

McTaggart, the flow of time, and the Disanalogy between Time and Space



GAL YEHEZKEL

Abstract

McTaggart's negative thesis in his proof for the unreality of time, which contends that the A-series is contradictory, is still today upheld as a proof of the unreality of the properties of past, present, and future, and of the 'flow of time'. In my paper, I defend the possibility of a complete and consistent description of the A-series, thus refuting McTaggart's negative thesis. I show that the failure to acknowledge the possibility of such a description is due to an ambiguity in natural language. Once this ambiguity is clarified, and in light of the disanalogy between time and space, the usual description of the A-series, 'Event *e* was future, is present, and will be past', is shown to be a successful description of the change in the temporal A-properties (the 'flow of time').

1

Almost 100 years after the publication of McTaggart's proof of the unreality of Time, philosophers are still debating the implications of his argument [8].¹ McTaggart's proof of the unreality of time is based on two main premises. The first ('the positive thesis') is that the A-series, that is, the series of locations of events running from the past through the present to the future, is essential for time. The second ('the negative thesis') is that the A-series involves a contradiction. Although philosophers usually do not accept McTaggart's startling conclusion, they differ as to the premise they reject. Some philosophers, usually proponents of the A-theory of time (who believe there really are such properties as being past, present and future), reject the negative thesis; others, usually proponents of the B-theory of time (who reject the existence of such properties), reject the positive thesis. Some proponents of the B-theory of time even uphold McTaggart's negative thesis, as a proof that the A-properties of past, present, and future do not really exist, and that the

Kriterion—Journal of Philosophy (2009) 22: 32–43.

<http://www.kriterion.at>

© 2009 The author

¹However, in this paper I will refer to the latter version of his argument [9, p. 9–22].

supposed ‘flow of time’ (that is, the supposed change in those properties) is an illusion.²

Thus, McTaggart’s negative thesis became the focus of a debate as to the reality of the A-properties of past, present, and future, and of the ‘flow of time’. Although in the present discussion I will concentrate on the second premise, I believe that the two premises in McTaggart’s argument are not totally independent of each other. In fact, although these premises can be examined independently, and usually have been considered in this manner, I believe that McTaggart’s reason for upholding the first premise is also the explanation for his conclusion that the A-series involves a contradiction.³ Briefly: the reason for his insistence that the A-series is essential for time is that A-properties are needed in order to describe the supposed ‘flow of time’, which in turn is needed in order to explain the distinction between time and space. However, all attempts to describe the A-series seem to fail to yield any consistent description lacking a spatial analogy. Thus, any attempt to describe the A-series seems to involve a fatal dilemma: either the description is incomplete and therefore fails to describe any real change, as its alleged spatial analogy shows; or the description involves a contradiction. However, as I will show in this paper, once an ambiguity in natural language is clarified, and in light of the disanalogy between time and space, the conventional description of the A-series, that is, ‘Event *e* was future, is present, and will be past’, is shown to be a successful description of the change in the temporal A-properties, that is, ‘the flow of time’.

2

McTaggart bases his positive thesis, that is, that the A-properties of past, present and future are essential for time, on two distinct claims. The first claim is that change, which is essential for time, assumes a change in the truth-value of some propositions, and that these can only be propositions that ascribe the temporal A-properties of past, present and future [9, p. 11-13]. The second claim relies on the close analogy between space and time. It is the change in the temporal A-properties, according to McTaggart, that ruptures the analogy between space and time, and explains why time, and not space, is the dimension of change [9, p. 9-22].

Examining these claims more closely, however, one soon discovers

²See, for example: [10, p. 70-83]; [11].

³Dummett makes a similar point, see [2].

that the first claim actually relies on the second. For McTaggart's first claim seems clearly false: surely not only do the temporal A-properties change, but so do the analogical spatial A-properties. Not only was the tornado a future event in the past, is a present event now, and will be a past event in the future – it was also in the south, is here now, and will be in the north. Now, one might object that latter description assumes a change in the temporal A-properties, and therefore fails to show that the temporal A-properties are not essential for change. However, although this objection is sound, the main point still stands. For the positive thesis is now revealed to depend on the claim that it is the change in the temporal A-properties which explains the disanalogy between space and time, and therefore, why time is the dimension of change. As I will show in what follows, the negative thesis, according to which the A-series is contradictory, is explained by the seeming failure to formulate a consistent description of the change in the temporal A-properties, one without spatial analogy.

