

1 A-, B-, and R-Theories of Time

A Debate

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Ever since the publication of Clifford Williams' paper on "The Metaphysics of A- and B- Time" (1996), there has been an ongoing debate about whether or not there is a genuine metaphysical dispute between these two views and if so how, precisely, it is to be drawn.¹ With the increased popularity of presentism, the debate or lack of such between presentism and "eternalism" (the currently fashionable name for the B-theory) has taken center stage.² Since for some, "eternalism" is compatible with either the A- or the B-theory of time, the presentism/eternalism debate has reignited the original general question of how, if at all, A- and B-time are to be distinguished (Zimmerman 2005). The title of my paper is meant to signal that I too am going to enter into the question of the legitimacy of the dispute, but the limitations of this essay must be stated at the outset. I am not going to be debating these different views in the sense of giving arguments for and against the various gambits in the philosophy of time,³ nor am I going to be directly concerned with the difference between A- and B-theories (or even, more specifically, presentism and eternalism) since I believe that the proper way to draw the lines in the metaphysical debate cuts across all those views. My primary purpose is rather to clarify a genuine debate and to indicate some of the ontological issues that are important for the future of the philosophy of time. To accomplish that goal I shall discuss a third view, the Russellian theory of time (hereafter "R-theory"), and distinguish it from A- and B-theories, including presentism and eternalism (at least in some of its commonly accepted forms), and defend it against mistaken formulations and misguided criticisms.

I shall proceed as follows: In section 1, I will use an ambiguity in McTaggart's notion of the B-series to draw a distinction between different views of temporal relations that I believe separate various disputants in the A-, B-, and R-time debate. I shall then, in section 2, further clarify the R-theory and explain how an ambiguity in McTaggart's B-series underlies some typical, yet fallacious, arguments against it. In section 3, I will use what we have learned in the previous sections to refute those who defend and those who reject (for the wrong reasons) Williams' indistinguishability thesis. Finally, in section 4, I shall turn to a paper by Jonathan Tallant (2008) in which he argues that

the view that temporal relations are simple and unanalyzable is false, because they serve no function and thus are ontologically redundant. I will show that Tallant's argument rests on a failure to appreciate the differences between the Russellian theory—his intended target—and the view(s) of time he criticizes.

1 MCTAGGART, TEMPORAL RELATIONS, AND THE R-THEORY

For McTaggart, as we ordinarily conceive of time and, as time or events or positions in time appear to us, it involves the distinctions of past, present, and future from which the terms “A-series” and “A-theory” are derived, and the relations of earlier/later than and simultaneous with (called “B-relations”) from which the terms “B-series” and “B-theory” are derived. The ontologist of time asks what category or categories of intrinsically temporal entity or entities there are or must there be to explain the temporal phenomena. To answer the ontological question: “What is the nature of time?”, therefore, is to give an inventory of all temporal entities, or rather, of all *kinds* of such entities there are.⁴ Are there intrinsically temporal individuals or *particulars*; time points or moments of absolute time capable of existing unoccupied? Does time consist of *relations*, and if so are those relations *internal*, grounded in the nature or properties of one or both of their terms, or are they *external*, grounded in an additional entity obtaining between its terms, or some combination of both? Are temporal relations reducible to some non-temporal relation such as causation or entropic increase or are they irreducible? Are there intrinsically temporal (non-relational) properties such as the A-series properties *pastness*, *presentness*, and *futurity* (hereafter “A-properties”), or the so-called “coordinate qualities” such as *being at t_1* and *being at t_2* ?⁵ Is there a special category of temporal change or temporal becoming or is it to be understood in terms of some other category already delineated? For my purposes, which are, on the one hand, to delineate a Russellian ontology of time so as to avoid confusions that might lead to a debunking of the metaphysics of time and, on the other hand, to defend the R-theory against some spurious objections, I want to concentrate on the B-series and ask: What are the ontological facts and what are their simple temporal constituents needed to account for objects standing in temporal relations?

Ontological facts are not essentially truth conditions or truth makers since facts have an objective existence independently of the meaning and truth of language and thought, for there are facts in a world without minds and language users. Facts are introduced to ground ontologically the having of properties and the standing in relations and more generally the having of complexes consisting of things, properties, and relations. Thus for the Russellian, facts are a category of their own over and above a list of their constituents. What temporal facts there are and how they are related to time will be an important element in understanding the different ontological accounts of time as we shall see in section 3.

What, then, is the B-series? There are difficulties with the term “B-series” and “B-theory” because they originate from McTaggart and his notion of the B-series is ambiguous in a way that has led commentators to either misunderstand McTaggart's positive conception of time and therefore his negative argument for its unreality, or prejudice the issue against the Russellian ontology of time. On the standard interpretation of McTaggart, there is both a B-series whose terms are related by Russellian simple and unanalyzable temporal relations (“R-relations” for short) and an A-series (or series of such) whose terms exemplify the monadic temporal properties of *pastness*, *presentness*, and *futurity*, and there is temporal becoming, the acquiring and shedding of A-properties by the terms in the B-series. Thus, it is typical for interpreters of McTaggart to attribute to him the view that there are A-properties “in addition to the B-series and its unchanging relations” (Savitt (2001): 261). This view is called the “A/B theory of time.” It is the standard interpretation of McTaggart's positive conception of time (but it is not McTaggart's).⁶

There is another interpretation of the B-series and therefore of the B-theory that is McTaggart's, but is not Russellian. According to this view, the B-series is analyzable (reducible) in terms of the application of the A-series to the non-temporal, but ordered C-series whose generating relation is (for McTaggart) *included in*.⁷ On this view the direction of time and its transitory or dynamic aspect are grounded in A-properties moving along a non-temporal C-series. According to McTaggart the terms of the C-series have an intrinsic order, but do not have an intrinsic direction or, as Broad calls it, an “intrinsic sense.” By an intrinsic direction or sense is meant the difference between A B C D and D C B A. In our experience of time and change, events or things in time occur in a certain direction, since A is earlier than B is earlier than C is earlier than D, rather than the other way around. For McTaggart, it is the application of the A-series to the C-series that generates a B-series with a direction or sense. For that reason he says,

