tallant puts it:

> [The non-presentist] required and gave an explanation of why to believe '[temporal] quantifier restriction' occurs; the presentist does not require such an explanation. Something else we must be clear on is that the explanation given for our [temporal] quantifier restriction is not one for which we have independent motivation. (Ibid.)

What the exercise in explaining sentences S1-S4 shows is presentism's more quantitatively parsimonious ontology brings with it an advantage over rivals when it comes to the explanatory expediency of controversial existential propositions. Given the data set

[41] S2 has no explicit quantifier but can only be true if a proposition that does explicitly quantify over Caesar is also true. For simplicity I exclude it from discussion.

provided, then, it seems as though presentism emerges the sole exhibitor of virtue (b) and might therefore be motivated as offering a theoretical edge over rivals.

However, as Tallant himself remarks, with another data set it might turn out that presentism is less well-supported by the virtues that come along with ontological parsimony. I want to confirm this conjecture. I believe that after substituting the data set of existential sentences for one comprised of causal statements, it is the non-presentist who comes out more virtuous with respect to (b). Consider the following

C1: Jack's throwing a stone with adequate force at *t1* causes the window to smash at *t3*

C2: The short circuit at *t1* causes the electrical fire at *t2*

Now the non-presentist can accept both C1 and C2 are true without qualification. But the presentist finds himself in the same position as the non-presentist was when faced with the data set S1-S4. That is, the presentist agrees that we usually read C1 and C2 as true but denies they are true *simpliciter*. If the presentist choses to justify this denial by rejecting **relational existence**, C1 and C2 are, according to his theory, truths about counterfactuals, or probabilities, or regularities, etc. They are not truths in themselves. But he then owes an additional explanation of *why* C1 and C2 are read as true, and not merely as counterfactually true, or probabilistically true, or inferentially true, etc.

Still, an additional explanatory demand does not count against the offending theory unless the secondary claim is unincentivized. The presentist might concede this secondary claim is necessary while insisting on its independent justifiability, namely, on the grounds that non-primitivists about causation share his reading of C1-C2 outside of any theorising about time. But the presentist's explanation of C1-C2 is a special case of causal reduction, just as the non-presentists explanation of S1-S4 was a special case of quantifier restriction. Causal reductionists, of whatever sort, do not formulate their analyses with the purpose of avoiding commitment to non-existent relata. An inferential or probabilistic analysis of a past event causing a present event is perfectly consistent with the co-existence of both events, as well as with their mutual exclusivity – it just so happens to be within a causal reductionist's power to reject **relational existence**. The presentist's causal reduction, on the other hand, constitutes a special case – it *cannot* be consistent with an extant past relatum. Thus, the presentist's additional explanans of C1 and C2 is distinct from the standard claim

of causal reductionism in the modality of its formulation and subsequent range of applicability. And this means that presentism's further claim remains unincentivized, even given causal reductionism.[42]

What about if the presentist choses justify the falsity of past causal statements by rejecting **past cause** instead? This won't help either. Consider C1* and C2*:

C1*: Jack's throwing a stone a few seconds ago caused the window's smashing right now

C2*: This morning's lecture overrunning caused my currently arriving late at lunch

The presentist and the non-presentist will disagree over the truth values of these two statements. Like before, the non-presentist will deem C1* and C2* true while the presentist deems them false *simpliciter*. The difference this time is that the presentist elaborates on his evaluation by saying that past events do not cause present events. But C1* and C2* *are* ordinarily considered true *and* formulated in the past tense: there is clearly a temporal asymmetry between the events in each sentence. The presentist owes an additional explanation for this temporal asymmetry: why do we think past events cause present events, despite it being the case that causation is a simultaneous relation? Moreover, the prospect of incentivising this secondary claim on independent ground seems rather bleak – arguments for simultaneous causation are usually only advanced by presentists themselves, which is far from independent incentive.[43] I conclude, therefore, that if presentism ever had the advantage of being the more virtuous vis-à-vis existential statements containing past events and entities, it is disadvantaged vis-à-vis past tensed causal statements with past relata.

