

Joint Reminiscing as Joint Attention to the Past

Christoph Hoerl and Teresa McCormack

The other chapters in this volume are concerned primarily with the phenomenon of children and adults jointly attending to physical objects in the visual field, and address important issues regarding the developmental significance of joint attention, understood in this sense. In this chapter, we are concerned with a phenomenon that has traditionally been considered quite independently of this body of research—joint reminiscing, or memory sharing. Our aim is to show how the general notion of joint attention can also be applied to the case of joint reminiscing, and that characterizing joint reminiscing as joint attention to the past, and spelling out the implications of such a characterization, provides us with a way of shedding light on its developmental significance.

There is clearly some intuitive appeal in the idea that, when two people are engaged in sharing memories of an incident they have experienced together, that past incident becomes the focus of their joint attention, much in the same way as an object in the current environment could become the focus of their joint attention through their looking at that object together. This way of putting things, however, may be thought to mask a crucial difference. On the face of it, the terms ‘memory sharing’ or ‘joint reminiscing’ stand for an activity that necessarily involves the use of a shared language. More specifically, it seems that it is only the existence of certain linguistic devices, such as the past tense, that makes it possible for two people to jointly focus attention, not just on aspects of their current environment, but also on past events and circumstances.

A central theme in the literature on joint attention is the idea that certain kinds of joint attentional abilities can be seen as precursors to linguistic abilities. The idea that language, and the existence of certain linguistic devices, can, in turn, make available other, more sophisticated, forms of joint attention has received less discussion. Indeed, the latter idea might be seen to raise a puzzle for developmentalists. For how is it that children come to grasp the meaning of these linguistic devices? How, for instance, do children come to understand the specific nature of the contribution the past tense makes to the meaning of a sentence? Consider the following passage from Elizabeth Anscombe:

It seems possible to show someone what to mean when one wants him to say ‘red’ with meaning, but impossible to show him what to mean by ‘was red’; for how does one get his attention directed to what he is to speak of? When one has to teach ‘red’ one can at least

ensure that the learner's eyes are looking in the right direction; and one would not expect to be able to teach him except on this condition. But if one is to teach the use of the past tense, then there is . . . nothing in him to direct in the hope of directing the attention, as in the other case it was possible to direct the eyes. Yet it seems that a necessary condition of his being able to grasp the meaning of 'there was red' is his attending to the right thing. (Anscombe, 1981, p. 105)E

We might get a better grip on the point Anscombe is getting at in this passage by considering a particular approach to language development championed, for instance, by Michael Tomasello (1999). The background idea informing this approach is that linguistic exchange, in general, is a matter of securing and sustaining joint attention (cf. also Campbell, 1998; Heal, Chapter 2 above). Thus, basically, what children learn when they come to grasp the meaning of a new piece of language is how this piece of language can be used as a means of achieving joint attention to a certain aspect of the world. The key proposal is that children are initiated into this use in the context of adult-child interactions in which joint attention to the relevant aspects of the world can already be achieved through other means. As Tomasello (1999, p. 109) puts it, 'the child acquires the conventional use of a linguistic symbol by learning to participate in an interactive format . . . that she understands first nonlinguistically, so that the adult's language can be grounded in shared experiences whose social significance she already appreciates.'

One way of understanding Anscombe's point is in terms of the claim that this picture of language acquisition cannot be used to explain how children come to grasp the meaning of the past tense. Put crudely, one sense in which it seems 'impossible to show [a child] what to mean by "was red"' is that there is no way of establishing a shared attentional focus on particular past events that can ground the child's understanding other than by using past-tensed expressions in the first place. In other words, in learning the meaning of the past tense, children are not simply learning a new means of securing and sustaining a kind of joint attention that they already have an independent purchase on. Rather, how children learn to participate in interactions involving a joint attentional focus on past events and how they come to grasp the meaning of the past tense are two aspects of the same developmental question.

There is, however, also a further, more radical claim that is perhaps hinted at in the passage we have quoted from Anscombe. There is a more fundamental sense in which it might be 'impossible to show [a child] what to mean by "was red"'; if, prior to the emergence of a grasp of the meaning of the past tense and the capacity to talk about the past with others, children are simply unable to turn their attention away from the present, so to speak, and focus it on particular past events and circumstances instead. In other words, the more radical claim that Anscombe might have in mind is that the very ability to make the past a possible focus of one's attention—to have one's mind 'looking in the right direction' (Anscombe, 1981, p. 105) in the first place—only emerges in the context of learning how

participate in linguistic interactions that involve the sharing of such attention to the past with others.

The bulk of this chapter will be taken up with an attempt to articulate one way in which this claim might be fleshed out. If it can be made good, as we believe that it can, it indicates a deep connection between a particular aspect of memory development, on the one hand, and a particular aspect of socio-communicative development, on the other.

As we will put it, our suggestion is that participation in joint reminiscing has a key role to play in the development of what Endel Tulving (1972, 1983) has called *episodic memory*. In the first half of this chapter, we will argue that what is needed to explain the difference between episodic memory and other forms of memory is precisely the idea that episodic recall, uniquely, involves turning one's attention to the past. In order to give substance to this idea, we will draw on work on perceptual attention to arrive at a general characterization of the role of attention that can also be put to work in giving an account of episodic recall. A key claim here will be that perceptual attention is the mechanism by which certain kinds of cognitive capacities can have an influence on the way in which information is processed in perception. We will argue that, for episodic recall to occur, information retained from past events must similarly be processed in a specific way, informed by certain kinds of cognitive capacities. This, we will suggest, can explain a sense in which episodic recall, uniquely, involves making particular past events the focus of one's attention.

It is by considering in detail the way in which certain kinds of interactions with others can turn on the sharing of such attention to the past that we will then, in the second half of the chapter, try to clarify the idea that joint reminiscing plays a crucial role in the development of episodic memory. Our strategy will be to focus on one specific kind of cognitive capacity underpinning the ability to turn one's attention to the past in episodic recall, possession of which is, roughly speaking, a matter of grasping the way in which causality unfolds over time. Put briefly, we will argue that, in order to give substance to the distinction between the past and the present, children need to grasp the idea that how things are in the present depends not just on what happened at one point in the past, but also on what happened subsequently. We will also suggest, however, that children first grasp this idea in the context of conversations in which an adult is trying to exert some rational influence on the child by reminding her of specific past events. In other words, our key developmental claim will be that the ability to attend to the past in episodic recall recruits a certain type of causal understanding, and that children acquire this type of causal understanding in the context of learning how to participate in a particular kind of rational engagement with others that turns on the sharing of episodic memories.