The B series, on the other hand, is not ultimate. For given a C-series of permanent relations of terms, which is not in itself temporal and therefore is not a B-series, and given the further fact that the terms of this C-series also form an A-series, . . . it results that the terms of the C-series become a B-series, those which are placed first, in the direction from past to future, being earlier than those whose places are farther in the direction of the future. (1908: 463–64)

Clearly, the resulting B-series is not Russellian. On the Russellian view, temporal relations (call them “R-relations”) are not to be identified with causal, spatial, entropic, or any other kind of relations. Thus the R-theory differs from the theory espoused by most B-theorists who analyze the direction of time from earlier to later in terms of the direction of causality (Mellor 1998, 2009; Le Poidevin 1991, 2007). Moreover, in calling temporal

relations unanalyzable a Russellian means that they cannot be reduced to the properties of their terms and, indeed, the terms of temporal relations have no intrinsically temporal properties such as pastness, presentness, and/or futurity, since there are none. R-relations are not analyzable, as in McTaggart, in the terms of a non-temporal series having temporal properties. On the R-theory, the only category of intrinsically temporal entities are relations; there are no temporal individuals, such as moments or time points; there are no monadic temporal A-properties; and there is no absolute becoming understood either as the coming into and going out of existence of objects or events, or as the donning and doffing of A-properties. In other words, on the R-theory, time is *relational*, that is, all ontological facts about time are understood as grounded in relations and that includes durations such as *lasts as long as*, or *lasts longer than*.

Russell's account of the direction of the B-series also differs from McTaggart's. According to Russell's view in *Principles of Mathematics*, when a relation relates two individuals there is an order in that connection, in that it does so with a *sense*: the relation goes *from one relatum* to the other. As Russell puts it:

... it is characteristic of a relation of two terms that it proceeds, so to speak, from one to the other. This is what may be called the sense of the relation, and is ... the source of order and series. It must be held as an axiom that aRb implies and is implied by a relational proposition $bR'a$, in which the relation R' proceeds from b to a , and may or may not be the same relation as R The sense of a relation is a fundamental notion, which is not capable of definition. (1938: 95–96)

For Russell, order must be taken as primitive. What we need is an order between a and b as related by R . Russell's account secures this order by building it into the relation itself; relations, upon Russell's account in *PM*, invariably have a *sense*. An asymmetrical relation generates a series because it provides a structure to each fact, since each fact has an order, an intrinsic order. Russell argued that there is a difference between the two facts aRb and bRa , and if the relation is asymmetrical then only one of those facts obtains. It is a synthetic a priori truth that if a relation is asymmetrical the converse of the relation cannot obtain. That is, for Russell a two-place relation holds always in a definite direction between its terms either from a to b or from b to a .⁸

In *Theory of Knowledge, The 1913 Manuscript* (1984), he gives a different analysis of order. According to it, Russell assumes in his ontological analysis of order in relational facts (e.g., a is earlier than b) order relations such as “being the first relatum” and “being the second relatum.” These relations hold between relata and facts. Since all series have a direction, Russell differs from McTaggart in both his account of the transitory aspect of time and its direction. For McTaggart what gives time a direction and its transitory character are changing A-characteristics. A Russellian will

ground the transitory or dynamic aspect of time in the relation “is earlier than,” and the direction of a whole series is aggregated from the order relations for all the relational facts contained in it.

In this chapter I make no attempt to defend either of Russell's accounts of temporal order against criticisms that have been lodged against them.⁹ My intention rather is to indicate that these accounts (and others like it) differ not only from all A-theoretic accounts, but also from the standard B-theoretic accounts of the direction of time as well. For on the standard B-theory, the direction of time is founded upon the direction of causation or entropy, but in a Russellian relational ontology there are reasons to reject such grounding. First, the phenomenon of temporal succession is fundamental, whereas causation and entropy are rather derived and complicated relations. A Russellian ontological analysis complies with the principle that a fundamental phenomenon such as succession should be grounded on a simple entity such as the R-relation if at all possible. Second, Russellians will reject causal accounts of the direction of time since they adopt an empirical principle of acquaintance according to which we must be acquainted with the simple entities of one's ontology. What excludes causal theories of time is that we perceive many temporal successions while we don't perceive the relation “causes” or “has greater entropy than” in those cases. Furthermore, Russellians will argue that causation and entropy are circular as earlier-relations since they presuppose temporal succession and the direction of time.

Whether these objections can be sustained is a large issue that I do not intend to explore here. My reason for raising them is primarily to indicate that a comment such as that by Craig Bourne, who asserts that “ontologically speaking, there is only *one* way to be a tenseless theory” (2007: 10–11), is not accurate.¹⁰ Bourne's statement overlooks the ontologically significant difference between the R- and B-theory analyses of the temporal phenomenon of succession and the direction of time.

To sum up, the B-series can be understood as Russell understood it as involving unanalyzable temporal relations between its terms, which are thereby temporal, or as McTaggart understood it as involving a non-temporal relation between timeless terms in a C-series plus something more, temporal properties and temporal becoming. These two notions of the B-series are not clearly recognized or distinguished, and a sliding from one to the other is prevalent in discussions of McTaggart and the “B-theory,” with often unfortunate results both for the interpretation of McTaggart's paradox and for the proper interpretation of the Russellian theory of time.

2 THE R-THEORY DEFENDED AGAINST SOME OBJECTIONS

To see how easy it is to confuse these two notions of the B-series, and the mistaken consequences of doing so, consider the two typical ways of stating the B-theory currently in vogue. Philosophers say that on the B-theory

past, present, and future events are equally real and that no events are really past, present, and future—claims that taken together are *prima facie* contradictory. However, if the B-series is understood as analyzable in terms of the application of the A-series (and temporal becoming) to the C-series, then it is correct to say that all terms of the C-series whether or not they are past, present, or future exist; the B-series requires it. On the other hand, if one interprets the B-series as a series generated by the intrinsically temporal relation “is earlier than,” then there are no A-properties, and in that sense none of the terms are past, present, or future.¹¹

