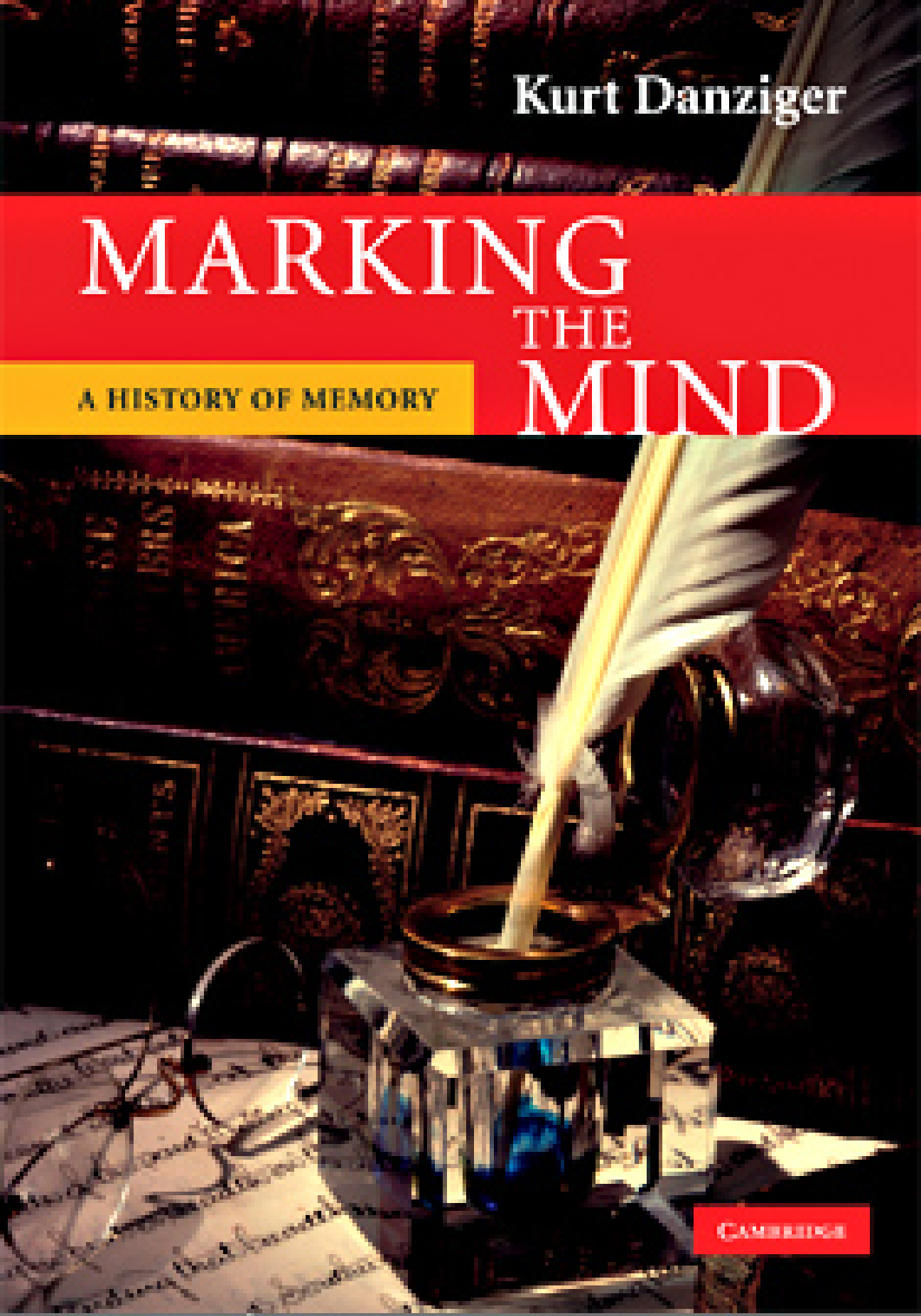
Kurt Danziger

MARKING THE MIND

A HISTORY OF MEMORY



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Marking the Mind

Memory is one of the few psychological concepts with a truly ancient lineage. Presenting a history of the interrelated changes in memory tasks, memory technology and ideas about memory from antiquity to the late twentieth century, this book confronts psychology's 'short present' with its 'long past'. Kurt Danziger, one of the most influential historians of psychology of recent times, traces long-term continuities from ancient mnemonics and tools of inscription to modern memory experiments and computer storage. He explores historical discontinuities, showing how different kinds of memory became prominent at different times, and examines these changes in the context of specific themes, including the question of truth in memory, distinctions between kinds of memory, the project of memory experimentation and the physical localization and conceptual location of memory. Danziger's unique approach provides a historical perspective for understanding varieties of reproduction, narratives of the self and short-term memory.

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When I embarked on the studies that form the basis for this book I regarded them simply as extensions of previous interests that would provide some amusement in old age. Gradually, this solitary pursuit turned into a book, a process that could not have come to fruition without the help of others. It is pleasant and appropriate to recall the stimulation provided by my Berlin friends, Lorraine Daston and Gerd Gigerenzer, who opened up important vistas for me. Subsequent conversation with David Murray showed me how much I did not know about the psychology of memory.

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1 Does memory have a history?

CHAPTER OUTLINE

All human societies remember their ancestors but they do so in very different ways. Where there is no writing, memory of one's forebears is evoked by shared reminiscences, mementos or ceremonies, but never by rereading their letters or obituaries. In some places, ancestors are recalled by donning masks, by imitating their gestures and by going into a trance.[1] We remember our dear departed when we pay a visit to the cemetery. But cemetery visits, as we know them, are essentially a nineteenth-century innovation.[2] Memorial practices change through the ages. The role played by monuments and processions, for example, has varied historically, not only in commemorating one's immediate ancestors, but also in the way the collective memory of societies is mobilized.[3]

Historical change in social practices of recall is not limited to ancestral memory. Among non-literate people, rules and regulations cannot be recalled by consulting written documents, though consultation of elders is common. There may also be specialists in memory whose services may be required even after the introduction of writing. Ancient Greece had the institution of the *mnemon*, a person whose job it was to remember religious or legal matters relevant to decision-making and jurisprudence.[4] Roman politicians and lawyers were known to own *graeculi*, 'little Greeks', who were intellectually trained slaves that were also required to memorize social and technical information so that they could prompt their masters during court sessions and political or social events.[5] With the accumulation of written documents the essential function of these slaves would be passed on to archivists and librarians. But this took many centuries, and in the Middle Ages oral testimony in court would still enjoy greater trust than documentary evidence.[6]

Individual memory as a historical problem

That the practices and institutions of social memory are historically embedded is not a matter open to doubt. Whether this has serious implications for the understanding of individual memory is, however, a far trickier question. The literature of modern psychology strongly implies that history has no relevance for the study of individual memory processes. Within that body of work the lack of any relationship between the history and the psychology of memory appears to be taken for granted, for there are virtually no psychological studies that so much as raise the question. The neurophysiological basis of memory processes is frequently addressed, their social basis rarely.