I mentioned at the end of the last section that weak presentists might be able to evade having to deny either **relational existence** and having to settle for simultaneous causation. I will now extend my demotivation strategy to deal with weak presentists by demonstrating that whatever abstracta occupy the role of causal relata, a data set exists for which the presentist needs a subsidiary unincentivized claim, thus putting weak presentists at the

[42] Though, of course, presentisms explanation of C1-C2 does *depend* on causal reduction theory being true, in the same way that the non-presentist depends on the quantifier reduction being a bona fide phenomenon in explaining S1-S4.
[43] Kant may be an exception here

same disadvantage against non-presentists. It should also be noted that motivating weak presentism as intuitive is out of the question because the abstract entities invoked in their causal analyses are the exclusive reserve of metaphysicians, not the objects of common sense.

9.1. Lucretian Properties

To presentism's aid, Bigelow reanimates the Lucretian view according to which the world presently instantiates accidental event-properties, such as *being-the-place-where-Troy-was-conquered* (1996:45). Once these events come to be past, the world instantiates corresponding past tensed event-properties of identical character, such as *having-been-the-place-where-Troy-was-conquered.* An often-overlooked aspect of Lucretianism is that interpreting 'the world' is itself a significant ontological project. Sometimes the world is understood as a substantival object (as seen in Crisp (2007) and Tallant (2014)).[44] This, to my mind, has a number of demerits. First of all, weak presentists are defined by their willingness to countenance atemporal entities, but interpreting the world as a substantival object means that those abstracta do no work in responding to the problem of cross-temporal relations. To unpack this: what a substance version of Lucretianism says is that there exists some infinite object, i.e. the world, whose regions exhibit various fine-grained event-properties. This makes regions of the world the relevant causal relata. But as we learned in Part II, presentism is committed to endurantism, which means that that these event-properties are instantiated by different regions of a unitary substance that wholly exists at every instant successively. At any given time, therefore, the world-regions instantiating event-properties will be simultaneous, and this implies simultaneity between the causal relata. Interpreting the Lucretian world in this way leaves the weak presentist having to reject **past cause** and faring no better than the strong presentist, despite having the prima facie resources to do so. Aside from this, the substance-based Lucretianism also suffers from requiring the equivalent of spacetime substantivalism to be true of the world – a curious imposition, even for presentism.

[44] Crisp says: "According to Lucretius, then, to say that the Trojans were conquered is to predicate a certain accident of property *of a bit of land or region of space*…' (2007: 93, my italics.) And Tallant says: "This property is instantiated by the world, such that the world has contained dinosaurs. So, there now exists some *object*, O, - the world instantiating the property..." (2014: 485, my italics.)

Another conception of the world is as the totality of maximally consistent true propositions (as mentioned in Bigelow (1996) and McDaniel (2014)). This alternative employs a totality of true propositions – all that is now the case – as that on which past and future entities supervene. A fully developed view of this sort would have to be accompanied by an account of truthmaking or grounding that could make each member of the totality true without also entailing the existence of the past entity featuring in that proposition. In other words, the viability of this 'totality' conception of the world stands or falls with the solution to other versions of the problem of cross-temporal relations. And this has ramifications for our discussion of cross-temporal causation.

Lucretians will account for causal sentences about the past in terms of sentences about the present. For example, the truth of C1*-C2* gets analysed as L1-L2:

> L1: The world's (now) instantiating the past tensed event-property *Jack's-having-thrown-a-stone* causes the world's (now) instantiating the present tensed event-property *the-window's-smashing*
>
> L2: The world's (now) instantiating the past tensed event-property *the-lecture's-having-overrun* causes the world's now instantiating the present tensed event-property *my-arriving-late-at-lunch*

