

Philosophical arguments against the A-theory

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1. INTRODUCTION

Theories of time divide into *A-theories* and *B-theories*. There are a number of different ways of characterising the A- and B-theories; theorists have yet to settle on a single pair of definitions.¹ This creates the difficulty that any characterisation is liable to appear to miss the mark to someone. However, we must start somewhere. My preferred definitions are as follows:

A-THEORY: There is an absolute present instant

B-THEORY: No instant is absolutely present

That is, according to A-theorists, (it is always the case that) some instant of time is absolutely, non-relatively present;² according to B-theorists, (it is always the case that) the A-theory is false, and therefore presentness for instants is always a merely relative matter (for example, relative to an instant or some occupant of spacetime).³ In that sense, the A-theory is analogous to the popular view in modal metaphysics that there is an absolute distinction between actuality and (mere) possibility, and the B-theory is analogous to the ordinary view of space that the distinction between ‘here’ and ‘there’ is always relative to a location in space.⁴

A few comments on the above definitions are in order. First, some might notice that given the above definition of the A-theory, one cannot be an A-theorist according to whom there are *no* instants of time. Now,

¹ Dorr (*Counterparts* MS, 1) provides a list of candidates.

² A-theorists include *presentists* such as Prior (1968), Bigelow (1996), Crisp (2003) and Markosian (2004); *growing block theorists* such as Tooley (1997) and Forrest (2004); and *moving spotlight theorists* such as Cameron (2015) and Deasy (2015).

³ B-theorists include Mellor (1998), Skow (2015), Smart (1949) and Sider (2001).

⁴ ‘Modal A-theorists’ include most so-called *actualists*, according to whom *everything (quantifying unrestrictedly) is actual*. Defenders of actualism include Adams (1974), Plantinga (1976) and Fine (1977).

I think that A-theorists should be realists about instants of time, given the ubiquity of quantification over instants in ordinary language and thought and the theoretical utility (if not indispensability) of instants for theorising about time. However, it would be nice all the same to be able to offer an alternative ‘instant-free’ definition of the A-and B-theories to those who reject realism about instants. I offer the following:

*A-THEORY**: There are temporary propositions

*B-THEORY**: There are no temporary propositions

A *temporary proposition* is a proposition such as that Kitty is happy, which is sometimes true and sometimes false. A non-temporary (i.e. *permanent*) proposition is a proposition such as that Kitty is happy at 2.15pm GMT on 2 May 2015, which is if true always true and if false always false. According to the above definitions, the A-theory is the view that some propositions are temporary and the B-theory is the view that every proposition is permanent.⁵ (Given certain plausible assumptions – such as that there are instants of time – the first pair of definitions is equivalent to the second. For suppose that there is an absolute present instant. In that case *this* instant is absolutely present. Call this instant ‘Instanto’. Then there is at least one temporary proposition, namely, the proposition that Instanto is absolutely present. In the other direction: suppose that there are temporary propositions. Then if there are instants, exactly one instant *t* is *accurate* in the following sense: for all propositions *p*, *p* is true at *t* iff *p* is true. (If all propositions are permanent, then *every* instant is accurate). However, plausibly, if exactly one instant is accurate then that instant is the

⁵ Note that in response to Prior’s (1959) famous ‘thank goodness that’s over’ argument against the B-theory, some B-theorists such as Sider (2001, 20-21) argue that even if all the facts are permanent, certain beliefs – for example, the belief that I am writing this sentence *now* – have non-permanent contents as their objects (see Zimmerman, 2005 and Russell, forthcoming, *Noûs* for useful discussion). However, I believe this combination of the B-theory and non-permanent objects of belief is difficult to sustain. Consider: the relevant non-permanent objects of belief are either temporary propositions or they are not. If they are, then exactly one instant of time *t* is *accurate* in the sense described above (i.e. is such that for all propositions *p*, *p* is true at *t* iff *p* is true); and plausibly, if exactly one instant is accurate it is absolutely present, and therefore the B-theory is false. On the other hand, if the relevant contents are *not* temporary propositions, then what are they? The standard proposal is that they are properties of some but not all instants, such as property of being an instant at which I am writing this sentence, or (perhaps equivalently) sets of some but not all instants. However, this proposal conflicts with the natural view that only *propositions* are objects of belief. Either way, then, there are good reasons for B-theorists to reject the claim that there are non-permanent objects of belief.

absolute present. See Dorr, *Counterparts* MS §1.1.) Second, it is important to note that the predicate ‘is absolutely present’ in the main definitions of the A- and B-theories is intended to express a *temporary property* that is gained and lost over time, rather than a *permanent property* such as the property of being identical to this instant.⁶ Third, there is of course more to being an A- or B-theorist than merely accepting or rejecting the claim that there is an absolute present instant. For example, A-theorists also hold that it is always the case that exactly one instant is present, and that presentness is an *instantaneous property* of instants: if any instant has it, then it never did and never will. Both A- and B-theorists hold that instants of time are ordered by a permanent transitive relation of *precedence*, and that every instant is present *relative to itself*; that is, that for all instants *t*, at *t*, *t* is present.⁷ Many A-theorists (but no B-theorists) hold that fundamental reality has structure corresponding to temporal (‘tense’) operators such as ‘it was the case that’ and ‘it will be the case that’.⁸ Some theorists might wish to build some of these or other similar theses into the definitions of the A- and B-theories. They are free to do so; however, I see no pressing reason to complicate a pair of otherwise simple and elegant definitions. Finally, and relatedly, an important difference between A- and B-theorists which is not obviously captured by the above definitions – but which is worth mentioning especially in light of the arguments described in this paper – concerns the nature of *change* and *the passage of time*. In particular, for A-theorists, facts of change are captured by temporary propositions such as that Kitty was sitting and now she is standing, whereas for B-theorists facts of change are captured by permanent propositions such as that Kitty is standing at 5.00pm GMT on 12 September 2015 and sitting at 5.17pm GMT on 12 September 2015. More generally, it is very natural for A-theorists to hold that *things change* and *time passes* exactly if there are temporary propositions. For B-theorists, on the other hand, change and the passage of time are features of a universe of permanent facts.⁹

⁶ Question: how can *B-theorists* state the B-theory if they hold that there is no temporary property of presentness for the predicate ‘is absolutely present’ to express? I will not attempt to address this problem here.