Yet recognizing the neurophysiological, and hence biological, basis of human memory processes should lead one to the conclusion that these processes must indeed have undergone a certain historical development. The biological evolution of human brain physiology simply cannot account for the kinds of memory skill that the modern individual employs every day: 'Human memory is clearly not an adaptation for remembering telephone numbers, though it performs this function fairly well, nor is it an adaptation for learning to drive a car, though it handles this rather different problem effectively too.'[7]

Any activity that involves reading must rely on memory processes that could not have existed *in that form* before the invention of writing, a comparatively recent development in human history. Certainly, the *possibility* of such a development may be considered to have been latent in the biological equipment of the species *homo sapiens*, but that still leaves open the question of how this equipment became adapted to serve the memory tasks that are routinely accomplished by literate individuals. There can be no question of biological adaptation here because the time-scale is far too short. One is dealing with developments that take place in social-historical time, counting perhaps in centuries rather than the millions of years of biological time. We cannot expect to explain how we ended up with the cognitive abilities we have by short-circuiting human cultural and social development.[8]

Such short-circuiting has sometimes taken the form of treating historical change as a mere continuation of biological evolution, explained by the same principles. For example, in the course of biological evolution, a trait originally selected for one kind of adaptation may eventually come to serve quite a different function. Feathers may have served the function of thermoregulation long before they were used to fly. Darwin's term was 'preadaptation', whose teleological connotations are hopefully avoided by the more recent neologism, 'exaptation'.[9] Applying this principle to the social evolution of human memory, however, at best provides a statement of the problem, while drawing attention away from the direction in which a solution must be sought. The increasing complexity of human society and vast technological progress have greatly multiplied the functions that human memory has to serve. It follows that whatever memory facilities were

selected in the course of human evolution must have come to serve a host of new functions in the course of human history. But this is merely to state the obvious. The question that should be on our agenda now concerns the course of this functional change, a course that takes place within socio-historical time, not biological time. For an understanding of this process we have to turn to concepts and categories that are adequate to socio-historical change, which 'preadaptation' and its variants are not.

Theoretical speculations about the evolution of human cognitive abilities have thrown little or no light on the development of human memory in historical time. This is because they have been preoccupied with the evolution of proto-humans into humans and with human functioning during the hunter-gatherer stage. Very little psychological attention has been directed at the huge cognitive changes, particularly in human memory, that took place after the advent of permanent settlement and literacy.

The work of Merlin Donald remains a notable exception.[10] Although the bulk of his work is concerned with the development of proto-human and human cognitive skills before the advent of literacy, he identifies the fundamental link between the earlier and the later periods and recognizes that human cognitive change did not stop with the early cave paintings of *homo sapiens*. It may be true that our brains have not changed over the last few millennia, but what sort of brain are we talking about? First of all, it is not the brain of an isolated creature. In its natural environment this organ functions within a network of social interaction linking the activity of several brains. Second, this organ specializes in plasticity, so that its functioning can be profoundly affected by the networks it is part of. Human brains are specifically adapted for life within human culture. That includes highly developed capacities for representation, the ability to use one cognitive content to signify another.

For the history of human memory the crucial development involves the use of materials outside an individual's body for purposes of representation. If those materials possess some permanence, such as marks on a rock surface or a tree bark, they come to function as an external memory. Acts of remembering may now be evoked, not only by the immediate presence of other individuals, or by some kind of bodily activity, but also by previously constructed symbols preserved by means of an external medium. From then on the further development of human memory is inextricably bound up with the historical development of external memory, a link that becomes particularly close once external memory takes the form of writing.

External memory is based on the purposeful modification of a physical medium by means of specifically designed tools and skills. In short, external memory constitutes a kind of technology, and like all technology it exhibits historical change and improvement that depend on the social conditions of its employment but also affect those conditions in turn. The technology of external memory is a part of human history. But it can only function as part of a system that includes the biologically constrained equipment of human

individuals. A tool is a tool only for those who know how to use it. Developing various external memory systems was not just a matter of material invention but also of acquiring the specific skills needed to get the most out of those inventions. This means that the functioning of individual memory, too, would be subject to historical change. The relatively brief time-scale of human history may preclude significant phylogenetic change, but this does not mean that human memory functions exactly the same way now as it did 5,000 years ago.

For technologies of inscription to be of any use people had to acquire the art of reading, something that was not hard-wired in their brains. But for inscriptions to function as a useful external memory, people had to develop memory skills that were just as novel as reading once was. They had to discover ways of linking their own memories to the memory that was potentially available outside. Without pointlessly reproducing everything that was in external memory, they had to find ways of making the content of external memory accessible. In other words, they faced special retrieval tasks that were different from any retrieval tasks they would have faced in the absence of external memory. Old mnemonic aids lost their value and new ones had to be invented. As the archive of external memory became more extensive, complex phonological and situational cues became much less useful for recovering its content. Instead, people had to learn to organize this content so that it became accessible through the use of new kinds of address systems and logical arrangements. Externally archived material is useful only to the extent that its organization is reflected in individual memory. If the archive's organization changes, as it certainly has in the course of history, individual memory eventually has to adapt its own organization.

But perhaps the organization of external memory is simply a reflection of features that were already built into individual memory before there was any external memory at all. This can be true only in the tautologous sense that humans would not have been able to develop ways of linking external and internal memory that were beyond the physiological limits of their biological equipment. However, as those limits allow considerable latitude in the forms of actual memory organization, these forms cannot be derived from them. It certainly does not look as though the organization of external memory required only the projection of an organization already established in the human brain. If that had been the case, one would have expected far more rapid advances in the organization of external memory than are observed in human history. The slow rate of progress suggests rather a co-evolution of external memory and the corresponding cognitive functions.

With the benefit of numerous inventions, accumulated over many centuries, it is easy for us to assume that forms of memory organization which we were taught in childhood are direct pointers to the way 'natural' memory operates. We are thoroughly accustomed to accomplishing the retrieval of verbal information by using indexes, titles, hierarchical arrangement and so

on. Yet all these devices had to be gradually developed in the course of many centuries during which people were slowly learning how to make the most of their new forms of external memory. Nor were the advantages of each new invention immediately obvious: there were false starts, setbacks and long delays before mnemonic aids that seem to us so natural became widely adopted.[11] Thus, even after the adoption of alphabetic script, the use of single-word units for representing and remembering written information was far from natural to human external memory users. For those using the non-Semitic scripts of the West, the very concept of 'word', as we understand it, appears as a *consequence* of extended use of written information.[12]

Such observations raise questions about what exactly is being investigated in modern memory research. Is it the constitution of a species-wide and generic 'human memory' that is being studied in twenty-first-century laboratories, or is it a socially embedded way of functioning that is the result of a long period of adaptation to a gradually developing culture of literacy? To decide this question the use of historical evidence is indispensable.

