

Memory and the A-Series

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1. The epistemology of episodic memory

I am trying to find a book I have mislaid. It is not in its usual place on the bookshelf. It is not on the bedside table, nor on my desk. Frustrated, I set about making a pot of tea. Suddenly, an image comes to mind: I picture myself handing the book to a friend, recommending it as a good read. 'No hurry about giving it back', I hear myself saying in my mind's ear, 'I shan't need it for some time'.

I remember, then, lending the book to a friend. But I do not merely remember *that* I lent it to them. I remember the experience of doing so, what the book looked like, the expression on my friend's face, the sound of my foolish utterance. What we have here is an example of what psychologists since Tulving have called *episodic* memory: remembering an event 'from the inside', recalling the experience itself (see e.g. Tulving 1983). It is often distinguished from remembering that, or *semantic* memory, for example remembering that Schliemann's discovery of what he took to be the mask of Agamemnon occurred in 1876. What is required for an episodic memory of an event, but not for a semantic memory concerning it, is that the event in question was experienced by the rememberer. Of course, the semantic memory will have arisen from some relevant experience, but it does not need to have been a perceptual experience of the event itself, as opposed to hearing or reading a report of it.

Of these two kinds of memory, it is episodic memory that seems to link us most intimately with the past. We can, in fact, characterise the difference between episodic and semantic memory as that between knowledge by acquaintance and knowledge by description, where the object of knowledge is the past. It is tempting to describe episodic memory as a re-experiencing of the past. That description should not be taken too literally, but it is a feature of episodic memory that it is not just a representation of a past event; it is also a representation of the *experience* of that event. So here is my proposed definition: an episodic memory of an event (i) arises from an original experience of that event and (ii) includes that experience (or a representation

of that experience) as part of its content. In what follows, I am not going to pay much attention to the second component of that definition, concentrating rather on the part of the content of the memory that concerns the event itself.

The question I want to ask is this: does the link between episodic memory and the past tell us anything about the nature of time? I think it does. This may seem surprising, but what I want to argue is that what one might call the epistemology of time interacts in interesting ways with the metaphysics of time.

The argument starts with an epistemological principle concerning episodic memory. It is this: a truly episodic memory cannot acquire a greater degree of closeness to the truth than the original experience. The memory is accurate only to the extent that the original experience was accurate. Call this principle (a). (Just to clarify: I am treating experience and memory here as items with propositional content, and so as vehicles for truth and falsity, not simply a collection of sensations.) Now we might think it would be quite easy to come up with counterexamples to this principle. Suppose, walking in the park one day, you are an unseen witness to what is evidently a very emotionally charged meeting between two people. You recognise these two people as friends of yours: a married couple. Seeing evidence of intense affection between them, but also what seems to be anxiety, you do not announce yourself, but walk quietly away. Later that day you learn, quite fortuitously, that the woman you thought you had seen in the park is in fact in some remote location, visiting an aunt. In an instant you recognise the significance of what you saw: not a meeting between husband and wife, but ... *an affair!* You now see the scene with different eyes (or different mind's eyes). You see the woman, but not as the woman you know. Perhaps you now see her as younger, taller, with darker hair. Is this not still an episodic memory? The experience is representing itself, but it is now a reinterpreted experience. The memory has become closer to the truth than the original experience.

This is an entirely coherent story, but it does not, I think, impugn the epistemological principle. The additional information turns the memory into a rather different kind of memory, no longer a purely episodic memory of the original experience. An honest report of the matter would be this: 'I recall seeing two people, and thinking at the time that they were a married couple of my acquaintance. I now know that one of them was not the person I took her to be'. The genuinely episodic element of the memory is not changed by the later information, only its significance is. What I am pro-

posing is that the epistemological principle is less a substantive fact about episodic memory than something that follows from our definition of it. The reason why episodic memories cannot be more veridical than the original experience, I suggest, is that the content of the episodic component of a memory is determined by the memory's link to the original experience, and in addition that the *well-groundedness* of the memory derives from that of the original experience. Call this principle (b). The representational content, and hence closeness to the truth, of that component is what it is by virtue of the content of the experience, and contains nothing that was not part of the content of the experience. (Of course, given that memories fade, the representational content of the memory may be somewhat less than the content of the experience. But it cannot be more.) So (b) entails (a).