To illustrate the nature of the argument we will put forward, it might help to consider one particular way of drawing an analogy between joint reminiscing and joint visual attention. Much existing work on the latter is concerned with articulating what is being seen as an important difference between genuine joint attention and

other, more primitive types of behaviour, such as following the other's gaze merely because it might serve as a clue to the location of a desirable object, or as a means to predict the other's behaviour in a competitive situation (see e.g. Call and Tomasello, Chapter 3 above). Two claims, in particular, can be found in the literature that aim to bring out why such behaviour falls short of joint attention. The first is the claim that joint attention turns on what Werner and Kaplan (1963, p. 43) call the shared *contemplation* of objects (see also Franco, Chapter 7 above). The second is the claim that, in joint attention, such shared contemplation is the vehicle for a type of interaction that is essentially *mutual* or *social* in nature (see e.g. the passage we have quoted from Tomasello, above; or Hobson, Chapter 9 above). Adopting a phrase used by Bates, Camaioni, and Volterra (1976, p. 59), we might summarize these two claims by saying that participating in joint attention is a matter of '[using] objects as a means to the [other]', where the key contrast is with ways of engaging with objects, and with other people, that are governed by purely individual, and purely practical, concerns.

Part of what we want to show is how similar considerations can be applied in giving an account of the nature and development of joint reminiscing. The type of remembering that is shared in joint reminiscing—i.e. episodic remembering—might also be said to involve an element of contemplation, in that it is concerned with what happened in the past in its own right. As we will show, this can be contrasted with a more primitive kind of remembering in which the significance of information retrieved from memory is exhausted by its capacity to yield expectations about the current environment. At the same time, however, we will also try to show how the sharing of episodic memories in joint reminiscing can serve as the vehicle for a specific type of social-communicative interaction that would not be possible in the absence of episodic memories. Adopting Bates *et al.*'s terminology, the general idea is that, as children learn to participate in joint reminiscing, they learn how to use not just particular objects in the current environment, but also particular past events as a distinctive kind of 'means to the other'. Thus, just as in the case of joint attention, giving an accurate account of joint reminiscing requires spelling out the distinctive form of engagement, both with the world (here the past) and with others, it involves. Our suggestion will be that, by doing so, we might also get a better grip on the suggestion that joint reminiscing in fact provides the first context in which children exercise the capacity to attend to the past in episodic recall.

1. EPISODIC RECALL AS AN ATTENTIONAL PHENOMENON

Whilst the term 'episodic memory', first introduced by Tulving (1972), is widely used in current psychological literature, there is a great deal of disagreement over the precise nature of the difference between episodic memory and other forms of

memory—so much so, in fact, that the usefulness of the distinction is sometimes called into question (see e.g. Tulving, 2002, for a review). In this section, we want to make a proposal that, in our view, has the potential to dissolve some of the existing disagreement by framing the question as to what makes episodic memory distinctive in a new way. We want to argue that it is useful to think of the difference between episodic memory and other forms of memory in terms of a distinct way in which attention is deployed in episodic recall. In other words, episodic recall uniquely involves the exercise of a particular form of attention, which might be described as attention to particular past events.

Consider the following example, adapted from Alfred Ayer (1956) and Gareth Evans (1982; see also Campbell, 2001). Suppose that a friend tries to remind you of an incident in your past of which she was a witness. As Ayer points out, you need not be in any doubt that the incident occurred; in fact, you might even form an accurate mental image of it. Even so, it is still possible that you cannot get yourself to remember the incident. Suppose also, however, that after a while, the incident does come back to you. This may happen quite suddenly, ‘in a flash of recollection’, as Evans (1982, p. 308) puts it. The question now is: How should we describe what has happened to you—i.e. what this change in your state amounts to?

Evans thinks that the change at issue can be described as a change in the causal history of your state. As he puts it, the relevant state of recollection only sets in once ‘the *right* information is retrieved’ (ibid.)—i.e. information that traces back to your own experience of the incident. On closer inspection, however, it is not obvious that your failure to recollect must imply the absence of a causal connection between your present mental state and your past experience, as this suggests. As the literature on priming brings out, there are a number of ways in which particular past experiences can have a causal influence on a person’s subsequent mental state in the absence of conscious recollection (cf. e.g. Mayes, 2001, for examples). Thus, it is not clear why we should rule out the possibility that your friend’s attempts to jog your memory succeeded in activating information retained from your experience of the incident, even before the flash of recollection occurred. Indeed, such information might play a part in explaining your ability to form an accurate mental image, say, of the location and people involved.

By way of developing a possible alternative to, or modification of, Evans’s account of recollection, it might be worth considering an example of a different situation, discussed by Naomi Eilan (1998), which, we believe, shares some similarities with the example just discussed. Suppose you are trying to find your keys, and you are looking for them on your kitchen table, which is cluttered with a variety of objects. The keys are in fact right there in front of you, but it still takes you some time to notice them, and you might later describe the situation by saying, ‘[They] were staring me in the face all the while I was looking for them, until something clicked’ (Eilan, 1998, p. 189).

As in the case of the flash of recollection, we might ask how this change in your state is to be characterized. What exactly is missing before you come to notice the keys? The idea that what is missing is information of a certain sort, or with a certain causal ancestry, is, if anything, even less appealing here. At least, it is difficult to see how the notion of information might be sharpened up in the required way, as, intuitively, there is also a sense in which the right information has been available to you all along.

We believe that a more promising way of approaching the question as to what it takes for you to notice the keys is in terms of Ulric Neisser's (1976, p. 20) idea that 'we can see only what we know how to look for'. Both Eilan (1998) and Johannes Roessler (1999) take this general idea as their starting-point and emphasize an active ingredient in the relevant notion of 'looking'. Put briefly, their suggestion is that the content of perceptual experiences depends, in part, on the particular kind of perceptual project the subject is engaged in, such that 'having a particular experience can be an achievement on the part of the subject' (Roessler, 1999, p. 57). In terms of our example, Eilan's and Roessler's point might be put as follows. Whether or not you notice the keys does not just depend on their presence (and visibility) on the table, but also on your capacity to formulate the question as to whether or not the keys are on the table in front of you and bring that question to bear in the process of looking.

We can think of two crucial factors that must be in place in order for you to engage in this project of answering the question as to where the keys are by looking. Arguably, your project must be informed by your possession of the specific concepts needed for framing the question, such as the concept 'keys'. On a more fundamental level, however, your project must also be informed by an understanding as to how, in general, perception can make the presence of physical objects, such as your keys, manifest to you. Put briefly, the thought here is this. The question you are trying to answer, broadly speaking, is a question as to how the world is, independently of you. And, in order to appreciate how perception can yield an answer to such a question, you must be able to make sense of how the circumstances you are aware of in perception might have obtained without your being aware of them. What makes intelligible the mind-independent existence of the perceived world, in this sense, according to Eilan and Roessler, is a grasp of the fact that further conditions have to be fulfilled, over and above things' being a certain way in the world, if you are to perceive that they are that way. They both connect this idea with Evans's notion of a 'simple theory of perception' (see also Campbell, 1994). According to Evans (1982, p. 222), a subject can be said to possess such a simple theory in so far as he is able 'to think of his perception of the world as being simultaneously due to his position in the world, and to the condition of the world at that position'. In short, it is your having a grip on the idea that what you can perceive is determined, in part, by facts about your own spatial location, which makes it possible for you to use perception to answer questions about the mind-independent world.

