Abstract  In this paper I make the case that the notion of memory—the very idea that there is a particular capacity that enables us to remember, to store, and to recall experiences and knowledge, and that in doing so constitutes an essential part of our existence—is in the midst of dissolving. I explore this dissolution of ‘memory’ as an epistemological and cultural paradigm shift. This shift can be observed in a broad spectrum of scientific and scholarly developments and, moreover, in literary, artistic, and public discourses. What all of these have challenged is the idea of memory as storage, an archive. I review four areas of research whose results and debates have fuelled this ‘memory crisis’: the social and cultural, the technological, the literary and the artistic, and the biological and cognitive. At the same time, we find in all these fields emerging perspectives that reach beyond the idea of memory as an archive, offering visions of more open, fleeting, social and cultural practices of remembering and forgetting.

Key Words  autobiographical memory, collective/social/cultural memory, digital memory, memory crisis, practices of remembering and forgetting

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After the Archive: Remapping Memory

The Elusiveness of Memory: A Historical Perspective

We know much about human memory. Yet as it is with memory itself, we do not know very much for sure. And, what is more, we only have a vague idea about memory as a whole. We cannot even say if there is such a thing as memory (or a memory, or specific memory systems) at all, and I am afraid that the view of memory that I put forward will intensify this doubt. However, it is not just a subjective impression that what we call memory has become more and more elusive but, as I want to argue, an observation that is ‘evidence-based’ in a strong sense—scientifically, conceptually, and culturally.

One reason for the increasing elusiveness of memory is that it means very different things to different people, all the more so if they use the
vocabularies of different disciplines. And there are only few disciplines where memory does not play any role. The meanings of memory meander even more if we consider different epochs, cultures, and languages. Many of them do not have a special word, let alone a concept, that suggests an isolated capacity, but terms that indicate an array of abilities and practices—as, for example, in East Cree, one of the Aboriginal languages of North America, where the word for memory, mituneyihchikan, embraces the entire spectrum of mental processes from remembering to thinking, knowing, feeling, and understanding—all of them inextricably intermingled and linked to the mental states and social practices of other individuals (Junker, 2007).

On the other hand, Western common sense, both in everyday life and in science, assumes that there is a specific material, biological, neuro- logical, and spatial reality to memory—something manifest—in the world. We can call this an ontological concept of memory. For many, memory (or a memory) is located in the mind or brain of an individual, an island of the past with a clear coastline in a sea of oblivion or different mental states. Like a statement of fact, it has a precise beginning and end like a psychological experiment. For others—not only the Cree, but also many of today’s social scientists, historians, cultural and literary scholars—memories are transindividual or collective phenomena, cultural creations like myths, legends, and other stories that reverberate in the minds of generations. They do not even necessarily have to be mental but also can be material and social artifacts, objectified in landscapes, monuments, museums, libraries, computers, rituals, calendars, anniversaries, and other structures and collective practices. Typically, such material structures of cultural memory are embedded in contexts of explanatory and interpretive discourse, as I examined in an earlier study emphasizing the crucial role narrative plays in these contexts (Brockmeier, 2002a).

And then there are those who view a memory as a personal, indeed intimate, part of one’s consciousness (as well as one’s unconscious), as a deeply affective thread of the fabric of one’s self, like a line from a poem, a musical theme, or a narrative drive that links us with a world of dreams, forebodings, and early experiences. ‘We live with those retrievals from childhood,’ writes Michael Ondaatje (2007), ‘that coalesce and echo throughout our lives, the way shattered pieces of glass in a kaleidoscope reappear in new forms and are songlike in their refrains and rhymes . . . We live permanently in the recurrence of our own stories, whatever story we tell’ (p. 136). Emotions may indeed be a strong indicator of what we conceive of as the objective reality of memories, all the more so as both emotions and memories are
modelled in many influential cultural traditions, including scientific and literary.

But the diversification of meanings, concepts, and phenomena of memory is only one reason why it has become elusive. At stake is not only the old story about modern science and scholarship: knowing more and more about less and less, until the original subject of research vanishes into thin air. This may be one story, but in order to explore some other stories, and for the sake of not already losing the main character of the play as the curtain opens, let me start with an alternative plot. This plot emphasizes the historical dimension of the issue. It assumes that for now there is memory—memory in the old, traditional sense as an individual faculty and as the place where the past is stored—yet what have changed are our views about it, our notions and ideas of what memory, remembering, and forgetting are all about. Eventually, I hope to show that what we call memory is, like Ondaatje’s kaleidoscope, one of those tricky phenomena whose assumed material reality and our views about it cannot really be separated.

Using the term ‘change’ is a rather understated way to make the case that the notion of memory—the very idea that there is a particular capacity that enables us to remember, to store, and to recall experiences and knowledge and, in doing so, constitutes an essential part of our existence—is in the midst of dissolving. This dissolution of memory as a specific epistemological and scientific subject—which had come into being, as Hacking (1995, 1996) pointed out, only in the late 19th century—is itself a relatively recent process. What makes this process especially interesting is that it takes place in a broad spectrum of scientific and scholarly developments and, moreover, in literary, artistic, and public discourses. It also can be witnessed in the emergence of entirely new research fields such as trauma theory, Holocaust studies, and social, collective, and cultural memory studies. What all of them have challenged, more precisely, is the idea of memory as storage, an archive of the past.

The archive is the metaphor most used (besides the wax tablet) to describe memory from Antiquity to modern experimental and neurocognitive psychology. There are countless variations of the archive, ranging from the warehouse, storage space, palace, and cave, to writing, the book, the library, and the hard disc (where the metaphorical field merges with that of the wax tablet)—most of which are firm and solid structures. They are meant to be permanent like the archive itself. For many generations, the entry to this archive, remembering, was the golden path to wisdom and all knowledge that reaches beyond the here and now. Plato (1955), one of the most influential
thinkers in the European history of memory, saw in the process of remembering, which he called *anamnesis*, the key to the deepest truths.