Individual memory is not only closely linked to historically changing forms of external memory, it also does its work in the service of tasks whose parameters are set by changing social demands and conventions. Consider some of the culturally embedded memory tasks that have provoked thought and wonder about the nature of human memory at various times. There is, for example, the task faced by the designated storyteller, bard or keeper of traditional lore in a non-literate society. Some of these individuals appear to accomplish prodigious memory feats when they reproduce verbal narratives that extend over many hours. Their reproduction is of something heard, not read; they cannot go back to check the script in the middle of their narration, yet they do not falter. How do they manage this feat? More to the point in the present context, do they employ the same memory skills as a lawyer in classical Rome mustering legal arguments without a prepared text in front of him? Do either of them have anything in common with the medieval preacher exhorting his flock by piling up biblical analogies and quotations that he has not only 'learned by heart' but also 'taken to heart'? If so, what? Without looking at the historical evidence we cannot know. Nor can we know whether the findings of modern memory research represent anything more than a documentation of how human memory functions when confronted with memory tasks that are as historically culture-bound as the tasks faced by an illiterate storyteller, a Roman lawyer or a medieval preacher.

Because human memory functions in a social context, engaged in tasks that bear the stamp of specific social demands, it has a history, a history that did not stop when the first psychological memory experiment was set up. Social demands give *direction* to the activity of remembering. In some social contexts exact reproduction of certain words is important, for example, in liturgical renderings of sacred texts or in many classical memory experiments. In other situations the exact words need not be remembered as long as

their emotional impact is faithfully reproduced, for example, in the retelling of an ancient legend. Sometimes there is a premium on remembering the logical structure of an argument; at other times it is vital to remember the layout of a building. But such memory tasks do not vary at random between cultures and historical periods. At certain times and in certain places, accurate memory for sacred texts is terribly important, but under different circumstances this sort of memory may actually be discouraged. The same can be said of all the other examples mentioned above and of most instances of remembering one might care to think of. The point is that the social context of memory is marked by what one might call *mnemonic values* that give direction to the process of remembering.

Many of the historical changes in memory are due to changes in these mnemonic values. They affect not only *what* is to be remembered, but also *how* it is to be remembered. For example, medieval texts devoted to the memory practices of monastic culture emphasize that biblical narratives must be remembered with full emotional engagement.[13] The kind of memory that is sought after here is very different from the depersonalized storage of discrete facts that has been so highly valued in more recent educational contexts (and in many memory experiments). The memory the monks were trying to develop did not express itself in the regurgitation of 'information' but in a kind of reliving, body and soul, of sacred narratives and parables.[14] In another historical period, the Renaissance, a more embodied, emotionally involving kind of memory would be compared to falling in love or being lovesick.[15] People have not always remembered in the same way, and their most valued ways of remembering have not always been the same.

A conceptual history

The array of experiences, functions and capabilities to which the term 'memory' was applied changed in the course of human history. The details of this process are complex and include many different aspects that await specific elucidation. Some aspects are more easily investigated, because they have left records in the form of monuments, images or linguistic inscriptions. Other aspects we know about because they are mentioned in surviving documents, for example, the use of mnemonic techniques in what used to be called the 'art of memory'. Yet other aspects, mainly pertaining to memory in oral speech situations, can still be observed in contemporary forms that may point to cultural survivals.

Describing and analyzing the social context for different ways of remembering is a task best left to professional historians. In this book I draw heavily on their work in order to supply the necessary background for my main topic, the conceptualization of memory in the texts of different historical periods. In

these texts memory has become an identified object of reflection. No doubt acts of remembering had sometimes occasioned comment, discussion and speculation before the advent of literacy, but the exploration of that kind of evidence requires the methods of the anthropologist and the oral historian. That dimension is not covered in this book because it would inordinately expand a topic that is already too large. There are many aspects to the history of memory, and the aspect that provides the focus here emerges in the writings of philosophers, physicians, psychologists and others who ensured the dissemination of beliefs about memory that these writings had probably helped to crystallize in the first place. With the advent of this textual material *concepts* of memory became part of the historical archive and therefore an identifiable part of intellectual history.[16]

In these writings memory is posited as a distinguishable feature or category about which things can be said. It forms the objective pole in a subject–object relationship. As an object, memory is marked by a certain degree of resistance or even recalcitrance. It does not automatically do what one would like or expect it to. It plays tricks on one, refuses its help when one needs it, distorts and decays. But perhaps it can be tamed? In one way or another, all the historical moves discussed here constitute attempts at doing just that, domesticating memory.

Concepts of memory have never constituted an isolated domain of ideas – they were always deeply connected to social practices and cultural artefacts. Some of these social practices, such as ancient mnemonic techniques or modern experimental techniques, have been directly targeted at memory itself; other practices, such as those of literacy, have had an indirect, though pervasive, effect on the conceptualization of memory. Cultural artefacts whose history is intertwined with that of memory include written and printed texts, more modern recording devices and digital computers. Although the examination of concepts of memory forms the thread that runs through this book, these concepts are placed in the relevant context of changing practices and artefacts whenever the available historical evidence permits.

During the period covered by this book, remembering ceases to be something that people just do without being conscious of what they are doing. They have come to separate remembering from their many other activities and to reify it in the form of an object called memory. They begin to reflect on this object, invent models for its working, intervene in its processes, supply it with ever more sophisticated aids, and generally seek to overcome its unreliability and recalcitrance. All this is happening in the context of vast changes in their societies and their technologies, changes that make new demands on human memory but also offer new possibilities for its effective employment. Unreflective acts of remembering were supplemented by deliberate attempts to modify the way memory operated and to enlist it in specific human projects. Beliefs about memory, efforts to improve memory

and the social tasks for which memory was mobilized, affected each other in a complex, historically changing interrelationship.

If one observed the manifestations of memory at any particular time one would be getting a snapshot of a particular moment or phase in the long history of this interrelationship. If one then forgot about the historical dimension one might be tempted to imagine that people's beliefs and theories about memory are quite separate from the object itself. In that case, ideas relating to memory would be on a par with theories in physics: the theories might change but that would not affect their objects. One function of a historical perspective is to remind us of the limitations of this analogy.

Perhaps a better analogy would be one that compared the way memory works to the way a physical world transformed by technoscience works. Such a world owes its existence to human insights and practices applied to the physical world, though the laws of physics are still the same. Analogously, the way memory operates in its social context – and there is always a social context – depends in part on the way memory tasks and techniques have been modified by beliefs, values and presuppositions applied to memory. This does not imply any changes in the principles of neurophysiology, because there is a fundamental difference between the socially embedded achievements and failures of memory and the physiological resources that provide the possibility of such achievements and failures. Achievements and failures are always socially defined and therefore historically variable.