Thus, the basic idea here is that your having a perceptual experience in the content of which your keys can figure as such is the outcome of an active perceptual project you are engaged in, in so far as it involves the bringing to bear of certain cognitive capacities. The key notion that, according to Eilan and Roessler, is needed to explain this sense in which perception involves an active ingredient, is that of attention. Attention, as Eilan (1998, p. 194) puts it, is ‘the means by which we answer... questions about the environment’. In other words, the appeal to attention can capture a sense in which a perceiver is not just a passive receiver of information, but is actively and rationally involved in the picking-up of information. What happens when you stare at the table without noticing your keys, for instance, is that information is not picked up in a way that engages with your project of answering the question as to where your keys are. It is only when the selection of information is successfully guided by that question that you come to notice the keys—i.e. when you attend to them in the required way.

We have introduced the example of coming to notice the keys as an example of a cognitive change that seems difficult to account for in terms of the idea of a change in the information available to the subject. Our other example of such a change was that of being reminded of an incident that happened in one’s past, and the incident coming back to one in a flash of recollection. Assuming that Eilan’s and Roessler’s analysis of the change that occurs when you come to notice the keys is along the right lines, is there an analogous way of explaining what is involved in the flash of recollection?

One way of developing the analogy here is in terms of the idea that episodic recall, too, involves a particular form of attention. Put briefly, the suggestion might run as follows. Just as we can ask what it takes for a subject to use perception to answer questions about her current environment, so we can ask what it takes for a subject to use her memory to answer questions about her past environment. The answer, in each case, turns on the general notion of attention as a mechanism mediating a particular kind of active involvement on the part of the subject in the processing of information. Putting this notion of attention to work in an analysis of episodic recall requires acknowledging that successful recollection of a past event depends on two factors: (a) the subject’s having experienced the event and having retained information from that experience, and (b) the subject’s being able to draw on such information in a specific way. There are ways in which a subject can be said to draw on such information that don’t amount to the subject’s recollecting the particular event in question—one such way, for instance, is in forming a mental image of what an event of that type might look like. By contrast, genuine recollection occurs only when such information is drawn on in a way that engages with the subject’s project of answering the question as to what actually happened.

John Campbell (2002, p. 27) has argued that the notion of attention is the key linking notion ‘connecting our psychology, at the level described by common

sense, with the information-processing described by psychologists'. It is this idea that, ultimately, also stands behind our suggestion that episodic recall should be seen as involving a particular form of attention. Episodic recall involves attending to the past, as we might put it, in so far as episodic recall is not just dependent on the availability of information retained from the past, but also on the subject herself having a particular kind of active influence on the processing of that information. Thus, the connection between common sense and information-processing psychology that Campbell speaks of might be spelled out as follows. Episodic recall is a matter of a subject's using her memory to pursue certain kinds of questions about the past; for an answer to come forward, however, the subject's pursuing the relevant question must have a causal influence on the way information retained from past experience is being processed. It is only then that the 'flash of recollection' occurs.

So much for the general suggestion that episodic recall can be seen as involving a particular form of attention. In what follows, we will try to flesh out this suggestion by arguing that it can provide for a useful way of thinking about certain aspects of the development of episodic memory.

2. EPISODIC RECALL AND CAUSAL UNDERSTANDING

We have suggested that recollecting a past event can be understood as involving attending to the past, in the sense of bringing certain kinds of cognitive capacities to bear in the process of remembering. To make this suggestion more concrete, we need to ask what those cognitive capacities might be. One way of framing this question is in developmental terms. What are the kinds of reasoning or understanding that must be in place if children are to be said to be able to use their memory to answer questions about what happened in the past?

One possible starting-point here would be the idea that using one's memory to answer questions about what happened in the past requires grasp of a simple theory akin to the simple theory of perception that, according to Eilan and Roessler, must be in place if a subject is to be capable of using perception to answer questions about her current environment. To repeat, the appeal to such a simple theory, in the case of perception, was meant to explain how the subject can give substance to the idea of the mind-independent existence of the perceived world. Roughly speaking, what makes it intelligible, for the subject, that circumstances she is consciously aware of in perception are not dependent for their existence on being perceived is the idea that what she can perceive is the joint upshot of two factors: what is the case in the world and where the subject herself is located within that world (cf. also Campbell, 1994). Similarly, it could be argued that, if a subject is to be capable of using her memory to answer questions about what happened in the past, she must grasp that her being able to remember a certain event

depends not just on that event's having happened, but also on certain other conditions being fulfilled, such as her having been in the right place when that event happened. Again, the idea here would be that this is (part of) the way in which the subject gives substance to the idea that events she can remember could have happened without her being able to remember them (cf. Hoerl, 2001, for further discussion).

In what follows, however, we wish to concentrate on a specific aspect of the ability to use one's memory to answer questions about what happened in the past that is already taken for granted in the above description. In doing so, we will follow Michael Martin, who describes as a crucial achievement in the development of episodic memory the child's being able to 'make sense of how there can be specific, and hence actual, events of which it has . . . conscious awareness, but which are nevertheless not part of the present scene' (2001, p. 280). In other words, the issue that Martin raises is what it takes for a child to be able to give substance to the distinction between the past and the present in recollecting particular past events. Central to resolving this issue, he suggests, is the idea that the child acquires 'a grasp of the concept of time as a causal structure' (ibid.).

We might get a better grip on the issue raised by Martin, and develop one way of reading the suggestion he makes, by considering the following example. Imagine a child carrying a toy, who visits a sequence of three locations in turn (not revisiting any locations in the sequence) and discovers afterwards that she no longer has the toy. Memory may yield to her a mental image of the toy at a specific location—say, location 2—that she visited earlier (or some other type of information that links the toy and that location), and thus she may return to location 2 to look for the toy. Although the child may be successful in retrieving the toy, and the information yielded by memory undoubtedly stems from a specific past event, we can still question whether the child is able to give any substance to the distinction between how things were in the past and how they are now.

To bring out the force of this question, consider a case in which the child returns to location 2, as above, but is unable to find the toy there. We can think of a primitive use of memory that is exclusively guided by an interest in how the world is, or might be, right now, which would allow the child to retrieve the toy from location 2, if it is there, but leave her at a loss if it is not there. The function of memory, in this sense, would be exhausted by its capacity to yield expectations about the present environment. If those expectations are frustrated, however, there is no function left for this type of memory to serve. The child might well continue searching, but these further searches would be directed merely randomly at the other two locations.

