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Memory, Amnesia, and the Past

by Christoph Hoerl

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Abstract: This paper defends the claim that, in order to have a concept of time, subjects must have memories of particular events they once witnessed. Some patients with severe amnesia arguably still have a concept of time. Two possible explanations of their grasp of this concept are discussed. They take as their respective starting points abilities preserved in the patients in question: (1) the ability to retain factual information over time despite being unable to recall the past event or situation that information stems from, and (2) the ability to remember at least some past events or situations themselves (typically because retrograde amnesia is not complete). It is argued that a satisfactory explanation of what it is for subjects to have a concept of time must make reference to their having episodic memories such as those mentioned under (2). It is also shown how the question as to whether subjects have such memories, and thus whether they possess a concept of time, enters into our explanation of their actions.

keywords: time, memory, concepts

word count: 12.700

My aim in this paper is to study the connections between the way we think about time on the one hand and the fact that we possess memories on the other. Ludwig Wittgenstein (1958, II xiii) puts some of the questions surrounding this connection as follows:

Would this situation be conceivable: someone remembers for the first time in his life and says “Yes, now I know what ‘remembering’ is, what it feels like to remember.” – How does he know that this feeling is ‘remembering’? [...] Does he know that it is memory because it is caused by something past? And how does he know what the past is? Man learns the concept of the past by remembering.

I wish to show that it is indeed true that we learn the concept of the past and related temporal concepts by remembering. More precisely, I wish to defend the claim that, in order to grasp the meaning of temporal concepts, a subject must entertain memories of a certain kind which are sometimes characterized as ‘episodic’ memories, i.e., memories of specific events or situations in the past. Having memories of this kind, I

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shall argue, is not just crucial at the time when a subject learns temporal concepts. Rather, at any stage in his lifetime, the subject's grasp of those concepts depends upon his continuing to have such memories. Knowledge of what it is for something to happen at a one time rather than another just is a kind of knowledge we can only have because we possess episodic memories. To start my investigation, I shall look at a puzzle which emerges as soon as we give memory such a central place in an account of temporal reasoning. The puzzle arises when we look at those who have lost the ability to remember large parts of their lives or to acquire new memories.

1. Amnesia

If it is indeed true that only a subject who possesses memories of particular past events or situations can know what it is for something to happen at one time rather than another, the empirical study of amnesia should bear witness to this. We should find that a loss of the capacity to remember particular past events or situations results in an inability to grasp temporal concepts. There may, of course, be a problem in finding clear empirical support for a claim of this kind. A complete loss of all such memories can be expected to have such a far-reaching impact on all aspects of a patient's cognitive life and his behaviour that it is doubtful whether we could ever even establish complete memory-loss as the right diagnosis for him, let alone factor out the specific effect this memory-loss has on his possession of a particular concept. There are a few cases for which a diagnosis of complete memory-loss has nevertheless been put forward, and I will discuss them briefly at the start of the third section of this paper. For the most part, however, my discussion will concentrate on some well-documented cases of patients whose memory-loss is profound, but not complete. Of particular relevance for my investigation is the observation that some of these patients are aware of their impairment or can at least be made aware of it. As I shall argue, this implies that they still possess a concept of the past. The existence of these cases then raises the question as to whether the patients in question would still be able to grasp temporal concepts if it was not for the memories they still have.

1.1 A Case Study

For my investigation, I will draw upon cases of amnesia like the one in a male patient usually referred to under the initials H.M. (cf. Scoville & Milner, 1957; Milner, Corkin & Teuber, 1968; Corkin, 1984; Ogden & Corkin 1991). H.M. suffered from epileptic seizures since the age of 10, and by the time he was 29 years old, his seizures proved uncontrollable despite maximum medication of various forms. Therefore, on 1st September 1953, a bilateral medial temporal-lobe resection was carried out – right from the centre of his head a piece of his brain the size of a fist was removed. Following the operation, his situation improved remarkably as far as the epilepsy was concerned. However, it soon became clear that the resection had also had a ‘striking and totally unexpected behavioural result’ (Scoville & Milner, 1957, pp. 12f.). From the day of his operation, he has suffered from profound anterograde amnesia, i.e., while he has retained memories of the time before the operation, it has been virtually impossible for him to recall any events which happened after it. (There is also a less profound 11 year period of retrograde amnesia, which Ogden and Corkin (1991) attribute to impoverished encoding and storage at a time when H.M. suffered from ongoing seizure activity and took high doses of anticonvulsant medication.)

How persistent H.M.’s amnesia has been can be seen from the results of an extensive follow-up study, which was undertaken fourteen years after his operation. For this study he was admitted to the Clinical Research Center at M.I.T. for two weeks. This is how the scientists conducting the examinations describe his time there (Milner et al., 1968, p. 217):

During three of the nights at the Clinical Research Center, the patient rang for the night nurse, asking her, with many apologies, if she would tell him where he was and how he came to be there. He clearly realized that he was in hospital but seemed unable to reconstruct any of the events of the previous day. On another occasion he remarked “Every day is alone in itself, whatever

enjoyment I've had, and whatever sorrow I've had.”

Our own impression is that many events fade for him long before the day is over. He often volunteers stereotyped descriptions of his own state, by saying that it is “like waking from a dream.” His experience seems to be that of a person who is just becoming aware of his surroundings without fully comprehending the situation, because he does not remember what went before.

This quotation is remarkable, because the scientists examining H.M. are willing to incorporate the patient's own words into their assessment of his situation. In their judgement, H.M. shows enough insight into his impairment to warrant taking his words at face value as an adequate description of his predicament. This is a situation which can be found in many cases of amnesia. The amnesia may have the effect that patients are often unaware of their impairment because they forget about it, but it can be pointed out to them, and they will express distress once it becomes clear to them that they have no memories of events comprising a large part of their biography.¹ In these situations, they appear to have a clear grasp of what is wrong with them. The fact that there may still often be times when they are not aware of their own situation is thus explained by their lacking *information* about it. We do not have to invoke a lack of *understanding* to account for it.

