1 Does memory have a history?

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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.