PART I

IN MIND, CULTURE, AND HISTORY: A SPECIAL PERSPECTIVE

Why this particular collection? There is a tide in the affairs of memory, which we thought we should take at the flood. The study of memory in cognitive psychology – one of the most venerable traditions of the discipline – has grown by leaps and bounds in the last twenty years, providing us with new tools and models, from the neural foundations of recollection to the creation and maintenance of autobiographical and historical memories (as well as many other things in between). In the same period, historians have thrown themselves with great abandon into the study of official and private memories, of celebrations and monuments, and of the invention and use of traditions. Even anthropologists have, to some extent, overcome their belief in culture as a *deus ex machina* or prime mover, and are beginning to describe it as the aggregation of myriad operations of remembrance and forgetting. Since these developments happened in isolation, as guaranteed by the cordons of academic specialization, it was time to understand how they all relate to each other.

Mere juxtaposition would be of little interest, as the lowliest search engine can do precisely that – juxtapose results, if nothing else – and especially as these are exciting times for anyone interested in memory as a psychological process fundamental to history and culture. As we report in the following chapters, in a whole variety of domains it makes little sense to think of memory as "individual" (for psychologists) or "cultural" (for historians and anthropologists), as the most fascinating phenomena occur in the individual creation of cultural and historical representations. To understand those phenomena, one should not be "interdisciplinary," if that means concocting a witches' brew of disparate results. Rather, one should ignore disciplines altogether and forge ahead, as many of our contributors are doing with blithe eagerness and thorough opportunism, using whatever tools and techniques will best further their particular interests.

So this volume presents a *special* perspective, emphasizing the role of memory processes in the construction of self-identity, of shared cultural norms and concepts, and of historical awareness. Although the results are fairly new and the techniques suitably modern, the vision itself is, of course, related to the work of precursors such as Frederic Bartlett and Alexandr Romanovich Luria, who in very different ways represent the starting point of a serious psychology of human culture.

A perspective is not a doctrine, nor should it be. This volume does not offer a definitive and synthetic view of human memory's contribution to culture and history, because that is neither possible nor desirable in the current state of our knowledge. But a perspective is what one needs as a guiding principle in the exploration of a vast literature. That is how the present volume was intended, and we hope that it will be used as a scholarly but reader- and student-friendly introduction to the domain of memory processes and their cultural effects.

1

What Are Memories For? Functions of Recall in Cognition and Culture

PASCAL BOYER

What is memory for? The easy and spontaneous answer is that "memory is for storing information about the past," "memory helps us preserve past events," and variations on that theme. But what is the point of *that*? Why should any organism have that kind of a capacity? What good is it? Surprisingly, this is not a topic that has received much attention from specialists of memory. There are, of course, many models and accounts of memory in psychology, but they generally focus on the internal workings of the organ, as it were, rather than its function in relation to the rest of human behavior. So it makes sense to ask, what does memory actually do? If we follow an organism around and try to understand its behavior, can we say that some of that behavior is influenced by memory? When? How? Perhaps, as we form a better idea of what memory does, we will be able to make more informed guesses about what memory is for and how it came to be.

MEMORY IS FOR THE PRESENT – SO WHY MEMORIES?

Obviously, we have memory because of evolution, because of the kinds of organisms we are, as a consequence of our evolutionary history. Now the past does not affect an organism, except through its consequences for present circumstances. So if we consider memory as a biological function, we are led to consider that memory is certainly not about the past but about present and future behavior. Memory has a biological function to the extent that it serves to organize current behavior.

Why would efficient behavior require any connection to the past? To answer this question, it helps to step back from what we know of memory and consider cognitive design in terms of biological engineering. Behavior should be appropriate, given the relevant features of the environment. Storing information about the past may be of use to organisms that (a) live

in environments stable enough that past situations carry information about present ones; and (b) cannot directly grasp, through perceptual processes, all the relevant features of their present environment. If all a paramecium needs is information about the salinity gradient of its environment, then it needs perception but not memory, both because salinity can be directly sensed and because the environment is constantly changing. We and most other animals are more complex organisms, depending on richer information about our environments, and the relative stability of these environments means that the past carries potential information about the present.

This makes good evolutionary sense of some of our memory systems. Psychologists generally distinguish between semantic, episodic, and procedural memory stores. Having *semantic* memory, in the usual sense of stable, declarative, and accessible knowledge of the environment, allows us to extract relevant information about current situations from past state of affairs. Whatever is stable across time is in our semantic memory. In the same way, various forms of *procedural* memory (skills, expectations, priming) have a straightforward biological function. They provide fast, appropriate responses modeled by past encounters – frequent and distant in the case of skills, unique and recent in the case of priming.