Thus, the case of H.M. shows that it would be false to subsume amnesia in general under the group of impairments called *anosognosia*, which can be defined as ‘lack of knowledge, awareness, or recognition of disease’ (McGlynn & Schacter, 1989, p. 145). There are cases of anosognosia about amnesia (often combined with

¹ Consider also the case of amnesic patient N.A. (originally reported in Teuber, Milner & Vaughan, 1968), who, on the occasion of a routine examination, ‘repeatedly tried to recall a question that he had wanted to ask. He finally searched his pockets, and found a written note: “Ask Dr. Squire if my memory is getting better”’ (Kaushall, Zetin & Squire, 1981, p. 385).

confabulation), but they contrast with so-called ‘pure’ amnesias like the case of H.M (cf. *ibid.*, p. 161-69; Moscovitch, 1995). His manifest concern about his situation stands in stark contrast to the neglect or outright denial of their impairment which patients suffering from anosognosia typically display. I think it is a corollary of this observation that, in at least some cases, amnesia does not result in loss of a concept of time, even though the patients give the appearance of living ‘from moment to moment’ (Milner et al., 1968, p. 232). In his own statements, H.M. expresses a sense of loss which we would not take seriously if we did not credit him with a grasp of the fact that there have been episodes in his life that he can no longer remember. In other words, only against the background of a residual faculty for temporal reasoning can he understand his own faculties as being impaired in comparison with those of normal subjects (including his own past self).

It would be false, however, to assume that H.M.’s becoming aware of his memory-loss would also restore in him an accurate representation of the time that has passed since his birth, which just happens to contain no information about the period of time he cannot remember – like a diary with blank pages. The phenomenology of amnesia is, in the first place, that of a person ‘living behind the times’ (Kaushall, Zetin & Squire, 1981, p. 385). In extreme cases, each new day after the onset of the amnesia presents itself to the patient as *the* day immediately following the last day he can remember.² But even in cases where the cut-off point is not quite as clear, patients will systematically underestimate the time that has passed since those events took place which they can still remember from before the onset of their illness. For instance, while H.M. ‘gives his date of birth unhesitatingly and accurately, he always underestimates his own age’ (Milner et al., 1968, p. 216).

² A case in which the subject does indeed show such a clear cut-off point is reported by Syz, who describes a patient suffering from amnesia following an accident as ‘believing on June 19th that it was still January 12th (the day after the accident)’ (Syz, 1937, p. 358). It should be pointed out, though, that Syz himself attributes the amnesia in this case mainly to psychogenic rather than organic factors.

Hence, we should not expect the amnesic patient's recognition of his predicament to restore in him an accurate representation of his own biography. Rather, what he will be aware of is his acute *temporal disorientation*. William Friedman (1990, pp. 80ff.) uses this term to describe the state a subject finds himself in when he does not know, say, what time of the day it is. H.M., he suggests, is almost permanently in such a state, and he is disoriented not just with respect to the time of day, but also on other scales. Because he seems to lack the resources we have for locating ourselves in time, he can, for instance, 'only make wild guesses as to the [present] date' (Milner et al., 1968, p. 216) – day, month or year. Temporal disorientation is defined relative to a process of *temporal orientation*, of finding out about one's place in time. We would not describe a subject as temporally disoriented for whom it did not have any significance what time it is. Being aware of one's own temporal disorientation thus requires that one can still make sense of oneself as occupying a particular location in an objective time series, even though one may not be able to make out this location on the basis of one's own resources. This is what appears to be the case in H.M. and patients like him.

1.2 Locating Thoughts

Talk of 'temporal disorientation' is quite common in the psychological literature, but I think the grounds on which we say of someone that he is unaware of his location in time, and the terminology involved in conceptualizing such a situation, merit a closer look. Saying that a person is located at a particular *place* is usually short for saying that he is at that place at a particular time. But what could saying that a person is located at a particular *time* possibly mean? Certainly not that it is that time when he is at a particular place. A person can only be at one place at a time, this is why 'the place where he is at *t*' picks out a particular place. But a person can return to a place many times, and therefore 'the time when he is at *A*' can fail to pick out a unique time.

I think we can find a way around this problem by understanding talk about the subject's temporal location as a way of specifying the content of a particular kind of beliefs, namely indexical beliefs. These are sometimes also called 'locating beliefs'

(Perry, 1993, p. 34f.) or ‘beliefs *de se*’ (Lewis, 1983, p.139). That such beliefs fulfil an indispensable role in a subject’s cognitive economy has been brought out by John Perry. He argues that appeal to indexical beliefs is ‘essential’ in the explanation of actions because someone may hold any number of nonindexical beliefs rationalizing an action and yet not act. In one of Perry’s examples, a professor goes to a department meeting at noon. The fact that he arrives there on time, Perry points out, cannot be explained solely by saying that he correctly believes that the meeting begins at noon. Rather, a complete explanation of his action would also have to appeal to him believing, at noon, that it is *now* noon or that the meeting begins *now*.

The difference between the two kinds of predicates involved in Perry’s example – date-expressions like ‘at noon’ and indexicals like ‘now’ – means two things: (1) A subject’s knowledge about the date of an event is independent of his own location in time. (2) Because of this, however, knowledge about the dates of events cannot convey to the subject his own location in time. A subject may know the date of every event in history – past and future – and yet still not know what the time is, now.³ In J. E. McTaggart’s (1927) terminology, dates assign to an event a position in the *B*-series – the series of positions running from earlier to later, or vice versa. And predicates assigning to an event a position in the *B*-series apply to it permanently, i.e., independently of when they are applied. Knowing that an event takes place *now*, by contrast, implies assigning to it a position in what McTaggart called the *A*-series, the series of positions running from the past through the present to the future, or vice

³ On the basis of this observation, some philosophers, notably Richard Swinburne (1990), argue that an ontology of time must recognize a difference between two kinds of fact, namely ‘tenseless facts’ and ‘tensed facts’. But doubts have been raised about the general structure of this ‘knowledge argument’. As David Lewis (1983, p. 144) points out, the fact that a map does not inform us about our own position on the depicted terrain does not imply that the map is in some sense incomplete or that it leaves something out. See also Mellor, 1981, and Butterfield, 1985.

versa. And whether what we say or think about an event's position in that series is correct or not depends crucially upon when we say or think it.