Once (a) is made immune from counterexample in this way, we can continue to employ the episodic/semantic distinction in the face of warnings from psychologists that the distinction is largely conventional. Here, for instance, is the psychologist Alan Baddeley's verdict:

An example of semantic memory might be knowing the chemical symbol for salt, while episodic memory would be exemplified by remembering a personally experienced event, such as meeting a retired sea captain while on holiday. There clearly *are* differences between these two situations, but it is questionable whether a distinction based on anything as subjective and phenomenological as personal reference is either viable or appropriate. Since all memory is surely based ultimately on personal experience, it is hard to see what is gained by assuming different memory stores depending on whether the personal reference is or is not recalled.

An alternative way of conceptualizing the difference between remembering personal incidents and recalling information is in terms of the degree of abstraction involved ... long term memory has a strong abstractive component; we tend to minimize memory load by stripping away inessential details and encoding new material in terms of existing schemata, keeping only enough to allow us to reconstruct the event if recall is required ... It is ... not only the case that semantic memory is built from personal experience by a process of abstraction; it is also the case that what appears to be a direct record of personal experience is itself a reconstruction based on an abstraction ... Hence, although Tulving's distinction between episodic and semantic memory may provide a useful reminder of the range of semantic memory, it remains very doubtful whether this reflects a clear

dichotomy between separate storage systems, as Tulving suggests. (Baddeley 1976, 317–18.)

What these remarks show is that, for psychologists, the issue is about encoding mechanisms. But philosophers, who tend to operate at higher levels of abstraction, can remain agnostic about this. What I have suggested is that, insofar as we are concerned with content and causal history, the distinction remains entirely viable and appropriate. The episodic element of a memory is simply defined as that to which principles (a) and (b) apply.

Once (b) is in place, a further thesis emerges, one about truth-makers: whatever in reality made true, or veridical, the original experience, corresponds in some way to whatever makes true, or veridical, the later memory (principle (c)). The simplest picture represents experience and memory as having exactly the same truth-maker. The memory, however, unlike the original experience, represents the event as *past*. This is not adding to the content of the memory in such a way as to come into conflict with principle (a), for if the purpose of memory is to preserve information about the past, then it can only do so by truly reflecting the fact that time has passed since the event took place. The passage from ‘this is *now* happening’ to ‘this happened’ is therefore required if the memory is to be as close to the truth as the original experience. What this requires in turn is that there be, at the least, a necessary connection between the truth-makers of the earlier and later mental state. Only if there is this necessary connection can the memory be said to be as well-grounded as the experience.

So we now have a number of connected principles characteristic of episodic memory:

- (a) The memory is no more veridical than the original experience.
- (b) The content and well-groundedness of the memory is determined by that of the original experience.
- (c) The truth-maker of the memory is necessarily connected to that of the original experience.

(b), I have suggested, implies both (a) and (c). Let us take a look at (c), the thesis about truth-makers, and inquire into the nature of those truth-makers.

2. The A-series and B-series: passage and order

Consider the event I recalled earlier of my lending a book to a friend. Is that event receding into the past or not? We can think of events in time as constituting what McTaggart (1908, 1927) called the ‘A-series’, that is, as being more or less past, present, or more or less future—positions which, of course, would always be changing. Or we can think of events as constituting only the ‘B-series’, that is, as standing in the unchanging relations of temporal precedence or simultaneity to each other. Now, if there really is an A-series, if time really is passing, then B-series relations are simply a product of A-series position. If, for instance, x is past and y is future, then x is earlier than y . To hold that there is an A-series is not to assert the unreality of the B-series. But there is no plausible way to invert this and represent the A-series as supervening on the B-series in such a simple way. Passage does not simply emerge from order. Those that hold that the B-series does *not* supervene on the A-series typically hold that the A-series is unreal, that time does not pass: there is only temporal order. It would, perhaps, be possible to hold that A-series passage and B-series order were completely independent of each other, but this would be a deeply unattractive position.

So those who, for whatever reason, hold that events form only a B-series, have something to explain: when in ordinary speech we appear to allude to the A-series, as when we say ‘I’m flipping the switch *now*’, or ‘My aunt arrived *yesterday*’, or ‘The lunar eclipse will occur *tonight*’, do we speak truly? It is here that the metaphysician of time has to engage with the semantics of tensed discourse. On one account (there are others), if I say ‘I’m flipping the switch *now*’ at time t , where t is a position in the B-series, then what I say is true if and only if it is a fact that I flip the switch at t . Let us call this semantics, and the associated assertion that there is in reality no A-series, the *B-theory*.