Ways of remembering are affected by changing *mnemonic values*: culturally grounded assumptions about what is most worth remembering, what ought not to be or need not be remembered, how the shards of memory should fit together, what kinds of tasks memory should be expected to serve. Such mnemonic values always imply certain conceptions of the nature of memory and sometimes these conceptions are made explicit in texts that address the topic. Historically, changes in memory practice were associated with changes in discourse about memory, reflecting a change of mnemonic values.

For example, the *precise* reproduction of material from external memory began to be highly valued in the period of the European Enlightenment and became a common feature of everyday experience during the Industrial Revolution. The emphasis on accurate factual memory affected educational practice as well as business and industrial institutions. Some of the technological advances of this time led to the development of new visual and auditory recording devices (camera and phonograph) that provided a ready source for theoretical models of memory as a machine for the copying, storage and exact reproduction of sensory input.[17]

The very concept of memory had changed. In previous times, as we will see later, the copying function of memory had been recognized but subordinated to other functions, such as moral improvement or imaginative production. In modern times, the conception of memory as essentially a copying machine meshed smoothly with the kind of memory work that was

increasingly being demanded in rapidly expanding commercial and industrial institutions. When widely shared, this conception helped to focus the deliberate exercise of memory in a particular direction and encouraged the development of certain kinds of memory skills. Memory concepts, technology, mnemonic values, institutional practices and memory performance were linked in a network of reciprocal influence.

Precisely because they have never existed in isolation, but have always been part of a network of interrelated phenomena, conceptions of memory have been implicated in the social manifestations of memory. Their history therefore has to be examined in relation to memory technology and the social practices linked to memory. There has never been any doubt that theories about memory have changed historically. But one only needs to look at the mnemonically relevant context of these changes to recognize that historicity is a feature, not only of the theoretical component, but of many other important aspects of human memory as well.

The history of memory and the discipline of psychology

For the discipline of psychology, historical change in human memory is a non-topic. There are two broad sets of reasons for this, one related to psychology's understanding of its subject-matter, the other to its place among the disciplines. Let us consider these in turn.

Traditionally, the subject-matter of psychology was defined in terms of what went on within individual minds. The behaviourist interlude changed that by introducing environmental adaptation, but the concept of 'environment' considered appropriate for a psychological level of analysis was totally abstract. As long as one was doing psychology, the kind of environmental richness encountered in historical studies would be irrelevant because all environmental features were reducible to generic 'stimuli' whose effects were governed by behavioural 'laws' that did not vary across species, let alone across historical periods. When behaviourism lost its attractiveness the traditional definition of psychology's subject-matter reasserted itself in a form that excluded any psychological relevance for history as effectively as ever.

With the exception of some marginalized clinical studies, the psychological study of memory now came to share the assumptions and precepts of what became known as cognitive science. According to a widely cited and sympathetic overview of cognitive science of the mid-1980s, the principles that guided its approach included: (1) a commitment to a level of analysis 'wholly separate' from the sociological or cultural; (2) 'faith that central to any understanding of the human mind is the electronic computer'; (3) a 'deliberate decision to de-emphasize ... the contribution of historical and cultural factors'; and (4) a list of relevant disciplines that significantly excluded history.[18]

Within this framework what was called 'memory' consisted essentially of a linear three-part process that encoded, stored and then retrieved informational input from the environment. The entire sequence was understood as taking place inside an individual mind/brain. What happened before encoding and after retrieval was not considered part of the psychology of memory. Guided by an inappropriate analogy with digital computers, this model constructed a 'memory' whose link with the outside world took the form of 'inputs' and 'outputs'. Inputs took the form of presented information and outputs were fed into an entirely separate sensori-motor system that was not part of the psychology of memory. The system was iterative only with respect to *cognitive* output in the form of symbols, which generated more symbols. What was outside the scope of the model was the kind of feedback that occurs when system-produced motor action in a material environment affects the system's own perceptual input. The limitation to pre-packaged presented information cut the intrinsic link between memory and perception and reduced memory to one functionally independent cognitive 'module' among others. Processing of information in such modules was supposed to occur via symbols that were defined purely syntactically, i.e. in terms of their relation to other symbols, rather than in terms of anything they represented.

It was of course recognized that this kind of model could not deal with real-world action in a socio-cultural context. But it was felt that such features could be added later, once the basic architecture of human cognition had been worked out. This strategy of cognitive science reflected an essentially Cartesian metaphysics that prioritized the thinking individual's mind excerpted from any social and cultural entanglements.[19] The 'memory' of such a mind would be outside human history: it dwelt only in the walled interior of the universalized individual. Within such a framework, a history of memory would not merely be irrelevant but would actually make no sense.

Towards the end of the twentieth century the limitations of this framework became more and more apparent. Although it still underlies a great deal of research in cognitive science, some fundamental rethinking has been occurring in various quarters.[20] Most relevant in the present context is a growing realization that the rigid boundary between what is inside and outside the individual mind should be abandoned, and that cognitive functions like memory should not be isolated from perception and from action in the world. Cognition is said to be 'situated' in a world that includes other individuals and material artefacts. From this point of view 'memory may not be something really located within the individual'.[21] That kind of shift creates a conceptual space within which a historical psychology of memory could play a relevant role. Potentially, the historical interlinking of memory culture, memory technology and memory theory becomes significant for an understanding of the psychology of memory. Bridging the gap between human cognition and human history becomes not only possible but also desirable.

However, such an enterprise is likely to face formidable obstacles, some grounded in genuine difficulties, others deriving from traditional prejudices against any collaboration between psychology and history that long antedate the more recent 'cognitive revolution'. These prejudices have their origin in psychology's long-standing concern about its position among the disciplines and more particularly about its status as a natural science.

In the psychological literature on memory, the contrast between frequent neurophysiological references and the virtual absence of historical references is striking. One might argue that people trained as psychologists are not equipped to handle historical evidence and should stay away from it. There is much to be said for this argument, but it does not provide a valid reason for psychologists' ignoring of historical information. Psychologists usually leave the technical conduct of neurophysiological investigations to physiologists, but no one would conclude from this that they should therefore ignore neurophysiological information. This unequal treatment of history and physiology suggests that there is more involved than merely the principle of maintaining a strict segregation between disciplines. It is as though we were still operating in terms of an essentially nineteenth-century model of a causal hierarchy of disciplines that obliges psychology to look to biology for its explanations but not to history, because biology represents a lower, more fundamental, level in this hierarchy than psychology. On this model, history should look to psychology for its explanations rather than the other way around.