Now, take a patient who has lost all the memories he might have had of events that happened after a certain point in time, or has never even been able to acquire memories of some or all of these events in the first place. In so far as that patient does not remember these events at all, he lacks information both about the dates of these events, i.e., their position in the *B*-series, and about the fact that they already belong to the past, i.e., their position in the *A*-series. Since we have said, however, that a subject's knowledge about an event's date is, as far as the content of that knowledge is concerned, independent of his own position in time, we must say that, in the former respect, the patient might still know just as much as he used to at the time of the last event he can remember (assuming a clear cut-off point, which is of course typically an idealization). The fact that he has not acquired any new knowledge in the meantime may strike us as odd, but, strictly speaking, his 'historical' knowledge of the events he still remembers – his knowledge of their dates and other details – is not affected by the amnesia. In fact, why his current lack of knowledge about events which took place later on constitutes an impairment, whereas we take it for normal that he did not possess any knowledge of these events at the time of the events he can still remember, can only be made clear by pointing out that these events are now *past*, whereas they were still in the *future* then.

Consequently, if the amnesic patient is to possess an adequate understanding of his predicament, he himself must think of it not simply as a lack of knowledge about events *after* a certain point in time. He also needs to grasp that those events were then still in the *future*, whereas they are now in the *past*. In short, he must know what it is for an event to have a position in the *A*-series. The puzzle we have initially formulated by asking how H.M. can be aware of his own amnesia can thus also be put by asking how he can still command concepts like 'past', 'present' or 'future'. How can he be able to realize that the events he still remembers were followed by many other episodes

which, by now, are also long gone, even though there is nothing in his mind telling him so?

How he can retain a grasp of a concept of time in this sense even though he is no longer able to determine his position in time on the basis of his own resources is the question I wish to pursue in the remainder of this paper. My aim is to show that we would not be able to credit H.M. with a grasp of the temporal concepts that allow him to form a genuine understanding of his own condition if it was not for the fact that he can still remember some events from before the period covered by his amnesia. What is crucial about these memories is that they involve an awareness of the particular past event his present knowledge derives from. Before I can turn to the significance of these memories, however, I shall have to talk about cases in which we say of someone that he knows or feels something because of things that went on in the past without implying that he remembers a particular past event. It is not always the case that in order for a subject's present mental state to derive from past experience of certain events, the subject must remember those events themselves. As I wish to show in the next section, though, appeal to a faculty which allows the subject to be influenced by the past in this way cannot account for that subject's possession of temporal concepts.⁴

⁴ Elsewhere, I have discussed accounts which give *perception* a central role in the subject's grasp of temporal concepts (cf. Hoerl, 1998). Theories appealing to the so-called 'specious present' have made much of the fact that, in order for us to be able to perceive movement and change, acts of apprehension must cover more than individual instants (James, 1890; Broad, 1923; Ayer, 1956). In my view, however, the criteria set out in this first section show why appeals to perception fail to account for grasp of temporal concepts. The content of perception, by itself, can only ever capture the relative position of events to each other, i.e., their position in the *B*-series. In order for a subject to have a concept of time, however, she must know what it is for an event to be located in the *A*-series. Cf. also Plumer, 1985.

2. Learning from the Past

Edouard Claparède reports on an experiment he carried out on a patient with Korsakoff syndrome who showed severe anterograde memory-loss similar to that discussed in the first section. On one occasion, he stuck her hand with a pin that was hidden between his fingers. As expected, he found that after a few minutes she had already forgotten the incident. But when he reached out for her hand again, she pulled it back. When Claparède asked her why she had done so (Claparède, 1911, pp. 69f.),

she said in a flurry, “Doesn’t one have the right to withdraw her hand?” [...], “Is there perhaps a pin hidden in your hand?” [...], or she would explain, “Sometimes pins are hidden in people’s hands.” But never would she recognize the idea of sticking as a “memory”.

In my opinion, it is no accident that these are sentences in the present tense. They show that there are a variety of ways in which past events or situations can be said to have an effect on us without us being able to remember these past events or situations themselves. However, these ways of being influenced by the past do not by themselves give rise to thoughts about the past and can therefore not explain grasp of the concept of the past or temporal concepts in general. In what follows, I shall take a closer look at two such ways in which we can be influenced by the past which fall short of explaining how we can have thoughts about the past. First, I shall look at the ability to retain factual information without retaining the event or situation that information stems from, i.e., without remembering the *source* of that information (see also Schacter, Harbluk & McLachlan, 1984; Shimamura & Squire, 1987; Johnson, Hashtroudi & Lindsay, 1993). Then, I shall turn to other effects the past may have on us and which may make us feel differently when we encounter something we have encountered before.

2.1 How Can the Amnesic Patient Know That He Is Amnesic?

Above, I have said that we have to be wary of conflating the amnesic patient's occasional lack of *information* about the fact that he is amnesic with a lack of an *understanding* of his impairment because there is a difference between simply forgetting about the state one is in and being unable to acknowledge that one is in it (as is the case with someone suffering from anosognosia). In what follows, I wish to explore another aspect of this dissociation. What I wish to show is that, even in cases in which a patient *can* retain the information that he is in fact amnesic without having to be reminded of that fact all the time, the capacity which enables him to do so cannot explain his grasp of the concepts involved in understanding his impairment.

Even severe amnesia does not always make it impossible for the patient to acquire and retain new factual knowledge. As the scientists who examined H.M. point out, such achievements may be quite isolated and often 'appear to depend on frequent repetition of the items and their embedding in a constant framework' (Milner et al., 1968, p. 232). But, for instance, the fact that H.M. volunteers descriptions of his own state seems to indicate that, over time, the reality of his being so severely amnesic has somehow sunk in. Similarly, Kaushall et al. (1981, p. 385) write about their patient N.A.:

The question invariably arises as to how N.A. can be forgetful to the point of being disabled, but can nevertheless remember as much as he does about his problem. In part, this must be due to repetition. Thus, just as he has been able to learn some of our names after much opportunity to learn, so he has become, after countless examples, acutely aware of his memory dysfunction. His memory problem, in fact, is an invariant background for his daily experiences.