If, however, one confuses the Russellian B-series (henceforth the “R-series”) with the McTaggartian B-series, then since the terms of the R-series do not exemplify A-properties, one may mistakenly conclude that the Russellian series is not a genuinely temporal series, but is a static, changeless series, whose terms are timeless, abstract objects or a *totum simul* (or a block) of sempiternal continuants. For a good example of how confusing these two notions of the B-series (and hence B-theory) can lead to mistaken interpretations of the Russellian view, consider the following passage from C. D. Broad’s classic chapter “Ostensible Temporality” in his *Examination of McTaggart’s Philosophy*. Broad claims that Russell’s theory,

seems to presuppose that all events, past, present, and future, in some sense “co-exist,” and stand to each other *timelessly or sempiternally* in determinate relations of precedence. But how are we to think of this “co-existence” of events? It seems to me that the events and their temporal relations are thought of either by analogy with timeless abstract objects such as integers in their order of magnitude, or by analogy with *simultaneous persistent particulars*, like points on a line in spatial order from left to right. (1938: 307)

These conclusions do indeed follow if one treats the Russellian R-series as McTaggart’s B-series minus A-properties as a C-series, for then the R-series (like the C-series) could be confused with, say, “greater than” between integers or “to the left of” between points on a line. If, however, the two different ontological accounts of temporal relations are kept distinct, then the fallacious inferences do not follow.

Broad’s mistakes are reinforced if one confuses the tenselessness (or permanence of) B-statements (henceforth “R-statements”) with the *eternal duration* of the terms such statements are about, or the tenselessness of B-facts (henceforth “R-facts”) with the *timelessness* of the terms contained within them.¹² Of course, both implications of the Russellian theory are egregious mistakes. The permanent truth value of R-statements, for example, “*a* is earlier than *b*” does not imply that *a* and *b* are and always will be unless one assumes that present truth implies present existence, which a Russellian will deny since he separates time and existence. It also does not follow that the terms of temporal relations are *timeless* abstract objects,

analogous to numbers; indeed, the very opposite is the case since the terms of temporal relations are, by that very fact, in time and so are temporal.

For the Russellian, R-facts, while they are not themselves in time, are indeed temporal since they contain temporal relations. R-facts are entities in their own right over and above their constituents, and as such they are not in time in that they do not exemplify non-relational temporal properties or temporal relations. In that sense time, understood as a Russellian series composed of a conjunction of R-facts, is timeless. This view gives some meaning to an aphorism I favor, namely, *time is timeless*. In other words, though time contains temporal relations, time does not exemplify them. Time is timeless in the further sense that the ontological ground of temporal phenomena are relations and on the R-theory relational universals such as “occurring earlier than” are timeless. A good formulation of the timelessness of time is stated by J. S. Mackenzie:

There is no time outside the process. Hence the process as a whole might be said to be eternal though every particular part in it has a place in time. . . . The process as a whole, when we thus conceive of it, is not in time, rather time is in the process. Time is simply the aspect of successiveness which the eternal process contains. (1955: 404)

It might be thought, however, that if the whole process (or conjunction of R-facts) is not in time, then there is something missing, namely, the transition from one time to the next; or the sense that R-facts are dynamic and not static and that time involves passage. But this strikes me as a mistake. Transition and passage do exist on the Russellian theory and they are compatible with an R-theoretic ontology.

For the Russellian the phenomenology of temporal passage is R-theoretic, that is, temporal passage or the dynamic aspect of time is grounded in a temporal succession or transition from earlier to later temporal items. Thus, an R-theorist should not fear that the words “temporal succession” or “transition” commit them to A-succession or A-transition. Succession is not an A-relation, but it is not a static relation either. Succession is not a transition from non-existence to existence or from *futurity* to *presentness* to *pastness*, but it does not follow that it is no transition at all. A transition is a temporal succession of opposite states and succession is based on the earlier-than relation.¹³ A temporal relational fact itself doesn’t change (it is, as explained earlier, timeless), but may be a change and in that sense involves a transition from earlier to later events or particulars (or more neutrally, temporal items).

That the “is earlier than” relation is dynamic is convincingly argued for by the German philosopher Erwin Tegtmeier in the following passage:

What we hear according to Russell, when we hear the c-tone preceding the d-tone, is the relational universals of “occurring earlier than”

together with its relata. We hear nothing else. Let us assume that we don't recognise the first tone [as] a c and the second as a d. Thus we hear only a temporal fact which as such is a dynamic fact. . . . If the fact is dynamic, which one can take for granted, the relational universal in it must be dynamic, too. Now, Russell introduces the relational universal as the one which holds between the two tones in the fact of our example. One can conclude that the relation "occurring earlier than" is a dynamic relation. (2010: 42)

Thus, the notion that Russellian time is static and A-time is dynamic is rooted in confusion. McTaggart thinks that an order relation, such as temporal sequence, which satisfies the conditions of asymmetry and transitivity, is thereby not a dynamic relation, but that is a further consequence of confusing a Russellian temporal series, which is dynamic, with McTaggart's C-series, which is static. McTaggart concludes that to account for the dynamic aspect of time one must introduce A-transition. Thus, the argument by McTaggart, that Russell's analysis is inadequate insofar as it is unchanging (since it misses the dynamic aspect), arises from a methodological muddle. The ontological analysis of time and change must not and need not attempt to duplicate time or be changing itself. As Tegtmeier has put it,

As to McTaggart's argument that the B-series cannot be temporal because it does not change, it is misleading and wrong mainly for two reasons. Firstly, the task is to analyse ontologically the general structure of temporal phenomena, *the task is to analyse the dynamics, not to dynamise the analysis*. The task of science, including philosophy, is to find out what the entities involved in its research object are and what their laws are; it is to describe and explain, not to imitate the object. (2007: 54; emphasis added).

An analogous point was made earlier by Frank Ramsey in a handwritten manuscript subsequently published as "Ramsey's 'Note on Time,'" (Ramsey 2006). He explains how the different ways of representing an R-series may mistakenly lead us to think that we need to add something more to a sequence to make it temporal. Ramsey notes that when we try to imagine a series of events in time we can do this either by going "through the events one after another in the order in which they happened, as when one rehearses a tune in one's mind" (2006: 157), or we may "want to have all the events in our minds at once in order to better see their relations, we then imagine them spread out before us along a line like the notes in a score" (2006: 157). The resulting series is, of course, a spatial representation of a temporal series, and then *qua* spatial series the "sense" of time from earlier to later is lost. If, however, one fails to distinguish these two representations of time, or confuses the dynamic R-relation of "earlier than" with its static spatial representation on a line or notes on a score, one may conclude

that we must introduce time over and above the series of notes spread out in space as something that "moves" and gives the series its sense and direction, as some A-theorists do. For McTaggart (1908, 1927) it is the A-series or trio of properties that are donned and doffed by the members of the C-series. For Broad in *Scientific Thought* (1923), it is the coming into existence of what did not previously exist and with it the adding on to what already exists, and for some presentists it is abstract propositions related by ersatz B-relations changing their truth value or their categorial status as they become concrete (Crisp 2007).

