Today, there is a lively exchange among literary and media studies in the common goal to understand 'mediated memory'. In this context, interme-diality and remediation are understood as effective techniques of cultural remembering in literature and other media (see chapter V.5).

The effective presence of literature in memory culture – what I call literature as a medium of cultural memory –, finally, is a phenomenon which is crucial to current discussions about the impact of media on memory, yet remains sorely underexamined. However, it is precisely insights into the power of art and literature as media which *actively shape* cultural remembrance on which the opportunity for literary and art history to engage in the ongoing interdisciplinary dialogue of memory studies depends. It is in this area that a productive exchange with history, sociology, and psychology is most likely to be engendered. (For this reason, chapter VI.3 is dedicated to this question.)

III.3 Mind and memory: Psychological approaches

It was not until the end of the nineteenth century that psychology became established as a science. Until that point, theories of indi-vidual memory were primarily the realm of philosophical and proto-psychological thinkers. Around 1900 the ways of thinking about memory ranged from philosophy and psychoanalysis to literature all the way to empirical research. Sigmund Freud's psychoanalytical concepts (such as transference; the importance of the unconscious mind; the mechanisms of denial and repression, condensation and displacement; secondary revision; and screen memory) have become central tropes in certain parts of current cultural memory studies (see III.1.2). Today, psy-chological approaches to memory are highly diversified, ranging from social and cognitive psychology all the way to the neurosciences. It is increasingly psychologists who suggest interdisciplinary approaches to the study of 'memory in culture', thus enabling collaborative research with colleagues from the humanities and the social sciences.

III.3.1 Memory in cognitive psychology, social psychology, and the neurosciences: History and key concepts

The beginnings of experimental psychology of memory date back to Hermann Ebbinghaus (1964 [1885]) and his attempts to observe the process of memory in its 'pure form' by memorizing nonsense syl-lables and measuring his ability to retain them in his memory. The British psychologist Sir Frederic C. Bartlett carried out studies dia-metrically opposed to those designed by Ebbinghaus; these focused

on the productive rather than the reproductive aspects of memory. In *Remembering* (1932), his classic study which combined elements of experimental and social psychology, Bartlett showed that all cognitive processes must be understood as an 'effort after meaning' (ibid., 44). Using an experiment in which participants were supposed to remember an unfamiliar story, he proved that memory is shaped by distortions—leveling, accentuation, assimilation. Bartlett agreed with Halbwachs insofar as he argued that constructive processes play a role in memory: 'Remembering ... is an imaginative reconstruction, or construction' (ibid., 213). That said, however, he also pointed out that the concept of *mémoire collective* needed to distinguish between 'memory *in* the group' and 'memory *of* the group' (ibid., 296). The latter he held to be an interesting, but in the end unprovable speculation. The first point, however—that sociocultural contexts have a constitutive meaning for individual memory—appeared to him to be quite evident.

Arguably, Bartlett's most important contribution to cultural memory studies is his popularization of the notion of 'schemata'. Schemata are patterns and structures of knowledge on the basis of which presupposi-tions regarding specific objects, people, and situations as well as regard-ing the nature of their relationship can be made. They reduce complexity and guide perception and remembering. Schemata are acquired through socialization. They are thus not universal, but culture-specific (this is what Bartlett's experiment with the unfamiliar story showed: the par-ticipants recalled the story according to their culturally shaped ideas about what 'good' stories should be like). Contemporary psychology assumes that

> [schemata consist] of slots and conditions governing what can occupy these slots (and thus, what can, according to the schema, be compre-hended, perceived, remembered, or anticipated). Schemata thereby have an economical function for memory, as now not all the details have to be remembered; instead just the particular slots of the par-ticular schema currently activated have to be concretely filled. ... [In this way] schemata make it possible for various pieces of information to be *meaningfully* related to one another and organized. (Pethes and Ruchatz 2001, 520)

Bartlett's studies did not attract much attention among his contempo-raries. The behaviourist approach dominant in psychology until the 1960s, which focused solely on measurable, external behaviour, found more to work with in Ebbinghaus's memory research. Today, however,

Bartlett is seen as an important trailblazer for later approaches within psychology which explore the sociocultural dimension of memory.