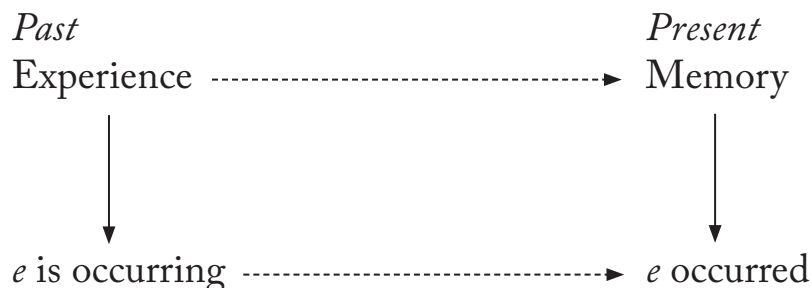
Contrasted with this is what we might think of as the natural semantics for tensed statements: ‘I’m flipping the switch *now*’ is true if and only if I am flipping the switch now, in the objective present. Call this semantics, and the associated assertion that A-series terms reflect corresponding divisions in reality, the *A-theory*. A-theorists do not always want to be associated with the idea of events literally receding in time, as if pastness is something an event can acquire more of. Some A-theorists, indeed, are *presentists*: they hold that only what is present is real. Outside the present, there are for them no events to *be* past. Believing in the A-series is for them a matter of ‘taking

tense seriously': taking the tensed structure of language to reflect a real and transient aspect of reality. We need not concern ourselves here with presentist versus non-presentist interpretations of the A-theory: what is relevant for the argument I want to develop is the semantics of tensed discourse and belief.

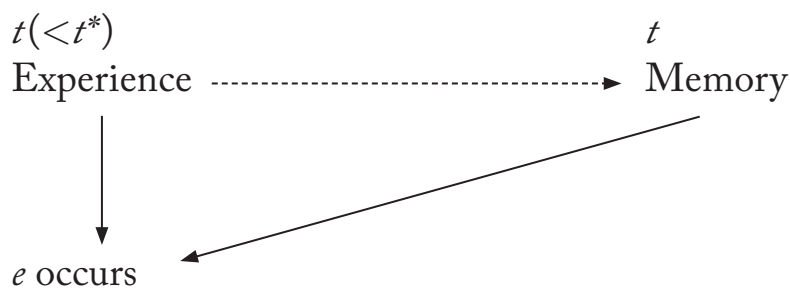
The crucial difference between the A-theory and the B-theory is their view of the kinds of thing that make temporal statements and beliefs true, namely the *facts* of the matter. Here I am taking 'facts' to be constituents of reality. For the B-theorists, facts do not change. For the A-theorist, they do. The facts which are constitutive of the present, for instance that this talk is now going on, that Mars is such-and-such a distance from the Earth, are in due course replaced by other facts, for instance that this talk is over. (See Mellor 1998, Chapters 2 and 3, for a full account of the A-theory and the B-theory in terms of facts and truth-makers for tensed statements.)

These two views of reality correspond to two models of memory. For the A-theorist, our changing beliefs about a given event track the changing facts of reality (the A-model). Your belief that this talk is going on will be replaced by the belief that it is over. On this model of memory, the mind tracks *changing* states of affairs, viewed from the *same* perspective (the present). What we have, in effect, is two parallel processes: the external changing facts, and the internal changing beliefs, which run in pre-established harmony (that is, evolutionary-established harmony):

A-model



For the B-theorist, in contrast, our changing beliefs about an event do not track *changing* facts, but rather the same fact from different perspectives (the B-model):

B-model

The contrast between the A- and the B-model of memory can be illustrated by means of a spatial analogy. The spatial analogue of the B-model consists of a perceiver walking around a fixed object, but keeping it in view all the time: the same object is viewed from different perspectives. The spatial analogue of the A-model is a perceiver who does not move, but is presented with a series of different objects in different orientations.

The B-model turns out to have the advantage when we consider again the principles governing episodic memory.

3. A puzzle concerning trans-temporal entailment

As I handed the book to my friend, I had an experience of seeing the book first in my hand and then in hers. I heard myself say ‘No hurry about giving it back’, and saw her smiling in response. I formed various present-tensed beliefs, among them ‘I am lending the book to her’. Later, recalling the experience, I think ‘I *lent* the book to her’. The later belief can only be true if the earlier one was. That is what principle (a) requires.

What we have here is an example of what is called ‘truth-value links’: a necessary connection between the truth-values of judgements made at different times. A somewhat more transparent description of the phenomenon would be *trans-temporal entailment*.

How does this fit with the two accounts of the semantics of tensed belief, the A-theory and the B-theory? On the B-theory, what made my original perceptual belief at t , ‘I am lending the book to her’, true, is the fact that the lending takes place at t . This same fact makes true my later memory belief at t^* , ‘I lent the book to her’ given that t is earlier than t^* . The two beliefs are made true by the same fact, so the truth of one entails the truth of the other. Principle (a) is thus satisfied: the closeness to truth of the memory belief depends on the closeness to the truth of the perceptual belief: if the earlier

belief had been false, the later belief could not have been true: the identity of truth-makers would forbid it.