To counteract these moves that lead to unpalatable results, Ramsey continues,

But clearly the whole difficulty is a mistake; the events are really in temporal order one before the other; each is present to or simultaneous with itself, future to the preceding ones past to the subsequent. The moving present is really the series of events themselves; only when the temporal series is replaced in imagination by a spatial series, do we try to restore its temporal quality by introducing presentness from the outside. This is not to say we cannot legitimately represent a temporal series by a spatial one, provided we are prepared to keep to it to all (say) ["] to the left of["] to stand by convention for ["]before["] and not attempt simultaneously an imaginative realization of the temporal relationship. (2006: 157–58)

While I certainly agree with Ramsey in maintaining that the representation of the reality of time, either pictorially (by a mental or physical diagram) or I might add, linguistically (by the use of tenseless sentences), should not be confused with the temporal reality so represented, and with Tegtmeier that the analysis of time should not require or involve a replication, reproduction, or imitation of the temporal phenomenon, there still remains the task of providing an ontological ground for temporal relations. I have already suggested that for a Russellian ontologist, simple and unanalyzable relational universals between particulars or events (not absolute moments) are sufficient to do that. However, the critics of B- and R-theories demur. Many of their arguments are certainly worthy of consideration, but I shall limit myself, in the final section of this paper, to a brief discussion of only one, namely, Jonathan Tallant's argument that the view that there are simple and unanalyzable temporal relations: that is, the R-theory is false because "we can describe a world functionally equivalent to our own (assuming our world is as the eternalist says it is), without making reference to B-theoretic relations." (2008: 118) I shall argue that insofar as Tallant believes he is modeling a Russellian ontology of time he confuses the R-theory with either McTaggart's version of the B-series (without A-properties), or some non-Russellian version of the B-theory. Before I turn to Tallant, however, I want to discuss a recent debate, spurred by Clifford Williams' articles

over the legitimacy of the A- and B-time controversy. I will argue that it too suffers from a failure to appreciate how both those views differ from the R-theory, and thus fail to realize that what is most fundamentally at stake in the debate between the disputants in the metaphysics of time are the different accounts of the ontological status of temporal relations (and transition), temporal facts, and the relation both kinds have to time.

3 SPURIOUS ARGUMENTS FOR AND AGAINST THE INDISTINGUISHABILITY THESIS

The usual way of referring to B-time is as a block universe, static, eternal, and tenseless. All of these appellations mistakenly suggest that time is a space-like block, a changeless, timeless whole, or a sempiternal continuum, and for those reasons are best avoided in characterizing the R-theory. A-time, on the other hand, is referred to as a dynamic, tensed time in which time or events in time are passing or flowing, and is the basis of ordinary change. Williams argues that these two ways of describing time omit something that is common to both. In both A- and B-time there is transition: A-transition in A-time and B-transition in B-time, but he argues that there is no difference between these two kinds of transition, and thus, there is nothing different about these two kinds of time.

In a recent article, Mikel Burley (2006) responds to Williams by arguing that there is a genuine disagreement between A-time and B-time. Burley claims that if we grant that time involves transition there is a clear difference between the two theories: A-theorists are realists with regard to time, since they believe that transition is an intrinsic feature of events independently of our experience of it, whereas B-theorists are anti-realists since they deny that transition is a feature of events independently of our experience of it.

I shall argue, however, that there are mistakes in both Williams' and Burley's reasoning for and against the indistinguishability thesis. 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. Burley, on the other hand, correctly rejects the indistinguishability thesis, but he misinterprets the difference since he fails to consider R-time or misunderstands it by claiming that B-time is anti-realist.

To connect this critique with my earlier discussion concerning two interpretations of the B-series, note that if 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. On the other hand, if we

treat temporal relations ontologically on a par with C-relations, as Burley seems to do, then you will think of the R-theory as anti-realist, since it renders transition a subjective phenomenon and thereby leaves out something essential to time. Williams and Burley are guilty of these mistakes, as I shall next demonstrate.

Williams argues that the usual ways of representing A-transition and B-transition makes A-transition incoherent and misrepresents B-time. He says:

Suppose we say, first, that in A-time presentness, or the now, moves from time to time, whereas in B-time there is nothing that moves from time to time. This is a natural way of picturing the different kinds of transition—it seems to add something to B-time that is missing from it, namely, the movement of the present. This something more, according to advocates of A-time, is the rock-bottom peculiarity of time that is missing from B-time. (2003: 81)

For Williams, this interpretation of A-time, involving *presentness* moving from time to time along a *temporal* series, is mistaken since it renders A-transition incoherent: it gives rise to questions regarding the rate of movement, the need for a second time dimension and more generally McTaggart's paradox. In other words, there already is A-transition in the B-relation *qua* R-relation and for that reason there is no need to introduce a moving now in A-time, which just duplicates the transition unnecessarily. The interpretation of B-time as lacking transition is, Williams maintains, also mistaken since it treats particulars in time like points in space since "all events in it are somehow 'eternally there,' like the parts of a big block that are fixed forever in the block" (2003: 82). On the proper interpretation of the B-theory, the terms in B-time are related by a primitive *temporal* relation of succession that grounds transition. Once Williams eliminates A-properties from this typical yet mistaken understanding of A-time (as involving R-relations and A-properties) and then identifies B-relations with R-relations, his indistinguishability thesis becomes compelling, since there would then be no differences between the A-, B-, and R- accounts of transition because they all involve only R-relations.