This confidence in memory, forcefully renewed in the Middle Ages, the Renaissance and Modern Times, has faded in recent times. Today, the idea of memory’s very existence is seriously called into question, and so is the view, traditionally associated with the archive, of remembering as a more or less unitary individual capacity. I have used the qualifier ‘more or less’ unitary individual capacity in order to consider an argument put forward in neurocognitive memory research. Although the process at stake is multidisciplinary, the psychology of memory no doubt plays an important—albeit contradictory—role in it. Since its academic institutionalization at the time of Ebbinghaus, psychology has claimed to be the home base of the scientific study of memory. So I want to address this argument right at the beginning. It ensues from a shift in academic psychology in the 1970s and 1980s from the hitherto common view of memory as an undifferentiated unitary function existing throughout (most of) the animal kingdom to the idea of several distinct neurocognitive systems of human memory, the ‘systems approach’ (Markowitsch, 2008). This shift was closely connected to the emergence of new brain imaging technologies and conceptually anticipated by Tulving’s (1972, 1983) distinction between semantic and episodic memory. Roughly a decade after Tulving, Schacter (1996) summarized what would become the main hypothesis of neurocognitive research since:

> memory is . . . composed of a variety of distinct and dissociable processes and systems. Each system depends on a particular constellation of networks in the brain that involve different neural structures, each of which plays a highly specialized role within the system . . . [demonstrating how] specific parts of the brain contribute to different memory processes. (p. 5)

Brain imaging technologies and the systems approach have come in tandem, changing much of neurocognitive memory research. There are some things, however, that have not changed. They include, first, the conviction that the diverse memory systems, whatever their number and nature, are reciprocally interconnected to form one brain. Second, there is the assumption that these memory systems can be constructed—in an amazingly random fashion—using data exclusively from a neurophysiological level (which is limited to activities on the level of cells and their connections; that is, the computer images of memory systems visible here necessarily leave out of account not only social and cultural practices but also all processes on the molecular level of the brain). Third, there is the unaltered supposition that the only research unit is the individual brain, the head (or, typically, a tiny
part of it) of an isolated person. Finally, and perhaps most importantly in the context of my argument, what has not changed is the hypothesis that each memory system operates according to the model of storage, that is, ‘encoding,’ ‘storing,’ and ‘retrieval’ (or ‘recognition’) of information, as a look in any psychological and neuroscientific textbook or research publication on memory testifies.

If we leave aside for a moment the situation in psychology, which is obviously more complicated, it seems, however, that the view of memory as storage or archive is about to be dismantled in several other areas of memory studies, albeit to different degrees and reflected in distinct ways. At the same time, new perspectives take form that reach beyond the archive idea of memory and offer more open, fleeting, and culturally embedded visions of what people do when they are remembering and forgetting. A main feature of these visions is that they transcend the isolated human brain as the single site of these activities, localizing them instead within a broader framework of social and cultural practices and artifacts, which are themselves subject to historical change.

There is abundant evidence—some of which I will review in a moment—that suggests a general trend in this direction. Perhaps we can call it a cultural paradigm shift in memory research. Elsewhere I have described this shift as both post-positivist and post-metaphysical, proposing a perspective on human beings as persons who remember and forget, embedded in material, cultural, and historical contexts of action and interaction (Brockmeier, 2002b). Drawing on this approach, I explore in this paper the meaning and implications of the dismantlement of the traditional notion of memory, a process that at the same time opens up new possibilities to conceive of what we call remembering and forgetting.

### The Memory Crisis

In order to flesh out my argument I want to map some of the developments and new findings that have contributed to the present memory crisis. ‘Memory crisis’ is a term originally used to dub the changes in the understanding of remembering that have been discussed since the early 1990s in several areas of the new memory studies. In a sense, the crisis was integral to the emergence of this new field of studies. It started with a number of authors from different disciplinary backgrounds setting out to explore forms and manifestations of Holocaust memory, consequences of trauma, and the distorted remembrance (and forgetting) of historical events that in some fundamental ways
contradicted the traditional notion of memory. Many of these studies challenged in particular the idea of memory’s continuity, stability, coherence, and—based on these—its moral weight and ethical status as an unassailable authority of truth and authenticity (Gross, 2000).

A case in point were Young’s (1993) comparative studies on the memory of the Holocaust. Young pointed out that although the very facts of this historically unique crime are beyond doubt, there was not one single ‘Holocaust’ event, but every nation (and sometimes even different communities within one nation) construed their memories of it according to their own traditions, ideals, and political agendas that were dominant at a certain historical moment in time. Memories, Young (2008) concluded, even if seemingly objectified in historical monuments and memorials, have a ‘fundamentally interactive, dialogical quality’ (p. 364). It is this quality that keeps their meanings open and negotiable, even and specifically when time goes on. Such reasoning was furthered by debates in history about witnessing, remembrance, and construction of memory in the wake of the publication in 1984 of Pierre Nora’s influential work on French national sites of memory Les Lieux de Mémoire [Sites of Memory] and the English translation of its introduction (Nora, 1989). At about the same time and in a related vein (albeit without any direct connection), new research in clinical psychology and psychiatry about the so-called False Memory Syndrome (FMS) began to question the permanence, truthfulness, and reliability of memories and instead emphasized the ‘malleability’ and ‘plasticity’ of human memory.

If we look today at the ‘memory crisis’ and the discussions and investigations it has entailed, we notice that it was not so much about a crisis in humans’ capacities to autobiographically remember and localize themselves in terms of past, present, and future, but about the limits of the archive model to represent them. It is in this sense that I use the term memory crisis. Obviously, researchers in several disciplines have made the same critical observation: while sophisticated memory investigations—for example, with victims of individual and collective trauma such as the Holocaust, war, colonialism, or apartheid—have unearthed complicated narrative ways of mnemonic reconstruction and construction, the traditional model of memory as a static and stable place of storage, where past perceptions and experiences are retained and from where they can be retrieved, proved increasingly to be inadequate—in fact, obsolete.

What exactly has given rise to this crisis of memory, which, since those early years, has developed far beyond the humanities where it first came into focus? What has turned memory and remembering as we believed to know it for a long time into something of which, as we
now learn from a variety of sources, in reality we did not know very much at all? I want to review a number of areas of research whose results and debates have fuelled the memory crisis as a crisis of the archive. What makes things confusing is that the term ‘memory’ labels a wide spectrum of often qualitatively very diverse phenomena. Nonetheless, a closer look suggests distinguishing them into four different fields: the social and cultural, the technological, the literary and the artistic, and the biological and cognitive. In each of these four fields of human knowledge and imagination we can identify distinctive traditions of inquiry and discussion of specific issues of memory; all of them open up to different cultural landscapes of knowledge and learning.

Four Fields of Memory Studies

In the 1990s, changes in these fields triggered the unprecedented ‘memory boom’ that we have since witnessed. Some of these changes were related to far-ranging political, technological, and cultural transformations, such as the digital revolution and the end of the Cold War, which closed an epoch but brought many new problems. This becomes particularly evident when we look at the first of the four fields of memory research.

Memory: The Social and Cultural Field

This field is defined by interests in the social and cultural constitution and organization of memory, as investigated by the human and social sciences, including history (especially oral history, cultural history, history of science and medicine, history of everyday life and of mentalities). All of these ‘proceed from the basic insight,’ as Erll (2008) puts it, ‘that the past is not given, but must instead continually be reconstructed and re-presented’ (p. 7).