What this shows is that, even though the patient may be severely amnesic, repeated exposure to examples of his impairment may enable him to retain the information that

he is amnesic without others having to remind him of that fact all the time. However, it is very important to become clear about the precise nature of the memory capacity described here.

To some extent, the grammar of sentences involving 'remember' or similar terms can help us clarify what is at issue. Memory-ascriptions often take one of two forms which indicate a difference in the type of memory ascribed. Sometimes the verb 'remember' is simply followed by a noun phrase describing a certain event or situation, at other times it is followed by a subordinate clause of the type 'that *p*'.

It is often assumed that amnesic patients lack a certain kind of memory for which Endel Tulving (1972) has coined the term 'episodic memory'.⁵ It is episodic memories which are typically ascribed in sentences in which 'remember' is followed by a noun phrase. Episodic memories are necessarily memories of particular events or situations, namely of episodes in the subject's autobiography, and the noun phrase can be understood as denoting the episode in question. Sometimes, episodic memories may also be expressed by sentences of the form 'I remember that *p*,' but in this case *p* must be in the past tense, and there is always in principle a description of the episode reported in the that-clause such that an expression in which 'I remember' is followed by that description is *also* available to the subject for expressing his memory. Thus, if 'I remember that we walked along the beach on my fifth birthday' is supposed to express an episodic memory, the speaker must also be prepared to assert something like 'I remember our walk along the beach on my fifth birthday.' Beliefs served up by episodic memory concern particular episodes in the subject's past, and the fact that the

⁵ See Kinsbourne & Wood, 1975; Schacter & Tulving, 1982; Wood, Ebert & Kinsbourne, 1982. However, there are also dissenting voices, e.g. Zola-Morgan, Cohen & Squire, 1983. The arguments I wish to present do depend on the possibility of distinguishing between episodic and non-episodic forms of remembering on the basis of their functional description, but they do not hang on the truth of the claim that episodic memory is selectively impaired in amnesic patients.

memory stems from an experience of the very episode remembered is constitutive for them.

I may remember that we walked along the beach on my fifth birthday because yesterday I found a box with old photographs; one of them was a picture of us walking along a beach, and it had the date of my fifth birthday on the back. Yet, I would not assert that I remembered our walk along the beach on my fifth birthday. I have no recollection whatsoever of that event itself, no episodic memory. The existence of cases like this, in which the subject would not be prepared to form a judgement in which ‘remember’ is followed by a noun-phrase describing a particular event or situation in the past, but which allow for him to form a judgement in which ‘remember’ is followed by a that-clause, indicates that episodic memory contrasts with another form of memory, which is sometimes characterized as ‘semantic memory’ (Tulving, 1972)⁶ or ‘factual memory’ (Malcolm, 1963). In keeping with the way I have set up the discussion in this section, we could also say that what is crucial about this form of memory is that it consists in remembering *information* (cf. also Martin & Deutscher, 1966). It is the information remembered which, in ascriptions of such memories, is captured by the that-clause.

It is important to realize that, in sentences ascribing such memories, the verb ‘remember’ may be followed by a that-clause in any tense (e.g. ‘I remember that next year will be a leap year’). This ought to make us wary of seeing any particular

⁶ Tulving originally adopted this term because he thought that the paradigm case for this form of memory was the retention of knowledge of the meaning of words. There are indications, however, that, far from it being a paradigm case, this is yet another phenomenon different from both episodic memory and mere retention of factual information. For instance, Gabrieli, Cohen and Corkin, 1988, point out that H.M. is just as bad in retaining the meaning of new words (i.e., words which have come into use after the onset of his amnesia) as he is in retaining episodic memories. Tulving (1983) acknowledges that the original distinction between an episodic and a semantic memory system may have been ‘inchoate’.

connection, in the case where p is in fact a sentence in the past tense, between the subject's grasp of what p means and the fact that he remembers that p . The crucial point about ascriptions of memories of this kind is that the particular circumstances under which knowledge that p was acquired are not relevant for the truth of the ascription. There are a number of different ways in which someone might arrive at a memory that p , and the memory itself does not carry with it any indications as to the way in which it was in fact acquired. Especially, it does not make a difference to the memory itself *when* it was acquired. Thus, I might say that I remember that we walked along the beach on my fifth birthday just because I discovered that photograph. Yet, for this to be possible, I must already have been able to grasp the temporal import of my discovery (namely, that the photograph depicts a scene from my fifth birthday many years ago) in order to form a memory comprising this kind of content in the first place.

Conversely, the mere fact that someone can be described as remembering that p because he learned so in the past does not imply that the content of his memory ought to be described using a clause in the past tense.⁷ A case in point is N.A.'s knowledge of the names of the members of the hospital staff (people he never met before his amnesia). Having met a particular person a number of times, he now remembers that this person is called thus and so. But that does not mean that he remembers any particular episodes in which he encountered that person, and it is not clear why his knowledge of his name should require any exercise of a concept of the past. However, if we are talking about a capacity which enables subjects to acquire knowledge which they could possess without possessing a concept of the past, then a subject's having this capacity cannot be what explains his possession of such a concept.

N.A., we are told, has not only learned the names of the members of staff in the hospital, but he has also, through repeated exposure to the symptoms of his

⁷ The related point that a subject's remembering a specific learning episode can not be deduced from his ability to recall material encountered only during that episode was not acknowledged in Tulving's original (1972) essay. It is, however, made explicitly in Tulving, 1983, pp. 29ff.

impairment, learned that he is amnesic. Yet, what I have said implies that the capacity to learn from past experience cannot explain how he comes to understand what it means to be amnesic, in so far as this involves him entertaining at least some beliefs about the past. This holds even though one of the things he might have learned from the past is that the sentence ‘I am amnesic’ is true. The relevant distinction here, in Michael Dummett’s (1991, pp. 69f.) words, is that between knowing, of a sentence, that it is true and knowing the proposition expressed by the sentence. As Dummett emphasises, one can know that a sentence p is true without thereby knowing that p . It would therefore be impossible to determine whether we are justified in saying that someone knows that p , where p is a sentence in the past tense, if all we could go by was the fact that past experience has taught him that p is true.