However, Williams' indistinguishability thesis is mistaken. There are as many different accounts of transition as there are different accounts of temporal relations, and all but one of them is decidedly anti-Russellian. On the typical presentist accounts, transition is analyzed in terms of the coming into and going out of existence of presently existing entities, and the ground of temporal relations is in what presently exists.¹⁴ For ersatz presentists such as Thomas Crisp (2007) and Craig Bourne (2007), who recognize ersatz B-relations in their ontology, temporal relations and the facts they enter into are fundamentally different from R-relations and R-facts. The fundamental difference concerns not only the constituents of the R-facts,

but also the relation of these facts to time. Ersatz B-relations have timeless objects (abstract propositions) as terms, and thus ersatz B-facts are timeless not only because they are outside of time, but also because they are timeless in the further sense of not having any temporal constituents. On the R-theory, a temporal relation cannot obtain between timeless objects, but must have temporal objects as terms. Therefore, R-facts, while not in time, are themselves the ground of time because they have as constituents R-relations whose terms exist in time.

For some open future or growing block theorists, C. D. Broad, for example, temporal relations are not R-relations since transition is grounded in the coming into existence of fresh slices of existence that are added to the sum total of existence. On this view, temporal relations come into existence as events become. For example, when an event *e* is present it does not stand in the “is earlier than” relation to anything, but at the next moment it acquires the relational property of being earlier than, say, event *e'*. In that case, however, the fact *e* is earlier than *e'* cannot be timeless in the sense of being outside of time since there is a time when it does not exist and a time when it comes into existence, namely, *when e'* does. Thus, on the open future theory both temporal relations and the temporal relational facts they enter into exist in time, and so are quite unlike R-relations and R-facts that are timeless.

On the full A-theory, or at least one version of it, according to which there are past, present, and future times or events, the temporal relation that obtains between them is not an R-relation. On the version of the A-theory that I have elsewhere called “the modified A-theory” (2004b) temporal relations are not primitive or ontologically on a par with A-characteristics; rather A-characteristics are more fundamental, and are essential to the ontological structure of time because temporal relations can hold between terms only if those terms have A-characteristics, and conversely, given events with definite A-characteristics, a certain temporal relation must hold between them. In “Ostensible Temporality” Broad explains this ontological assay of temporal relations in the following passage:

Even if we reject the view that “X is earlier than Y” means that there is a difference in the A-characteristics of X and Y and that this difference is positive, there remains another alternative which would suffice for McTaggart’s purpose. It might be suggested that the relation “earlier than” can hold only between terms which have A-characteristics; just as harmonic relations can hold only between terms which have pitch. And it might be suggested that the degree of the B-relation between two terms depends on the difference between the determinate values of their A-characteristics; just as the harmonic relations between two notes depend on the difference between the absolute pitches of the two. In fact, to use an expression of Meinong’s, we might be able to see that B-relations are “founded upon” differences in the A-characteristics of the related terms. (1938: 302–3; emphasis added.)

Thus, on the modified A-theory events cannot stand in a temporal relation unless they exemplify A-properties and therefore, the temporal relation between events on this version of the A-theory is not an R-relation whose terms neither exemplify A-properties, nor are they “founded upon” them. Clearly, then, there is a dispute between A- and R-theorists, and, as we have seen earlier, there is also a debate between B- and R-theorists over the proper analysis of temporal relations.

Burley, who believes that there is a distinction between A-transition and B-transition as the basis for the distinction between the two theories, objects that B-transition is not really an objective transition at all, both because “the B-theory construes this transition as a purely experiential phenomenon—as a feature, not of events, but exclusively of the way in which they are experienced” (2006: 416), and because a world without objective A-transition is a world without time. In other words, without transitory A-properties or A-transition in some other form, for example, as emerging and passing away, critics claim that the B-series, though it has the same formal properties as a temporal series, is not a genuinely temporal, but a static, timeless, changeless series.

Burley is correct in that Russellian transition or passage is not a feature of events (which are particulars or facts), but rather, transition is wholly based on the simple and unanalyzable “is earlier than” relation. It does not follow, however, that transition is not a feature of the world, but exclusively of the way in which transition is experienced.¹⁵ On the contrary, Russell’s dynamic relational universal “occurring earlier than” is a feature of the world because it is experienced, that is, an object of acquaintance. Thus, to assert that the R-relation and the facts it enters into are static is also false since the fact that the a-tone precedes the c-tone contains a dynamic temporal relation and is therefore a dynamic temporal fact in a temporal series. To think otherwise, as Burley clearly does, is to misunderstand the Russellian view in a way that has its roots in McTaggart’s conception of the B-series, and it fails to see what is really at issue between the several theories of time, namely, their different accounts of temporal relations, the temporal facts that such relations enter into, and the relation of those facts to time.

Temporal relations are unique in that they involve a process or transition or succession from one term to the next. This difference between temporal relations and all other non-temporal relations is difficult to recognize, since our linguistic representation of a non-temporal series takes time to express, and the pictorial representation of a temporal series may be momentary and static. Nevertheless, the earlier-series is a special series, a real progression from earlier to later events, and not the other way around, and this, on one of Russell’s views of the direction of a relation, is grounded in the relation itself. For these reasons, the Russellian will reject claims that without tense and becoming the temporality and direction of time are without foundation or that R-time is anti-realist. On the R-theory, the foundation of real time is the simple and unanalyzable R-relation.

To recapitulate, if Burley thinks of the B-series as McTaggart does, then in order for there to be transition you will need something moving along the non-temporal C-series. On the other hand, if we think of the B-series as Russell and Williams do (something simple, unanalyzable, and known ostensibly) as generated by R-relations, then the notion of A-transition as something over and above R-relations will be redundant and incoherent. When these two notions of the B-series get confused, one will claim, as Williams does, that there is no difference between A-transition (without temporal properties) and B-transition (since they both involve primitive R-relations), or as Burley does (or at least implies), that in B-time there is no transition since there are no A-properties, whereas in A-time there is transition because there are A-properties. If, however, we keep the two interpretations of the B-series with their two different analyses of temporal relations and transition distinct, and recognize that there are several other analyses of temporal relations and transition, then there is an ontological difference between the A-, B-, and R-theories of time, and the debate over the correct analysis of transition remains a legitimate question in the metaphysics of time.