In 1989, the wall that divided Europe and much of the rest of the world came down, and with it restrictions of access to archives and memories previously unavailable, especially in the former Soviet hemisphere. Countries with newly gained independence began reinventing themselves, negotiating controversial pasts in the light of novel stories of national identity; many registers of collective memories had to be newly arranged. At the same time, Truth and Reconciliation Commissions, most famously in South Africa, Chile, and Guatemala, gave center stage to issues of remembering and forgetting, as did East German writers, artists, and activists publishing secret Stasi files, autobiographical accounts, and memoirs outlawed during Communism,
and as did Spanish historians who unearthed mass killings, documents, and personal memories from a time that Franco Fascism had taken great pains to officially forget. Obviously, there are a variety of cultural strategies to shape and reshape the relationship between past and present. These strategies include configuring some events as past and over, other events as still present and alive, and again others as stretching into the future. And they also include flexibly changing such configurations in the light of new developments in the present.

‘As the century drew to a close,’ observe Rossington and Whitehead (2007), ‘there was an increasing concern with how best to remember the traumatic instances that had punctuated its history’ (p. 5). This concern has been bolstered by new perspectives emerging from other long-time suppressed people and communities that have transformed into academic approaches such as postcolonialism, indigenous studies, feminism, gay and gender studies. Again, the aim is to re-appropriate individual and collective memories of traumatic pasts. I use the term re-appropriation in this context to refer to forms and practices of remembrance—individual and social—that are carried out in processes of intergenerational transmission. Many of the phenomena under discussion here are in fact such processes; they carry out the ‘ongoing work of reconstructive imagination’ (Assmann, 1998, p. 14) that traditionally is called history or historical consciousness but that ‘mnemohistorians’ conceive of as ‘historical memory’ (Halbwachs, 1992), ‘cultural memory’ (Assmann, 1992) or historical ‘collective memory’ (Wertsch, 2009). A part of these processes is the remembrance of memories of others, and these others also comprise the dead. Often this remembrance takes place in spatial connection with what Nora (1989) described as ‘sites of memory.’ But whereas Nora and many historians and social scientists of memory use the concept in the sense of places where groups of individuals engage in public commemorative activity establishing or confirming a sense of unity through a shared past, it also allows for a slightly different view. If we understand sites of memory not as only points of reference for those who survived and personally remember historic events, but also for those born long after them, the word ‘memory’ becomes, as Winter (2008) notes, a ‘metaphor for the fashioning of narratives about the past when those with direct experience of events die off. Sites of memory inevitably become sites of second-order memory’ (p. 62), places where people remember the memories of others and in this way re-appropriate a particular tradition.

It might have been the single most momentous event in the history of the study of memory that, in the closing decade or so of the 20th
century, this new multidisciplinary field of social (or collective, or cultural) memory studies came into existence. And it might have been the single most momentous challenge in this field to break with the longstanding notion of memory as an individual archive of the past, although this break was all but free from contradictions and conflicts. On a theoretical plane, poststructuralist arguments in the wake of Derrida and Foucault, and intertextualist arguments in the wake of Bakhtin, further fanned the flames. According to these arguments, memories (and associated phenomena like autobiographical identity constructions) are meaning constructions and thus are in principle unstable. They do not relate to essences past or present but are first of all events in language and other semiotic systems, akin to complex texts (Brockmeier, 2005). Interlaced with broader ‘cultural texts’ and situated within ‘symbolic spaces’, they are always incomplete in isolation. And because they are discursively negotiated (instead of just given or ‘retrieved’), they clearly appear as subject to orders of power and struggle.5

Influenced by these arguments, propelled by historical developments, and underscored by the emergence of new genres of political memory narratives (Andrews, 2007), the surge of vital interests in how the past gets rewritten in the present resulted in the emergence, across a multitude of academic discourses and disciplines, of a new understanding of remembering and forgetting: whatever it is we call memory, it is shaped and defined by social practices and other cultural vehicles. Conceptually, many authors thus have preferred to use the verbal noun ‘remembering’ to underline the ongoing dynamic of construction and reconstruction and to replace the traditional idea of memory with one of being in a state of constant flux.6 We also could say that they have shifted the focus from memory as an entity to a process. Obviously, this dynamic view of memory is situated in a much wider world, and a much more complicated world. Understanding it involves examining ‘the symbols, codes, artifacts, rites, and sites in which memory is embodied and objectified; the coherence or fragmentation of the narratives, rituals, geographies, or even epistemologies it relies upon; and the way their authority changes over time’ (Lambeck & Antze, 1996, p. xvii).

**Memory: The Field of Media and Technology**
A second field of memory studies revolves around the technological and the (old and new) media that shape individual and collective remembrance. The hub of this field is the global phenomenon of the digital revolution, which is, in essence, a revolution of human memory
and communication technologies. Yet the field comprises much more; it extends to the many efforts of understanding this revolution, its cascading consequences—the permanent production of new technologies and social practices of digital and virtual memory—and their psycho-socio-cultural implications. This interest is a driving force in disciplines such as information studies, communication studies, media studies, and social studies of technology, some of which have come into being only recently.

Philosophers of mind, information scientists, and cultural theorists have all emphasized the material and technological dimension not only of our processes of remembrance, but also of our very notion of memory. They see this notion transforming under the impact of the digital revolution, newly charged with new ideas of malleability, mutability, and constructivity. Now, it is not a new discovery that memories are mediated, that they are negotiated in interactional and conversational contexts (Hirst & Echterhoff, 2008; Middleton & Edwards, 1990), and that they are grounded, in a Vygotskian sense, in ‘mediated actions’ (Wertsch, 1998) and in ‘cultural systems of semiotic regulation’ (Valsiner, 2007). Nor is it new that their content is shaped in manifold ways through the media in which they exist (photographs, films, words, narratives, books, artworks, performances, places, mementos, and other artifacts, and combinations thereof), or that individual memories are often confounded with these media (Kittler, 1999; McQuire, 1998; Sontag, 2003)—some would say they are distorted by them (Schacter, 1995b, 2001). But the extensive digitalization of memories surely has drawn sharper attention to the ‘inextricable interconnections between acts of remembrance and the specific mediated objects through which these acts materialize,’ as Dijck (2007, p. 16) put the matter. Dijck, a finely tuned analyst of these interconnections, argues that digital technologies indeed deeply affect the very nature of our remembering processes, and she concludes that our notion of memory has to be reconceptualized to take into account this new type of material mediation. So what, then, is new about it?