Not until behaviourism made way for other approaches, in the course of the 'cognitive turn' in psychology, were internal processes of perception and cognition of interest again. Humans were now understood as information-processing creatures, and the main metaphor of memory became the computer. 'Memory' was treated as a three-step process of encoding, storing and retrieving information. In this context, the reconstructivity of memory so strongly emphasized by both Halbwachs and Bartlett came more to the fore: Ulric Neisser, one of the founders of cognitive psychology, compared the process of remembering with the attempt by a paleontologist to recreate the form of a dinosaur using fossil remains: 'The model of the paleontologist ... applies ... to memory: out of a few stored bone chips, we remember a dinosaur' (Neisser 1967, 285).

Since the 1970s, the ground-breaking research done by Endel Tulving (whose main work is *Elements of Episodic Memory*, 1983) has advanced cognitive psychology's understanding of various systems of memory. Psychologists distinguish among ultra-short-term memory, short-term (or working) memory, and long-term memory. Long-term memory is in turn also subdivided into different systems, according to the criterion of their dissociability: In specific experiments or through the observation of memory disorders, it becomes clear that the systems operate independently of each other. 'Two systems of memory are dissociable, when constraints can be specified which benefit or inhibit one of the two memory systems, while having no effect on the other' (Erdfelder 2002, 199). The following systems of long-term memory are currently distinguished in the psychology of memory (Schacter, Wagner and Buckner 2000; Schacter 1996):

Explicit (or declarative) memory systems

(a) Semantic memory. 'Semantic memory' contains conceptual and factual knowledge. In this memory system, we remember learned, symbolically represented knowledge (for example that 'the earth is round'). Semantic knowledge is not tied to a specific time or context. It consists to a significant extent of schemata. This memory system is, in addition, identified with 'noetic' (knowing) consciousness. In retrieving information from the semantic memory, we have the subjective feeling of *knowing that*.

(b) Episodic memory. 'Episodic memory' is tied to a specific time and context. It encompasses memories of life experience (for example,

'the first day of school'). In calling up episodic memory, we have the subjective feeling of *remembering.* Tulving (1983, 124), on whose work the distinction between semantic and episodic memory is based, describes memory in the framework of the latter as 'mental time travel': 'Remembering, for the rememberer, is mental time travel, a sort of reliving of something that happened in the past.' Identified with this system is an 'autonoetic' (self-perceiving) consciousness (see Wheeler 2000). Episodic memory has a unique subjective coloring, and is additionally – in contrast to semantic memory – strongly affective.

Episodic memories are further subdivided into 'field memories' and 'observer memories': Daniel Schacter (1996, 21) asks – 'Do you see yourself in the scene?' This is the question to identify an observer memory. 'Or do you see the scene through your eyes, as if you were there and looking outward, so that you yourself are not an object in the scene?' This would indicate that an episodic memory is represented as a field memory. Field memories are connected with a particularly emotional intensity, and observer memories with a certain distance to the past events.

Recent memory research works from the assumption that episodic memory is above semantic memory in the hierarchy. Even episodic, self-referencing information must first pass through the semantic memory system in the course of its serial encoding: 'Without the possibility of embedding self-referential experiences in a socially shared system of rules and frameworks, the event would not take on any form in a person's consciousness and would not become an experience to be remembered' (Welzer 2002, 104; see also Tulving and Markowitsch 1998).