2.2 The Construction of the Past

I have drawn a distinction between two ways in which we ascribe memories to others. In one case we typically use a sentence in which ‘remembers’ is followed by a noun phrase describing a certain event or situation, in the other case we typically use a sentence in which ‘remembers’ is followed by a that-clause. A crucial difference between the two cases lies in the fact that in order to make a memory-ascription of the second kind, it is irrelevant to know how the memory was acquired, whereas an ascription of the first kind presupposes that the memory derives from an experience of the event the subject remembers. But was I justified in moving from the claim that there is a difference between these two ways of ascribing memories to a subject to the claim that there are in fact two different kinds of psychological states to consider? What if, for instance, the subject himself is often not able to tell which kind of memory-ascription is the more appropriate – as when Goethe says of the events from his childhood narrated in his autobiography that he cannot tell the ones he genuinely remembers from the ones he was told about by others (see Anscombe, 1983, pp. 120ff., for a discussion of this example)? Moreover, what if some of our self-

ascriptions of episodic memories simply turn out to be wrong? What if we sometimes think we remember something which in fact never happened?

It is certainly true that it is often beyond the ken of the subject which kind of information his memory judgements are based upon and that we can sometimes be mistaken about whether we do genuinely remember something or not. The most striking cases of this kind are probably those in which the subject's own memory-judgements are false simply because an episode like the one apparently remembered never took place. Larry Jacoby and his colleagues have devised a number of experiments which show that, by manipulating the difficulty of a task they are asked to perform, subjects can be induced to judge falsely that they remember something (see, for instance, Jacoby, Kelley & Dywan, 1989; Kelley & Jacoby, 1993). In one experiment, subjects were asked to complete fragments of five-letter words. Some fragments had only one letter missing and were easy to complete, others had two letters missing and were more difficult to complete. The subjects were given the impression that the cues were all fragments of words from a list they had been asked to study before, and with each word completed they were asked how well they recalled having seen it on the list. Unbeknownst to them, however, they were also shown some fragments of words which had not actually been on the list. It turned out that subjects were significantly more likely to say that these words 'felt familiar' or even that they had a 'clear memory' of them as having been on the list if the fragment belonged to the group that was easy to complete rather than to the group that was difficult to complete. What Jacoby and his colleagues take this kind of experiment to show is that subjects who find it easier than expected to perform a particular task can be induced to attribute that ease of performance to having performed the same task, or a related one, before. According to the criteria we have set out, some of the memories the subject thus falsely attributes to himself clearly count as episodic.

In the light of these observations, it might be thought that the arguments I have put forward above are problematic on two counts: Firstly, it seems that a 'feeling of remembering' can be present even though the subject does not in fact remember

anything, and, secondly, it may be suggested that having this feeling of remembering is enough for a subject to understand what it is for something to have happened in the past. I shall call this proposal the 'constructivist account'.

In fact, however, experiments such as the one described do not provide conclusive support for the constructivist account. It might well be the case that subjects explain to themselves the ease with which a task is being performed in terms of their having performed the same task at an earlier time. But from this it does not follow that their very idea of what it means to have performed a task at an earlier time is derived from the experience of being able to perform certain current tasks very easily. To think otherwise would mean conflating the conditions under which a subject accepts a given content with the conditions the subject thereby accepts to be fulfilled – the content's truth-conditions (see Peacocke, 1986, Ch. 2, for this distinction). There might be an important connection between the two, but in this case they certainly diverge. The conditions under which the subject accepts the proposition that he has performed the task before concern the subject's present situation, but the conditions the subject accepts in virtue of assenting to that proposition are supposed to concern the past.

In short, the subject's proposed conjecture about the reasons why he performs a given task so easily already operates with the concept of the past. However, the subject cannot arrive at this conjecture simply by considering his performance in a practice which does not involve exercise of such a concept. It rather seems that if the subject takes the way in which he performs a certain task now to be an indication for his having performed that task, or a related one, before, he does so because he already possesses some other means of understanding what it is to have performed a certain task in the past. In other words, rather than the subject's belief in the truth of his judgements being based on a prior feeling of remembering, his conviction that he is in fact remembering is based on the belief that his judgements are true. Instead of showing how the subject could arrive at an understanding of what it is for something to have happened in the past without possessing genuine episodic memories, this only

shows that the subject's (second-order) judgement that he remembers a particular event is sometimes based on a fallible inference from his present beliefs.

Claparède's patient is quite unique in this respect, in so far as she shows that the subject is not forced to draw such an inference. The impression of memory is never necessitated by the causal influence of the past on one's own present behaviour.⁸ Thus Claparède (1911, p. 69):

When one told her a little story, read to her various items of a newspaper, three minutes later she remembered nothing, not even the fact that someone had read to her; but with certain questions one could elicit in a reflex fashion some of the details of those items. But when she found these details in her consciousness, she did not recognize them as memories but believed them to be something "that went through her mind" by chance, an idea she had "without knowing why," a product of her imagination of the moment, or even the result of reflection.

What I am urging, in short, is that we must reverse the direction of explanation the constructivist account suggests: It is not the case that the subject's knowledge about the past is the result of his forming a correct conjecture on the basis of a feeling of remembering (the correctness of that conjecture being something the subject cannot be authoritative about). Rather, the subject would not describe his feeling in finding a task easier than expected as a 'feeling of remembering' if it was not for the fact that he did

⁸ Cf. also Kelley & Jacoby, 1993, p. 82. In other words, what we have here are cases in which 'the attribution of a past belief can be effectively challenged by a lower-level, more economical attribution in which the past is introduced only causally and not epistemically' (Bennett, 1976, p. 103). See also Bennett, 1964, for an extended discussion of this issue.

often know what had gone on before and how it had affected what he had done on a later occasion.

In fact, our discussion of mistaken memory only serves to reinforce the points we have made in the first part of this section. We, as *theorists*, may sometimes observe that a subject's present state of mind is causally influenced by his past experiences, and we may thus have to invoke the concept of the past in order to explain how the subject comes to be in that state of mind. But this does not imply that the concept of the past is itself part of the content of that state of mind, and thus it does not warrant crediting the *subject* himself with the concept of the past. These two perspectives must be kept apart. In other words, the fact that the past may have had a causal effect on his present state of mind is not enough to show what could make available to a subject the notion of the past itself.