⁷ Exactly what this thesis amounts to depends, of course, on one’s particular theory of time. For example, for B-theorists the thesis is equivalent to the claim that every instant is self-identical.

⁸ See especially Sider (2011, Chapter 11). Sider appears to hold that a commitment to fundamental temporal operators is *definitive* of the A-theory. See Deasy (2015) for an argument to the contrary.

⁹ Some B-theorists might be tempted to claim that on their view, *time does not pass*. I think this temptation should be resisted, as it simply provides A-theorists with

Although the A-theory is in some ways the ‘intuitive’ theory of time, there are a number of serious arguments against the view. In particular, many theorists reject the A-theory on the grounds that it is inconsistent with the picture of fundamental reality derived from contemporary spacetime physics, according to which there is no fundamental structure corresponding to absolute presentness.¹⁰ However, some theorists also reject the A-theory on purely philosophical grounds: they hold that the A-theory can be shown to be false *without* an appeal to current spacetime physics. In this paper, I describe three such arguments against the A-theory:¹¹ McTaggart’s (1908, 1927) famous argument that the A-theory is contradictory; Fine’s (2005) interesting but little-discussed argument that the A-theory is consistent with time’s being ‘frozen’; and Deng’s (2012) recent argument that the A-theory fails to capture the ‘intuitive picture’ of the passage of time. I show that there are plausible A-theoretic responses to each of these arguments, and conclude that, whatever else is wrong with the A-theory, it is not obviously a *philosophically* suspect theory.

Why focus on these arguments in particular? After all, they are by no means the *only* purely philosophical arguments against the A-theory; one could write a large book focused solely on the many variations of McTaggart’s argument.¹² The main reason for focusing on these arguments is that they seem to capture three relatively distinct and natural types of philosophical objection to the A-theory, namely: that it is inconsistent (McTaggart); that it doesn’t really deliver on the promise of providing a *metaphysics* of ‘real change’ and ‘passage’ (Fine); and that it doesn’t really deliver on the promise of providing an *intuitive account* of ‘real change’ and ‘passage’ (Deng).¹³ It follows that if there are

another reason for rejecting the B-theory. Rather, B-theorists should simply reject the A-theoretic analysis of passage in terms of temporary propositions.

¹⁰ Putnam (1967) and Baker (1974) argue against the A-theory on similar grounds. See Markosian (2004, 73-5) and Zimmerman (2011) for some possible A-theoretic responses.

¹¹ In fact, Fine’s and Deng’s arguments are specifically directed toward versions of the A-theory that accept realism about instants. However, many A-theorists *are* realists about instants, and therefore it is not entirely misleading to describe these arguments as arguments against the A-theory. In any case, I am careful in what follows to distinguish the different targets of different arguments.

¹² As well as the many versions of McTaggart’s argument, a well-known philosophical argument against the A-theory *not* considered here is Smart’s (1949) argument that the A-theorists account of passage can be shown to be incoherent by consideration of the question ‘how fast does time pass?’. See Markosian (1993) for discussion.

¹³ Being a bit more careful, Deng argues that the A-theory is *no better than the B-theory* at capturing the ‘intuitive picture’ of the passage of time. However, she also

plausible A-theoretic responses to *these* arguments, then A-theorists can take themselves to be in a relatively good position *in general* with regard to purely philosophical arguments against their view. Moreover, while McTaggart's argument is well known (albeit frequently misunderstood), Fine's and Deng's arguments have received relatively little discussion. And finally, as we shall see, understanding these arguments and considering the best way for A-theorists to respond to them teaches us a lot about the A-theory itself. Therefore the project of this paper is not simply the negative project of showing why certain arguments against the A-theory do not work; it is also the positive project of showing how the A-theory *does* work.

2. MCTAGGART'S ARGUMENT

The best known purely philosophical argument against the A-theory is due to J. M. E. McTaggart (1908, 1927). The argument forms part of McTaggart's wider argument for the conclusion that *time does not exist*, the basic form of which is as follows:

- (1) There is time \supset there is change over time
- (2) There is change over time \supset the instants of time form an A-series
- (3) The instants do not form an A-series
- (4) There is no change over time (from 2 and 3)
- (5) There is no time (from 4 and 1)

The part of this argument that has received most attention is the argument for premise (3), the claim that the instants of time do not form an 'A-series': in other words, a series of instants each of which is either absolutely past, present or future. Given that the instants of time form an A-series exactly if the A-theory is true, if this argument is successful it shows that the A-theory is false. From now on I will use 'McTaggart's argument' to refer specifically to McTaggart's argument for premise (3). Although McTaggart's argument has received a great deal of attention over the years, there has never been a firm consensus concerning whether it is successful: some have dismissed it as a 'howler' (Broad 1938, 309-17 and Sider 2001, 35, n. 19), whereas others have taken it to

holds that the B-theory cannot capture the 'intuitive picture', from which it follows that the A-theory cannot either. In any case, I think A-theorists should resist the conclusion that their theory of passage cannot capture the 'intuitive picture'.

successfully establish the falsehood of the A-theory (Dummett 1960, Mellor 1998, 72-8).¹⁴

McTaggart's argument is supposed to show, as McTaggart puts it, that A-theorists 'cannot escape from contradiction': that is, they cannot avoid the conclusion that the A-theory implies a falsehood, and is therefore false. The argument proceeds roughly as follows.¹⁵ Call the event of your reading this sentence 'E'. If the A-theory is true then

(6) E is absolutely present¹⁶

McTaggart (1927) writes:

If M [some event] is past, it has been present and future. If it is future, it will be present and past. If it is present, it has been future and will be past. *Thus all three characteristics belong to each event.* (McTaggart 1927, 20; my emphasis)

In other words, McTaggart argues that (6) implies that

(7) E was future, is present and will be past

from which it follows that

(8) E is past, present and future

However

(9) Necessarily, nothing is past, present and future¹⁷

Therefore

(10) (7) implies a falsehood – namely, (8) – and is therefore false

¹⁴ I think it is neither a 'howler' nor that it shows that the A-theory is false.