Where this model is not fully adopted, the contrast between the positive affinity of psychology to physiology and its negative affinity to history at least carries the implication that psychology belongs with the natural rather than the social sciences or the humanities. That is connected to the way it defines its subject-matter. A natural science investigates natural objects, that is, objects regarded as part of the natural order, objects whose characteristics conform to universal regularities and whose properties are independent of human beliefs and practices. In so far as psychology is defined as a natural science, the assumption is that its subject-matter is essentially of this type and that means it is unaffected by human history.

In practice, however, this has not been treated as an assumption but as something that is self-evident and beyond question.[22] To a very large extent, psychology has investigated its subject-matter as though it belonged to an ahistorical human nature. This may have produced results but the assumption of ahistorical validity remains only an assumption until it is tested against relevant evidence. The relevant evidence in this case would have to be historical, and that leads one straight to the history of psychological categories such as memory. In other words, the scientific grounding of the belief that historical evidence is redundant would itself require evidence from history. In the case of memory, the more recent work of historians has actually yielded quite extensive evidence that is relevant to this question.

But historians cannot be expected to concern themselves too much with the psychological implications of their work. It seems, therefore, that psychologists themselves will have to look more closely at the historical material if its psychological implications are not to be lost.

In the past, historians of psychology have shown little interest in memory. I think this is because they shared the belief of their scientific colleagues that memory was essentially a biological category and therefore had only a phylogenetic, not a social, history. If that is so, then historical inquiries into memory would be concerned only with theories *about* memory, not the historical constitution of the concept of memory itself.[23] In a style that has long been derided by historians, such inquiries tend to look for anticipations of modern conceptualizations, such as information processing, in ancient texts.[24] More generally, the traditional history of psychology has tended to assume that 'the subject of psychology is universal',[25] that there existed a distinct part of objective reality that was 'psychological' and that did not change through history; what changed was valid knowledge about it. History then becomes the story of the discovery of truths about matters that were at least as old as the human species and sometimes older. This view of the relationship between psychology and history converged beautifully with the self-understanding of a discipline that considered itself part of the natural sciences.

Is there any way of escaping this type of narrative? That depends on how one interprets the relationship of the past to the present. One way is to take the present as representing the truth, so that the past becomes the story of how this truth triumphed and error was defeated. However, there is another way of using the present as a starting-point. Instead of equating the present with the truth, one can trace back its certainties so as to demonstrate their historical contingency. One can turn to the past in order to interrogate the present about the stuff out of which it was constructed.[26]

What are contemporary researchers doing when they investigate memory? There are two stories to be told here. In one story, the one researchers like to tell themselves, they are engaged in a process of *discovery*, a tale of an unknown continent that is slowly being opened up. History here is an account of these discoveries, of experimental 'findings' and the theories to which they give rise, or, occasionally, of inspired guesses that antedate these achievements. But if one replaces this narrow historical framework by the broader framework of human cultural history there is another story to be told. From this perspective, what modern scientists do when they investigate memory is to reconstitute memory as an object of human knowledge and human practice in accordance with the exigencies and requirements of their time.

But in constituting, representing and investigating their subject-matter, modern investigators are obliged to start with the technical and discursive resources they inherited. They may have built on these resources but they

were never free to start from scratch and invent their own scientific language and their own technology in a vacuum. In the case of psychology, part of their inheritance was an everyday psychological language and a more specialized philosophical language that already posited psychological reality in a certain way. Psychologists were users of this everyday language and generally took for granted the kind of psychological reality that was presupposed by this use. In the course of time, scientific psychology did develop its own language by dropping large parts of everyday psychological language as well as much of the philosophical language (e.g. 'soul', 'will' and 'character'), modifying the meaning of other parts and inventing new terms with new meanings. This kind of transformation did not take place without profound change in the denotation of psychological terms. The 'behaviour' that is an object of study for scientific psychology has almost nothing in common with the 'behaviour' that is an object of ethical judgment. The 'personality' that is investigated by the methods of psychological science has hardly even a family resemblance to the 'personality' of great men and women as explored by their biographers. Other psychological categories, including 'intelligence', 'attitude' and 'motive', underwent transformations that were no less profound.[27]

The history of these transformations is a relatively recent one, virtually co-extensive with the history of modern psychology itself. It is a history that is closely tied up with the history of psychology as a scientific discipline. Changes in the meaning of psychological categories were contingent on changes in psychology's investigative practice, psychologists' professional project, external social pressures on the discipline, cultural currents and so on. This raises the suspicion that the content of modern psychology, its way of defining, dividing up and understanding psychological phenomena, is entirely a matter of 'social construction'. That much of this content is socially constructed is hardly open to doubt; the interesting question now is whether we can glimpse a remainder of 'natural kinds' beyond layers of construction.[28]

Can historical studies contribute anything to answering this question? They might do so, particularly if they were able to shed light on continuities between the discursive practices of modern psychology and those of the pre-scientific period. Although there is a pervasive discontinuity to be taken into account, it is not certain that this excludes any continuity at all.[29] There is, for example, a modern psychology of thinking pursued by scientific means. Is this the same 'thinking' that was the subject of ordinary and philosophical discourse centuries before the advent of modern psychology? Even if the answer turns out to be 'in some respects but not in others', as seems likely, one would have made some progress in identifying the aspects that show historical continuity across long periods of time. Having identified these aspects, one could then ask further questions about the reasons for their historical survival. Did they survive because they referred to universal

features of the human mind that were unaffected by socio-historical contingencies, or did they survive because of certain continuities in discursive practices that bridged the transition to the practices of modern psychology? If so, what was the nature of these continuities?

Did any categories of modern psychology exhibit sufficient continuity of meaning over long periods to make them candidates for the kind of historical study contemplated here? I have already mentioned 'thinking', but this has too often been a marginalized category in modern psychology. Similar considerations would apply to 'imagination'. Other promising candidates, such as 'perception', raise issues of terminological change that would needlessly complicate the inquiry. Yet others, such as 'consciousness', have a history that is altogether too short. Skipping a tedious discussion of the pros and cons of a potentially vast list of candidates, let us proceed at once to the psychological category whose history forms the subject-matter of this book – memory.

Unlike most of the terms in the modern psychologist's vocabulary, memory has a truly ancient lineage. It has been called one of 'the great primordial concepts of psychology'[30] and provides evidence for the antiquity of psychology that is about as good as such evidence gets. There is probably no other psychological object that can be traced so far back without even a change in its name. Plato and Aristotle engaged in speculations about memory that have attracted comment and discussion right up to the present. Ancient Roman writers addressed the subject of memory as part of their discourse on rhetoric, a topic they took very seriously. Monastic authorities of the Middle Ages added their own interpretation of the nature and uses of memory. During the Renaissance there was an outburst of writings devoted to memory, and over the centuries there was also speculation about a physical basis for memory. Eventually, in the nineteenth century, memory emerges as an object of investigation for modern science, especially psychological and medical science. There is obviously much discontinuity here, but also, it seems, a thread of continuity, though it is not easy to say what that consists in, other than a mere name.