3. Memory and Action

There are rare cases of patients whose knowledge about their own lives – not just about time after the onset of the amnesia, or a certain point some time before, but their whole biography – appears to be exclusively of the non-episodic kind described in the last section (Cermak & O'Connor, 1983; McCarthy & Hodges, 1995; Wilson & Wearing, 1995). These patients may have some general autobiographical knowledge – knowledge that in fact concerns their own past history – but, in recall tests, they prove incapable of elaborating or specifically describing any individual episodes. Cermak and O'Connor describe the behaviour of their patient S.S. as follows (1983, p. 230):

Although he clearly understood the instructions and was proficient at recounting stories, especially from his childhood, it soon became apparent that he was not retrieving memories which could truly be considered as episodic. [W]hat he tended to recall was the general idea of a past event or the fact that an event had happened rather than the event itself. While this is hard to

describe, it did seem to be equivalent to one's being able to recount a family story more because it had become family folklore than because it was truly remembered. As a consequence, there is no ability to elaborate on the story because the folklore only goes so far.

In this final section, I wish to argue that patients with an impairment of this kind cannot have an appropriate understanding of the situation they are in.⁹ They lack the conceptual resources for capturing what is wrong with them; in particular, they do not have an adequate concept of time. Conversely, if amnesic patients like H.M. do possess such an understanding, it is due to their still having some episodic memories from before the time of the onset of their amnesia, even though large parts of their lives may be irretrievably lost to them.

Clearly, this does not follow straightforwardly from what has been said so far. What would be needed is not just an argument for the insufficiency of non-episodic

⁹ Of the three patients whose cases are discussed in the studies mentioned in brackets above, the first is described as having an 'entirely superficial' view of his impairment (O'Connor, Cermak & Seidman, 1995, p. 48). Of the second, it is reported that he 'lacks insight into his deficits and denies any cognitive impairment' (McCarthy & Hodges, 1995, p. 33). The third case is in many ways one of the most challenging in recent literature, in particular because the patient is persistently preoccupied with maintaining that he has just recovered consciousness. However, as Wilson, Baddeley and Kapur (1995, p. 679) point out, it is possible that this claim, instead of showing that he is aware of his lack of memories and tries to explain it, actually stands in the way of his becoming aware of the real nature of his impairment. Indeed 'when the possibility of profound memory loss is presented to him as an alternative to his preferred explanation, he responds by denying it and showing signs of anxiety and epileptogenic belching' (ibid.). Another case of near-complete loss of episodic memory may be found in Tulving, Schacter, McLachlan & Moscovitch, 1988.

forms of memory for grasp of a concept of time, but an argument for the necessity of episodic memory. In what follows, I shall attempt to give such an argument. I think we can make clearer why these memories should play such a pivotal role by looking again at those patients who still have memories of at least some events in their past and at one of the effects it has on their behaviour that they lack memories of more recent events, and specifically their own recent actions. I wish to do this by drawing up a comparison.

3.1 Repetition

As a ‘venture in experimental psychology’ (thus the subtitle of the book) Constantin Constantius, the protagonist of Kierkegaard’s *Repetition*, sets out to travel to Berlin. He already spent some time there on a previous occasion, and now wishes to repeat this visit. More precisely, his explicit aim is to ‘test the possibility and meaning of repetition’ (Kierkegaard, 1843, p. 150). Will it be exactly the same again as it was during his first sojourn? He stays at his former lodgings, visits the same places, sees the same people. Alas, wherever he turns, whatever he does, the ‘repetition’ he seeks turns out to be impossible, since none of his efforts will bring back what it was like when he first visited Berlin. Merely going through the same moves does not amount to having the same experience because, this time, he has already done it all before. The traveller finds himself trapped by a dialectic which Kierkegaard (*ibid.*, p. 149) summarizes as follows:

The dialectic of repetition is easy, for that which is repeated has been – otherwise it could not be repeated – but the very fact that it has been makes the repetition into something new.

What I wish to show is that the amnesic patient whose case we have discussed and Kierkegaard’s traveller who sets out on his illusory venture fall on the two sides of this dialectic: the former does not realize that what is repeated has already been, the latter does not realize that the repetition makes it into something new. They both miss out on

a crucial aspect of what happens to them, but we give two very different explanations. In fact, if we credit the amnesic patient with an understanding of his situation we see his predicament as exactly the reverse of that of the traveller.

While the traveller can remember his previous visit to Berlin – after all, this is precisely one of his reasons for going back there (cf. *ibid.*, p. 151) – he sets out on a hopeless endeavour because he fails to attach to the events remembered the significance we would attach to them. He fails to realize that every opportunity is in some sense unique. And the sense in which it is unique is that it will never come round again; it has a particular position in time. In short, what the traveller lacks when he sets out on his quest for ‘the repetition’ is a concept of time.

The reason why the amnesic patient fails to assign the right significance to repetitions that occur in his life is of a different kind. He simply cannot remember that he has been in the same situation before. But this does not mean that he cannot attach to the things that happen the significance Kierkegaard’s traveller fails to see. We should only have reason to think so if he seemed oblivious to the fact that each opportunity is in some sense unique. In fact, however, we find exactly the opposite. One of the aspects of an amnesic patient’s becoming aware of his impairment is precisely that it becomes painfully apparent to him that he is locked in a cycle of activities which is hopelessly inadequate with respect to certain long-term goals, goals which would rely on each of his actions building upon his prior achievements (see, for instance, the changes in N.A.’s outlook on his own life reported in Kaushall et al., 1981, p. 385). Instead, he will typically strive ‘for a rigorously stable environment as an aid to his memory’ (*ibid.*, p. 387), which rules out even the attempt at progress towards such goals, as he realizes that any kind of progress he might make can mean a potential danger to him, since, as a consequence of such progress, he might find himself in an environment which he can no longer recognize. There are actions we cannot make undone, and it is part of being a self-determined and responsible agent that we take this into consideration in deciding what we do. The amnesic patient possesses a notion of time as we have it in so far as he is sensitive to the irrevocability

of certain acts, and this sensitivity will sometimes enter directly into his deliberations as to which action to perform.