There are a number of specific qualities of ‘digital memory machines,’ as modern computers are called in the literature in this field, that impact on the cognitive functions and cultural practices of remembering of their users—that is, of us. To begin with, computers are advanced multimedial and multimodal facilities. In combining text, graphic, image, film, and audio media and modalities, they bring about unprecedented ‘morphing’ capacities, as Dijck puts it. Yet at the level of 21st century digitalization, these multimedial and multimodal capacities are not just properties of machines but need to be viewed as
'mental-technical-cultural processes' (Dijck, 2007, p. 164), bound to affect the cultural practices involved in creating and handling memory constructs and, in this way, our understanding of ourselves and others.

Another quality of the new ‘mental-technical-cultural processes’ that come in tandem with global digitalization is that they are interlaced with novel types of intersubjective networks. These networks connect individuals and their memories to others. Blurring established borders between the personal and the collective, they redefine the relationship between the private and the public. This alone profoundly changes traditional conventions for autobiographical remembering, undermining, among others, any idea of memory as a predominantly cerebral property of human being. Rather than being self-confined machines for automated recording, storage, and retrieval of individuals, multimedia computers are constitutively ‘networked,’ setting up public arenas for shared life constructions and interpretations. In this sense, they are historically novel ‘technologies of self with surprising creative and affective potential’ (Dijck, 2007, p. 162).

This potential becomes manifest in the development of new digital technologies that allow users to operate on autobiographical memory documents, mixing and remixing them. Consider memory technologies such as multimedia lifelogs or lifeblogs that people use to keep track of their changing lives (and those of connected persons); software to manipulate digital photographs, interlock them with interpreting texts and sound frames, and link them to other documents, personal and public; mix-and-burn software that allows one to ‘customize’ existing sounds to particular moods; and digitalized home movies that make it possible to easily reframe a family’s contrived past and blend it with historically authentic documents. Such digitalized mementos deeply affect people’s later remembrance of things past. Over time they may turn into ‘true’ memories that gain more and more ‘documented’ authenticity.

What essentially contributes to such digital-psychological (re-)shaping of memories is its social and discursive dimension. Personal collections of electronic memory documents are typically embedded in and often fused with networks in which users/rememberers share their memories and mutually influence their practices of creative reminiscing. Of course, an important factor here is that the 21st century internet, in contrast with earlier systems, is not only social and interactive but truly global, ubiquitous, and cheap. As a consequence, cultural styles and traditions of remembrance continuously transform and the results quickly disperse in an uncontrolled fashion. Sometimes, however, they establish, at least for some time, new genres of remembrance—for
instance, ‘global memory places’ like the web-based encyclopedia Wikipedia and its ‘floating’ wikis (see Pentzold, 2009) and digital ‘memorial landscapes’ for the dead (see Veale, 2004). Dijck (2007) sees in the emergence of such new genres connecting private memories to reflections (and memories) of others and to public resources the true innovative potential of digital memory machines.

At the same time, new storytelling technologies break open and radically alter long-established narrative genres, for example, by integrating user action within the storyworld. This may entail that in remembering the elements of a story in a certain fashion the user/rememberer changes the development of the story and gives it a new turn. The Holodeck narrative machine, a widespread interactive storytelling software, incorporates every action of the visitor in a way that affects the life of his or her fictional persona, with every different choice leading to a different storyline. ‘It would be impossible,’ concludes Ryan (2009) in her analysis of this type of interactive narrative game which creates stories in real time during the run of the program, ‘to store in advance all the consequences of all the decisions that can be made by the player’ (p. 51).

Traditionally, narrative (both oral and written) has been humans’ most advanced means of contextualizing propositions, ideas, memories, and ourselves. What has emerged with the advent of multimedia and networked computers, as Harris (2002) has argued, is a new device, in fact, ‘the most powerful contextualization device’ ever known: ‘its capacity for creating and developing new contexts, visual and verbal, far outstrips that of the human mind’ (p. 49). Harris goes on to assert that this ‘is a far more important fact about the computer than its superhuman capacity for information storage’ (p. 49). Drawing on neuroscientific findings about the ‘morphing nature’ of episodic memory, Dijck (2007) takes this line of thinking one step further and suggests that multimedia and multimodal computers may enhance this essential quality of episodic memory, its inherent mutability, more than any previous technology. Considering the latest research from neurobiology and neurocognitive psychology, she concludes that we ‘have to accept human memory as an amalgamation of creative projection, factual retrieval, and narrative recollection of past events’ (p. 163). It is exactly this morphing and transformative nature of autobiographical remembering that is supported by digital technologies—‘mental-cultural-technical processes’ that are not only mnemonic aids but truly creative instruments of reminiscing.

This is all the more evident in the easy access that the 21st century internet provides to the digitalized universe of fictional and nonfictional
narrative. Seamlessly, we enter an endless realm of storyworlds unfolded in literary writing, graphic novels, film and television, plays, paintings, photography, music, and historical documents. All of these storyworlds are employed as ‘semiotic resources’ for the creative imaginations of our personal lives, to use Zittoun et al.’s (forthcoming) terms. Zittoun et al., drawing on the work of the philosopher Vaihinger (1952; see also Smythe, 2005), argue that it is an essential part of the human condition that we often trust hypothetical and imaginative storyworlds more than everyday evidence. We may add that the point of multimedia and globally networked computers is that they present hypothetical and imaginative storyworlds as everyday evidence.

Viewed in this light, the computer, rather than being a warehouse of the mind that stores memories and other ‘data,’ proves to be a narrative and epistemological model that helps reconceptualize memory beyond the semantic and metaphorical realm of the archive. The focus on the digital mediation of memories also sheds new light on the fact that our everyday worlds, in a more general sense, are swamped with mnemonic media and memory artifacts. These artifacts comprise cities (e.g., Boyer, 1996), landscapes (e.g., Assmann, 1992), nations (Olick, 2003), public places of commemoration (Assmann, 1999), and personal mementos (e.g., Petrelli, Whittaker, & Brockmeier, 2008).

Not least, most of our acts of remembrance are intermingled with language, all the more so if we view them as a part of our social and communicative life—with language in all its manifold oral, written, and performative forms. It is therefore not surprising that the digital revolution and, in its wake, the establishment of a global system of digital literacy have had an important impact on our theoretical understanding of language and writing as specific forms and practices of human memory (Brockmeier & Olson, 2009). Likewise, the development of new technologies of globally shared (or distributed) digital memories has prompted research in the social sciences and cultural studies to address the consequences of another momentous outcome of the digital revolution: namely that many traditional archives—libraries, museums, collections of documents, and other artifacts—are being digitalized. Electronically ‘rewritten,’ they have become subject to often far-ranging transformations of their mnemonic status (Hedstrom, 2002).