About this book

Any history that concentrates on conceptual change faces peculiar problems of chronology. A comprehensive general history of a particular period may simply recount what happened and what happened next in a relatively unproblematic chronological order. But a history of conceptual change has to face up to the arbitrariness of its selection of relevant material and hence the dubious nature of any chronology it constructs. Such chronologies owe their existence to the perspectives afforded by subsequent, more contemporary, categorizations, boundaries, beliefs, etc. The

fact that we are now able to construct such a chronology, going forward from earlier to later periods, does not mean that there was anything pre-ordained or necessary about this historical sequence.[31] At each point, a change in the historical contingencies might have led to a different outcome. Although later periods were never totally unaffected by what had gone before, there was at least as much deliberate rejection of the past as, an often unnoticed, continuing influence of age-old concepts. In any case, the take-up of the past was always selective; some old things proved more durable than others.

Though an element of chronology, a rough succession of before and after, may be unavoidable in a purportedly historical exposition, the history of 'memory' does not constitute a linear progression, and it would be seriously misleading to present it as such. The main reason for this is that historical references to memory occur in a wide variety of theoretical and practical contexts, and, depending on the context, quite different aspects of memory are addressed in each case. There is no *single* object of reference on which all discussions converge. The topic of this book is provided by a loose assembly of problems, practices and assumptions, each of which can be said to have its own history. These will not be historians' histories aiming at a full contextualization of events, but they will retain two of the great values of the historical approach: the explication of the 'otherness' of the past and the demonstration of the impermanence of human constructions.

In the structure of this book, topics take precedence over chronology. The chapters are organized by topic, but within each chapter there is usually a vaguely chronological arrangement such that the order in which topics are discussed follows the sequence of their historical prominence. (The exception is the last chapter, in which chronological arrangement appears only within each sub-section.) That arrangement reflects the reality of different topics enjoying prominence at different times as well as the historical succession of their authors. Chapters 2 and 3 are largely devoted to historically earlier material, chapter 4 is a transitional chapter, while chapter 5, 7 and 8 deal largely with twentieth-century developments. The remaining chapters (6 and 9) span diverse periods.

In a sense, each chapter of this book is concerned with a different history, and these histories do not form any kind of narrative sequence. Each chapter has a time line of its own, depending on the historical trajectory of the topic under discussion. For example, metaphors of memory, discussed in the next chapter, have a history that stretches over millennia, whereas the experimental psychology of memory, addressed in chapter 5, hardly extends back more than one century. Yet metaphors are still relevant during this late period. So the reader must be prepared for a great deal of chronological backtracking and crossing.

When a topic is related to an active area of contemporary research it remains open-ended and an arbitrary limit has to be imposed on its

discussion in a historical context. Where exactly does the past end and the present begin? The question has only to be formulated to reveal its silliness. Past and present are distinctions imposed on a continuous process for the sake of discursive convenience. However, distinctions between periods relatively close to the present moment and more distant periods do have a real basis, and an account that is concerned with the bearing of the one on the other needs a decision about when to stop. The closer one gets to the immediate present the harder it becomes to maintain the kind of perspective that an essentially historical account demands. In this book I have used two stopping rules, where appropriate. The first rule is completely arbitrary: it is given by the end of the twentieth century. But this does not mean that the end comes precisely in the year 2000. It means that I am prepared to consider anything written up to the last decade of the century as part of the subject-matter for this book. Whether it is in fact included depends on my second stopping rule, which prescribes increasing selectivity in the choice of material as the historical account comes closer to the present day. This is not only a matter of practical necessity in the face of an impossibly large accumulation of potentially relevant material, it is also required by the need to maintain the focus of this book on *conceptual* change.

I emphasize this focus because I want to avoid any false expectations. As I have already indicated, by conceptual change I mean change in the presuppositions, hidden metaphors, values, unreflected practices, implicit beliefs that determine the form of explicit theoretical models and the interpretation of empirical observations. In the case of memory, the history of this kind of change extends much further back than the history of empirical research in the modern manner. Empirical issues do have a history, but it is a relatively shallow history that rarely goes back more than a few decades. One encounters this kind of history in scientific literature reviews devoted to the evaluation of specific hypotheses in the light of new empirical data. They serve a very useful purpose that is quite different from the goals of the present study.[32] Much of the empirical literature has little bearing on the topic of conceptual change, because it is concerned with projects carried out within an *implicit* conceptual framework. That remains the most effective way of pushing ahead with day-to-day research. However, empirical data and specific hypotheses advanced to explain them will enter the present account only in so far as they reflect on the plausibility of some underlying conceptualization.

My task would have been considerably easier if I had adopted a more remote cut-off date for this study. Had I ended a century or even half a century earlier I would have been able to present a strictly historical account that stayed well clear of contemporary psychological issues. But that would have preserved the traditional gap between the past and the present, embodied in the segregated accounts of two mutually estranged disciplines, history and psychology. There are good reasons for the existence of this

segregation, but the space between should not be left forever empty; bridging it has potential benefits, as I have suggested. There are also problems. In particular, bringing the recent past into a historical account leads to problems of distancing. It is obviously difficult to escape a myopic perspective on developments that are still taking shape in front of one's eyes, even when one has no direct involvement in these developments.

My primary interest, however, lies in the links, the continuities and discontinuities, between the near-present and the past. This entails a somewhat different view of the recent past from that of many practitioners in the memory sciences, who are justifiably proud of real technical improvements and interesting empirical findings. Because this book focuses on another set of issues there will be little reporting on these matters and greater concern with forgotten contributions, false starts, dissonant voices, hidden assumptions that were once explicit and broader social implications that are often problematic. There are aspects of the past that are of purely antiquarian interest, but there are other aspects that continue to be relevant, perhaps because they offer certain parallels to the present, perhaps because they simply show that currently popular ways of conceptualizing memory are not the only conceivable ones, or, most commonly, because they are still active under the surface.

A clear example of the last case is provided by the deployment of metaphor to explain the nature of memory. In particular, a set of metaphors depicting memory as a kind of storage *container*, and memories as stored experience, continues to be alive today, though its origins go back well over two millennia. These origins are explored in chapter 2, where Plato's famous wax tablet model of memory becomes the fulcrum for a discussion of the relationship between durable memory metaphors and the inscriptive practices that are an essential part of literacy. This leads to a more general exploration of how activities employed in the service of external memory often become the favoured source of models for explaining the workings of internal memory.

Theoretical discourse on the nature of memory forms only half of the relevant historical legacy of the pre-modern period. The other, perhaps more important, half consists of the practice-orientated discourse of the 'art of memory' explored in chapter 3. From the first recorded texts addressing the subject of memory, the interests of the authors were not purely theoretical, but were also concerned with practices that might make memory work better. Inevitably, there was a link between practical and theoretical concerns, and during both the Roman and the medieval period this link was a very close one. This reflects the links between advances in the technology of external memory and adaptations of internal memory that can be so clearly observed during this period. The flourishing and eventual decline of the mnemonic system of 'local memory' is of special interest here.