I have deliberately used the notion of responsibility to indicate the particular kind of situation in which it becomes relevant for us to take account of the fact that opportunities for action can be constrained in the way described. It seems that constraints upon the subject issuing from the environment, however complex (see Gallistel, 1990; Brown & Vousden 1998), cannot by themselves fully explain the need to time one's actions with respect to particular times. Rather, when such a need arises, it is typically in a context in which the environment is itself subject to the agent's will, i.e., in which a subject's actions will issue in that subject subsequently finding himself in a crucially different environment. This is what makes it impossible to perform the same action again once it has been performed already. Any attempt to repeat the action will take place against an environment which is marked by the fact that it has been performed already.¹⁰ In other words, any repetition of the action would be precisely that: a repetition, not the same action again. It is, I submit, an understanding of this fact, that our own actions can make a difference to the way the world is, that underlies our grasp of the concept of time.

In short, my suggestion comes to this: Whether a subject possesses a concept of time as we have it will make a difference as to how we explain his behaviour. While there may be no conclusive operational test to establish whether any given subject possesses such a concept, our explanation of a subject's behaviour can dissociate the question as to whether he possesses a concept of time from the question as to which particular events he can remember. If we credit the amnesic patient with possession of a concept of time we credit him with an insight Kierkegaard's traveller lacks: an

¹⁰ It therefore seems that sensitivity to such opportunities cannot be explained in terms of grasp of regularities (repeatables) but necessarily implies the 'possession of a reflective (or objective or detached) conception of causality' (Campbell, 1994, p. 69).

insight, in fact, into the causal structure of events; namely that once they have taken place, things might not be the same any more.

3.2 The Significance of Episodic Memory

I have suggested that knowing what it is for something to happen at a particular time sometimes enters directly into one's deliberations, and that at least one of the most basic cases in which this can happen is through one's realizing that there are certain actions which have irrevocable consequences. In fact, for every action there is a description such that it is true that once this action has been performed it can never be performed again – and in human agency this can sometimes be the description under which the action is intentional. We would not credit someone with grasp of a concept of time who is oblivious to this aspect of human agency. I have also suggested that we can dissociate the question as to whether a subject is able to form the intention for such an action from the question as to which particular past events he remembers. However, as I wish to argue now, in order to form the intention for such an action a subject must possess at least some knowledge which is episodic in character, i.e., the content of which must be spelled out by reference to a particular episode in the past.¹¹ This is precisely the knowledge amnesic patients like H.M. and N.A. possess in virtue of having memories of events that happened some time before the onset of the amnesia.

What kind of knowledge must a subject possess in order to understand what it means to say that there are things in life which one can only do once? Life affords a sophisticated enough agent with ample occasions on which events make an irrevocable difference to his life. But this does not mean that every subject in whose life such

¹¹ This makes my account non-reductionist, but, I believe, not vacuous. The question is not how a subject's use of a concept of time can emerge from activities which do not already involve an exercise of such a concept. Rather, the question I am after is which particular exercises of that concept can count as manifesting knowledge. For methodological remarks which point in a similar direction see Peacocke, 1992, ch. 1.

events occur is actually able to represent them as making such a difference – i.e., as happening at a particular time in his life – even if we allow that he can learn from them. The first time we burnt our hand in the fire may have taught us a lesson for the rest of our life, but this does not mean that we will also remember the incident itself for the rest of our life. As we have seen earlier, there are various ways in which a subject might have learned from past experience, but which do not give rise to thoughts about the past. The information retained in these cases is information as to what the subject can expect whenever an event or situation of a particular kind occurs, and hence, what to expect whenever he performs an action of a particular type. But what this means is precisely that information of this kind cannot convey to the subject that there are certain things one can only do once. What is learned in these cases can only ever issue into intentions to perform a certain *kind* of action whenever a situation of a particular kind obtains. And this makes appeal to knowledge acquired in this way unsuitable for the kind of explanation we are after. A subject's intentions cannot take account of the fact that one can do certain things only once merely on the basis of knowledge in which events figure only in virtue of the general, repeatable types under which they fall – as certain kinds of movements or utterances, as possessing a certain duration, as happening at a certain time of day, etc.

Past experience can teach us what it is for an event to make an irrevocable difference to our life – what it is for an event to have happened already – only if individual events themselves are remembered. We are subjects for whom witnessing a certain event is not just significant in virtue of the lessons which we might learn for future situations in which events of a similar sort occur. For us, an event can be significant in its own right, because we can see much of what happens afterwards as being influenced by the fact that this event has already taken place. This is so because we are subjects for whom the fact that certain things cannot be made undone possesses a crucial significance. We expect a responsible agent to take account of the fact that certain of his acts will make an irrevocable difference to his life (and possibly that of others). However, the fact that past experience can feed into a capacity to take

responsibility for our lives in this way indicates that there is a memory faculty at work which is of a wholly different kind than that which merely enables us to retain information about what to expect of a certain (repeatable) kind of event or situation.

The memory faculty which allows the subject to acquire and retain the knowledge involved in appreciating the uniqueness of each new situation, i.e., the fact that there are certain things he could do which could not be made undone afterwards, must involve an awareness of particular past episodes as episodes in which events made an irrevocable difference. Our grasp of the fact that certain things can only be done once necessarily conditions and is conditioned by our outlook on the past. Sensitivity to the fact that certain deeds cannot be made undone is inseparable from the insight that we have to live with the consequences of our past deeds (and of past events in general).¹² But what it means to say that we have to live with those consequences cannot itself be a matter of knowledge we can have without remembering occasions on which we acquired it. The fact that we have memories of various circumstances that led up to our present situation is part and parcel of the fact that we can appreciate its uniqueness. And the fact that we can see various aspects of our present situation in the light of a particular episode that went on before is part and parcel of the fact that we can remember that episode, i.e., that we locate it in the past.