We can contrast this primitive use of memory with a more sophisticated ability to make use of the memory of the toy as being at location 2, even in a situation where the toy can no longer be found at that location. Given that the toy was seen at location 2, but is no longer to be found there, the place where the child

should search next is the place she visited subsequently, i.e. location 3. We can point to two factors that must be in place if the child is to be able to make use of her memory in the way called for here. On the one hand, she must have a grip on how her memory of the toy as being at location 2 might be correct, even though the toy is no longer to be found there. This much is required if it is to be so much as possible for her to continue making rational use of her memory, even after her search at location 2 was unsuccessful. On the other hand, to put her memory to actual use, in the required way, she must be able to integrate it with further knowledge. Specifically, she must be able to draw on knowledge of the temporal order in which the three locations were visited, and use that knowledge in conjunction with her memory of the toy as being at location 2, in order to constrain her search.

What connects these two factors, we want to argue, is a particular kind of causal understanding they both require, relating to a fundamental aspect of the way in which causality works in time. First, what makes available the thought that the toy may indeed once have been at location 2, even though it is no longer there, is the idea that what is the case now depends not just on what was the case at a certain time in the past, but also on what happened subsequent to that time. In other words, it is the idea of a further event, which happened after her being at location 2, and which made it the case that the toy is no longer there, that allows the child to hold on to her memory of the toy as being at location 2, and make use of that memory in further reasoning. Second, it is the same general idea of a sequence of events, later stages of which can obliterate or change the effects of earlier ones, that is also needed for the child to be able to make use of knowledge of the order in which the three locations were visited in constraining the search. We might describe the kind of reasoning that is required here as follows. There is no point in the child revisiting location 1 if she remembers the toy being at location 2, because, given the order in which she visited the locations, the toy must have been removed from location 1 to show up in location 2. Instead, since it is no longer in location 2 either, it must have been lost subsequent to her visit to location 2, i.e. during or after her move to location 3.

Note that, in the preceding paragraph, we have described the child's reasoning in a way that, arguably, entails that the child can grasp the notion of the past, and of particular past events. This is deliberate, in so far as the point we want to make is that it is precisely the ability to engage in reasoning of this general type—i.e. reasoning which turns on the causal significance of the order in which sequences of events unfold—that can explain a sense in which the child can give substance to the difference between the past and the present. Specifically, it is only when the ability to engage in such reasoning is in place that the child can be said to use her memory in a way that involves a grasp of the fact that things might no longer be the way they once were. As we might put it, recollecting past events in their own right—i.e. *as* past events—requires the ability to conceive of them as belonging to a sequence of events leading up to the present, and to give causal significance to

the temporal order of that sequence in terms of the idea that later events in the sequence can obliterate or change the effect of earlier ones.

If these considerations are along the right lines, they might provide us with a way of cashing out both the claim that episodic recall involves a particular form of attention and the claim that 'a grasp of the notion of time as a causal structure', as Martin (2001, p. 280) puts it, plays a crucial role in episodic recall. As we have argued in the previous section, episodic recall can be seen to involve a particular form of attention in so far as it involves using one's memory to answer questions as to what happened in the past. The argument of this section has been that giving substance to the difference between the past and the present requires the ability to engage in the particular kind of causal reasoning we have described. In other words, it is only if the ability to engage in such reasoning is in place that a subject can be said to attend to past events in their own right in episodic memory.

If what we have said so far is correct, one important empirical question regarding the development of episodic memory is this: At what point in development do children start to grasp the causal significance of the temporal order in which events take place? This is the question we wish to focus on in the next section. So far, we have given only one example of a task that might be used to measure such a grasp (i.e. serial search), and we will discuss two studies that have found that young children do have difficulties with this type of task. However, we will also discuss other developmental studies, involving quite different experimental paradigms, which support the idea that there is a specific aspect of causality, relating to how causality works in time, that children have difficulties with well into the third year of their lives.

3. YOUNG CHILDREN'S CAUSAL UNDERSTANDING

The causal reasoning abilities of young children have become a particular focus of attention in recent developmental research, some of which points to important continuities between causal reasoning in such children and the mature causal reasoning of adults (Corrigan and Denton, 1996; Gopnik and Sobel, 2000, Gopnik *et al.*, 2001; Schlottman *et al.*, 2002). Much of the recent research on children's causal reasoning has been carried out within the general framework of the 'theory-theory' (Gopnik and Meltzoff, 1997), which claims that children's understanding of the world develops in a way that bears close resemblance to the process of theory formation and change in science (Gopnik *et al.*, 2004). Gopnik *et al.* argue that young children have simple theories about various domains (e.g. biology or psychology) that are underpinned by a body of causal knowledge, and that they learn causal relationships systematically and efficiently through their observations of events. In fact, they suggest that infants' perceptual sensitivity to the causal relationships in Michottean displays of colliding objects (Leslie, 1982;

Oakes, 1994; Oakes and Cohen, 1990) may be evidence of causal understanding in the physical domain from very early in life.

Although some researchers may object to this rich interpretation of infants' abilities (e.g. White, 1995), there is ample evidence from an older body of research that children as young as 3 years can not only make explicit judgements about the causal powers of familiar objects (e.g. Bullock, Gelman, and Baillargeon, 1982; Gelman, Bullock, and Meck, 1980; Shultz, 1982), but can also make rapid and accurate inferences about the causal powers of completely novel objects in ways that are systematic and can be described in terms of certain principles (Shultz, 1982; Shultz and Kestenbaum, 1985). Nevertheless, we want to suggest that the causal understanding underpinning these abilities might still fall short of a mature grasp of causality in one crucial respect, in that it may not encompass an understanding of how causality unfolds over time. Appreciating the causal powers of objects is a matter of being able to judge which events usually take place when those objects feature in certain ways in certain situations. However, this is, at least in principle, separable from being able to grasp how causal influence is propagated through a succession of such events.

One way of making this clear is by contrasting two versions of a picture task that has been used with 3- and 4-year-olds. Gelman, Bullock, and Meck (1980) examined children's ability to complete a sequence of three line-drawings depicting a simple causal transformation. They found that 3-year-olds correctly chose, e.g., a picture of a knife to put in between a picture of an apple and a picture of a cut apple, or a picture of a cut apple to put next to a picture of an apple and a picture of a knife. However, Das Gupta and Bryant (1989) argued that children could solve the Gelman *et al.* task purely on the basis of associating an instrument (e.g. a knife) with a certain type of outcome (e.g. a cut object) without using the idea of a causal transformation leading from an earlier state of affairs to a later state of affairs. In their own studies, Das Gupta and Bryant used picture sequences beginning with, for example, a cut apple and ending with a wet and cut apple. To complete this type of sequence, they argued, children were required to reason from the initial state of the object to the end state, rather than simply choosing an object with associated causal powers (e.g. in this example, they would have to choose a picture of a jug of water rather than a picture of a knife). They found that 3-year-olds had difficulties under such circumstances, suggesting that although they were familiar with the causal powers of the relevant objects, they were unable to take account of the temporal order in which events must happen to yield the sequence indicated by the pictures.