Profound historical changes separate the classical and medieval interest in the topic of memory from the active pursuit of memory studies in the

twentieth century. chapter 4 is devoted to the most salient aspects of this transformation. It begins with the topic of imagery, which lost much of its ancient importance during this period, and then considers some historical markers of the increasing 'privatization' of memory. The later sections of the chapter deal with the increasing role of science and medicine in nineteenth-century conceptualizations of memory and also some of the consequences of that development. Throughout the period covered by this chapter, there is a tendency to make memory the object of special forms of knowledge that were quite incompatible with one another. Changes in concepts of memory largely depended on the emergence, elaboration and historical displacement of these divergent ways of knowing memory.

Since antiquity, the experience of conscious recall had been part of the core meaning of the term 'memory'. However, in the late nineteenth century the drawing of analogies between biological and psychological phenomena became a popular intellectual pastime that transformed the meaning of quite a few psychological concepts, including 'intelligence', 'learning' and 'memory'. The term 'memory' was stretched to cover virtually any change in physiological function as a result of exercise, without any necessary link to conscious recall. Memory in the traditional, psychological, sense became simply a special manifestation of a more fundamental biological process.

Chapter 5 is concerned with a topic that takes us well into the twentieth century, namely the emergence and subsequent history of memory as an object of investigation for experimental psychology. Compared to traditional mnemonic practices, this involved a change in the methods of intervention from those dedicated to the improvement of memory to those dedicated to the improvement of knowledge about memory. However, the elaboration of appropriate experimental techniques required much theoretical work on the concept of memory, and the chapter traces this work through some of its historically more interesting stages. Two interrelated questions run through this chapter: how to balance the reproductive and the reconstructive aspects of memory, and what investigative tools would be most appropriate for an empirical science of memory?

The range of what was to be covered by the term 'memory' has fluctuated historically, as has its core meaning. At times it was regarded as an essentially intellectual process, at other times as something more automatic or as something more affective. From the beginning of recorded discourse on the matter there was a recognition that memory phenomena were not unitary, that different forms of memory had to be recognized. These attempts at distinguishing between different kinds of memory are discussed in chapter 6. Plato had noted a profound difference between remembering and reminding, as well as giving special importance to a form of memory he referred to as *anamnesis*. Aristotle distinguished between memory and recollection, and the Scholastics developed a whole architecture of memory faculties. In more recent times, philosophers, beginning with Henri Bergson, turned their

attention to memory kinds, and psychologists followed suit, distinguishing, for example, between short-term and long-term memory, or episodic and semantic memory. Neither the empirical grounding nor the conceptual foundation of these distinctions can, however, be regarded as secure, and this raises the more general issue of whether any of these distinctions can claim to be anything other than an artificial construction.

In the seventh chapter I consider the controversial relationship of memory and truth, an issue that acquired new political connotations in recent times. A historical perspective on this relationship requires some understanding of the background for the sharp distinction between memory and imagination that characterized some twentieth-century positions. Another aspect concerns the genesis of the modern version of 'hidden truth', and this is addressed in a section devoted to psychoanalysis. I then take up the historical thread that links the late nineteenth-century notion of 'traumatic memory', first discussed in chapter 4, to its politicization in the late twentieth century.

Implicitly or explicitly, memory has always been assigned a place in the scheme of things. One way of doing this is to localize memory in the physical world. That forms the subject-matter of chapter 8. Even in pre-modern times there was speculation about what was sometimes called the 'seat' of memory, whether that seat be in the heart, the brain, the nerves or specific parts of the brain. In due course, this discourse of localization became entwined with the discourse on memory kinds discussed in chapter 6. Various forms of phrenology were the result. Beginning in the nineteenth century, technological developments produced a succession of new twists in the persistent attempt to pin down aspects of memory in specific locations. However, certain conceptual problems inherent in the project of spatial localization resisted solution by technological progress. In this chapter the problems of writing a history that extends virtually to the present become particularly acute. I have therefore limited myself to issues for which the continuity of past and present is evident and left aside other developments where any attempt at a historical assessment would be premature.

Quite apart from localizing memory in a physical sense, there is the question of placing it in relation to other concepts referring to powers or functions of the psyche. Conceptions of memory have always depended on the place assigned to memory in a network of other more or less psychological and biological concepts. In chapter 9 some of the historically more important of these networks are described, beginning with the Aristotelian notion of an inner sense of which memory was a part. A section on faculty psychology is followed by a discussion of some nineteenth- and twentieth-century conceptions of the relationship between memory and more modern psychological categories, especially those of perception and personality. One historical constant has been the fuzziness of the boundaries separating various psychological categories, a phenomenon that is nicely illustrated by

ancient controversies about whether medical diagnosis depended on 'memory' or on 'reason'.

Finally, there is the question of whether memory should be thought of as something essentially *within* the individual or whether it is as much outside as inside. Early on, feats of memory were attributed to an influence that was definitely outside the human individual, the goddess Mnemosyne. Placing memory unambiguously inside the individual constituted a major change. Then there is the question of whether memory must be located in physical space or whether its place is somewhere else, perhaps in a moral or symbolic order. More recently, alternatives to the physical and the intra-individual location of memory have multiplied side by side with the flourishing research programme of neural localization. These matters are discussed in the final section of chapter 9.

The issues addressed in these chapters clearly constitute a selection of the many topics that might be considered relevant for a history of memory. The field, if one can even describe it as such, straddles several disciplines and would require a library of books to do it justice. One author who has looked into the topic describes it as 'the quintessential interdisciplinary interest'.[33] A cultural historian would have approached the topic in a different way, a historian of science in yet another way, and one can easily imagine other possible perspectives, such as that of psychiatric history, cultural anthropology, the history of philosophy and so on. There is no definitive list of topics that deserve inclusion in any assembly relevant to the history of memory concepts. Nor would a single lifetime suffice for doing justice to such an undertaking. So there can be no question of writing *the* history of memory discourse, though it is possible to construct histories of particular issues.

The selection of issues for this book was guided by the goal, already referred to, of interrogating the conceptual basis of contemporary psychological approaches in the light of historical discourse regarding memory. My goal entailed a focus on questions of memory in individuals, not questions of collective memory. Such a distinction is not an unproblematic one, as is made clear in the last section of the book, but it is not simply based on current disciplinary borders. There is an extensive history of speculation about memory as an individual attribute, and this forms an archive with reasonably distinct boundaries.