What of the A-theory? According to this account, the truth-maker of the original belief is that I am *now* lending the book to my friend. By the time I recall the incident, however, this fact has gone out of existence, to be replaced by the fact that I *lent* the book to my friend. The past fact, the one that made true my original belief, is no longer available to make any present belief true. It cannot even be a component of the truth-maker of the memory. My present memory belief is made true by a *present* fact, that I lent the book. Original belief and later memory are therefore, on this account, made true by *different* facts.

Does this matter? It does if this means that we no longer have an explanation for trans-temporal entailment. If the original belief and later memory have different truth-makers, why should the truth of the memory depend in any way upon the truth of the original belief? Perhaps however, as we noted earlier, we do not need the truth-makers to be identical. What is needed is a necessary connection between the truth-makers, so that the obtaining of the later truth-maker, that *I lent the book*, necessitates the past obtaining of the earlier truth-maker, that *I am lending the book*. This connection would then ground the relation of trans-temporal entailment between the beliefs: the truth of the later belief entails the truth of the earlier belief, and *vice versa*. Unfortunately, the A-theorist cannot express the required connection between the truth-makers. One of the consequences of ‘taking tense seriously’ is that every attempt to express the relationship between facts existing at different times ends up expressing a relation between present facts. Consider this report:

If my present belief ‘It *was* the case that *p*’ is true, then my past belief ‘It is *now* the case that *p*’ was true.

This certainly looks like an expression of the relationship of trans-temporal entailment: a truth at a later time entailing a truth at an earlier time. But this whole sentence is true *now*, and the truth-maker of both antecedent and consequent are present facts. As long as we think that truths *about* time can only be stated from the perspective of a position *in* time (namely the present), then we will never be able truly to express the relationship between a fact that obtains at one time and a fact that obtains at another time.

It might be argued that in fact the A-model and B-model are in exactly the same position vis-à-vis the explanation of trans-temporal entailment. If we define a truth-maker for x as a fact that is sufficient for the truth of x , then, whichever model of memory we choose, it cannot be the same truth-maker that makes true both my original experience and the later memory. At best, the truth-makers for the two beliefs have a component in common. On the B-model, the common component is the fact that I lend the book at t . But this is not sufficient for the truth of the later memory belief: an extra component is required, as the following schema shows.

The belief 'I am lending the book', had at t , is made true by the fact that:
(i) I lend the book at t .

The belief, 'I lent the book', had at t^* , is made true by the facts that:
(i) I lend the book at t ; (ii) t is earlier than t^* .

Fact (ii), that t is earlier than t^* , is a component of the truth-maker of the memory, but not of the truth-maker of the original experience.

Similarly, on the A-model, there is (so the suggestion goes) a common component to the truth-makers of original experience and memory, namely the event in question, that of my lending the book. But this is sufficient for the truth of neither belief: what more is required is a fact about the temporal location of this event:

The belief 'I am lending the book' is made true by:
(i) the event of my lending the book; (ii) that event's occurring *now*.

The belief, 'I lent the book' is made true by:
(i) the event of my lending the book; (ii) that event's occurring *in the past*.

(Of course, this analysis would not be available to the presentist, for whom the event in question has ceased to be part of any reality that could make the memory belief true.) There is, nevertheless, this crucial difference between the A-model and the B-model: on the B-model, the complete truth-maker for the original experiential belief is a part of the complete truth-maker for the memory belief. So if the memory belief is true, the original experiential belief is true. On the A-model, the existence of the complete truth-maker

for the original experience is actually incompatible with the existence of the complete truth-maker for the memory. So the A-model's representation of the truth-makers cannot explain the trans-temporal entailment relations between original experience and later memory.

The A-theorist may still insist, however, that what we are calling trans-temporal entailment *is* adequately captured by presently true conditionals, for our only way of talking 'about' the past is by means of past-tensed statements. However, putting the phenomenon of trans-temporal entailment in the context of memory adds an extra dimension: a causal dimension. Experience and memory are well-grounded by virtue of their causal history, which should include their truth-makers if they are to warrant the title of knowledge. Even if we are prepared to accept that the original experience is now made true by a present fact, it makes no sense to suppose that it was *caused* by that present fact.

4. Conclusion

The argument of the paper may be summed up as follows:

- (1) Episodic memory requires a connection between the truth-makers of memory and the experience on which the memory is based, truth-makers that feature in the causal history of those states.
- (2) That connection cannot be articulated if temporal truths are all present truths.