**Memory: The Literary and Artistic Field**

The third field with a particular concern for memory is literary and artistic. It doubtless draws on the longest and most venerable tradition of thinking about memory, with its Western history reaching
back to the beginnings of ancient Greece, Israel, and Egypt (Assmann, 2006). Literary works from Homer and Augustine to Rousseau and Proust have not only provided extensive material for the study of remembering and forgetting, offering a large variety of fictional test cases of memory phenomena, as Nalbantian (2003) has argued. They have also meticulously described and, in fact, examined the narrative fabric of memory phenomena. More than that, from the beginning they have essentially contributed to the very formation of this fabric and its differentiations and transformations in different epochs and cultures. In many respects we can recognize close interrelations between the development of autobiographical understanding, the emergence of mind-representing and mind-creating narrative resources in certain epochs and cultural contexts, and the evolution of the modern idea of the self (Freeman & Brockmeier, 2001; Herman, forthcoming a).

Yet the concern with remembering and the autobiographical process has again gained a particular quality in modern literature and the arts, fuelling an extensive amount of scholarship and reflection in criticism, literary and art theory, philosophy, and narratology. In particular, the study of autobiographical and other forms of memory writing has increased exponentially over the past decades. It has often been pointed out that since Modernism a large portion of Western literature has turned into an experimental laboratory of self-examination; and in the center of this examination we find the question of autobiographical remembering and its interconnections with identity construction (e.g., Eakin, 1999, 2008; Olney, 1998; Ritivoi, 2005). The interest in the nexus of autobiographical memory and 'life writing,' to employ the more comprehensive term commonly used today (Jolly, 2001; Saunders, 2008), has been closely linked to the creative development of a rich repertoire of literary forms and techniques. This narrative repertoire has not only afforded us with the possibility to become aware of, and examine, our manifold practices of remembering, but also to experiment with them and, in fact, advance our mnemonic and reflexive potentials, as Herman (forthcoming b) has shown in Modernist key texts.

Much of the contemporary narrative exploration of memory and self has taken a critical stance towards the idea that experiences can be stored and preserved over time and finally recalled in an act of autobiographical self-consciousness (Brockmeier, 2008). Autobiographers, writers, and artists have long been aware of the intricacies and contradictions of what we take to be one's personal memories. An emblematic example is Samuel Beckett. Olney (1998) pointed out that
much of Beckett’s work can be read as an effort to think through the insight that one’s personal identity can never be grounded in autobiographical memory because, as Beckett observed, memories of one’s past are themselves part and parcel of that very construction. Ultimately—in this view—both what we call our memories of the past and the very idea of past, present, and future (and its succession) are formed independently from any physically or biologically given material trajectory: they are meaning constructions.

Along these lines, it was not psychological research on memory but literature and the arts at the beginning of the 20th century that set out to scrutinize critically the traditional picture of memory and to evoke alternative scenarios never seen before. The rejection of the naïve notion of ‘the past’ being preserved in a mental (or material) archive, which started here, has been gaining more and more ground in the other fields of memory studies sketched above. What is more, we even can discover a comparable trend in the fourth field of memory studies, the biological and neurocognitive.

**Memory: The Biological and Neurocognitive Field**

This field is marked by a biological, medical, and psychological focus on the individual and his or her capacities (and problems) to remember and to forget. Here, we look at research by neurobiologists, psychiatrists, neurologists, psychologists (mainly in neurocognitive research contexts but also with interests in cultural, discursive, and narrative psychology), clinical researchers, and psychotherapists (involved in trauma and Holocaust studies, dementia studies, narrative and discursive medicine and health studies, among others). There are several crucial events that have influenced the field since the 1990s, although their significance is assessed differently in various academic quarters. While neurobiologists would refer to new research on the molecular and cellular level, neurocognitive psychologists would highlight the systematic use of neuroimaging technologies. At the same time, neurologists, psychiatrists, and gerontologists have been concerned with more medically, socially, and psychologically applied issues, as reflected in the rapid increase of (and research with) people suffering from memory diseases like Alzheimer’s Disease. Furthermore, psychotherapists would emphasize the debates about the already mentioned False Memory Syndrome and the ‘memory wars,’ whereas narrative and discursive psychologists would outline increasing research on the importance of contexts of interaction, intersubjective practices, fictional imagination, and cultural models of storytelling for people’s autobiographical narratives.
I have argued that there is an overarching tendency in memory research that fundamentally challenges the idea of memory as an archive; this tendency can also be observed in this fourth field. But the general cultural paradigm shift has only to a very limited degree affected the conceptual shape of memory in this field, which is still very much defined in terms of storage, that is—to use the language of psychology and neuroscience—as encoding, retaining, and retrieval of information. This is all the more astonishing as there are many spectacular new findings and observations in this field that contradict and undermine the traditional view of memory. Although results of neuroscientific research often receive wide media attention and become the subject of discourses far beyond the scientific community, their connections with findings and debates in other areas of memory studies are rarely addressed. Even more rarely do we find discussions about the implications of such findings for our conceptual and theoretical ideas of memory. That these ideas need, however, to be fundamentally reconsidered—particularly vis-à-vis recent neurobiological developments—becomes obvious when we take a closer look at some remarkable findings in this field.

How neuroscience of memory lost its subject

To try to specify the neuroanatomical mechanism of memory would be no easier than to specify the mechanisms of life. (Tulving, 2002, p. 322)

Let us begin with a few discoveries of brain research that have a direct bearing on our construction of the ‘the past.’ Storing and recalling past experience is, according to the traditional mantra, the common denominator of what memory is all about. Now considering matters on a neurological level, we have learned that there is no evident distinction between brain processes operative in remembering and in perceiving. That is, there is no biological correlate that allows us to distinguish between what we traditionally call acts of remembering the past from acts of perceiving the present, whether in a visual, acoustical, or tactile mode. Nor are there any indicators that separate the content of a perception in the here and now from the content of a perception that we had at some point in the past. For the neuronal circuits involved there is no difference between perceiving, say, a face here and now and having perceived this face a few days or years ago. If not from a manifest neurobiological configuration, where then does the distinction between present and past come from? It is attributed afterwards, by us, in an act of interpretation and temporal localization, an act of creation, not just of representation or mirroring. This act involves a
number of activities on the levels of the brain, the mind, and the culture in which the mind (and the brain) is embedded.