¹⁵ This reconstruction is based on McTaggart's later 1927 version of his argument. I have followed McTaggart's statement of the argument as closely as possible.

¹⁶ From now on I omit the 'absolutely' in 'absolutely present', except when it is required for clarity or emphasis.

¹⁷ There is a sense in which something can be past, present and future: for example, I am past, present and future in the sense that I am *located at* past, present and future instants. In the context of McTaggart's argument, 'is past', 'is present' and 'is future' should be read as meaning *is wholly past*, *is wholly present* and *is wholly future*, where something is (e.g.) wholly past if its *only* location in reality is in the past. Alternatively, one can think of the argument as concerned only with instantaneous events or with instants of time.

It follows that the A-theory is false. (Note that this argument does not essentially rely on there being such things as *events*. For example, call the instant it is now 'Instanto'. An analogous version of the above argument begins with the premise that

(11) Instanto is present

and concludes that Instanto is past, present, and future. Therefore A-theorists who are anti-realists about events are also vulnerable to McTaggart's argument.)

The key movement in the above argument is from premise (7) to premise (8). The question is: *why* does McTaggart think that (7) implies (8)? I take the following to be a plausible reconstruction of McTaggart's thought: first, McTaggart accepts what we would call a 'reductive analysis' of the temporal operators 'it is (now) the case that', 'it was the case that' and 'it will be the case that'. He writes: 'But what is meant by "has been" and "will be"? And what is meant by "is", when, as here, it is used with a temporal meaning, and not simply for predication?' He answers:

When we say that X has been Y, we are asserting X to be Y at a moment of past time. When we say that X will be Y, we are asserting X to be Y at a moment of future time. When we say that X is Y (in the temporal sense of 'is'), we are asserting X to be Y at a moment of present time. (McTaggart 1927, 21)

In other words, McTaggart accepts the following analyses:

N: It is (now) the case that ϕ iff at some present instant, ϕ

P: It was the case that ϕ iff at some instant t earlier than the present instant, ϕ

F: It will be the case that ϕ iff at some instant t later than the present instant, ϕ

Of course, these principles alone cannot bridge the gap between premises (7) and (8); they merely provide an analysis of the temporal operators. Therefore McTaggart must also accept something like the following principle:

REDUNDANCY: For all instants t : at t , x is past [present, future]
 $\supset x$ is past [present, future]¹⁸

In other words, if something (e.g. an instant or event) is past *at an instant* then it is past *simpliciter*, if it present *at an instant* then it is present *simpliciter*, and if it is future *at an instant* then it is future *simpliciter*. In short, the temporal operator 'at t ' is redundant when attached to statements of temporal predication.

It is easy to see that (7) implies (8) given the N, P and F principles and Redundancy. Given the N, P and F principles, (7) implies that E is future at some past instant, present at some present instant, and past at some future instant. Given Redundancy, it follows that E is past, present and future. But why does McTaggart accept Redundancy? After all, McTaggart never explicitly endorses the principle: his only *explicit* commitment is to the N, P and F principles. Moreover, there is no sense in which the principle is *obvious* or *intuitive*. I believe the most plausible explanation is that McTaggart is lead to Redundancy via realism about instants. First, it is clear that McTaggart is a realist about instants: he accepts the N, P and F principles, and writes that 'existence is much a predicate of the future and past as of the present' (McTaggart 1927, 7, n.1). This naturally leads McTaggart the thought that time is like space, and in particular, that instants of time are analogous to spatial locations. And given realism about instants there *is* a sense in which instants are like spatial locations: in particular, both instants and spatial locations are things *at which* events occur. However, McTaggart then moves from the thought that instants are like spatial locations *in some respects* (such as that mentioned above) to the thought that instants are like spatial locations *in this respect*: expressions of the form 'at t ' display the same logical behaviour as expressions of the form 'at location l ', or 'in place p '. For example, consider the sentence

(12) In Australia, there are black swans

The expression 'In Australia' in the above sentence simply serves to restrict the scope of the relevant quantifier ('there are') to Australia. Furthermore, one can infer from (12) that *there are black swans*.¹⁹ If

¹⁸ Redundancy is really three principles, one for each of the temporal predicates 'past', 'present' and 'future'. However, for ease of exposition I treat it as a single principle. Moreover, note that the 'is' in this principle is to be read as equivalent to a standard predicate logical predication.

¹⁹ Of course, statements of the form 'In Australia, ϕ ' do not invariably imply ϕ ; to use an example of Lewis' (1986, 5), the sentence 'In Australia, all swans are black' does not imply that all swans are black.

expressions of the form 'at t ' invariably displayed the same logical behaviour as the expression 'In Australia' in (12), one could always infer ' x is past [present, future]' from sentences of the form 'At t , x is past [present, future]'; in other words, Redundancy would be true. Thus McTaggart goes from realism about instants to thinking of time as being like space, and, via something like the line of thought described above, to an (implicit) acceptance of Redundancy.²⁰

How should A-theorists respond to McTaggart's argument? McTaggart anticipates that A-theorists will argue that what follows from (7) is not (8) but

(13) It was the case that E is future, will be present, and will be future, it is the case that E was future, is present, and will be past, and it will be the case that E is past, was present, and was future

However, given the N, P, and F principles (13) implies that

(14) At some past instant E is future, will be present and will be past, at some present instant E was future, is present and will be past, and at some future instant E is past, was present and was future

which given Redundancy implies again that

(8) E is past, present, and future

McTaggart assumes A-theorists will respond to this further argument as they did to the initial argument, by arguing that what follows from (13) is not (14) but some even more complex tensed claim p . However, McTaggart will then apply the N, P and F principles to p and show that p implies (8) given Redundancy. A-theorists will then respond to *this* argument as they did to the first two arguments, and so on. As McTaggart points out, this dialectic could in principle continue indefinitely. On those grounds, McTaggart concludes that A-theorists can 'never escape from contradiction':