One of the few studies aimed explicitly at investigating connections between children's general understanding of time and their causal reasoning abilities is that of Povinelli *et al.* (1999). The question they were interested in was whether young children have an 'explicit understanding of time as a successive series of causally interdependent states of the world' (pp. 1426–7). They addressed this question by

examining whether 3- and 5-year-olds can recruit information about the temporal order in which two past events took place in working out a current state of the world. In one of Povinelli *et al.*'s experiments, children took part in two games with an experimenter, one after the other. Unbeknownst to the child, while he or she was playing the first game, a second experimenter hid a toy in one box behind him or her. While the child was playing the second game, this experimenter then moved the toy to a different box. Immediately after the children finished playing the second game, they were shown videotape clips of themselves playing each of the games, with each of the two hiding events that they had previously been unaware of now clearly in view. They were then asked to find the toy. The crucial manipulation in the study was that children were not always shown the videotape clips in the order in which the games had actually occurred. To pass the task, children thus had to draw a connection between what they could see on the videotape clips and what they knew about the order in which they had actually played the two games. They had little difficulty in working out, based on what they had been shown, that there was now a toy in one of the boxes. Yet, the 3-year-olds were unable to work out which of the videotape clips depicted the toy's current location, even if they were explicitly reminded, while watching the videotape clips, which game they had played first and which they had played last.

We have recently carried out a study involving a different experimental paradigm, which also examined whether children can take account of the order in which two events occurred in making judgements about a present state of affairs (McCormack and Hoerl, forthcoming). In our task, children were familiarized with a box that had two different buttons. Pressing one button resulted in a marble appearing in a window, whereas pressing the other button resulted in a toy car appearing in the window. There was only ever one object in the window at any one time. The apparatus was then covered, and the buttons were pressed one at a time. Children were required to infer the current contents of the window when given retrospective cues about the temporal order in which the buttons had been pressed. We found that children younger than 5 were unable to infer the current contents of the window, even if explicitly encouraged to take order information into account.

Finally, there is also evidence that children have difficulty in using knowledge of the temporal order in which a series of events took place in situations that are closely analogous to the example of searching for a toy we used in the previous section. Wellman, Somerville, and Haake (1979) conducted a task in which 3-, 4- and 5-year-old children visited a series of eight well-defined locations. At location 3, the experimenter took a picture of the child with a camera, but at location 7, the experimenter told the child that he or she could no longer find the camera. Although many of even the youngest children initially searched in location 3, their second searches were often at locations 1 and 2, even if children were able to recall where they had seen the camera. Wellman *et al.* suggested that the younger children

in their study may have been employing a simple associative strategy (which led to searches at the location most strongly associated with the missing object), rather than trying to infer where it was possible that the object might be. Haake and Somerville (1985) used a simpler task, in which the child observed the experimenter visiting four hiding locations while holding an object that was at some point left under one of the locations. Like Wellman *et al.*, they found that the second searches of young children were often not logically constrained by the temporal order in which the locations had been visited.

Although the studies that we have described have used quite disparate tasks, and each of them assesses a number of abilities in addition to causal and temporal reasoning, together their findings point to a specific difficulty that 3–4-year-olds seem to have with what we might call *temporal-causal reasoning*, i.e. reasoning that turns on the causal significance of the temporal order in which sequences of events unfold. In the preceding section, we argued that it is just this type of reasoning which a subject must be capable of, if she is to be able to attend to the past in episodic memory. Thus, if what we have said is correct, one useful way of approaching questions about the development of episodic memory is by asking how children acquire the ability to engage in such temporal-causal reasoning.

4. JOINT REMINISCING AND CAUSAL UNDERSTANDING

In the opening paragraph of his 1983 monograph, Tulving characterizes episodic memory as the only form of memory which involves ‘travel[ling] back into the past in [one’s] own mind’ (Tulving, 1983, p. 1). One of the key aims of what we have said so far has been to show how Tulving’s claim might be fleshed out in terms of the idea that episodic recall, uniquely, involves a particular form of attention, which might be called ‘attention to the past’. In the remainder of this chapter, we wish to investigate a developmental claim which Nelson, drawing on Tulving’s characterization of episodic memory, puts as follows: ‘[E]stablishing a past that can be travelled through [in one’s mind] depends on socially shared remembering’ (1988, p. 266). In light of our own discussion, another way of capturing the claim is this: it is through participating in communicative exchanges that centre on the sharing of memories of particular past events, i.e. joint reminiscing, that children acquire the capacity to attend to the past.

Our discussion so far has focused in particular on the role that a specific form of causal reasoning, which we have called ‘temporal-causal reasoning’, can be seen to play in making possible such attention to the past. This might provide us with one way of understanding the significance of joint reminiscing for the development of episodic memory. The idea, in short, would be that children first learn to engage in temporal-causal reasoning in the context of joint reminiscing. But how exactly should we think of the developmental mechanism whereby participation

in this particular kind of communicative activity makes available a new type of reasoning ability?

A key claim in what follows will be that there is a particular kind of normative dimension to temporal-causal reasoning. So far, we have characterized this type of reasoning primarily in terms of the kinds of causal relationships it picks up on. Here our concern is also with a specific form of rationality it can be seen to involve. To illustrate, consider once again, for instance, the serial search task we described in section 2, above. In the version of the task that was critical to our argument, the child had a memory of the toy as being at location 2 (out of three that had been visited), but the toy was no longer to be found there. We have said that, in order to constrain her subsequent search, the child must integrate her memory of the toy as being at location 2 with her knowledge of the order in which the three locations were visited. A natural way of describing what this involves is by saying that the child must treat the content of her memory as evidence or support for the toy's being in one location rather than another, given the content of her knowledge about the order in which the three locations were visited. Christopher Peacocke has described the general kind of reasoning at issue here as 'second-tier thought, since it involves thought about relations of support, evidence or consequence between contents, as opposed to first-tier thought, which is thought about the world where the thought does not involve any consideration of such relations between contents' (1996, p. 130). What we want to suggest in this section is that there is a close connection between the capacity to engage in temporal-causal reasoning, conceived of as a species of such second-tier thought, and the capacity to engage in a particular kind of communicative exchange in which the sharing of memories is the means by which one person exerts rational influence on another. Furthermore, we also want to suggest that it is in this sense that 'socially shared remembering', as Nelson puts it, might be seen to provide the first context in which children exercise the type of reasoning abilities required to attend to particular past events in episodic memory.