Before concluding this section I want to mention a useful paper by Natalja Deng (2010), who criticizes Burley and some B-theorists, for example, Mellor (1998), Le Poidevin (2007), and Falk (2003), for failing to see that transition is an objective feature of B-time, and Williams for claiming that there is nothing at stake in the A-versus-B debate. My only misgiving about Deng's paper is that she overlooks what I think is ultimately at stake between the various disputants by reducing the issue to the following three claims that are asserted by the B-theorist and denied by the A-theorist:

- 1) Eternalism: All times exist and are ontologically on a par.
- 2) There are no monadic temporal properties of pastness, presentness, or futurity, but only dyadic temporal relations of succession, precedence, and simultaneity.
- 3) There are no tensed facts, but only tenseless facts, such as the fact that my writing this {occurs} (tenselessly) on a Friday, and the fact that this event {precedes} the event of your reading this by a certain interval. (2010: 741)

The problem with this way of framing the debate is that it doesn't capture some essential features of the Russellian theory, for example, that times and durations are understood relationally and that the ontological status of temporal relations and transition are the fundamental issues upon which the other claims are parasitic, nor does Deng consider the differences between A-, B-, and R-facts both in terms of their constituents and their relation to time.

4 A CRITIQUE OF TALLANT'S "WHAT IS IT TO 'B' A RELATION?"

Not only can the failure to recognize different assays of temporal relations and transition lead to the indistinguishability thesis, it can also lead to mistaken formulations and misguided criticisms of the R-theory. For example, Jonathan Tallant purports to demonstrate that "the view that temporal relations are simple and unanalyzable (e.g., Oaklander 2004, 24–25) commits us to B-relations as ontological gratuities with no function" (2008: 118). His overall argument is that it is possible to construct a world functionally equivalent to a B-theoretic eternalist that can account for all the temporal facts that an eternalist can account for, but does not contain B-relations. Since B-relations don't do anything, their existence ought not to be countenanced in any adequate ontology of time.

Since Tallant's main target is my commitment to simple and unanalyzable temporal relations, it would seem reasonable to assume that wherever he uses the term "B-theory" he is referring to the R-theory; however, that is not the case. It becomes clear that there are not two, but three different notions of the "B-theory" and while he confuses them all, he never directly deals with the Russellian theory of time. "The B-theory" may be McTaggart's B-series, i.e., the C-series and A-series together with absolute becoming; a Russellian R-series whose terms have some *duration*, or a four-dimensionalist (4D) view of the B-series that contains instantaneous (non-durational) contents or time points. Whether a four-dimensionalist can countenance R-relations in her ontology is questionable. Russell's temporal relations are based on a principle of acquaintance according to which the simple entities in one's ontology must be those we are acquainted with, but we are not acquainted with durationless points or contents as the terms of temporal relations. In any case, Tallant's critique of the B-theory is directed at the 4D variety of the B-theory and not the Russellian R-theory. Thus, Tallant's critique of the R-theory is an attack on a straw person because he either (a) assumes that the terms of R-relations are timeless because he confuses the R-theory with McTaggart's analysis of B-relations, or (b) he identifies a commitment to simple and unanalyzable temporal relations with the 4D view that, unlike the Russellian view, treats the terms of temporal relations as time points or the contents of such that have zero duration. To see what is involved in these points and to defend them, I shall turn to his paper.

In the opening paragraph of his paper, Tallant asserts "My conclusion is that if one adopts eternalism, then the unreality of time looks a better option than the B-theory" (2008: 117). What I want to argue is that even before we consider his argument against the B-theory, the ambiguity of the term "eternalism" mirrors the ambiguity found in the term "B-series," and his equivocal use of "eternalism" vitiates his attack on the B-theory and the R-theory.

The following passage will be used to illustrate my point. Tallant says:

In the opening paragraphs I drew a distinction between eternalists and B-theorists. Such a distinction seems plausible. Eternalists claim that all instants are on an equal ontological footing. Most, if not all, B-theorists agree with this claim. But a B-theorist is, whilst an eternalist is not, committed to the *further claim* that there are temporal relations, of “earlier than” and “later-than”, that hold between these instants. Hence, an eternalist can hold their position without also being a B-theorist. (2008: 118; emphasis added.)

Tallant’s argument in this passage is confused. To see why, let’s look at his understanding of the term “eternalism.” He says, “Eternalists claim that all instants are on an equal ontological footing. Most, if not all, B-theorists agree with this claim” (2008: 118), but do they agree? Much hangs on what is meant by “instant.” If an instant is a *timeless* instant or a *timeless* point, so that he is claiming that eternalism₁ means that “all timeless instants/points are on an equal ontological footing” then there is no B- or R-theorist who would accept that our world is as the eternalist₁ says it is (for that would just play into the hands of those who allege, like Broad, Craig, and others, that without A-properties the “B-series” is indistinguishable from the series of integers), although, of course, an eternalist₁ can hold his position without also being a B- or R-theorist.

Alternatively, if an instant is a *temporal* entity, whether a durationless time point or the content of an instantaneous point (a temporal part) as in the B-theoretic 4D view (Sider (2001): 59–60), or a particular with a duration as in the Russellian view, then we could define two further meanings of “eternalism.” On B-theoretic four-dimensionalism, “eternalism₂” would be the view that “all *temporal* instants (time points or their contents) are on an equal ontological footing” and on the Russellian view, “eternalism₃” would be the view that the existence of temporal relations entails the temporality of all its terms; that is, all the terms of an R-relation are in time. Temporal relations are not a *further* entity, as Tallant maintains, needed to render the terms of an eternalist₃ ontology Russellian (R-theoretic), rather the terms of R-relations are all ontologically on a par, in being temporal entities since they are in time, because they stand in temporal relations. To put the point otherwise, it is in virtue of being R-related that all terms of the R-series are on an equal ontological footing and thus that we can characterize the R-theory as “eternalist₃.” So conceived it is true that a commitment to eternalism₃ is entailed by the Russellian theory (and eternalism₂, by a B-theoretic four-dimensionalist) but it is not the case, as Tallant says, that “an [R-theoretic] eternalist [that is, an eternalist₃] can hold their position without being a [R-] . . . theorist” (2008: 118) unless of course an R-theoretic commitment to temporal relations is confused with either McTaggart’s analysis of them (eternalism₁) or with the B-theoretic 4D view (eternalist₂),¹⁶ identifications that are clearly mistaken, as I have argued throughout this essay.