Such an infinity is vicious. The attribution of the characteristics past, present and future to the terms of any series [i.e. events or instants of time] leads to a contradiction, unless it is specified

²⁰ I believe that something very like this line of thought can be found in more recent versions of McTaggart's argument defended by Bourne (2006) and Smith (2011).

that they have them successively. This means, as we have seen, that they have them in relation to terms specified as past, present, and future. These again, to avoid a like contradiction, must in turn be specified as past, present and future. And, since this continues infinitely, the first set of terms never escapes from contradiction at all. (McTaggart 1927, 22)

There are two steps A-theorists must take in order to respond to McTaggart's argument: first, they must provide a principled reason for rejecting the claim that (7) implies (8); second, they must show that having blocked the move from (7) to (8) they have 'escaped from contradiction'. Let us begin with the first step. As we saw above, the route from (7) to (8) plausibly runs through the N, P and F principles and Redundancy. Therefore rejecting either of these premises (for convenience I treat the N, P and F principles as a single premise) provides the A-theorist with a principled reason for rejecting the claim that (7) implies (8).

Some A-theorists – in particular, some *presentists*, according to whom *everything is present* – reject the N, P and F principles.²¹ For example, Tallant (2009) and Sanson and Caplan (2010) reject the existence of past and future instants, and hold that the temporal operators 'it was the case that' and 'it will be the case that' are primitive and unanalysable. According to them, the most metaphysically perspicuous truth-condition for a claim of the form 'It was the case that ϕ ' (for example) is *that it was the case that ϕ* ; there is simply nothing more to say about what makes such 'tensed' claims true. As Tallant and Ingram (forthcoming) put it:

Nefarious presentists [such as Tallant]... look to use the language of truth-maker theory, without paying any price on the coin of ontology. They say things like: "<Caesar crossed the Rubicon> is made true by the fact that Caesar did cross the Rubicon." But when pressed to tell us what 'Caesar did cross the Rubicon' consists in, they demur. "Do not talk of existing truth-makers," they tell us. "Rather," they say, "<Caesar crossed the Rubicon> is true because Caesar crossed the Rubicon. This is a tensed truth about the world, and there is no explanation for its truth to be given in terms of ontology." *In perfectly general terms, all that nefarious presentists think we can say is that <it was the case that p> is*

²¹ See Deasy (forthcoming, *Noûs*) for some doubts about this way of characterising presentism.

true, because it was the case that p. (Tallant and Ingram, forthcoming, 1; second emphasis mine)

A-theorists who reject realism about instants obviously have a good reason for rejecting the N, P and F principles.²² However, as mentioned above, many A-theorists *are* realists about instants. For example, according to some defenders of the *moving spotlight theory* instants are just what B-theorists claim they are, namely, maximal instantaneous slices of four-dimensional reality.²³ On the other hand, presentists such as Markosian (2004) and Crisp (2007) defend a *propositional view of instants*, according to which instants are abstract objects analogous to stories or plans. In particular, according to the propositional view instants are *complete, consistent, temporal propositions*: consistent propositions that are sometimes true and such that for any proposition *p*, either *p* or not-*p* is true at them. On this view, the *present* instant is just the *true* instant, and what it is for ϕ to be the case *at a time* is just for there to be some instant-proposition which implies ϕ .

Let us call A-theorists who are realists about instants (whether they identify instants with slices of spacetime or with propositions) *block A-theorists*. Whether or not block A-theorists accept the N, P and F principles, they have very good reason to reject Redundancy.²⁴ As we saw above, Redundancy follows naturally from the idea that given realism about instants, expressions of the form ‘at *t*’ function like the expression ‘In Australia’ in statements such as ‘In Australia, there are black swans’. However, block A-theorists do not treat expressions of the form ‘at *t*’ like the expression ‘In Australia’. Rather, they hold that expressions of the form ‘at *t*’ function like the expression ‘In *Return of the Jedi*’ in the sentence

(15) ‘In *Return of the Jedi*, there are Ewoks’

²² I take it the same goes for *adverbialists* such as Lowe (1987), according to whom the instantiation relation between objects/events and properties is itself ‘tensed’ (so that, for example, the fact that I was a boy is most perspicuously expressed as the fact of my *having been* a boy).

²³ See, for example, Deasy (2015).

²⁴ Some block A-theorists – in particular, moving spotlighters according to whom instants are slices of spacetime and there is exactly one temporary fundamental property of presentness - have the theoretical resources to accept the N, P and F principles. On the other hand, presentists who defend the propositional view of instants cannot accept the N, P and F principles on pain of circularity, because as we saw above, they define ‘instant’ using the temporal operator ‘sometimes’, defined as follows: $\text{SOMETIMES}(\phi) \leftrightarrow \phi \vee \text{WAS}(\phi) \vee \text{WILL BE}(\phi)$.

The expression ‘In *Return of the Jedi*’ in (15) functions as a sentence operator, so the ‘logical form’ of (15) is something like

(16) ‘According to the film *Return of the Jedi* (there are Ewoks)’

It clearly does *not* follow from (16) that there are Ewoks. Why? Because *Return of the Jedi* isn’t true! Similarly, according to block A-theorists one cannot infer that the Battle of Hastings is present from the sentence

(17) ‘At 1066, the Battle of Hastings is present’

Why? Because 1066 is not present! More generally, for block A-theorists statements of the form ‘at t , ϕ ’ imply ϕ *only when t is present*, just as statements of the form ‘according to story s , ϕ ’ imply ϕ *only when s is true*. Thus block A-theorists reject Redundancy.²⁵

We have seen that A-theorists can provide a principled reason for rejecting the claim that

(7) E was future, is present and will be past

implies

(8) E is past, present and future

by rejecting the N, P and F principles or Redundancy (or both).²⁶ However, McTaggart’s argument demands more: as we saw above, McTaggart claims that A-theorists cannot ‘escape from contradiction’ merely by blocking the move from (7) to (8). In other words, McTaggart argues that *even if* A-theorists can provide a principled reason for rejecting the claim that (7) implies (8) they *cannot avoid* accepting (8). Why does McTaggart think this? As I understand it, the McTaggart’s idea is as follows: call a ‘cycle’ of McTaggart’s argument an argument from a premise that the A-theorist accepts such as (7) or

(13) It was the case that E is future, will be present and will be past, it is the case that E was future, is present and will be past, and it will be the case that E is past, was present and was future

²⁵ This is not to suggest that block A-theorists must hold that instants are abstract objects; as we saw above, some block A-theorists identify instants with slices of spacetime.