In short, I have argued that a subject's grasp of a concept of time must incorporate a certain form of practical understanding of the subject's present situation, namely the understanding that what he can do now is constrained by what has already happened and will constrain what can happen in the future. Episodic memories, I have suggested, play an essential role in explaining how a subject can have such an understanding, because the knowledge of what it is for such constraints to obtain can only be acquired and retained if this knowledge is itself episodic in character. It is only because we are

¹² The balance between these two aspects can be upset in certain pathologies. In manic excitation, for instance, the patient often seems to be oblivious to past and future, whereas depression is often marked by an over-emphasis on the past which makes it very difficult for the subject to make any new decisions. Cf. Fraisse, 1963, ch. 6.

aware of particular remembered episodes as imposing constraints on the present that we can also see what might happen now as imposing constraints on the future. And it is only because we can understand the present as providing a unique opportunity for action in this sense that we can be said to know what it means for something to happen at one time rather than another. It is in this sense that episodic memories are necessary for grasp of a concept of time.

4. Concluding Remarks: Thinking about the Past

I have suggested that a specific memory faculty, the ability to remember particular events or situations from the past, is at the heart of our grasp of the concept of time. Through such episodic memories, I have argued, subjects are directly aware of a particular feature of temporal reality, namely the fact that past events impose certain constraints on the present. And possession of such episodic memories, and thus of a concept of time, manifests itself in a subject's ability to take responsibility for his life in a certain way, i.e., to be aware of the fact that certain of his acts will have irrevocable consequences for the future.

By saying that episodic memories play such a crucial role in enabling us to take responsibility for our lives, I do not wish to suggest that we generally remember only those events which brought about dramatic changes in our lives. In fact, many of the memories we most cherish are of quite insignificant episodes (though see Conway and Rubin, 1993, for some interesting data about the kinds of memories subjects tend to retain throughout their lives). The point I have been trying to make is that it is these memories which incorporate our understanding of what it is for an event to have a particular place in our history – an understanding which also extends to events which we believe took place but of which we have no episodic memories.

Episodic memory, I have suggested, is bound up with an ability to view one's present situation in the light of the episode remembered. Again, this may not amount to much, but it means, for instance, that we can recognize a certain situation as a repetition of another in the sense discussed above, i.e., as being numerically different from an

earlier situation of the same type. Episodic memory therefore always presents particular events as being connected with our present situation. It possesses a connectedness that differs from the mere knowledge of facts, as Annette Baier (1976, p. 220) points out:

[I]t is not an unimportant conceptual truth that memory is of times, while knowledge is of facts, and that times cannot be discontinuous, as known facts can be disjoint. [...] Disjointed facts are not fragments, but building blocks for a system which tries to unify them.

What this means is that, in so far as it is in virtue of having episodic memories that a subject possesses the concept of a particular time, that concept is that of a position in time seen as an egocentric framework in which the subject himself is also located.¹³ What bestows upon remembered time the continuity Baier speaks of is the fact that all the episodes are remembered in their relation to the present. Even though the subject may be unable to give very specific temporal information about remembered events or order them sequentially (cf. Friedman, 1993), they are, in virtue of being remembered, part of what McTaggart called the *A*-series, the series of temporal positions running from past through present to future and vice versa.

In section one, we saw that the significance of predicates like ‘past’, ‘present’ and ‘future’ lies in the fact that they can figure in self-locating beliefs. In order for a subject to have a concept of time as a feature of the reality he himself is part of, he needs to have a concept of events as organized in this *A*-series rather than merely in the *B*-series, the series of positions running from earlier to later, or vice versa. Events are only properly conceived of as being in time if they can be conceived of in relation to

¹³ I am here not talking about the question as to whether a sense of one’s own temporal continuity and identity over time is a necessary ingredient of episodic memory. This important question has been the subject of recent studies in psychology (e.g. Wheeler, Stuss & Tulving, 1997) and in philosophy (Campbell, 1997), but it goes beyond the scope of the present inquiry.

the subject's current activity. No such relation obtains, to use an example borrowed from McTaggart (1927, pp. 16f.), between the adventures of Don Quixote and the present, and this is why we do not conceive of them as being located anywhere in time.¹⁴

However, this does not mean that only events we can remember can figure in self-locating beliefs. In this section, I have emphasised the role episodic memories play in making us sensitive to a particular kind of constraint on current action. I have argued that the only way we can be aware of the fact that certain acts can have irrevocable consequences is by seeing our own situation as constrained by the fact that certain things have already taken place. This means that we must possess knowledge that is essentially episodic in character. However, it does not mean that, for each particular episode, the subject's understanding of what it is for that episode to have occurred in the past depends on his having a memory of it. The constraint on action I have pointed out obtains independently of whether the subject is directly aware of it or not. A subject who understands his current abilities for acting to be constrained by a particular event in this way will thereby be in a state with a past-tensed content, independently of whether this is a state of his remembering that event or not.

There are instances in which we already know that a certain event has taken place in the past because someone else has told us so, but suddenly we realize (in a 'flash of recollection') that the description fits an event we remember. Gareth Evans (1982, p. 308) describes the phenomenon as follows:

After the flash of recollection, the subject is in a different *informational* state, with a different causal history, but its content, and the beliefs based upon it, need not change.

¹⁴ Wilfrid Sellars (1962, p. 592) puts a similar point by saying that only against a picture of time which includes an explicit 'now' can the *non-fictional* character of statements about time – their 'rootedness in the real-life activities of *observation* and *inference*' (ibid.) – become clear.

If what I have been saying is right, we might also put the point as follows. The content of the state the subject is in, as a state with a past-tensed content, does not change, because what is constitutive for a thought to be about the past does not depend on whether it is a memory or not, but on the role it fulfils within a subject's cognitive economy. Part of what it is to locate an event in one's own past is to see one's present capacities for action constrained in a certain way. However, the fact that a subject can understand what it is for actions to be thus constrained in the first place does depend on his having episodic memories. It is they which incorporate the subject's knowledge of what it is for his present capacities for action to be constrained by the fact that certain things have already taken place and cannot be made undone. Once this knowledge is in place, there are a variety of ways in which he may find reason to locate other events in his past even though he does not remember them. The tragedy of the amnesic patient's situation upon realizing his impairment is that he grasps that a great deal of his life has long gone and many things he might want to do are inappropriate to his situation. But there seems to be little hope that it will all come back to him in a flash of recollection one day.

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