Not being a professional historian, I have not sought to add to this archive but merely to employ some portions of it as a resource in exploring continuities and discontinuities in various conceptualizations of memory, including recent ones. Disciplinary specialization and isolation has resulted in a situation where information relevant to the historical conceptualization of memory is scattered across the literature of several disciplines and subdisciplines. My aim here is to assemble at least some of this information in a coherent form so as to allow connections to emerge that would otherwise be lost.

None of us can escape the influence of his or her time. This influence is pervasive, so that the past that forms one's framework is only the past as currently interpreted. Nevertheless, the opening of windows onto the past is likely to bring advantages when compared to a life behind shutters, even if the view outside is somewhat limited and distorted. I certainly have biases, and they will become apparent in the course of my exposition. I am sceptical of claims that such biases can be avoided. The dangerous biases are the unconscious ones, and I can only hope that these do not prove overwhelming.

Among the limitations of which I am aware, the most serious one pertains to the Eurocentric or 'Western' nature of the domain covered in this book. My own experience of working for many years in Asia and Africa makes me very conscious of this disturbing fact. Unfortunately, I do not have the resources to do anything meaningful about it. Rather than pepper my work with the odd reference to information from non-Western sources in a pretence at cross-cultural generality, I have decided to draw a sharp boundary here and leave the crossing of that boundary to those who are far better qualified to do so than I am. I fully expect that if and when that happens, major revisions to many of my hypotheses and interpretations will be necessary. The topic of memory has been important for many different cultural traditions, so the possibility of comparative studies exists. But this will require collaborative scholarship that is both international and transdisciplinary. In the meantime, it seems preferable to avoid 'token gestures of incorporation'.[34]

Notes

1. P. Connerton, *How societies remember* (New York: Cambridge University Press, 1989), p. 68.
2. P. Ariès, *The hour of our death* (New York: Alfred A. Knopf, 1981).
3. E. Hobsbawm and T. Ranger, *The invention of tradition* (Cambridge: Cambridge University Press, 1983).
4. J. Le Goff, *History and memory* (New York: Columbia University Press, 1992).
5. W. Schönpflug and K. B. Esser, 'Memory and *graeculi*: Metamemory and control in extended memory systems', in C. A. Weaver, S. Mannes and C. R. Fletcher (eds.), *Discourse comprehension: Essays in honor of Walter Kintsch* (Hillsdale, NJ: Erlbaum, 1995), pp. 245–55.
6. M. T. Clanchy, *From memory to written record: England, 1066–1307* (Cambridge, MA: Harvard University Press, 1979).
7. D. F. Sherry, and D. L. Schacter, 'The evolution of multiple memory systems', *Psychological Review* 94 (1987), 439–54.
8. M. Tomasello, *The cultural origins of human cognition* (Cambridge, MA: Harvard University Press, 1999).
9. S. J. Gould, 'Not necessarily a wing', in *Bully for Brontosaurus: Reflections in natural history* (New York: W. W. Norton, 1992), pp. 139–51.
10. M. Donald, *Origins of the modern mind: Three stages in the evolution of culture and cognition* (Cambridge MA: Harvard University Press, 1991; also *A mind so rare: The*

evolution of human consciousness (New York: W. W. Norton, 2001); and 'The mind considered from a historical perspective: Human cognitive phylogenesis and the possibility of continuing cognitive evolution', in D. M. Johnson and C. E. Erneling (eds.), *The future of the cognitive revolution* (New York: Oxford University Press, 1997), pp. 355–65.

11. J. P. Small, *Wax tablets of the mind: Cognitive studies of memory and literacy in classical antiquity* (London: Routledge, 1997).
12. D. R. Olson, *The world on paper: The conceptual and cognitive implications of writing and reading* (New York: Cambridge University Press, 1994).
13. I. Illich, *In the vineyard of the text: A commentary on Hugh's* Didascalion (Chicago: Chicago University Press, 1993).
14. M. Carruthers, *The book of memory: A study of memory in medieval culture* (New York: Cambridge University Press, 1990).
15. L. Bolzoni, *The gallery of memory: Literary and iconographic models in the age of the printing press*, trans. J. Parzen (Toronto: University of Toronto Press, 2001).
16. I prefer to use the term 'concept' to 'theory' in this context. Theories are usually distinguished from observations and imply an explicit formulation with explanatory intent. Concepts are sometimes expressed in this form but are often implicit. Their role is to interpret, to provide meanings, to unify, to categorize experiences that would otherwise be chaotic. Theories require concepts, but not the other way around. This distinction is more common in the continental than in the Anglo-Saxon literature. It is found, for example, in studies in the history of science indebted to the work of Georges Canguilhem and in German *Begriffsgeschichte*. For a brief English-language introduction to the relevant aspects of Canguilhem's approach, see G. Gutting, 'Continental philosophy and the history of science', in R. C. Olby, G. N. Cantor, J. R. R. Christie and M. J. S. Hodge (eds.), *Companion to the history of modern science* (London: Routledge, 1990), pp. 127–47; for *Begriffsgeschichte*, see M. Richter, '*Begriffsgeschichte* and the history of ideas', *Journal of the History of Ideas* 48 (1987), 247–63.
17. D. Draaisma, *Metaphors of memory: A history of ideas about the mind* (Cambridge: Cambridge University Press, 2000).
18. H. Gardner, *The mind's new science: A history of the cognitive revolution* (New York: Basic Books, 1985), p. 6.
19. R. A. Wilson, *Cartesian psychology and physical minds: Individualism and the sciences of the mind* (Cambridge: Cambridge University Press, 1995).
20. The following conclusion represents one result of this rethinking: 'We must be wary of any definition that treats memory and belief as if they could be simple primitives existing only inside the brain.' C. Westbury and D. C. Dennett, 'Mining the past to construct the future: Memory and belief as forms of knowledge', in D. L. Schacter and E. Scarry (eds.), *Memory, brain and belief* (Cambridge, MA: Harvard University Press, 2000), pp. 11–32 (p. 29).
21. R. Pfeifer and C. Scheier, *Understanding intelligence* (Cambridge, MA: MIT Press, 1999), p. 514.
22. During the twentieth century, this was somewhat less true of the continental European literature, where one can find attempts at linking history and psychology, though rarely by psychologists. See, for example, J.-P. Vernant, 'History and psychology', in F. I. Zeitlin (ed.), *Mortals and immortals: Collected essays* (Princeton, NJ: Princeton University Press, 1991), pp. 261–8.
23. D. J. Hermann and R. Chaffin (eds.), *Memory in historical perspective: The literature before Ebbinghaus* (New York: Springer-Verlag, 1988).
24. S. Kemp and G. J. O. Fletcher, 'The medieval theory of the inner senses', *American Journal of Psychology* 106 (1993), 559–76.
25. For a historian's reaction to this assumption, see R. Smith, 'Does the history of psychology have a subject?', *History of the Human Sciences* 1 (1988), 147–77. For a