²⁶ In particular, block A-theorists who accept the propositional view of instants such as Markosian (2004) and Crisp (2007) reject both.

to (8), which the A-theorist rejects. Now consider the first cycle of McTaggart's argument, from (7) to (8). In order to avoid accepting (8), the A-theorist will reject either the N, P and F principles or Redundancy (or both). However, *in order to do this* the A-theorist must accept claim (13), which is a premise of the second cycle (i.e. the argument from 13 to 8). And in order to avoid the conclusion of *this* cycle, the A-theorist must accept some further tensed claim p which is a premise of the third cycle; and so on. More generally, the A-theorist's means of avoiding the conclusion of any given cycle of McTaggart's argument *automatically generates the next cycle*. In that sense, A-theorists cannot avoid accepting (8): they cannot 'escape from contradiction.' This idea can be usefully illustrated by means of a metaphor: think of any given cycle of McTaggart's argument as a prison for the A-theorist. McTaggart's argument is that the only way for A-theorists to escape from prison (i.e. to avoid the conclusion of a given cycle) is to accept a claim which puts them straight back into prison (i.e. which immediately gives rise to another cycle). Thus the A-theorist never actually escapes from prison: she merely moves from one prison (i.e. one cycle) to another.

A-theorists should reject the above characterisation of their dialectic with McTaggart. In particular, they should reject the claim that their means of avoiding the conclusion of any given cycle of McTaggart's argument somehow 'traps' them by 'automatically generating' the next cycle, so that they 'cannot avoid' accepting (8). Rather, A-theorists should characterise the dialectic as follows: consider the argument from (7) to (8). As we saw above, in order to avoid accepting (8), the A-theorist will naturally reject either the N, P and F principles or Redundancy (or both). Having done so, the A-theorist has avoided accepting a claim that is inconsistent with the fact that necessarily, nothing is past, present, and future. Therefore the A-theorist has 'escaped from contradiction'. Moreover, she has done so in exactly the way *any* theorist would when faced with a valid argument for a conclusion that is inconsistent with some principle she is unwilling to give up: she has rejected one of the premises of the argument. But what about the *next* cycle of McTaggart's argument? In responding to the argument from (7) to (8), has the A-theorist not accepted (13), the first premise of the argument from (13) to (8)? No! As we have just seen, the A-theorist does not respond to the argument from (7) to (8) *by* accepting (13); she does so by rejecting one or more of McTaggart's premises. As it happens, the A-theorist *does* accept (13), as well as many other 'tensed' claims which follow from (7) by standard tense logic. And of course McTaggart is free to generate further arguments against the A-theory by applying his premises to *those* tensed claims. However, the A-

theorist's response will be the same in each case: she will reject at least one of McTaggart's premises. Indeed, having rejected at least one of McTaggart's premises, it is difficult to see why the A-theorist should continue to engage in the dialectic with McTaggart! To return to the prison metaphor: the A-theorist escapes from prison (i.e. avoids the conclusion of a given cycle) by rejecting one of McTaggart's premises; and having escaped, she is free. McTaggart then invites her to step into *another* prison (i.e. another cycle of the argument) from which both she and McTaggart know she has a means of escape (i.e. by rejecting whichever premise she rejected the first time). It is difficult to see why she should do so: she already knows how to get out! In short: the in-principle infinite dialectic McTaggart describes is not one in which the A-theorist 'cannot escape contradiction', but rather one in which McTaggart repeatedly appeals to premises his opponent has already rejected (i.e. the N, P and F principles or Redundancy). In that sense, McTaggart's argument looks less like a *trap* and more like a *mistake*.

2. FINE'S ARGUMENT

Fine (2005) writes:

Suppose we ask: given a complete tenseless description of reality, then what does he [the A-theorist] need to add to the description to render it complete by its own lights? The answer is that he need add nothing beyond the fact that a given time *t* is present, since everything else of tense-theoretic interest will follow from this fact and the tenseless facts. But then how could this solitary 'dynamic' fact, in addition to the static facts that the anti-realist is willing to accept, be sufficient to account for the passage of time? [The A-theorist's] conception of temporal reality ... is as static or block-like as the anti-realist's [i.e. B-theorist's], the only difference lying in the fact that his block has a privileged centre. Even if presentness is allowed to shed its light upon the world, there is nothing in his metaphysics to prevent that light being 'frozen' on a particular moment of time. (Fine 2005, 287)

Fine's argument is relatively straightforward: A-theorists who are realists about instants – that is, block A-theorists – defend a picture of reality according to which there are many permanently related instants of time exactly one of which is *present*. But how do block A-theorists guarantee *change* in which instant is present? In other words, what distinguishes the block A-theory from the 'frozen' A-theory, according to which there are many permanently related instants of time exactly

one of which is *always* present? Fine answers: nothing! Of course, block A-theorists will naturally respond to this argument by pointing out that there *is* something in their metaphysics that prevents the ‘light of presentness’ being ‘frozen’ on a particular instant, namely, the fact that not only is there a present instant, there are instants that *were* and *will be* present.²⁷ However, Fine is prepared for this response; he writes:

However, the future presentness of $t+$ amounts to no more than t being present and $t+$ being later than t , and... the past presentness of $t-$ amounts to no more than t being present and $t-$ being earlier than t . But then how can the passage of time be seen to rest on the fact that a given time is present and that various other times are either earlier or later than that time? (Fine 2005, 287)

In other words, Fine assumes that block A-theorists accept the P and F principles:

P: It was the case that ϕ iff at some instant t earlier than the present instant, ϕ

F: It will be the case that ϕ iff at some instant t later than the present instant, ϕ

Given the P and F principles, the fact that some instants were and will be present amounts to no more than (or ‘is nothing over and above’) the fact that some instants are earlier and later than the present instant. However (Fine argues), the fact that some instants are earlier and later than the present instant is consistent with the claim that presentness is ‘frozen’ on a particular instant. Therefore block A-theorists *still* cannot distinguish their purportedly ‘dynamic’ view from a ‘frozen’ A-theory according to which a particular instant is eternally present.