Lucretian analyses like L1-L2 come up against the 'aboutness' objection. As articulated by Tallant & Ingram, this says that "Lucretianism provides inadequate truth-makers about the past, since propositions about the past aren't 'about' present entities." (2020: 678.) In reply to the 'aboutness' objection, they look towards the Priorian view that all true propositions can be prefixed by a present tensed operator: since any proposition is true just in case it is true *now,* a proposition ϕ is logically equivalent with the expression of ϕ within the scope of a present tense operator NOW. In symbols:

Logical equivalence thesis: $\phi \equiv NOW\phi$

But observe what happens when the propositional variable is filled in by a proposition that seems to be about the past:

(1) The world is such that *e1* caused *e2*

Is logically equivalent to

(2) It is now the case that (The world is such that *e1* caused *e2*)

What Tallant and Ingram take this to show is that while sentence types like (1) appear to be about the past, they are nonetheless logically related to sentences about the present like (2), so it is not unreasonable to expect the relevant truth-makers to be in the present (ibid.).

Our interest is in how all this stands up to assessment against virtue (b). As (b) dictates, Lucretian presentists owe an additional explanation of *why* we assume causal statements such as C1* and C2* are about past entities or events, not about the world instantiating the salient event-properties, as in L1-L2. That explanation is what the logical equivalence thesis is supposed to provide. The next crucial question is whether this explanation can be independently incentivised and must be answered in the negative. For although presentists and non-presentists can acknowledge the aptitude of tense-operators to describe the systems containing tensed propositions, the Lucretian's claim amounts to much more than this. Lucretians, like other presentists, need tensed tense operators in their fundamental description of the world, to 'carve nature at its joints'. But this isn't the case for all of presentism's ontological rivals; B-theorists in particular think that systems containing tensed propositions only occur in thought or the logician's models, and not among the fundamental facts of the world. So what we have here is an additional explanatory claim that is not, in the context of all those party to the discussion, independently incentivised. Therefore, even if Lucretianism can successfully deal with cross-temporal causation, its method of doing so means that it cannot invoke its quantitatively parsimonious ontology as an initial motivation.

Lucretians are not the only variety of weak presentists. Other abstracta called upon to stand proxy for past entities include haecceities or thisnesses (the view is developed most fully in Ingram (2016)) and there will undoubtedly be other suitable candidates.[45] But whichever is selected, the weak presentist comes up against an analogous data set that demands explanation of why C1* and C2* are to be analysed via these abstracta, instead of the original putative truths about past causes.

In light of all this, weak presentists are unlikely endorse that excluding incentivised claims carries much weight in adjudicating between rival metaphysical theories. But it is important not to lose sight of the background against which this plays out. Without virtue (b),

[45] See also Bourne (2006).

presentism's ontological parsimony delivers no real advantage, and so presentism loses yet another of the very few motivations on which it proceeds. Presentist models of time continue to be a tantalising area of discussion, but it is hard to see how this dialectically weaker position could compel those who aren't already convinced that it's worthy of serious consideration. And with this, I conclude that my argument against the indistinguishability thesis is in no way impeded by the decision to exclude presentism.

Conclusion

My aim throughout this essay has been to build a case against the indistinguishability thesis. With respect to the tensed-tenseless dichotomy, I based its untenability on two shortcomings: (a) there is nothing to support the necessary claim of intertheoretical equivalence can be applied to the features at the centre of the A- and B-theories, and (b) there are alternative ways to undermine the dichotomy whose success seems to be linked to abandoning indistinguishability in favour of something like inseparability. With respect to the dynamic-static dichotomy, **IT** relied upon proving the independent necessity of temporal transition, but again both arguments advanced to support this supposed conceptual truth were intangible. Moreover, one of the premisses used in those arguments, the 'stuck' claim, drew our attention towards differences between how A- and B-theorists confront persistence-related metaphysical challenges. The exact account of how A- and B-time are strengthened by the adoption of different doctrines concerning persistence, together with some of the criticisms made in Part I, were open to objection by presentists. However, there is a distinct lack of attraction to this view, so it can be safely avoided. With this, I hope to have reinforced, and in some small way sharpened, those putative delineations of A- and B-time.

(29,966 words, excluding front/end matter.)

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