'Autobiographical memory' is based on processes of the narrativization of episodic memories to form life stories (see Rubin 1996; Fivush 2008). Its function had been described by the English philosopher John Locke in *An Essay Concerning Human Understanding* (1690): For Locke, memory is the condition for individual identity and responsibility. It is through remembering that individuals experience the continuity of their selves and are able to orient themselves on the basis of previous experience in the world. Today a distinction is made among various levels of autobiographical knowledge:

- 'Lifetime periods': 'lengthy segments of life that are measured in years or decades, say, going to college, living in Arizona, or working at a particular place' (Schacter 1996, 89)
- 'General events': 'extended, composite episodes that are measured in days, weeks, or months, such as going to football games during freshman year [or] vacationing at the Grand Canyon' (ibid.)

- 'Event-specific knowledge': 'individual episodes that are measured in seconds, minutes, or hours, such as ... the moment you first laid eyes on the Grand Canyon' (ibid., 90)

On the first two of these levels, the autobiographical memory also exhibits semantic aspects. Schacter (1996, 151) therefore assumes: 'Perhaps lifetime periods and general events are part of semantic memory, while event-specific knowledge is part of episodic memory and preserves the details of individual experiences.' This illustrates how closely the systems of memory cooperate with one another.

Implicit (or non-declarative) systems of memory

Semantic and autobiographical memories are consciously brought about and are thus part of the 'explicit memory'. Yet at the same time, we find ourselves continually influenced by past experience, without our being aware of it. This is an effect of 'implicit memory' (Schacter 1996, 161–91). There are two central forms of implicit memory:

(a) *Procedural memory.* As early as 1896, Henri Bergson (1988) called attention to the 'procedural memory', with his concept of *mémoire habitude* (as opposed to the explicit *mémoire souvenir*). This system of memory allows automatic actions that occur without any conscious reflection. Motor skills and habits such as riding a bicycle or playing the piano are examples of procedural memory. In contrast to the 'knowing that' of the semantic memory, here we have the feeling of *knowing how*.

(b) *Various forms of priming (perceptual and conceptual).* The term 'priming' refers to the higher likelihood that we will recognize a stimulus which we have already unconsciously perceived at some earlier point. Advertising uses perceptual priming when it repeats images; unconscious stereotypes or unintended plagiarism can be a result of semantic-conceptual priming.

Cognitive psychology certainly does not understand memory according to a simple 'storage and retrieval' model; on the other hand, memory is also not seen through the lens of radical constructivism as purely a product of the present without any reference to past events. It instead takes the middle road, represented by the concept of 'ecphory' (Tulving 1983): The psychology of memory posits the existence of 'engrams', or memory traces, a term which was introduced, along with 'ecphory', by Richard Semon (1921) in 1904 (for a philosophical history of the term

see Sutton 1998). At least as important for remembering, however, are retrieval cues. These can be external stimuli, but also internal cues – emotional, cognitive, or motivational, for example. Ecphory means that each memory is the result of a synthesis of engram and cue, of stored information regarding past experience and the conditions at the time of recall: 'The cue combines with the engram to yield a new, emergent entity – the recollective experience of the remember – that differs from either of its constituents' (Schacter 1996, 70).

The fact that differing versions of the past can be modelled on the basis of one and the same engram raises the question of the 'veridicality' of memory, of its 'truth'. This question is nowhere more pressing than in the context of the false memory debate, which was sparked at the beginning of the 1990s in the USA as a result of spectacular court cases in which witnesses testified to the best of their knowledge, in good conscience, and yet nonetheless reported false memories. The possibility of memories being false has been debated particularly in connection with the memory of traumatic experiences, such as sexual abuse (see Schacter 1995).

The term 'trauma' is used to refer to experiences which, as a result of their extreme emotional intensity, cannot be worked through sufficiently, meaning they cannot be narrativized. Mechanisms of traumatic memory include suppression, dissociation from the experience already during its encoding, as well as the involuntary and compulsive reproduction of fragments of memory (see Williams and Banyard 1999; Schooler and Eich 2000). However, inaccurate memories of traumatic experiences can evidently also be induced, for example through suggestive questioning and false information (Loftus and Ketcham 1994).