In this scheme of things, it is more difficult to explain why any organisms should have *episodic* memories, or what we most commonly refer to as simply "memories" – information about unique, specific situations that they encountered in the past. What is the point of that? The answer may seem straightforward enough – we recall the past so we can learn from it – but the existence of semantic and procedural forms of memory shows that episodic memories are not really of much help. The different forms of learning observed in natural organisms, from operant and classical conditioning, to associations, to more complex forms of information-processing, all reflect the influence of past situations on present cognition – but not via memories of particular episodes. If anything, it would seem that organisms learn about the past mostly to the extent that they can extract from past situations what is *not* unique about them, and what will be relevant in the future. So why do we have this interesting, and to human minds extraordinarily important, capacity to store unique episodes?

EPISODIC MEMORY AND TIME TRAVEL

Episodic memory was originally defined as knowledge of the "what, when, where" of a scene, as opposed to information that could be extracted from either a single or multiple situations without reference to these individual

situations (Tulving, 1983). The technical distinction between "episodic" and "semantic" stores captured (but also modified) a familiar if not altogether precise assumption that there is a difference between "memories" in the ordinary sense on the one hand and knowledge or skills on the other.

However, this definition in terms of what-where-when soon proved less than satisfactory. It turns out that we often have information about what-where-when for situations that we did not actually experience; conversely, many autobiographical memories lack at least some of that information. Temporal markers in particular are known to be rather poor cues in autobiographical memory (Brewer, 1988; Robinson, 1976; Wagenaar, 1986). More important, the early definition of episodic memory did not capture one of its essential features, at least in humans, namely, our capacity to *reexperience* past situations. As episodic memory often consists of imaginatively revisiting the original scene; it can be described as "mental time-travel" (Suddendorf & Corballis, 1997; Tulving, 2001).

The terms "what-where-when memory" and "mental time-travel" (henceforth WWW and MTT) correspond to distinct phenomena, accessing information about a great many unique details of past experiences on the one hand and constructing a simulation of the affective as well as sensory-perceptual experience itself on the other.

Imagery and affective tenor are essential to the specific phenomenology of recollection and trigger a powerful indication that the scene really occurred as mnemonic reconstruction depicts it, that is, it is what psychologists call a "remember," and not just a "know" memory (Roediger, Wheeler, & Rajaram, 1993; Tulving, 1985). The assumption may be misleading, as we know from research on memory illusions, but is nonetheless almost inescapable. If the memory of it feels like reliving the scene, then we think we really experienced *that* scene (Johnson & Raye, 1981; Ross, Buehler, & Karr, 1998).

AUTOBIOGRAPHICAL MEMORY FROM PHENOMENOLOGICAL RECORDS

Conway and colleagues proposed a synthetic model to summarize the connections between knowledge of self-related facts and episodic recollection (Conway, 2001; Conway & Pleydell-Pearce, 2000). Self-memory knowledge consists of a hierarchy of representations, including at the topmost level a version of one's *life-story*, a general narrative that combines several, lower-level *lifetime periods*. These correspond to such extended periods as "when I was at school" or "when we lived in Italy." Each of these periods is characterized by a set of relevant *general events*, for example, "taking the school bus,"

"show and tell," or "having my morning *cappuccino*." The general event representations are themselves linked to episodic memories proper, that is, records of short specific experiences that Conway calls *phenomenological records*.

Phenomenological records have the following properties: (1) They retain summary records of *sensory-perceptual-conceptual-affective* processing derived from working memory; (2) they represent *short time slices*, typically limited to the contents of consciousness as one specific goal was being pursued; (3) these contents are represented roughly in *order of occurrence*; (4) the records are only retained in a durable form if they become *linked to knowledge* of one's own life (autobiographical facts); (5) they are recollectively *experienced* when accessed; (6) they provide *specificity* to representations of general autobiographical events; (7) their *neural correlates* may be separate from other autobiographical knowledge networks (Conway & Pleydell-Pearce, 2000). The combination of semantic memory and phenomenological records would suggest that "memories" of one's own experience come in a great variety of shapes, from the most specific – the raw record of experience, as it were – to the most abstract – the association of a mere fragment of experience with a lot of knowledge (Schacter et al., this volume).