In asserting that the B-theorist is committed to “eternalism” whereas the “eternalist” is not committed to the B-theory, Tallant is equivocating on (and confusing) the Russellian conception of the B-theory (eternalism₃) with either the 4D conception of the B-theory (eternalism₂) or with McTaggart’s conception of the B-theory (eternalism₁), that is, the non-temporal C-series without A-properties. Since Tallant does not distinguish the three different notions of “eternalism,” he thinks that if he can establish the ontological gratuity of temporal relations in an eternalist₁ world or an eternalist₂ world then they would also be redundant in a Russellian eternalist₃ world, a conclusion that obviously does not follow. At best Tallant can be taken to be arguing that eternalism₁—a world with no intrinsically temporal entities—is a preferable ontological alternative to an eternalism₃ that countenances Russellian simple, unanalyzable temporal relations. In what follows I shall briefly argue that he never really manages to construct a timeless C-theoretic world and therefore the question of whether eternalism₁ is a better option than the alternatives need not be addressed.

The first step in Tallant’s project is to construct a timeless C-world that models an R-theoretic world without temporal relations, a project that seems to me impossible. To see why this is so, consider the following passage:

What is a C-world, then? Consider, what we might think of as, a single instant. That is, a particular way that the world might be at any given *time*, a particular 3D arrangement of physical objects. . . . This single instant looks, if we could look at it, much as a paused video might. This is our single instant. Consider this instant to be world *w*: is time real in *w*? Seemingly not. There are no B-relations.¹⁷ Now add another instant to this world. Do we now have a temporal world? Intuitively I would suggest not. . . . So far there is no reason to think that the mere creation of two instants is sufficient for there to be time. We have not arranged them properly. (2008: 118)

In this passage Tallant constructs a world containing instants *qua* temporal entities—three-dimensional objects that exist *in time*—and concludes that instants are timeless entities in a non-temporal C-world. It is this shift that reflects the confusion I just alluded to between a (temporally) eternal₂ and eternal₃ series and a (timelessly) eternal₁ series. If we begin by considering the way the world might be at a given instant, or as Tallant puts it, “a particular way that the world might be at any given *time*” (2008: 118; emphasis added), then we have time since we have the simultaneity relation between the contents at a time. If we add another instant to that world, that is, create another instant (at another time) and continue in that manner, we have a temporal world and not a timeless one.

In personal correspondence, Tallant defended his claim that it is coherent to talk about timeless worlds when he is talking about instants by saying the following:

take a combinatorial recipe for possibility, and derive a timeless world by subtracting away all ‘instants’ from an eternalist B-theoretic world, other than *t*. Call this a timeless point. Now, to this we’ll need to add another timeless point. Is that possible? Given only a pretty weak combinatorial principle it looks to be. Simply start with another time-ly world; subtract away all instants bar one; that is now another timeless point. Add this to our existing timeless world. . . . So I now have a world that includes two timeless points. Is that a world where time is real?

If you’re a B-theorist, then intuitively I’d want to say that you should say ‘no’. There are no B-relations and it is the B-relations that give us time. Now, carry on adding timeless points to this world. At no point, I want to suggest, does ‘time’ get in on this picture *unless* there are B-relations between these timeless points (let’s suppose that the relation that they stand into one another is something like ‘entropic increase across their contents’). I think that clears up what I meant by ‘instants’ in the foregoing. That’s all supposed to be about the ‘instants’/points.

If we start off with “an eternalist B-theoretic world” and subtract all instants except *t*, then the result is *not* a timeless point. Given that the B-series is a genuinely temporal series, that is, an R-series, since there are intrinsically R-relations and simultaneity relations between and among its terms, it follows that the terms are temporal. Indeed, on the Russellian view, eternalism just is the view that the terms of the R-series exist as temporal because they are R-related. Thus, subtracting all “instants” except one would not eliminate temporality since there would still be a simultaneity relation among the contents at that “instant.” To assume that a term of an R-relation when subtracted from the B-series (and bereft of A-properties) is a timeless instant/point is an assumption that McTaggart makes, but it obviously begs the question against a Russellian at the outset. To put my point otherwise, if Tallant starts off with an “eternalist B-theoretic world,” then depending on what meaning of “eternalist” he is utilizing, the very notion of an “eternalist, R-theoretic world” is contradictory (since the objects in an R-theoretic world are temporal and the objects in an eternalist, world are timeless), and the suggestion that one might subtract an instant from an “eternalist, R-theoretic world” and arrive at a *timeless* instant/point is also contradictory both because there are no instants (or durationless times or contents) in an R-world and because what does represent a world at an instant are particulars related by a simultaneity R-relation, and so are temporal.

Since Tallant’s plan to construct a C-world of timeless instants/points from the terms of an eternalist, R-theoretic world does not succeed, he cannot use a timeless C-world to demonstrate that temporal relations are ontological gratuities with no function in an R-world and that consequently if one is an R-theorist that time is unreal. I should add that Tallant’s attempt to demonstrate that the phenomenology of temporal passage

can be accounted for within a C-world (or presumably an R-world without R-relations) is based on a mistaken assumption he shares with Burley and others, namely, that on the R-theory the phenomenology of passage is subjective. Tallant says:

There is no good argument here from the nature of temporal phenomenology to the conclusion that time is real. The B-theoretic claim, that temporal passage is mind dependent, can be made to work for the C-theorist. Put simply, if temporal passage can be mind dependent in a B-world it can be mind dependent in a C-world. But there is no obvious need for anything over and above this variation of entropy and phenomenology. So, if the phenomenology of temporal passage is merely experience *at* any given timeless point, then there is no *prima facie* reason why occupants of a timeless reality could not also experience temporal passage. (Tallant (2008): 122)

If “temporal phenomenology” is understood R-theoretically, as the transition from earlier to later temporal items, then the objects of our temporal phenomenology are *not* mind-dependent and any attempt to undermine the R-theory by assuming an eternalist, world and then grounding the phenomenology of time without R-relations is pointless and can seem plausible only by greatly distorting the Russellian ontology of time and succumbing to one of the erroneous formulations I have discussed in this paper.