To begin with, it might help to consider a case in which communication falls short of its goal. The following extract is from a conversation in which an adult experimenter (E) wants to find out what a child (C) did during a recent camping holiday.

- E: You slept outside in a tent? Wow, that sounds like a lot of fun.
 C: And then we waked up and had dinner. First we eat dinner, then go to bed, and then wake up and eat breakfast.
 E: What else did you do when you went camping? What did you do when you got up, after you ate breakfast?
 C: Umm, in the night, and went to sleep.

(Fivush and Hamond, 1990, p. 231)

Intuitively, what seems to go wrong in this conversation is that the child does not really understand the import of the adult's use of the past tense. The child

responds to the adult's questions by producing what is typically called a 'script', i.e. a schematic story of how things usually go (Nelson, 1986; Schank and Abelson, 1977). In recounting such a script, the child of course makes use of knowledge that was in fact acquired in the past. However, what is missing from the child's response is any indication that she herself can give significance to the difference between the way things went on a particular occasion in the past (i.e. her camping holiday) and the way they continue to go on a typical day.

Recent developmental research has focused in particular on the significance of adult-child conversations that differ from the example just quoted in two important respects. First, they are conversations concerning past events that the child has experienced together with the adult (usually a caregiver). Secondly, they are conversations that involve so-called scaffolding by the adult; that is to say, the adult draws on her own memory of those events in guiding the conversation—by providing some of the relevant information herself, by explicitly confirming the child's recollections, or by asking leading questions. In particular, such scaffolding seems to be aimed at eliciting, or rather jointly generating, a temporally structured account of a sequence of events, in contrast to simply asking 'What else happened?' Consider the following conversation between a mother (M) and her child (C), which seems rather more successful than the one we quoted before:

M: What happened to your finger?

C: I pinched it.

M: You pinched it. Oh boy, I bet that made you feel really sad.

C: Yeah... it hurts.

M: Yeah, it did hurt. A pinched finger is no fun... But who came and made you feel better?

C: Daddy!

(Fivush, 1994, p. 149)

In what follows, we want to focus on two kinds of contribution the mother makes to this conversation: First, she explicitly confirms the child's memory of her pinching her finger ('You pinched it', 'It did hurt'). Secondly, she introduces a further topic: another event that happened after the child pinched her finger ('who came and made you feel better?'). What we want to suggest is that these contributions can be seen to serve the aim of helping the conversation come to a success in two different, but closely connected, senses. On the one hand, they aim at aiding the child's thinking about the two events in question, and specifically their relationship to each other. On the other hand, they also aim to effect a change in the child's current emotional attitude. We believe that it is by looking at how these two aims are connected with each other, and how what the mother says might help in achieving them, that we might also better understand the general idea that parent-child conversations about the shared past, and the particular types of parental scaffolding they involve, might have a crucial role to play in children's own developing understanding of the past.

Let us look, first, at the content of the mother's contributions. What seemed to be lacking in the previous example involving the child who had been on a camping holiday was any indication that the child was able to give substance to the difference between the past and the present. Part of what the mother does in this second example is to give the child the means to do just this. What she flags, in her contributions to the conversation, is that the event mentioned by the child did take place—the child did pinch her finger, and it did hurt—but also that there was another event—Daddy making the child feel better. It seems clear that, at least in the mother's view, this later event had the power to obliterate the effects of the earlier event—acting as an 'intervening cause' between the first event and the present, as we might put it. And it is precisely the general idea of such an intervening cause which makes intelligible why things might no longer be the way they once were.

However, there is another aspect to this conversation that is not just a matter of what is being said, and if we think that the child can see the relevant connection between the two events, it also has something to do with that aspect. Perhaps the most natural way of understanding what the mother is trying to communicate to the child in this example is that there is no longer any reason for the child to be distressed about her finger. Here we are assuming, as Fivush (1994, p. 149) does, that the rekindled memory of what happened to her finger initially causes some distress to the child, which the mother wants to alleviate. If this is true, the question we should ask is how the mother attempts to do this. For instance, one option for her would have been simply to try and exert some causal influence on the child's emotional state, by introducing another topic of conversation purely as a means of distracting the child. But, intuitively, she does something quite different. Note that the mother is actually quite careful not to distract the child from the truth that, indeed, she did pinch her finger, and also the general truth that 'A pinched finger is no fun'. Rather, as we might say, her strategy is to show the child that these truths have no direct bearing on how the child should feel, because of what happened after the child had pinched her finger.

Ultimately, our interest here is not in whether the child in this example does in fact understand that this is what the mother is getting at. Rather, what we want to highlight is that, if she does so, her understanding the content of the mother's words is closely tied up with her appreciating the point they have in the conversation. We might get clearer on this issue by considering again a distinction between two aspects or dimensions of what we have called temporal-causal reasoning, which we discussed at the beginning of this section. On the face of it, it is precisely a particular instance of temporal-causal reasoning that the mother in the current example is prompting the child to engage in. The reasoning in question turns on a grasp of a particular kind of causal relationship obtaining between two events in virtue of the fact that the later event changed or obliterated the effects of the earlier event. As we have suggested, however, there is also a further, normative dimension

to such reasoning, in virtue of it being a species of what Peacocke has called 'second-tier thought'. In connection with the current example, the basic idea here might be spelled out as follows. The child's being able to grasp the relevant relationship between the two events at issue is, in part, a matter of her being able to appreciate relations of support (or lack thereof) between the content of her memories of these events and the contents of certain attitudes towards the present. That is to say, unless the child can, for instance, rationally revise her feelings in light of those memories, it is difficult to see how she can be said to have picked up on the way the two events are related to each other.

We have considered this example in some detail because we believe that it can illustrate at least one way in which the sharing of memories of past events can serve as a means of a particular form of rational interaction between two individuals. As such, it might also help us to understand better Nelson's claim that participation in 'socially shared remembering' is a crucial factor in the emergence of the very ability to attend to the past in episodic memory. Broadly speaking, the general idea here is that a specific type of reasoning ability that must be in place for episodic memory to be possible is in fact first exercised in a socio-communicative context. At the start of this section, we suggested that one key to unpacking Nelson's claim lay in the idea (developed in more detail in previous sections) that the ability to engage in temporal-causal reasoning plays a crucial role in making possible the kind of attention to the past involved in episodic recall, by allowing the child to give substance to the distinction between the past and the present. However, we have also sought to bring out a particular kind of normative dimension to temporal-causal reasoning. It involves the ability to assess relations of support, evidence, or consequence between the content of one's memories and the content of certain attitudes towards the present, in light of one's knowledge about the order in which different past events unfolded. Thus, one way of understanding Nelson's claim is in terms of the idea that children first come to use their memory in this way in a dialogical situation in which the relevant memories are shared with an adult, and in which the adult is using the sharing of those memories as a means of exerting rational influence on the child. In other words, it is through coming to appreciate the point that the adult's appeals to certain past events have in conversation that the child develops the ability to assess the relevant relations between the content of her memories and the content of her attitudes towards the present. In more concrete terms, this also involves the child's coming to understand that things might no longer be the way they once were. And it is in this sense that the development of episodic memory, which involves such an understanding, might be seen to be tied to children's participation in joint reminiscing with others. In what follows, we will try to flesh out this suggestion in the context of a discussion of recent work in developmental psychology that centres on the notion of a narrative.