Cognitive science, a relatively new field that emerged in the mid-1970s, accommodates the insight that the study of memory requires interdisciplinary research which overcomes the polarity of the natural sciences and the humanities (see Maturana and Varela 1992). Psychologists, computer scientists, linguists, social scientists, philosophers and neurologists cooperate in the attempt to understand cognitive processes and structures of knowledge in humans and to put this to productive use in the development of artificial systems of intelligence.

In the USA the 1990s was dubbed the 'decade of the brain'. Neuroscientific memory research has shown through the measurement of neuronal activity that memory has no fixed location in the brain (see Markowitsch and Nilsson 1999). Every region of the brain appears to be involved in processes of remembering, a fact which speaks for the theories of connectionism or for certain forms of the neuronal-network

model, which posit that memory is not a storehouse, but rather consists of enduring cognitive structures constructed in the nervous system (see McClelland 2000). Remembering thus proves to be the activation of neuronal patterns. It is continually created anew within an autopoietic system. The neuroscientists Gerald M. Edelman and Giulio Tononi thus emphasize that 'a memory is not a representation; it is a reflection of how the brain has changed its dynamics in a way that allows the repetition of a performance' (Edelman and Tononi 2000, 95). A comprehensive neurobiological definition of memory still valid today is that of Rainer Sinz:

> Memory is the learning-dependent storage of ontogenetically acquired information. This information is integrated selectively and in a species-specific manner into the phylogenetic neuronal structures and can be retrieved at any given time, meaning that it can be made available for situation-appropriate behavior. Generally formulated, memory is based on conditioned changes of the transfer properties in the neuronal 'network' whereby under specific circumstances the neuromotoric signals and behavior patterns corresponding to the system modifications (engrams) can completely or partially be reproduced. (Sinz 1979, 19; quoted in Markowitsch 2008, 275–6)

What is the contribution of brain research to interdisciplinary memory studies? Through various neuroimaging techniques, memory systems can now be studied from the perspective of cognitive psychology *and* the neurosciences (see Schacter, Wagner and Buckner 2000; Roesler et al. 2009). With an eye towards autobiographical memory, functional imaging has shown that different regions of the brain are activated during the recall of positive vs negative experiences, from the more recent vs more distant past, or of imagined vs actually experienced events – in other words, that our brain differentiates in reference to affect, time, and facticity of what is being remembered (see Markowitsch 2002, 132–3). Many brain researchers also emphasize that we have long fallen for *Descartes' Error* (Damasio 1994), namely the assumption that reason and emotion are mutually exclusive. On the contrary, emotions – themselves obviously socially and culturally formed – appear to shape to an extraordinary degree our consciousness, our memory, and our actions. The autobiographical memory in particular is unthinkable without emotions (see also LeDoux 1996).

The psychology of memory has expanded today into a number of subdisciplines; *The Oxford Handbook of Memory* (Tulving and Craik 2000)

and *The Science of Memory: Concepts* (Roediger, Dudai and Fitzpatrick 2007) offer useful overviews. The subdisciplines of a broadly defined psychological memory studies – from cognitive psychology to social and developmental psychology all the way to neurobiology and cognitive neuroscience – for a long time proceeded in parallel, but are now increasingly coming together in an interdisciplinary dialogue.

III.3.2 Remembering in a sociocultural context: Ecology, communicativity and narrativity of memory

Memory as a social and cultural phenomenon has attracted increasing attention since the mid-1980s, a time when pure cognitivism was under attack and there were calls for an expanded view that also took into account contextual factors. Neisser (1982, 4) offered the provocative summary: 'If X is an interesting or socially significant aspect of memory, then psychologists have hardly ever studied X.' So-called ecological approaches turn away from traditional experimental research in the laboratory, and look at the interactions between the individual and the sociocultural environment: other people, things, places, media such as text and image – all of which can act as triggers for remembering (see Bruce 1985; Neisser and Winograd 1989; Graumann 1997). The 'extended mind' model assumes that there are not only 'engrams', which represent experiences on the neuronal level, but also, with a term coined by Merlin Donald (1991, 308–33), 'exograms', that is, external memory representations, from body decorations to hieroglyphics, books and movies. Connected notions are that of embodied or distributed cognition, developed in cognitive science and philosophy (Lakoff and Johnson 1999; see Sutton 2006).