Other studies have shown that the same holds true for the distinction, unverifiable on neurological grounds, between a present perception or thought and an imagined future perception or thought. Whether I perceive a face or imagine this face (be it a face that I want, hope, or am afraid to perceive in the future), the activated neurological functions are the same. As Szpunar and his colleagues (Szpunar, Chan, & McDermott, 2009; Szpunar, Watson, & McDermott, 2007) have demonstrated, the brain abilities that are involved when I recall a scene at my last birthday party (‘episodic memory’) and when I imagine this scene to happen at a future birthday party (‘episodic future thought’) are indistinguishable. Likewise, the feelings associated with these perceptions or imaginings imply the same neuronal processes. Identical neuronal activities are also involved in my emotional reaction to a person I see in the present, to the memory of that person (be it mental or mediated through a photograph), or to an (imagined) future encounter with that person. Again, the same imaginative capacities and emotional states are in operation when people have certain thoughts, beliefs or desires, or imagine having these thoughts, beliefs or desires (at whatever point in time)—‘desire-like imaginings,’ as Currie and Ravenscroft (2002) have called them—or imagine others having certain thoughts, beliefs, or desires (often called ‘theory of mind’ or ‘mindreading’). Obviously, there is no such thing as a physiological borderline between what we consider and ‘feel’ to be present (what we perceive or experience in the here and now), future (what we anticipate in our imagination), and past (what we usually call memory). Once more the question is: What defines a ‘memory’ if it is not given, identifiable, or deducible through a neurophysiological substrate?

Clearly, the temporal status of an experience is crucial here. Many of our experiences are temporally localized; they are brought to mind as something that occurs presently or belongs to the past or the future. Furthermore, we envision them as something that happens simultaneously, earlier, or later in relation to other experiences. According to a much discussed distinction by the philosopher McTaggart (1908), these are the two basic ways in which we temporalize events and arrange them ‘in time.’ McTaggart called them the ‘A series’ (which corresponds to the common sequence of past, present, and future) and the ‘B series’ (which orders events in terms of earlier and later). But these forms of temporalization do not necessarily reflect a given material structure, an ontological property of the world in which we live—though today we may base this argument on different
philosophical and scientific lines of reasoning than the Cambridge idealist McTaggart did in his days, when he spoke about the ‘unreality of time’. Nor can this or any other notion of time be claimed to unfold in a ‘natural’ act along a neurobiological (or physical) time trajectory that preexists our concepts of it and is independent of the meaning constructions by which we strive to localize our experiences and ourselves ‘in time.’ Indeed, McTaggart did not maintain this but rather suggested ways in which we—speakers of the English language (and other Standard Average European languages)—make sense of events in temporal terms.

Yet the ways of A series and B series are not our only ways. Rather, our temporal self-localizations encompass a much wider variety of meaning-making activities. These are the activities of a consciousness of a higher complexity than realized exclusively on the neuronal level—which is not to say that this is not already complex enough. But the complexity at stake also spans the dialogical and societal dimension of human consciousness, that is, it also comprises the interlacement of consciousness with cultural sign and symbol systems such as language and, especially, the language of narrative. As Yamada and Kato (2006b) put it, ‘What we experience in life is not identical to successive physical stimuli over time but is, instead, composed of organized meanings and constructed realities as life events and life stories. It is this “narrated” life that gives a consistent temporal structure to our experiences’ (p. 265).

Narrative is a unique cultural practice of temporal self-localization. And, again, autobiographical remembering is a case in point here, for its narrative fabric provides ‘the structural glue that ties together the who, what, where, when, and why,’ to borrow Nelson’s (2007, p. 327) terms. But it is not only narrative that affords us such glue. Every culture offers a broad repertoire of conventional forms and practices that tie these elements together, shaping visions of time, autobiographical memory, and of the interconnected way in which we imagine them. These visions go far beyond the A and B series. They include stories, concepts, theories, metaphors, images, and other representations, all of which are typically commingled with everyday practices and projects (Munn, 1992), mnemonic tools and discursive interactions (Middleton & Brown, 2005), and social institutions like schools (Kontopodis, 2009) and museums (Levin, 2007). This is one reason for the amazing cultural diversity of these visions of memory and time, a diversity that also extends to the ways in which they combine concepts of individual development and life time with cultural and religious worldviews at large. They tend to be, for instance, more contextualist in countries like
Japan, where cyclical and spiral gestalts of temporality are widespread in individuals’ view of their life course and lifetime, emphasizing a strong sense of generational continuity and interconnectedness to larger ecological cycles of nature (Yamada and Kato, 2006a, b), whereas in Western countries and languages, models of autobiographical time tend to resonate with more individualist sociocultural imperatives (Brockmeier, 2000).

There are further important neuroscientific and neuropathological findings that underscore a close nexus between the imaginative trajectories of memory and time. As we cannot distinguish on neuronal grounds the perception of a face from the imagination of this face—whether we ‘situate’ this imagination in the past or future—we cannot separate ‘real’ acts of remembering from acts of ‘imagined’ remembering (Buckner & Carroll, 2007; Harris, 2000; Hassabis, Kumaran, Vann, & Maguire, 2007). Even if such acts create fictive or even fantastic scenarios, they still are carried out by ‘real’ neurophysiological activities. And as not only readers of fiction know well, the fictitious is often more likely and plausible and, indeed, emotionally more engaging than the real. It is not least this crucial imaginative capacity of the human mind that enables us to ‘time travel’ and envision ourselves in other times—times of our life course (Zittoun et al., forthcoming), of possible lives (Brockmeier, 2002c), spiritual life (Belzen, 2008), and the afterlife (Yamada & Kato, 2006a).

In some contexts (and particularly against the backdrop of the traditional idea of memory), this neurobiologically grounded notion of imagination causes serious problems. Just consider the issue of imagined and invented or, as some say, false memories. One of the few certain outcomes in this highly contested area is that although on a neurobiological basis we may not be able to testify that memories are ‘right’ or ‘wrong’ we certainly can prove that they are ‘real.’ That is, in either case, they come with a solid neuronal correlate. Again, what remains unclear is, however, what exactly is meant by ‘memory’ (or ‘memories’) in this context.

The findings and observations reviewed thus far refer to the shape and the differential and temporal definition of ‘memory’ (and ‘memories’)—or, more exactly, the difficulties of such a definition. A second area of research that I want to mention challenges established ideas of the permanence or continuity of memories. We have to keep in mind that the new neurobiological picture of the brain, sometimes called the ‘21st-century brain’ (Rose, 2006), is characterized by many forms of neuroplasticity. While previous generations of researchers assumed that the structure of the brain was immutable after childhood,
this picture has been replaced by one that shows a brain that is all but stable. Irrespective of age, it changes all the time, continuously adapting to new circumstances. This new emphasis on neuroplasticity breaks radically with the idea of a permanent memory, which has piggybacked on the old ‘20th-century brain.’