Fine’s argument presents a serious challenge to the block A-theory. But, what about ‘presentist’ A-theorists such as Tallant (2009) and Sanson and Caplan (2010), who reject realism about instants? As we shall see below, a version of Fine’s argument can also be raised against versions of the A-theory that reject realism about instants. Moreover, I believe Fine’s argument gives relatively precise expression to a common feeling of dissatisfaction among both B-theorists and some neutral observers of the metaphysics of time with the general A-theoretic claim that the A-theory but not the B-theory provides a metaphysics of ‘real change’ or

²⁷ I assume, as Fine does, that if there are instants that were and will be present then the present instant is not always present.

'temporal passage'. However, let us begin with Fine's argument as stated. How should block A-theorists respond to Fine's challenge? The first point to note is that it is *not* the case (as Fine seems to suggest) that all block A-theorists accept the P and F principles. In particular, block A-theorists who endorse the propositional view of instants such as Markosian (2004) and Crisp (2007) cannot accept the P and F principles on pain of circularity: as we saw above, on the propositional view of instants an *instant of time* is just a maximal, consistent proposition that is *sometimes* – in other words, *is, was, or will be* – true. Therefore A-theorists who accept the propositional view of instants will naturally respond to Fine's argument by pointing out that on their view, the fact that there are instants that were and will be present *does not* 'rest on the fact that a given time is present and that various other times are either earlier or later than that time'; rather, the fact that there are instants that were and will be present is an unanalysable or 'fundamental' fact. And (they will argue) this clearly distinguishes their view from the 'frozen' A-theory.

What about block A-theorists who *do* accept the P and F principles?²⁸ Call such theorists *reductionist block A-theorists*. In contrast to A-theorists who endorse the propositional view of instants, the reductionist block A-theorist's *basic* or *fundamental* picture of reality is exactly the same as the 'frozen' A-theorist's. Does that mean that reductionist block A-theorists cannot distinguish their view from the 'frozen' A-theory? No! According to the 'frozen' A-theory, the present instant is always present. However, given the P and F principles, it follows from the fact that there are instants earlier and later than the present instant that there are instants that were and will be present; and if some instants were and will be present, it is *not* the case that the present instant is always present! Thus reductionist block A-theorists can also easily distinguish their view from the 'frozen' A-theory. More generally, reductionist block A-theorists can respond to Fine's argument by pointing out that even though the P and F principles express metaphysical analyses of 'it was the case that' and 'it will be the case that', the analyses remain biconditionals: *they still cut both ways*. Therefore even if the reductionist block A-theorist has the same *basic* picture of reality as the 'frozen' A-theorist, given the P and F principles her view is inconsistent with the 'frozen' A-theory.

A defender of Fine's argument might respond to the above point as follows: of course Fine is aware that the P and F principles 'cut both

²⁸ Such as Deasy (2015).

ways', and therefore that given the reductionist block A-theory there are instants that were and will be present. He is not arguing that reductionist block A-theorists *are really* 'frozen' A-theorists. Rather, he is presenting reductionist block A-theorists with a challenge: show how it can be sufficient for change and the passage of time that there are instants that were and will be present *when these notions are analysed in terms of the permanent relations to the present instant*. However, the reductionist block A-theorist can simply respond to this challenge with a counter-challenge: show why it *isn't* sufficient for change and the passage of time that there are instants that were and will be present when these notions are analysed in terms of the permanent relations to the present instant. After all, as we saw in §1 above, for A-theorists it is true that *things change* and *time passes* exactly if there are temporary propositions (propositions that are sometimes true and sometimes false), and the fact that 1066 is earlier than the present instant (for example) is a temporary proposition; it was false when 1065 was present. Thus the reductionist block A-theorist can show that *on the most natural A-theoretic account of change and passage*, her view is one according to which things change and time passes.

The reductionist block A-theorist can make a further point: Fine's argument suggests that it is not sufficient for change and the passage of time that there are instants that were and will be present, when these notions are analysed in terms of permanent relations to the present instant. This implies that what is required for change and passage is that the fact that there are instants that were and will be present be among the *metaphysically basic facts*, as it is for A-theorists who accept the propositional view of instants. However, this raises the question: why is it sufficient for change and passage that the fact that there are instants that were and will be present is among the metaphysically basic facts? Couldn't the metaphysically basic facts – *whatever* they are – be 'frozen' as well, so that the present instant is *always* present? In that case, there is a version of Fine's argument that applies to *all* A-theorists, including block A-theorists who accept the propositional view of instants and A-theorists who reject realism about instants. For example, consider the sort of presentism defended by Tallant (2009) and Sanson and Caplan (2010), according to which facts about what *was* and what *will be* the case – for example, that such-and-such events *occurred* and such-and-such events *will occur* – are metaphysically basic. Inspired by Fine's original argument against the reductive block A-theory, one might argue as follows:

How can these 'dynamic' facts be sufficient to account for the passage of time? The presentist's conception of temporal reality is as static or block-like as the B-theorist's, the only difference lying in the fact that there are facts about what was and will be the case. Even if these facts are among the metaphysically basic facts, there is nothing in the presentist's metaphysics to prevent time being 'frozen' so that nothing ever changes. In other words, how does the presentist who rejects realism about instants distinguish herself from the 'frozen' presentist? How can it be sufficient for change and the passage of time that facts about what was and will be the case are among the metaphysically basic facts?