Turning now to McTaggart's negative thesis, despite its startling conclusion, his argument is embarrassingly simple: The properties of past, present and future are incompatible, and yet each event *e* in the A-series has at least two of them. The A-series, therefore, involves a contradiction. Now, simple as it is, it seems clearly wrong, for surely these properties are incompatible only when ascribed simultaneously to the same event. The description of the A-series, therefore, is not contradictory, for it can be said without contradiction that an event *e* was future, is present and will be past.

McTaggart's answer to this claim is not formulated with great clarity. Its main point, however, seems clear enough. To follow Dummett's influential formulation [2, p. 497–498]: This proposed description is incomplete. For all that was achieved by this suggestion is to introduce compound A-properties, that is, '...is future in the past', '...is present in the present' and 'is past in the future'. This, however, results in nine compound A-properties, several of them incompatible, such as '...is past in the present' and '...is future in the present', and yet they all apply to event *e*. All these compound A-properties should therefore be ascribed to event *e* in order for the description of the A-series to be complete; but again this is possible without contradiction only at the cost of introducing another level of complexity into our A-properties. Thus, any attempt to describe the A-series seems to involve an infinite regress, which is the result of a futile attempt to escape the following dilemma: either the description is incomplete, because it does not apply to event

e all the compound temporal A-properties that actually apply to it, or it is contradictory.

It might be objected that this dilemma relies on a dubious assumption, that is, that the description in each level will be incomplete unless it explicitly ascribes to event *e* each of the compound A-properties that can be formulated at this level of complexity. This demand seems to rely on the fact that the proposed description of the A-series, that is, ‘event *e* was future, is present and will be past’, describes the position of the A-series only at a specific point in time – namely, the time in which event *e* is present (because it ascribes to event *e* only the compound A-properties that apply to it at that time). Thus, it seems to fail to describe the change in the A-series. In the words of a recent writer:

“By saying that an event is present, was future, and will be past, we have described things as they are now. But because reality undergoes A-series change, things have not always been as they are now” [3, p. 141].

It may be answered, however, that the fact that the proposed description of the A-series describes things as they are now does not entail that it fails to describe things as they were in the past and as they will be in the future. Surely the question is not whether the description explicitly ascribes every possible compound A-property to event *e*, but whether these compound A-properties follow from this description. It must be remembered that the compound A-properties are not only structured out of the basic A-properties of past, present and future, but also follow from them. Thus, for example, that event *e* in the present is present, adds nothing to the fact that event *e* is present. Likewise, it follows from the fact that event *e* was future that in the past it was true that ‘event *e* is future in the present’. Consequently, it seems obvious that if the proposed description consistently ascribes to event *e* the basic A-properties (of past, present, and future), then all the compound A-properties that apply to event *e* at different times follow from this description; this indicates its success in describing the change in the A-series. Now, it follows from the proposition ‘*e* was future, is present and will be past’ that the proposition ‘*e* is future’ was true, ‘*e* is present’ is true, and ‘*e* is past’ will be true. This description therefore consistently ascribes to event *e* the A-properties of past, present, and future. At the same time this description is complete, because all the other compound A-properties that actually apply to event *e* at different times follow from these basic A-properties.

Still, it seems to me that advocates of McTaggart's negative thesis will not accept the proposed description as a satisfactory description of the change in the A-properties. The reason for this dissatisfaction is that this description seems unable to capture any real change in the temporal A-properties. In order to see why, recall that the change in the temporal A-properties is supposed to explain the disanalogy between time and space. However, the supposed spatial analogy of the description of the temporal A-series, 'event *e* is north in the south, present here and south in the north', seems to be true.⁴ Moreover, examining the supposed spatial analogy closely, one finds that this allegedly elaborate description simply says that event *e* is here, and does not exist everywhere (that is, that there are places in the south and north where it does not exist). Thus, the description of the supposed 'flow of time' succeeds only in describing the fact that event *e* occurs now and is limited in time. Hence, it fails to describe any change in the temporal A-properties of event *e*.

The apparent conclusion is that the supposed description of the flow of time is unsuccessful. The indication of this failure is the supposed spatial analogy of the description of the 'flow of time'. This apparent failure of the standard description is the reason, as far as I can see, for the insistence on explicitly ascribing every possible compound A-property to event *e*, in a failed attempt to describe a real change in the temporal A-properties.