A well-studied phenomenon of the new brain is, for example, that every act of remembering mingles elements of experience from the past with elements of experience from the present. Its very operation is based on the fusion of elements of realistic imagination with elements of fictitious imagination, elements of ‘experienced memories’ with elements of ‘imagined memories.’ All new experiences, that is, new neuronal input, encounter neuronal networks that have already been shaped by previous encounters with the world. This preexisting ‘neuronal knowledge’ powerfully influences the way new experiences are integrated, shaping the content, texture, and emotional quality of what we ‘recall’ of the moment. If we use in this connection terms such as ‘memories,’ we must be conscious of the fact that there is, however, no physical correlate to the 20th-century vocabulary of encoding, storing, retrieving, long-term storage, and short-term storage. What might count as a neuronal correlate is the very opposite of anything resembling an archive: a highly fluctuating excitation pattern formed by continuously changing connections of nerve cells, a fickle and unreplicable circuit that in manifold ways is interlaced with other circuits that are also in permanent flux. Nowhere and at no moment in time we can identify here a spot—that is, some molecular or cellular processes, or neuroanatomical substrate—where something could be stored, preserved, and kept over time. Singer (2007) remarks about this excitation pattern that its trajectory, that is, the trail of its movement, ‘depends on the entirety of all internal and external factors that have an impact on the system’ (p. 17), whereas he refers by ‘the system’ to the entire cerebral cortex. ‘During its progression,’ Singer goes on, ‘through this multidimensional state space, the architecture is constantly altered by the experience it gains along the way. Therefore it can never return to the same location’ (pp. 17–18).

Edelman (2005) thus calls not only the system of the cerebral cortex but every single event within this system dynamic and context-sensitive: ‘it yields a repetition of a mental or physical act that is similar but not identical to previous acts’ (p. 52). In Edelman’s terms, such act is ‘recategorical’ because ‘it does not replicate an original experience exactly’; he therefore concludes that we cannot assume that such a ‘memory’ is ‘representational in the sense that it stores a static registered code for some act’ (p. 52). What happens in the multidimensional
network of neuronal groups is ‘a non-identical “reliving” of a set of prior acts and events,’ irrespective of the fact that often there is ‘the illusion that one is recalling an event exactly as it happened’ (p. 52).

For this reason, neuroscientists emphasize not just the constructive and ‘recategorical’, but the creative nature of neuronal activities. For quite a while it has been established knowledge among neurobiologists that memory is structurally like perception, a generative event occurring in the present, rather than an image or scenario fixed and encoded in the past and somehow mysteriously retrieved in the present (e.g., Bontempi & Frankland, 2009; Edelman & Tononi, 1999; Rosenfield, 1988; Schacter, 2001). Each time the ‘memory’ of a face is activated, an innovative process of reconstruction, reinterpretation, and reevaluation is carried out, during which the face gains a new meaning, even though it might only be minimally altered. It is this new meaning that we envision the next time we remember, that is, when we again reinterpret and modify the ‘memory’ in a new context and under altered circumstances, which once more will leave their mark on it, and so on—as if it were an experiment on the transformation of a story in a process of collective remembering by Bartlett (1932). As a consequence, when we, as adults, recall an autobiographical childhood memory we almost always envision the end product of a long process of transformation and editing, irrespective of how intensely we believe that the last ‘memory’ which we bring to mind mirrors an original and authentic event like a photographic snapshot that has been ‘engraved’ or ‘inscribed’ on our brain.

These findings and observations have contributed to making it impossible to assume, let alone localize and differentially identify, a distinctive place or faculty (or an array of faculties or systems) that corresponds to the 20th-century vocabulary of encoding, storing, retrieving, and short- and long-term storage of information. ‘Yes, we can talk about memory systems and memory processes, and we can name them,’ as Tulving (2002), one of the towering figures of neuroscience, remarks about the last decades of research, ‘but we have little idea how “real” these systems and processes are’ (p. 323).

Against this backdrop I have put forward the argument that the concept of memory, even in its traditional heartland of cognitive psychology and neuroscience, is about to lose its long taken-for-granted ontological gravity, that its semblance of a rectified entity which, like the lung or the heart, has a safe and sound place in the world or, at least, in the human head, is dissolving. With its unparalleled rise over the last decades, the neuroscience of memory is about to lose its original subject the more it scrutinizes it.
Conclusions: Towards a New Understanding of Memory

The cultural paradigm shift in the conceptual architecture of our ideas of remembering and forgetting, which I have traced in four fields of memory studies, will need some time to be digested. This is understandable, considering the long period of time when what memory is and why it matters was taken for granted—which basically is the Western history of culture. For countless philosophers, psychologists, writers, and artists in this tradition, memory and the capacity to bring the past back to life were indisputable facts of the human condition. Memory was a given faculty of every healthy individual, of every single mind or brain, and it was a truism that losing it was losing one’s mind. Memory mistakes, ultimately, were sins that, even if they happened all the time, only confirmed the belief that one’s memory ought to be, and in principle was, able to provide reliably a correct and permanent replica of past experiences. This morally and religiously charged vision of memory and its ‘sins’ seems to linger on even in the thinking of leading contemporary neuroscientists (see, e.g., Schacter, 2001).

Now, with the old notion of the archive dismantling, is there a new notion of memory in the offing that has the potential to replace it? What about the future of memory? Although there are various efforts conceptually to unify the new multidisciplinary memory studies, be it under the leadership of traditional neurocognitive psychology or the new cultural or collective memory studies, my sense is that too much speaks against the likelihood that there will be one new notion of memory and one new disciplinary format, let alone one new coherent methodology (Brockmeier, in press). For one, the new enterprise of multidisciplinary memory studies only loosely associates a wide spectrum of different interests, scholarly traditions, and academic agendas. This is reflected by a plethora of diverse vocabularies and research protocols. Olick characterizes the field as ‘non-paradigmatic, transdisciplinary, and centerless’ (2008a, p. 25), which, in his view—and I agree—corresponds to the status and scope of many of its concepts. These concepts are not meant to reflect ontologically the true nature or essence of ‘memory’ but serve as useful instruments, sensitizing for important mnemonic aspects or implications of cultural practices and products (Olick, 2008b). What is more, this epistemological nominalism is undergirded by the conviction of most memory researchers that ‘remembering itself often involves the interaction or coordination of different processes operating at different timescales across different parts of complex systems, each with its own distinctive histories, formats and dynamics,’ as Sutton (2009) puts it—or, in a
nutshell: ‘The requisite pluralism is demanded by the world, not imposed by theorists’ whim’ (p. 300).

We may, however, identify some general tendencies that seem capable of remapping the remains of memory onto the new 21st-century landscapes of knowledge and epistemology. Some of these tendencies I have already insinuated; in conclusion, let me summarize them. In all four fields we find emerging visions of remembering and forgetting as social and cultural practices, and of memories as social and cultural products. Rather than being isolated operations of minds or brains (or of isolated cellular, molecular, or cognitive systems of these brains), these practices are carried out by people. That is, they are realized by persons with agency, intentionality, and the brain states that entail and enable such agency and intentionality. In other words, human memory practices are embedded or embodied—in environments, *umwelts*, eco-niches, everyday life-meaning contexts, and historical lifeworlds of action and interaction; they are activities within cultural (and that implies noetic) orders, which are themselves subject to historical change. An important part of these cultural orders are artifacts—material media, technologies, and other devices with which human remembering has always been closely linked, even if they have only recently moved to the center of our intellectual and technological attention.