This 'challenge' to the presentist is, of course, absurd. But *why* is it absurd? I suggest the reason is not simply that there are certain facts about what was and will be the case among the metaphysically basic facts, but because *there are* such facts. The presentist who rejects realism about instants distinguishes herself from the 'frozen' presentist by pointing out that on her view an event occurred that is no longer occurring, and some event that is not occurring will occur.²⁹ If some event that is not occurring will occur, then things change and time passes! Similarly, block A-theorists – *whether they are reductionists about the temporal operators or not* – can distinguish their views from the 'frozen' A-theory by pointing out that on their views, there are instants that were and will be present. If there are instants that were and will be present, then the present instant is *not* always present.

Fine's argument against the reductionist block A-theory is reminiscent of Kripke's (1972, 45) famous 'Humphrey' objection to Lewis's (1968) modal counterpart theory, on at least one natural interpretation of that objection.³⁰ According to Lewis's theory, the fact that some *x* is a *possible F* amounts to nothing more than the fact that *x* has a counterpart that is *F*, where a *counterpart of x* is an object that is relevantly similar to *x* and which is located at some other possible world. Kripke objects to Lewis's theory as follows: Hubert Humphrey cares about whether he could win the 1968 presidential election, but he does not care about whether an object that is relevantly similar to him and which is located at some other possible world wins the election. One natural interpretation of

²⁹ Of course, she will have to state these facts in a way that avoids commitment to the existence of merely past and future events, assuming that she holds that events have temporary existence. But that is her business. See Zimmerman (2011, §1) for an argument that presentists should accept that some events have permanent existence, even if they only occur temporarily.

³⁰ That is not to deny that there are other relatively natural and perhaps more charitable interpretations of Kripke's argument.

Kripke's objection is as follows: counterpart theorists hold that the fact that some x is a possible F amounts to no more than the fact that x has a counterpart that is F ; but the fact that x has a counterpart that is F is consistent with the thesis that x is *not* a possible F . The correct response to Kripke's objection is analogous to the reductionist block A-theorist's initial response to Fine's argument: to point out that given the counterpart theoretic analysis of *possible F*, the fact that some x has a counterpart that is F *implies that* x is a possible F . In other words, counterpart theorists can respond to Kripke's objection by drawing attention to the fact that the counterpart-theoretic analysis is a biconditional, and therefore *cuts both ways*.

Fine's objection to the reductionist block A-theory, like Kripke's objection to modal counterpart theory, can be seen as a failure to get to grips with a certain kind of analysis. However, perhaps there is more charitable interpretation of Kripke's and Fine's objections. In particular, some theorists appear to accept a principle along the following lines:

PRESERVATION: Metaphysical analyses must preserve enough of the original phenomenon

Something like preservation can be detected in the common reaction to Lewis's (1986) *modal realism*, namely, that modal realism is false because how things are at other concrete, spatiotemporally disconnected universes has nothing to do with how things *must* and *could* be; in other words, that the analysis fails because there is not enough of the original phenomenon – namely, *modality* – in the 'Lewisian Pluriverse'. If the principle of preservation could be expressed more perspicuously and independently motivated, then perhaps Kripke's and Fine's objections could be shown to have more substance. However, even if the preservation principle *could* be independently motivated, it is not at all clear that the P and F principles would fail to meet it: after all, it seems perfectly natural to think that what happens in the past has a great deal to do with *did* happen, and that what happens in the future has a great deal to do with what *will* happen. In short, the P and F principles *do* seem to 'preserve enough of the original phenomenon'.³¹

³¹ A final point: none of the above should be taken to suggest that the idea of a 'frozen' A-theory is *unintelligible*. The point is just that any version of the A-theory according to which there are instants that *were* or *will be* present – even if this fact reduces to the fact that there are instants earlier or later than the present – is inconsistent with the 'frozen' A-theory. In particular, from the perspective of a reductionist block A-theorist, one cannot be a 'frozen' A-theorist according to whom there are past and future instants.

3. DENG'S ARGUMENT

Deng (2012) attributes the following argument to Fine (2005):³² There is a certain intuitive picture of the passage of time that the block A-theory fails to capture. The B-theory *also* fails to capture this picture. Therefore there is no substantial difference between the block A-theory and the B-theory when it comes to capturing the intuitive picture of passage. Note that Deng's primary aim in giving this argument is not to attack the block A-theory, but to defend the B-theory. However, block A-theorists should still treat the argument as an argument *against* their view. After all, one of the primary motivations for being an A-theorist – and therefore complicating the otherwise successful, well-established, and elegant picture of fundamental reality derived from spacetime physics – is to provide an intuitive account of the passage of time. For the block A-theorist to accept the conclusion that there is no substantial difference between their view and the B-theory when it comes to capturing the intuitive picture of passage is tantamount to rejecting the A-theory.

Let us examine Deng's argument in detail. The key premise of the argument is that the block A-theory fails to capture 'the intuitive picture of passage'. But what *is* the intuitive picture of passage? Deng writes:

When we picture this kind of process [the passage of time], we imagine more than the tensed facts that obtain at present, to the effect that certain other times were present and others will be. The act of imagination itself unfolds over time; first we imagine a certain time being present and certain others being past and future, *but then we also imagine the next time being present and certain others being past and future*. That is, first we imagine just one set of tensed facts holding, but shortly after that, we also imagine a different set of tensed facts holding, which privilege a different time. (Deng 2012, 8)

According to Deng, the intuitive picture of passage consists in a temporally-extended imaginative episode in which different instants of time are successively imagined to be absolutely present. But how does the block A-theory fail to 'capture' this picture? After all, according to block A-theorists, different instants are successively present; as we saw in connection with Fine's argument above, no block A-theorist denies

³² What follows is my reconstruction of the argument. I will not address the question of whether this is an accurate interpretation of Fine (2005).

that as well as there being a present instant, there are instants that *were* and *will be* present. The problem, according to Deng, is that block A-theorists fail to grant sufficient metaphysical weight to the *former presentness* of past instants and the *future presentness* of future instants (Deng 2012, 8; my emphasis):

First we imagine one set of tensed facts holding, but shortly after that, we also imagine a different set of tensed facts holding... *it is this next collection of tensed facts that is left out of any given standard realist [i.e. block A-theoretic] description.*