5. THE ROLE OF NARRATIVES IN MEMORY DEVELOPMENT

According to Nelson (1996), a central aspect of the developmental significance of joint reminiscing can be captured as follows. Initially in development, she claims, 'memory as such has no value in and of itself, but takes on value only as it contributes to the individual's ability to behave adaptively' (Nelson, 1996, p. 265). It is only when children learn how to engage in joint reminiscing with others that memories emerge which, as she puts it, 'appear to be valued for themselves' (p. 266). Key to explaining this developmental shift, according to Nelson, is the notion of a *narrative*. Her idea is that learning to engage in joint reminiscing involves acquiring a specific set of linguistic skills—narrative abilities—and the possession of these skills forms the background to a distinct kind of engagement with the past, which she describes as valuing memories for themselves.

We wish to conclude our chapter by taking a closer look at the notion of a narrative, which has become a central notion in much recent writing on memory development (see also Fivush, 1991, Miller, 1994, Pillemer and White, 1989, among others). Specifically, we want to argue that there are at least two different, though interconnected, ideas that might be seen to inform the claim that narrative abilities play a crucial role in memory development. The first is the idea that narratives provide a crucial framework for recollecting particular past events in their own right, independently of any direct relevance they may have for current behaviour and expectations. The second is the idea that narrative abilities also serve to make such memories of particular past events socially accessible, and thus make it possible for memory to assume a new function, over and above its function in guiding behaviour and expectations. In discussing these two ideas, we also wish to compare our own account of memory development to other accounts that can be found in the existing literature.

Against the background of the argument we have outlined, one way of reading Nelson's claim that memory development is, at least in part, a matter of the child's coming to value memories for themselves, might be as follows. We have argued that there is a sense in which memory is initially used only to answer questions about how things are (or may be) in the child's current environment. It is only with development that children begin to use their memory in a way that involves a grasp of the fact that things might no longer be the way they once were, and thus that genuine episodic memories emerge.

A similar line of thought can be seen to be at work in developmental accounts which give narrative abilities a central role in making possible stable, enduring memories of particular past events. Nelson (1993, 1996), for instance, argues for the existence of a developmentally primitive memory system that is geared, primarily, at the retention of generic information. That is to say, information gleaned from particular events is typically quickly forgotten, unless reinforced by the experience of further events of the same type and retained in the form of a general

schema or script for the type of event in question. The development of language, Nelson claims, makes possible a new mechanism for establishing persistent memories by a process of reinstatement. Such reinstatement takes the form of generating memory narratives, either internally or with a social partner. And it is through such reinstatement, according to Nelson, that memories for particular past events can acquire longevity.

Similarly, Fivush and Hamond (1990) have observed that young children's recall, when asked about a certain event, appears to be quite fragmented and context-dependent. They suggest that such children are 'relying on the adult's questions to provide retrieval cues' (p. 243), and consequently recall different aspects on different occasions. With the acquisition of narrative abilities, by contrast, children acquire a consistent framework for recounting events, including the 'who, what, when and where' (Neisser, 1982), which they can use to guide their own retrieval (see also Hudson, 1990; Hudson and Shapiro, 1991).

On our account, we can retain the notion that the development of narrative skills plays a crucial role in memory development. However, our emphasis here is on a fundamental type of reasoning ability involved in narrative construction—i.e. the ability to engage in what we have called temporal-causal reasoning—whose significance is often not fully recognized or made explicit. Nelson, for instance, assumes that narrative construction can exploit a developmentally more primitive 'capacity for holding in mind a sequence of events, involving self and others, temporally and causally arranged' (1993, p. 17). There is considerable evidence to support such a claim, if it is to mean that even quite young children can reproduce a sequence of events behaviourally, or describe it verbally, and do so in a way that tends to be faithful to the temporal and/or causal relations between individual events in the original sequence (see e.g. Bauer and Mandler, 1989, 1992; Nelson, 1986). Yet, as we have tried to argue, there is also evidence suggesting that young children still lack an important kind of causal understanding, which might be described as an explicit grasp of the causal significance of the temporal order in which events happen (see also Pilemmer, 1998; Povinelli *et al.*, 1999; Welch-Ross, 2001). And, arguably, it is this kind of causal understanding which is required for full-blown narrative construction.

In fact, one way of understanding the notion of a narrative is to see narratives as the very vehicle of this more sophisticated form of causal understanding. That is to say, construction of a narrative is the form that a subject's grasp of the causal significance of the temporal order of events takes. Narratives, on this view, embody an understanding of how the overall outcome of a sequence of events depends on the temporal order in which they happened: i.e. how events that came later in the sequence might have changed or obliterated the effects of earlier events. A detailed defence of this view of what narratives are is beyond the scope of this chapter. But, if it is along the right lines, narratives might be thought to play an even more fundamental role in memory development than Nelson, Fivush

and Hamond, and others suppose. Part of our argument has been that attending to the past in its own right, in episodic memory, depends on being able to give substance to the idea that things might no longer be the way they once were. This, we have argued, is the reason why episodic recall requires the ability to conceive of remembered events as belonging to a sequence of events, later stages of which can obliterate or change the effects of earlier ones. Thus, if narratives can indeed be seen as the vehicles for the particular kind of causal understanding involved here, narrative abilities, in fact, have an essential role to play in making genuine episodic memory possible in the first place.

6. NARRATIVES AND THE SOCIAL FUNCTION OF MEMORY SHARING

In the previous section, we interpreted Nelson's claim that a crucial stage in memory development consists in the child's coming to value memories for themselves as a claim about the *content* of a sophisticated form of memory, i.e. episodic memory. That is to say, we have argued that recollecting particular past events in episodic memory involves attending to the past in its own right, independently of any direct bearing it may have on the present. Further, we have suggested that narrative construction, involving a certain form of temporal-causal understanding, might have a crucial role in making such attention to the past possible.

In talking about children coming to value memories for themselves, however, Nelson herself seems to have a stronger claim in mind, which also encompasses the idea of a fundamental change in the *function* of memory. To say that episodic memories are valued in themselves—say, in the sense that they involve a grasp of the fact that things might no longer be the way they once were—does of course not preclude that they can, on occasion, be put to a practical purpose. In an earlier section, we discussed the example of a child searching for a lost toy, and tried to show how rationally constraining her search, even if the toy is no longer at the location where she remembers it as being, involves attending to the past in episodic memory. For Nelson, however, the paradigm case of memories' being valued in themselves is one in which the very activity of recollecting and constructing a narrative of the past is, in some sense, valued in and of itself.