Other constitutive elements of these cultural orders are sign and symbol systems that serve an essential mnemonic function (which partly overlaps with that of other artifacts and media). One of these sign systems is language, and its close connection with our practices of remembering has especially come to the fore in numerous investigations of the narrative and discursive fabric of autobiographical remembering. Since the 1990s, in the wake of what has been called the narrative turn, research and scholarship on the narrative fabric of the autobiographical process has enormously proliferated. In this way another new field of knowledge has taken shape. This narrative and discursive field, intersecting and overlapping with the field of memory studies, ranges from psychology (narrative and discursive psychology, developmental psychology) and medicine and health sciences (narrative medicine, clinical and health psychology) to narrative studies (cognitive narratology, sociolinguistic and linguistic-anthropological narrative and discourse studies). It also encompasses research areas such as ‘auto/biographical studies’ (which are more social-scientific grounded) and the (more literary-oriented) study of ‘life writing.’ The rich stock of new insights into the narrative nature and culture of remembering and forgetting afforded by these enterprises offers, from
the perspective I propose here, what amounts to a comprehensive and sophisticated alternative to the archive model of autobiographical memory. This ‘narrative alternative’ has, in particular, been advanced in what Bruner (2001) called the study of autobiographical self-making and world-making.

No doubt, there are more alternative models to the storage concept of remembering and forgetting, as there are more areas of remembering than the autobiographical process, more modes of remembering than narrative, and more contexts of remembering than discursive ones. But here, in the exploration of the narrative fabric of the autobiographical process, we witness the emergence of a most promising candidate for a novel vision of human remembering after the archive.

Notes

1. Although the ‘systems approach’ has become the dominant orientation, this is not to say that there is conceptual consensus or even partial agreement within experimental cognitive and neurocognitive psychology of memory on what exactly the discipline is investigating, let alone what ‘memory’ is (see, e.g., Roediger, Dudai, & Fitzpatrick, 2007). Despite continuous attempts at systematizing the technical vocabulary and the aspects of memory referred to by specific terms, the fractioning of memory goes on. As a consequence, the composition, functions, and number of neurocognitive ‘memory systems’ have become increasingly disputed; there is, by now, any number of ‘memory systems’ from two to some hundred discussed in the literature (see, e.g., Tulving, 2007).


4. The term ‘memory boom’ was originally coined by Terdiman (1993) and Jay Winter (2000) to refer to a new way to actively take care of the production and historical transmission of memories in the 20th century, beginning with World War I. The new memory boom that started in the 1990s also refers to a cultural and academic process. The ISI Web of Knowledge, which combines citation indexes in the social sciences and in the arts and humanities, yields over 11,800 references to collective/cultural/social/public/popular memory, of which some 9500 appeared during the decade 1998–2008 (see Beiner, 2008; Blight, 2009).

5. A telling example of such a view of autobiographical memory as a, semiotically speaking, ‘cultural text’ is New York MoMA’s autobiographical installation of the Cuban-American artist Maria Magdalena Campos-Pons, Spoken Softly with Mama, which I have discussed in another work (Brockmeier, 2001).

6. E.g., Brockmeier (2002a); Connerton (1989); Middleton & Brown (2005); Middleton & Edwards (1990). Not surprisingly, Barlett’s Remembering (1932) looms large in these discussions.
7. For the neuroscientific summaries made in this section I draw, if not otherwise specifically referenced, on Addis, Wong, & Schacter (2007); Gazzaniga, Ivry, & Mangum (2009); Edelman (2005); Harris (2000); Schacter (1996, 2001); Schacter & Addis (2007); Suddendorf & Corbalis (2007); a number of chapters from Squire (2009); Szpunar, Chan, & McDermott (2009), and Szpunar, Watson & McDermott (2007). I concentrate on this focused selection from an immense literature since my intention is not to present a comprehensive research review but to stage an argument.

8. For the cultural nexus of memory, time, and narrative, see Brockmeier (2009); Fivush & Nelson (2004); Freeman (1998); Medved & Brockmeier (2008); Straub (2005).

9. What characterizes such activities is that they create ‘richly imagining fictitious experience’ (Hassabis & Maguire, 2007, p. 299). Hassabis and Maguire call what happens in these processes ‘mental scene construction’; other scientists (Buckner & Carroll, 2007) speak of ‘self-projection’ or refer to the constructive activities of a ‘prospective brain’ (Schacter, Addis, & Buckner, 2008).

10. In some areas of the neurobiology of memory, new operative concepts have emerged that seem to react to the mismatch between new findings and an inadequate language (and inadequate models) to represent them. The term ‘memory consolidation’ is an interesting example. It aims to reflect ‘memories’ as fleeting and unstable excitation patterns, instead of ‘information’ ‘encoded’ in some ‘storage.’ The question that comes to the fore in this new view is, however, how to explain the possibility of more or less stable long-term memories (or neuronal circuits with a mnemonic function) at all—wherever they occur between the hippocampal region and the cerebral cortex. ‘Memory consolidation’ indicates a possible answer. It is based on the presumption that some kind of consolidation process of exciting patterns may lead to a ‘gradual stabilization’ over time. What is meant by ‘memory consolidation,’ then, is quite the contrary of an act of encoding and a subsequent process of storing of information, but, as Bontempi and Frankland (2009) assert, ‘a highly dynamic process that involves large-scale reorganization at both the synaptic and entire interconnected brain system levels’ (p. 733). The authors state, however, that the ‘precise mechanisms underlying this reorganization are largely unknown’ (p. 733).

References


**Biography**

JENS BROCKMEIER is a Senior Scientist based at the Free University Berlin, with a background in psychology and philosophy. He also is a Visiting Professor in the Department of Psychology at the University of Manitoba, a Honorary Professor of Psychology at the University of Innsbruck, and a Senior Visiting Research Fellow at the Centre for Narrative Research of the University of East London. His research is concerned with the cultural fabric of memory and language, with a focus on narrative as a linguistic, psychological, and social practice of remembering— issues he has explored both as empirical phenomena (in various languages and sociocultural contexts, as well as under conditions of illness and health), and as philosophical questions. His article ‘After the Archive: Remapping Memory’ draws on a series of lectures delivered at the University of Sheffield as Marie Curie Senior Research Fellow of the European Union-sponsored research program ‘Memory/Memoir.’

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