This capacity for autobiographical memory is served by a variety of orchestrated but distinct cognitive systems. Rubin (2006), for instance, notes that recollection certainly involves modality-specific stores – memory for specific visual, auditory, and linguistic information – as well as a capacity for visual imagery (Watson & Rubin, 1996). Beyond these external sources of information, three specific capacities in particular are engaged in autobiographical recall: (1) *self-reflection* – an ability to have thoughts about one's own experiences as meta-representations (so experienced past is an experience but not a hallucination); (2) a sense of *personal agency and ownership*, which connects current thoughts and intentions to a unified self; (3) an ability to represent a *continuous self* enduring through time (Klein, German, Cosmides, & Gabriel, 2004). Impairment of any of these capacities results in dramatically altered autobiographical memory. For instance, autistic patients whose meta-representational abilities are impaired have poor autobiographical memories. The same goes for those schizophrenic patients with a disrupted sense of ownership (e.g., delusions of thought-control) (Elvevåg, Kerbs, Malley, Seeley, & Goldberg, 2003). Autobiographical memory is also poor in subjects like young children whose sense of enduring temporality is rudimentary (Klein et al., 2004).

To sum up, having episodic memories consists of constructing a plausible, seemingly veridical though vicarious form of experience from the faint

cloth of records of consciousness, within the frames supplied by knowledge of one's past. The result is an imaginative engagement with the past – but what are the effects of such engagement?

MEMORIES FOR THE SELF

One main answer, from the psychological literature, is that memories constitute the self (Rubin, 1996) – a representation of distinctive personhood through particular facts "owned" by the person (Klein, 2001). This is actually a classical philosophical assumption found, for instance, in John Locke's statement that a human being is a person only to the extent that they can relate to their own, distinctive past (Locke, [1697]1975). This would imply that very young children, who seem to lack integrated autobiographical memory, are not full selves in this sense; and that amnesic patients have lost one of the essential components of the self.

The empirical evidence, however broadly consistent with this view, also gives it a particular twist, in that the capacities that support selfhood are in fact necessary for autobiographical memory. Recall of both facts and episodes from one's personal past are essential to one particular component of the self, what Ulric Neisser called a "narrative" self (Neisser, 1993), in contrast to other components, for instance, the sense of ownership of one's bodies and actions, the "ecological" self that is impaired in alien-hand or other control delusions (Boyer, Robbins, & Jack, 2005; Frith, 2005). Also, recall of phenomenal experience is useless if it is not integrated in self-knowledge (Conway & Pleydell-Pearce, 2000). This is manifest in both the development and impairments of episodic memory.

Contrary to the simple assumption that having a past directly creates a self, the developmental literature suggests that having a sense of self is a precondition for entertaining episodic memories as autobiographical. Even though we as adults can remember few, if any, episodes before the age of five, there is considerable evidence that children from the age of two maintain a considerable store of episodic memories (see, for instance, Fivush, 1997). These memories, however, are not strictly speaking *autobiographical*, as (a) they are not associated with a clear sense of distinctive personal experience (young children may represent the event as something that happened, not necessarily as something that happened to *them*) and (b) the episodes are not integrated in a causal story that would lead to one's present experience, as they are in adults (Nelson, 1988). Nelson and colleagues' systematic studies of spontaneous and cued recall show that distinct aspects of self-representation come online at different stages of development, and

each of these stages is characterized by a different way of representing one's own past experience (Nelson, 2003; Nelson & Fivush, 2004). A distinction between actually experienced and imagined events predates a sense that recalled experiences are located in the past. This is true of one's own, unique past, and one's access to that past is also unique (Nelson & Fivush, 2004). Early episodic recall in children lacks the certainty that makes memory seemingly real – in psychological terms, a developed capacity for reality monitoring (Sluzenski, Newcombe, & Ottinger, 2004), a point vividly illustrated by this dialogue between father and daughter in Shakespeare's *The Tempest*:

PROSPERO

[…] Canst thou remember
A time before we came unto this cell?
I do not think thou canst, for then thou wast not
Out three years old.

MIRANDA

Certainly, sir, I can. […]
'Tis far off
And rather like a dream than an assurance
That my remembrance warrants.

Indeed, one of the components that selfhood creates is the "assurance" that memory "warrants," that the facts are indeed records of own experience rather than of dreams or fantasies. This dependence of autobiographical memories on self-representations is certainly relevant to the familiar phenomenon of childhood amnesia, a failure to retrieve all but a few of the episodes encoded before age four or five (Rubin, 2000).