One way of understanding Nelson's point is in terms of a further distinction sometimes drawn in the developmental literature between episodic memories and autobiographical memories (see e.g. Fivush, 2001; Nelson, 1996; Reese, 2002). In particular, autobiographical memories, on this view, are held to embody a particular form of understanding of the self, and this might go some way towards explaining Nelson's idea that constructing a memory narrative can sometimes be valued in and of itself.

For Fivush, for instance, '[e]pisodic memories are representations of what happened; autobiographical memories are memories of what happened *to me*'

(2001, p. 36, original emphasis). According to her, the crucial difference between these two types of memory lies in the fact that the latter requires what she calls a particular form of 'representational awareness' (p. 37). That is to say, autobiographical memory can only emerge once children come to understand that memories are representations of the past, which, on Fivush's view, involves understanding that one's own representation of a particular past event can differ from those of others. It is in this context that Fivush also talks about the role of joint reminiscing in memory development. Joint reminiscing, she argues, plays a crucial role in the development of autobiographical memory, because sharing memories with others provides experience of contrasting perspectives on past events. This, as she puts it, 'is how children come to understand memories *as* representations, a critical step in the development of a subjective perspective' (Fivush, 2001, pp. 42–3, original emphasis; see also Fivush, Haden, and Adam, 1995; Haden, Haine, and Fivush, 1997; Nelson, 2001; Welch-Ross, 1997).

The idea of a difference between episodic and autobiographical memory, drawn along these lines, has not been a feature of the account we have put forward. Fivush's account can be seen as part of a larger group of theories which frame developmental questions (e.g. also questions about the significance of joint visual attention) in terms of questions about the acquisition of a 'theory of mind', which is held to centre on an understanding of the representational nature of mental states (see e.g. Baron-Cohen, 1995; Perner, 1991). As Jane Heal (Chapter 2 above) points out, however, this approach makes it difficult to see why carrying out certain activities jointly with others should have any particular importance in development. Applying Heal's argument to Fivush's account, it is at least unclear why something like the representational understanding of memory described by Fivush could not develop in the absence of genuine joint reminiscing. To be sure, joint reminiscing might be seen as a context in which differences in the way two people remember a particular event become particularly salient. However, such differences might also, at least in principle, become apparent to a child who simply observes that other people's reactions after a certain event are different from her own.

Heal's general aim is to argue against the usual conception of a 'theory of mind' as the end-point of development, instead replacing it with a view according to which development is a matter of the child's 'learn[ing] with growing sophistication to play his or her part in [a shared] life' (above, p. 00). Interestingly, Welch-Ross (2001) has criticized Fivush's (2001) account on related grounds. Picking up on Fivush's notion of a 'subjective perspective', she argues that the development of such a perspective is not, as Fivush portrays it, a matter of noticing differences between one's own perspective on past events and that of others. Rather, she suggests that such a perspective first emerges 'because children begin to organize events according to personal and emotional evaluations that are shared with others' (Welch-Ross, 2001, p. 116).

Like Welch-Ross, we believe that the primary significance of joint reminiscing lies not in making evident differences in perspective, but rather in establishing a shared outlook on the past in the first place. An example here might be the conversation involving the child who had pinched her finger, as discussed above. According to our reading of this example, the rekindled memory of what happened to her finger initially causes some distress to the child, which the mother tries to alleviate by reminding the child that Daddy subsequently came and made her feel better. Thus, jointly constructing a structured account of what happened in the past, in this example, might actually be seen to serve as a means of resolving differences between two people's perspectives.

However, implicit in this interpretation is a further idea that is unrecognized, or at least not made explicit, by Welch-Ross. It seems that it is precisely *by way of* organizing events according to such a jointly constructed structured account that, at least in this case, mother and child arrive at the kind of shared personal and emotional evaluation of the past of which Welch-Ross speaks. Picking up on our earlier suggestion regarding the notion of a narrative, one way of developing this point might be in terms of the idea that narratives of the past are not just the vehicle of a certain form of causal understanding, but also the vehicle of a certain form of normative understanding. What we have suggested, in fact, is that there is a close connection between these two features, in that giving significance to the causal order in which events happened is, at least in part, a matter of being able rationally to revise one's current attitudes in light of memories of particular past events. It is in this sense that joint narrative construction might be understood as a way of arriving at a shared appreciation of how certain attitudes are, or are no longer, rationally appropriate.

Again, we do not have the space to discuss this way of construing the notion of a narrative in more detail. Rather, we want to end our discussion by coming back, once more, to Nelson's claim that children come to value memories for themselves as they learn how to participate in joint reminiscing with others. One reading of this claim that we have as yet left under-explored is in terms of the idea that it is the activity of sharing memories with others that children come to value in and of itself. Bernard Williams has argued that any plausible account of language in general needs to recognize 'the immense importance that human beings find in exchanging assertions which offer no news to any of them' (2002, p. 47). Many of our conversations about the past, in particular, clearly take the form of such exchanges of 'plain truths' (p. 45). What we want to suggest, in short, is that the notion of a narrative, as just outlined, might help us shed light on the importance that we nevertheless attach to them.

To develop the point, it might be helpful to note a parallel with issues regarding joint attention discussed in some of the other chapters in this volume. Several of them can be seen as trying to articulate a sense in which engaging in joint attention is a fundamental feature of what Jane Heal describes as living a 'shared life'.

This issue comes to the fore specifically in connection with two, closely interrelated claims about the significance and nature of joint attention, different variants of which are discussed by a number of the authors. The first is the claim that joint attention has a fundamental role to play in grounding (further) collaborative activities, such as communication and joint action. The second is the claim that what makes these activities genuinely collaborative is the particular kind of mutual awareness that they involve and that joint attention provides for. What connects these two claims, on Heal's own view, is the idea that it is by way of engaging in joint attention that we recognize, and make manifest that we recognize, 'what reasons [others] already acknowledge and what kinds discussion and project it might be fruitful to engage with them' (p. 00 above).

To adopt Heal's words, one way of understanding the view that we have outlined is in terms of the idea that there is a specific way in which conversation can also turn on such a mutual acknowledgement of reasons, that has to do with the possibility of jointly constructing a narrative of the past. Thus, one way of understanding the importance we attach to joint reminiscing, even when it amounts to no more than the exchange of plain truths, is in terms of the idea that joint reminiscing is an activity through which others can become available to us as subjects with whom certain forms of rational engagements can be entered into. We value memories of particular past events for themselves, on this view, because the sharing of such memories is a way of establishing, maintaining, or negotiating a distinctively social relationship with others.

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