Therefore:

- (3) Only the B-theory can provide a satisfactory account of episodic memory.

Let me end by acknowledging the causal antecedents of this discussion. The existence of truth-value links and their significance is considered in Michael Dummett's well-known paper 'The Reality of the Past' (1969). The central question of that paper is whether these links pose a problem for anti-realism about the past, the view that past-tense statements are made true by evidence which justifies the statement. The difficulty, as he acknowledges, is that judgements made in the past about what obtained then and corresponding judgements made in the present about the past will on the anti-realist view have very different truth-conditions. Suppose at one time I say, truly, 'There are fairies in my garden'. But by the time I come to say, at a later

date, 'There were fairies in my garden', all trace of their existence has been completely obliterated. The later statement will, on the anti-realist view, be either false or lack truth-value. The truth-value link from the earlier statement to the later one has thus been broken. We might also imagine the following, perhaps rather less usual case: I utter 'There are fairies in my garden' when there is no evidence warranting the assertion at all. On the anti-realist view, the utterance lacks a truth-value. But now suppose that God (for example) creates evidence warranting the later assertion, 'There *were* fairies in my garden'. This later statement is true, but there is, bizarrely, no truth-value link with the earlier statement.

Dummett's reply on behalf of the anti-realist, is, in effect, that the assertion of a truth-value link will itself be an assertion that takes place in time, and so be evaluable in the context of that time. If I now have evidence that justifies me in asserting 'There *were* fairies then', then I also have evidence which justifies me in asserting 'If I said then "There are fairies", I would have spoken truly'. To demand, as the realist does, that we ignore our temporal perspective in discerning the truth-value link is to demand the impossible.

In *Past, Space and Self*, John Campbell appeals to something very like our principle (b) governing episodic memory. As he puts it: 'The groundedness of the memory judgement depends on the groundedness of the original judgement.' (Campbell 1994, 233.) Part of the connection here, of course, is the truth-value link, and again we get an apparent conflict with the anti-realist view of the past. But here the anti-realist's explanation of the truth-value link is inadequate. My current memory judgement is true by virtue of current or future evidence in justification of it. But it is not *this* evidence to which the original judgement was sensitive. The value of bringing memory into the discussion is this: even if anti-realism is consistent with truth-value links (what I have called trans-temporal entailment), its account of these links is not consistent with the idea that in memory we are tracking the same state of affairs as occasioned the original perceptual judgement.

What I have tried to do in this paper is to employ this move against the A-theory. The A-theorist, as I have characterised him in this paper, need not be an anti-realist about the past in Dummett's sense. The passage of time may take things and events out of existence, but it does not follow that statements about them are true only in virtue of evidence we are capable of finding. Nevertheless, for the A-theorist, as for the anti-realist, the facts of the matter are constantly changing. The facts to which the original perceptual experience was sensitive are not the facts against which the truth of the

memory is to be assessed. More seriously, the A-theorist's ontology prevents him from articulating just what the connection is between those facts.

Finally, here is Dummett on the crucial difference between the realist and the anti-realist:

What the realist would like to do is to stand in thought outside the whole temporal process and describe the world from a point which has no temporal position at all, but surveys all temporal positions in a single glance ... The anti-realist takes more seriously the fact that we are immersed in time: being so immersed, we cannot frame any description of the world as it would appear to one who was not in time, but we can only describe it as it is, i.e. as it is now. (Dummett 1969, 369)

That captures precisely the difference between two brands of realism: the A-theory (immersed in time) and the B-theory (standing outside it). And standing in thought outside time is precisely what we would have to do in order to articulate the connection between *that* fact, existing in the past, and giving rise to the original experience, and *this* fact, existing in the present and making true my current memory.

Literature

- Baddeley, Alan D. 1976 *The Psychology of Memory*, New York: Harper and Rowe.
- Campbell, John 1994 *Past, Space and Self*, Cambridge, Mass.: MIT Press.
- Dummett, Michael 1969 'The Reality of the Past', reprinted in *Truth and Other Enigmas*, London: Duckworth, 1978, 358–74.
- McTaggart, J.E. 1908 'The Unreality of Time', *Mind* 18, 457–74.
- 1927 'Time', Chapter 33 of *The Nature of Existence*, Vol. II, Cambridge: Cambridge University Press; reprinted in Robin Le Poidevin and Murray MacBeath (eds.) *The Philosophy of Time*, Oxford: Oxford University Press, 1993, 23–34.
- Mellor, D.H. 1998 *Real Time II*, London: Routledge.
- Tulving, Endel 1983 *Elements of Episodic Memory*, Oxford: Oxford University Press.