In conclusion, I hope to have demonstrated that there is, or rather are, genuine ontological debates between A-, B-, and R-theories of time that revolve around the status of temporal relations (and transition), the facts temporal relations enter into, and the relation of those facts to time, and furthermore, that the R-theory, as distinct from the A- and the B-theory, should be considered a viable response to those questions.¹⁸

NOTES

1. See Williams (1996, 1998a, 1998b, 2003), Deng (2010), Oaklander (2001), Parsons (2002), Nunn (2000), and Callender (2011).
2. See, for example, Lombard (1999, 2010), Meyer (2005), Ludlow (2004), Sider (2001, 2006) Crisp (2004a,b), Stoneham (2009), Dorato (2006a,b) and Oaklander (2008) “General Introduction,” vol. I, 1–11.
3. For my own and others’ views on the pros and cons of the various gambits, see Oaklander (2004, 2010), Oaklander and White (2007), and Oaklander (2008) vol. II, *Time and Metaphysics*.
4. It strikes me that this is an important distinction because it shifts the issue away from the question of whether or not only present entities, or past and present, or past, present, and future entities exist. There is, perhaps, an important truth involved in this way of distinguishing the views but one that follows from more fundamental ontological questions about what *kinds* or categories of temporal entities there are, as I shall argue. Moreover, it

- gives rise to the typical and standard objections to the legitimacy of the dispute that are avoided if we downplay this way of specifying the terms of the debate.
5. This terminology is, I believe, due to Gustav Bergmann (1964, 1967) who did not believe in coordinate qualities, but see C. D. Broad (1925) and Nelson Goodman (1951), who both did.
 6. This interpretation is not surprising as there are some grounds for it since in the chapter on “Time” McTaggart (1927) discusses Russell in the context of the question whether there could be time or the B-series without the A-series. Nevertheless, the A/B interpretation of McTaggart is mistaken, as I argue in Oaklander (1996, 2002a). Other examples of proponents of this interpretation, or who seem to adopt an A/B theory of time, include George Schlesinger (1980, 1994), William Lane Craig (1998), Yuval Dolev (2007), Quentin Smith (1993), and Kit Fine (2006), see especially 405–6. It should be noted that while Dolev construes the tensed theory in terms of an A/B ontology and the tenseless view as solely a B-relation ontology, his own rejection of the debate stems from his rejection of what he calls the ontological assumption of both views, namely, “that the difference between past, present, and future concerns the *ontological status* of events and things” (2007: 8). Though interesting and important, I shall not discuss Dolev’s argument in this chapter except for a brief comment in a later footnote (fn. 15).
 7. This is not quite right, since without temporal becoming the terms of the C-series cannot form a B-series. Of course with temporal becoming, i.e., the acquiring and shedding of A-properties by the terms of the C-series, there cannot be a B-series either, which is McTaggart’s paradox of which I shall say no more in this essay, but see Oaklander (2002a). For discussions of McTaggart’s C-series see, King-Farlow (1974), Rochelle (1998) and Le Poidevin (1998).
 8. For a defense of Russell’s analysis of order in the *Principles*, see Fred Wilson (2007).
 9. For criticisms of Russell’s accounts see Orilia (2008, 2010), Tegtmeier (1990, 2004), Bergmann (1992), and Hochberg (1987).
 10. The entire passage from which the quote is taken is as follows: “Since what characterizes a theory of time as tenseless is the fact that it postulates equally real times but no ontologically significant notion of the present, then, ontologically speaking, there is only *one* way to be a tenseless theory—the differences among tenseless theorists arise in formulating and filling out this ontological picture” (Bourne (2007): 10–11). It seems to me, however, that my point still holds.
 11. Characterizing the debate between the presentist and eternalist as between those who hold that only the present exists and those who hold that past present and future exists is problematic for two reasons. First, it gives *prima facie* support for those, like Lombard (2010), who argue that there is no way of understanding tenseless existence other than did, does, or will exist and therefore once again there is no difference between presentism and eternalism. Furthermore, to characterize the B-theory as eternalism, understood as the view that past present and future exists, may cause one to overlook the R-theory since on some versions of the B-theory the present is an instantaneous state of being, whereas on the R-theory all entities in time have some duration. Thus, not only does this way of drawing the distinction fuel the debates about the indistinguishability of A- and B-time or presentism and eternalism, it encourages a misunderstanding of the R-theory, and more importantly, it fails to get at what is really at stake regarding the various metaphysical theories in the philosophy of time as I shall argue later, especially in section 3.
 12. Hence, my dislike of the characterization of the R- or B-theory as “tenseless theory of time.”
 13. See Erwin Tegtmeier (1999).
 14. See Craig (1999, 2000) and Bigelow (1996). For criticism see Oaklander (2002b,c), and Magalhães and Oaklander (2010), Part IV, “The Case Against Presentism,” 187–248.
 15. Dolev (2007) and Tallant (2007) also argue, in effect, that the B-theory is anti-realist since it treats transition as a subjective phenomenon. In Oaklander and White (2007) we offer a detailed response to that criticism. I think it is important to point out, however, that there is another aspect of temporal phenomena that is dependent upon our changing psychological attitudes and temporal relations toward one and the same event, namely, our experience of the passage of events from the future to the present and into the past.
 16. It is easy to confuse R-theory and four-dimensionalism if one understands 4D and the R-theory as species of eternalism and claims that eternalism is the view that past, present, and future times, events, or temporal objects exist and are equally real or ontologically on a par. Thus, another reason for not understanding the debate between A- and R-theory or presentism and the R-theory in terms of past, present, or future existence is to avoid the confusion of the R-theory with the 4D version of the B-theory.
 17. But why couldn’t we say that there is the unanalyzable B-relation of simultaneity? Tallant mentions the possibility of time being real in virtue of a simultaneous causal relation, but we are not talking about analyzing temporal relations in terms of causal relations, but in terms of unanalyzable temporal relations, so his reply to that possibility is irrelevant. See Tallant (2008: 118, fn 3).
 18. I have greatly benefited from correspondence and conversations with Erwin Tegtmeier and Alan White, who carefully read and commented on several versions of this chapter. I also wish to thank Ade Artis and Ernâni Magalhães for their helpful suggestions, and Adrian Bardon for pointing out some unclear passages. While all of the aforementioned helped make this chapter better than it otherwise would have been, I alone am responsible for its contents.

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