It is easier to understand Deng's argument if we imagine that the universe began one moment ago and will end one moment hence. Call the present instant T , the first moment of time $T-$, and the last moment of time $T+$. Here is a block A-theoretic description of the world (where 'WAS' is read 'it was the case that' and 'WILL' is read 'it will be the case that'):

PRESENT: T is present & WAS($T-$ present) & WILL($T+$ is present)

Next, here is a block A-theoretic description of how the world *was*, at the first moment of time:

PAST: WILL(T is present) & $T-$ is present & WILL($T+$ is present)

Finally, here is how the world *will be*, at the last moment of time:

FUTURE: WAS(T is present) & WAS($T-$ is present) & $T+$ is present

Now we can restate Deng's argument as follows: the intuitive picture of passage consists in the temporally extended event of imagining that each of Present, Past and Future is successively true. According to the block A-theoretic description of reality, Present is true, Past was true but is no longer, and Future will be true but is not yet. However, in order to capture the intuitive picture, it is not enough to merely grant former truth to Past and future truth to Future; more needs to be done. Therefore the block A-theory fails to capture the intuitive picture of passage.

Suppose we follow Deng and allow that granting former truth to Past and future truth to Future is not sufficient to capture the intuitive picture of passage. A natural question is: what *does* it take to succeed in capturing the intuitive picture? Assigning truth *simpliciter* to both Past

and Future would simply result in a contradictory theory, according to which e.g. T is present and not present (remember that presentness is an instantaneous property, and therefore such that if something had or will have it, it doesn't have it). Perhaps Fine's (2005) 'non-standard realist' theories of time – *fragmentalism* and *external relativism* – might be thought to succeed where the standard block A-theory fails. For example, using a primitive 'fundamentality' operator, the fragmentalist can claim that each of Past, Present and Future is fundamentally true, but also add that it is not the case that, fundamentally, Past, Present and Future are true. In that way, the fragmentalist can grant something in addition to merely former and future truth to Past and Future (that is, *fundamental* truth) without engaging in a contradiction.³³ An alternative and even more radical approach would be to reject the traditional assumption that theories of time must be static representations that do not themselves change over time. Instead, one could argue that given the nature of time – given that the essence of time is *change* – theories of time must *themselves* be unfolding temporally-extended processes, and therefore cannot be stated once and for all at a given moment.³⁴ For example, on this view the block A-theory would be stated by uttering Past at $T-$, Present at T , and Future at $T+$. Although Past and Future would both be ascribed truth *simpliciter*, no contradiction would arise, as they would not be ascribed truth *simpliciter* at the same point in the temporally-extended theory. A version of the block A-theory which did not merely describe change but *involved* change in this way might be said to 'capture' the intuitive picture of passage in the relevant sense.

In fact, block A-theorists are *not* forced by Deng's argument to endorse Fine's 'non-standard realism' or strange temporally-extended theories. There are two points block A-theorists can make in response to Deng's argument. First, Deng never explains *why* the ascription of former truth to Past and future truth to Future is not sufficient to capture the intuitive picture of passage. For example, consider the intuitive picture of the passage of *my life*. This might consist in imagining my birth, and then my being a child, and then my being as I am now, and then my being an elderly person, and then my death. Suppose you ask me to

³³ Deng (2012, 9-11) actually rejects both of Fine's 'non-standard realist' theories. Indeed, as mentioned above, Deng's (2012, 15) final view is that *no* theory of time succeeds in capturing the intuitive picture. What we are concerned with here, however, is the argument that the *block A-theory* fails to do so.

³⁴ This would require rejecting the view that theories are *models*, and therefore abstract objects which do not 'unfold' in time. Furthermore, note that the idea here is not simply that theories of time must have temporary *contents*; rather, it is that theories of time *have temporal extent*.

provide a simple account that captures this intuitive picture, and I provide something like the following: I was born, and after that I was a child, and now I am an adult, and some day I will be an elderly person, and then I will die. It would be very strange for you to object that my account does not grant sufficient weight to the facts of my birth and death (for example). After all, my account clearly states *that I was born* and *that I will die*. Unless you can provide some good explanation of why I haven't done enough to capture the intuitive picture of my life, then there is no obvious reason for me to revise my account.

Second, there are some perfectly good senses of 'capture' in which the block A-theory *can* be said to capture the intuitive picture of passage. For example, the intuitive picture of passage – the temporally extended imaginative episode described by Deng – clearly *embodies* or *represents* a view according to which some instant is present and other instants were or will be present. However, there is a perfectly natural sense of 'capture' according to which if a picture *P* embodies or represents a theory *T* then *T captures P*. For example, it is common to represent the B-theory with a picture of reality as a 'static' four-dimensional block; and it is equally common to say that the B-theory *captures* the picture of the universe as a 'static' four-dimensional block. In that sense, the block A-theory does capture the intuitive picture of passage. Furthermore, notice that the block A-theorist's *beliefs about which time is absolutely present* will, from the perspective of the intuitive picture of passage, evolve over time in a perfectly appropriate manner: at *T*- the block A-theorist believes Past, at *T* the block A-theorist believes Present, and at *T*+ the block A-theorist believes Future. Indeed, the only difference between the block A-theorist's evolving beliefs about the temporal distribution of presentness and the intuitive picture of passage is that the intuitive picture of passage involves *imagination* rather than *belief*. It follows that were the block A-theorist to *imagine* the passage of time, what she would imagine is exactly the intuitive picture of passage! In that sense, the block A-theory can again be said to successfully 'capture' the intuitive picture of passage.

4. CONCLUSION

In this paper I have described three important philosophical arguments against the A-theory, and showed that in each case, it is a relatively straightforward matter for A-theorists to avoid the relevant conclusion. Thus A-theorists can take some solace from the fact that they can resist some of the principal *philosophical* arguments against their view. The real problem for A-theorists – the problem they should focus on – is the

fact that their view seems to be at odds with contemporary spacetime physics.³⁵

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³⁵ This paper has benefited from very helpful comments from many people, including *****

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