Autobiographical memories, then, depend on what Conway, (1996) called a "self-system" of current goals and semantic knowledge of the self. This is clear not just in the developmental facts reviewed so far but in cultural differences as well. People in different places construe the connections between self and others in slightly different ways. They also retrieve autobiographical memories that support these implicit assumptions about selfhood. For instance, the U.S. versus East Asia difference in terms of "independent" versus "interdependent" ways of construing the self (Markus & Kitayama, 1991) is correlated with important differences in the age of first memories (later by about six months in Asia) as well as their content (more generic, with more characters, in Asia) (Ji, Schwarz, & Nisbett, 2000; Leichtman, Wang, & Pillemer, 2003; Wang & Conway, 2004). The differences in both

self-image and memory may be mediated by early, culturally variable practices of child-adult dialogue about own experience (Wang, 2001). Even in terms of large-scale narrative, it would seem that autobiographical memory is driven by normative considerations, among them by a sense of what the normal cultural "life-script" is, what events punctuate it, in what order and with what results (Berntsen & Rubin, 2004; Berntsen & Bohn, this volume).

As far as impairment is concerned, here too the evidence would point to a major revision of the Lockean picture. We may expect that losing access to one's past is, in some real sense, losing access to one's self or at least to a major component of it. However, apart from exceedingly rare cases of fugue states with complete and durable retrograde amnesia, this is not what the clinical evidence suggests. On the contrary, patients do know that they have a past, and that it is connected to their personal identity. They also have access to some summary description of their own personality traits, before and after their accident (Klein, Cosmides, & Costabile, 2003; Klein, Cosmides, Costabile, & Mei, 2002a). Contrary to the classical picture, the loss of most episodic memories, even accompanied by anterograde amnesia (failure to form new memories), does not quite result in the complete loss of identity – see the famous cases of patients HM (Corkin, 2002) and KC (Rosenbaum et al., 2005). This, too, would support the notion that a large part of the sense of self, including the narrative self, is maintained by *semantic* knowledge of the past, as a frame within which recalled episodes are intelligible and provide an intuition of reality (Conway, 1996; Williams & Conway, this volume).

MEMORIES FOR SOCIAL GROUPS

What do shared memories do for social groups? Here too we find that empirical evidence to some extent challenges a common and seemingly innocuous assumption – that memories sustain a distinctive *identity*, which is what social groups need, maintain, and transmit to further generations. This is one of the main themes in what David Blight called the "memory boom" (this volume), the renewed interest of historians, anthropologists, and the general public in the collective construction of a common past. Increasingly, historians have focused on the development of memories for historical events, in the many ways in which the past is constructed, retrieved, or distorted as part of various identity projects (see, for instance, Blight, 2002, on the American Civil War) and in particular on the ways in which people associate particular places with particular visions of the historical past (see Nora,

1984, 1986; Winter, 1995, this volume). This interest in memory as an active, goal-driven process among social groups reminds one of a similar view of individual memory originally proposed by Bartlett (1932).

There is, of course, a lot of evidence for an interest-driven appropriation of the past (see, for instance, Blatz & Ross, this volume). Also, we know that ethnic or national groups are "imagined communities" as well as real ones, normative as well as descriptive (Anderson, 1983), and that nationalism creates nations rather than the other way around. That is, the specific form of the modern nation, with a common language and polity and the (often largely spurious) claim of common descent and cultural norms, owes a lot to the need to create a viable state with a common administration and educational system (Gellner, 1983). Indeed, the period of strongest emphasis on the creation of *national* states in the nineteenth century was also that of unprecedented and deliberate *invention* of "ancestral" national traditions (Hobsbawm & Ranger, 1983). A great deal of ingenuity went into the transformation of various folktales, historical memories, and cultural norms into "ethically constitutive stories," narratives that provide national histories with emotional and moral impact (Smith, 2003a). The instrumentalist vision seems to follow naturally from all this.

There is danger, though, that phrasing collective remembering in terms of constructive memory may lead to a simplistic, instrumentalist vision of shared historical narratives. Following this, people, and especially people in groups, simply adhere to the most convenient, identity-boosting, or morally satisfactory view of the historical past that is available. Indeed, collective remembering is not *just* the outcome of deliberate construction (Wertsch, this volume). The ways in which particular episodes become part of shared histories are far from simple. As Pennebaker and colleagues demonstrated on a variety of events and social contexts, the appropriation of an event requires complex *individual* processes whereby people locate historical events in relation to their own life stories (Pennebaker, Páez, & Rimé, 1997, this volume). Also, the ways people think of themselves as parts of groups is strongly constrained by individual cognition, in particular by people's essentialist assumptions about communities. Tacit assumptions about ethnicity are often derived from spontaneous, early-developed (and largely false) assumptions about living kinds. Young children, like most adults, assume that all members of an animal species possess some non-apparent, inherited, and causally efficacious "essence." Cats are what they are – and what makes them different from dogs – because they inherited some essential "catness" that makes them grow and behave the way they do (Hirschfeld & Gelman, 1999). There are many signs that this biological