3

In this section I shall show that the last conclusion is false, and that the proposed description of the A-series successfully describes a change in the temporal A-properties, which has no spatial analogy. The failure to acknowledge this fact is due to two reasons: The first is an ambiguity in natural language, which does not clearly distinguish between two forms of understanding the description of the change in the temporal A-properties, the relative and the actual. The second is a failure to recognize either a basic disanalogy between time and space, or its importance for McTaggart's argument. The disanalogy between time and space I am referring to arises from the fact that any difference in the reference of indexical expressions, which express A-properties, whether temporal or spatial, assumes that they are uttered at different times,

⁴Although he was not the first to make this claim, Taylor was the first philosopher to offer an accurate formulation of supposed spatial analogy of the 'flow of time'. See: [12, p. 607-608]. As far as I know, this supposed analogy has never been challenged before.

but not in different places (assuming they are uttered by the same subject). Although this disanalogy was recognized before in different terms by several philosophers, its importance for the solution of McTaggart's paradox was not acknowledged.⁵ In light of this disanalogy between time and space, and once the ambiguity in language is clarified, the proposed description of the A-series, that is, 'event e was future, is present and will be past', will be shown to describe a real change in the temporal A-properties, such that has no spatial analogy.

I shall begin by clarifying the ambiguity in the proposed description of the change in the temporal A-properties, that is:

1. Event e was future, is present, and will be past.

The supposed spatial analogy of proposition 1, received when each temporal expression is replaced with an analogous spatial one, is expressed in the following proposition:

2. Event e is north in the south, here here, and south in the north.

As mentioned above, proposition 1 is ambiguous, with regard to the compound A-properties, which can be understood either in a relative or in an actual manner. The common way of understanding the compound A-properties is relative, as exemplified in Goodman's explanation of the proposition, 'World War II was future', according to which this proposition

"...says only what may be said about any event that did not begin at the first moment of time. Likewise, of any event that does not run to the end of time, we may truly say that it will be past" [5, p. 266].

Thus, according to the relative understanding of the compound A-properties, proposition 1 does not describe any change in the temporal A-properties. As already stated, this is also evident from proposition 2, which is the exact spatial analogy of proposition 1 according to this interpretation. This analysis seems to show that the 'flow of time', as a unique feature which distinguishes between time and space, is merely a (grammatical) illusion, generated by tense [13, p. 289].

This interpretation of the compound A-properties relies on the nature of indexical expressions (which signify the A-properties), whose reference

⁵For previous formulations of this disanalogy, see [6, p. 122]; [10, p. 95-96]; and [1, p. 70]. I believe that Mellor, for example, failed to see the connection between this dianalogy and McTaggart's negative thesis, which he upholds.

is determined by the context of their use. Notice that this characterization does not determine whether the circumstances which determine the reference of indexical expressions are objective or merely subjective. This is important in the present context, because, although it is generally agreed that the spatial A-properties are subjective, and determined relative to the subject who utters the corresponding indexical expression, the ontological status of the temporal A-properties is controversial. This characterization of indexical expression is therefore neutral as to the question of whether the temporal A-properties are subjective, like the spatial A-properties, or reflect an objective feature of reality. In accordance with this characterization, the relative interpretation of proposition 1 is explained as follows: usually, the reference of an indexical expression is determined relative to the context of its use. In the case of compound A-properties, however, one indexical expression determines the context for the other. This is clear in the case of the spatial A-properties, as exemplified in proposition 2. For example, in the proposition ‘Event *e* is north in the south’, the second indexical expression, ‘in the south’, determines the context for the first indexical expression, ‘is north’. Accordingly, what this proposition actually claims is that relative to the south, event *e* is to the north. Proposition 1, according to this interpretation, should therefore be understood analogously. Thus, according to this analysis of proposition 1, the tense only masks the relative nature of the temporal compound A-properties creating the illusion of the unique change in temporal A-properties, which constitutes the ‘flow of time’. According to this analysis, proposition 1 should actually be analyzed as:

3. Event *e* is future in the past, present at the present, and past at the future.

Although natural language is ambiguous in this respect, I find it natural to distinguish between the actual (which will be explained immediately) and the relative understandings of the temporal compound A-properties by the use of tense. Thus, although proposition 3 is only relative, and does not describe any real change in the temporal A-properties, I shall suggest that proposition 1 should be understood as describing a real change in the temporal A-properties, such that has no spatial analogy.

The distinction between proposition 1, which describes an actual change in the temporal A-properties, and proposition 3, which is only a relative proposition, should be understood as follows: while it does not follow from proposition 3 that the proposition ‘Event *e* is future’ was true in the past, or that the proposition ‘Event *e* is past’ will be true in

the future, this is exactly what is being claimed by proposition 1. Thus, according to the actual interpretation of the compound A-properties, proposition 1 can be analyzed as:

- 1'. It was true in the past that 'Event e is future', it is true now that 'Event e is present', and it will be true in the future that 'Event e is past'.

In contrast to proposition 3, whose structure can be analyzed as:

- 3'. In relation to the past it is true that 'Event e is future', in relation to the present it is true that 'Event e is present', and in relation to the future it is true that 'Event e is past'.

Several remarks are in order: Firstly, this analysis of proposition 1 does not imply that the temporal A-properties are objective features of reality, and therefore does not entail that the 'flow of time' is an objective feature of reality. All that follows from the distinction I am calling attention to is that proposition 1 describes an actual change in the temporal A-properties. This change may or may not be an objective feature of reality. Secondly, according to the A-theory of time, those who believe that the change in the temporal A-properties is not only an objective feature of reality, but also a necessary feature of time, maintain that propositions 1 and 3 are actually equivalent, if not outright synonymous. For, according to this conception of time, proposition 1 not only entails proposition 3, but also follows from it. This is because, according to this conception of time, the change in the temporal A-properties is a necessary feature of time, and therefore of any event in time (assuming that this event does not endure all the time). However, what matters for the present discussion is the general agreement, both according to the A-theory of time and the B-theory of time (as I will immediately explain), that proposition 1 describes a real change in the temporal A-properties. Finally, the distinction between proposition 1 and 3 can be understood according to the B-theory of time, which holds that the temporal A-properties are subjective, and determined in relation to the subject, as follows: while it does not follow from proposition 3 that event e was ever in the future of the subject, or will be in the past of the subject, it does follow from proposition 1. That is, it follows from proposition 1, but not from proposition 3, that the subject existed before event e began, and will exist after event e will end. In proposition 1 therefore, according to the B-theory of time, the subject simply reports the actual change in the temporal relation between himself and event e .

It is now time to turn our attention to the question of analogy between time and space. As I explained, there is an ambiguity in the usual description of the A-series. The relative reading of this description, exemplified in proposition 3, does not describe any actual change in the temporal A-properties, and has a spatial analogy, that is, proposition 2. On the other hand, the actual reading of the supposed description of the A-series succeeds in describing a real change in the temporal A-properties, and therefore should have no spatial analogy. Thus, the success of the supposed description of the A-series is attested to by the impossibility of its spatial analogy.

The impossibility of a spatial analogy of proposition 1 lies in a basic disanalogy between time and space. In light of this analogy, an attempt to interpret proposition 2 as reporting an actual change in the spatial A-properties would result in a contradiction. The disanalogy referred to is based on the following difference between the spatial and the temporal A-properties: any difference in the reference of an indexical expression, which expresses an A-property, whether temporal or spatial, assumes that they are uttered at different times, but not in different places (assuming they are uttered by the same subject). Thus, two different (and excluding) A-properties, whether spatial or temporal, can apply to the same event only at two different times, but not necessarily at two different places (occupied by the same subject). Another formulation of this disanalogy is that two different spatial A-properties can apply to event *e* only at different times, while two different temporal A-properties can apply to event *e* at the same place.

In light of this disanalogy, it can be shown that the spatial analogy of proposition 1 describes a contradiction: Proposition 1, which describes an actual change (difference in time) in the temporal A-properties, does not assume a difference in the spatial location of the subject that utters this sentence. Accordingly, let us interpret proposition 2 as an actual, rather than a relative, proposition, and examine whether it could thus describe a possible state of affairs: In order for proposition 2 to be an exact analogy of proposition 1, it should therefore not assume any difference in time. That is, proposition 2 should be understood as ascribing to event *e* mutually excluding spatial A-properties simultaneously (by the same subject). This, however, is contradictory: it is impossible for event *e* to be simultaneously both here and not-here (to the south or to the north), in relation to the same subject.

There is, obviously, the possibility of two mutually excluding spatial A-properties applying to event *e* simultaneously, but relating to different

subjects. Thus, it may be true for me that ‘*e* is here’ and simultaneously true for someone else (located in the south) that ‘*e* is in the north’. However, the possibility does not affect the disanalogy between time and space, because there is no need for different subjects in order to explain the truth of proposition 1. Moreover, there is a particular significance to the possibility of an actual difference in A-properties not due to different subjects. For part of the issue at stake is the objectivity of the flow of time, that is, the objectivity of the change in the temporal A-properties. The fact that a simultaneous actual difference in the spatial A-properties can be explained only in relation to different subjects only highlights the distinction between agreed-on subjective A-properties, in the case in the spatial A-properties, and what is supposed to be an objective change, in the case of the temporal A-properties.

It might be objected that there is no need for different subjects in order to explain the possibility of simultaneous actual difference in the spatial A-properties. Consider, for example, Gale’s suggestion that someone can simultaneously utter two different tokens of ‘here’ by holding up cards with ‘here’ inscribed on them, one in each hand [4, p. 407]. Why not use this suggestion in order to explain the possibility of different spatial A-properties which simultaneously apply to the same event?

This suggestion, however, confuses the use of ‘here’ as a demonstrative and its use as an indexical. As a demonstrative, the word ‘here’ can denote different places simultaneously, depending on the specific demonstration which accompanies its expression. As an indexical, however, which is the spatial analogy of the temporal (indexical) expression ‘now’, the word ‘here’ cannot denote different places simultaneously, and refers only to the location of the subject.⁶

4

The conclusion drawn from the previous discussion clearly demonstrates that a complete and consistent description of the A-series, and therefore of the ‘flow of time’, is possible. The mistaken view that such a description is impossible was shown to depend on an ambiguity in natural language, which does not clearly distinguish between two possible readings of the supposed description of the flow of time – the actual and the relative. Once this ambiguity is resolved, and the disanalogy between space and time is established, the usual description of the A-series is shown to be a complete and consistent description of the supposed

⁶For the distinction between indexicals and demonstratives, see [7, p. 490-491].

‘flow of time’, one which successfully describes an actual change in the temporal A-properties, and has no spatial analogy.

McTaggart’s negative thesis, in his argument for the unreality of time, is thus proved to be false. However, it does not follow from this conclusion that the temporal A-properties, or the change in those properties, that is, the alleged ‘flow of time’, is an objective feature of reality, or that the disanalogy found between time and space reflects an objective difference between time and space. All that can be deduced from the previous discussion is the failure of any argument which attempts to prove the subjectivity of the flow of time and the temporal A-properties from an alleged inconsistency in the A-series: no such inconsistency is to be found.

Gal Yehezkel
The Open University of Israel
The Dorothy de Rothschild Campus
108 Ravutski Street
P. O. Box 808, Raanana 43107
Israel

`<yehezkel.g@gmail.com>`

References

- [1] Y. Dolev. Space and time: Some (dis)analogies. *Iyyun*, 49:61–72, 2000.
- [2] M. Dummett. A defense of McTaggart’s proof of the unreality of time. *The Philosophical Review*, 69:497–504, 1960.
- [3] H. Dyke. McTaggart and the truth about time. *Philosophy*, 50 (supplementary):137–152, 2001.
- [4] R. M. Gale. Here and now. *Monist*, 53:396–409, 1969.
- [5] N. Goodman. *The structure of appearance*. D. Reidel Publishing, Dordrecht, 1977.
- [6] C. L. Hardin. Thank goodness it’s over there! *Philosophy*, 59:121–125, 1984.
- [7] D. Kaplan. Demonstratives. In J. Almog, J. Perry, and H. Wettstein, editors, *Themes from Kaplan*, pages 482–563. Oxford University Press, Oxford, 1989.
- [8] J. M. E. McTaggart. The unreality of time. *Mind, New Series*, 68:457–484, 1908.
- [9] J. M. E. McTaggart. *The Nature of Existence*, volume II. Cambridge University Press, Cambridge, 1927.
- [10] D. H. Mellor. *Real Time II*. Routledge, London, 1998.
- [11] D. H. Mellor. The time of our lives. *Philosophy*, 48 (supplementary):45–59, 2001.
- [12] R. Taylor. Spatial and temporal analogies and the concept of identity. *The Journal of Philosophy*, 52:599–612, 1955.
- [13] R. Taylor. Moving about in time. *The Philosophical Quarterly*, 9:289–301, 1959.