Social-psychological and discourse-oriented approaches pursue questions of interpersonal memory activity. They look at the interdependence of individual and group in the collective construction of memories within a framework of conversational or group remembering – for example, when family members look at old photos: 'The point is to create a socially shared and validated *version* of the past out of previously individual experiences' (Bangerter 2002, 191; see also Clark and Stephenson 1995). In studies of conversational remembering it has been shown that through memory talk and the cross-cuing that emerges as a result it is not so much that *more* is remembered, but first and foremost that the participants remember *differently*: Episodic memories are adjusted according to criteria of relevance specific to the group. 'Audience tuning' determines the selection of and perspective on what is remembered. The shared elaboration can have such an influence that

a source amnesia makes second-hand experiences become part of a person's own life history, indistinguishable from first-hand memories (see Echterhoff, Higgins and Groll 2005). In the collective discursive negotiation of memory, thus, not only mnemic factors play a role, but also social, linguistic, rhetorical, and, last but not least, aesthetic-narrative factors.

Narrative psychology recognizes the prominent role narrative structures play in remembering (Bruner 1991). In a productive application of Bartlett's studies, David E. Rumelhart reintroduced the notion of 'story schemata' in 1975. Today, narration is conceived of as a ubiquitous format for the creation of meaning (Schank and Abelson 1995). Gerald Echterhoff and Jürgen Straub (2003–04) list the diverse functions of narrative for the human mind: the constitution of human time, the creation of meaning and handling of contingency, basic mental abilities (perception and reception, thought and judgement, memory and remembering, motivation and personal goals, emotion and affect), the creation and representation of identity, and communicative and social-interactive functions.

Life experience, in particular, is given meaning first through narrative emplotment. In this context, Donald E. Polkinghorne (2005, 8) speaks of processes of 'symbolic transformation' and explains: 'Narrative knowing ... is a reflective explication of the pre-narrative quality of unreflective experience.' It is

> not a simple recall of the past. Narrative comprehension is a retrospective, interpretive composition that displays past events in the light of current understanding and evaluation of their significance. While referring to the original past life events, narrative transforms them by ordering them into a coherent part-whole plot structure. (ibid., 10)

The fact that life stories are always reconstructed in retrospect, from a provisional end point, inspired in Jens Brockmeier the concept of a 'retrospective teleology' (Brockmeier and Carbaugh 2001, 247–80). In the subsequent moulding of pre-narrative experience, various forms of 'narrative smoothing' can be observed, which Polkinghorne (2005, 9) summarizes as follows: 'In configuring a story of a life episode, narratives often omit details and condense parts ("flattening"), elaborate and exaggerate other parts ("sharpening"), and make parts more compact and consistent ("rationalization") to produce a coherent and understandable explanation.'

The sociocultural dimension of narrative remembering can be considered under many different aspects: Patterns of narration are, first, following Bartlett, to be understood as culture-specific schemata, which already pre-form every single experience we have. The cultural context thus influences *what* can be narrated and remembered and *how* this can be done. From the perspective of discourse-oriented psychology, narration appears, second, as a fundamental practice of the shared creation of memory within the framework of conversational remembering. The autobiographic remembering self, as 'totalitarian ego' (Greenwald 1980) changes, third, its life story according to current sociocultural contexts and the demands for meaning that result from the experience of the present.

III.3.3 Psychology and cultural memory studies: Integrative models

Genuinely transdisciplinary memory research, which combines approaches from cultural history, social sciences, literary and media studies with research in psychology, psychoanalysis and neurosciences, has gradually taken root since the beginning of the 1990s (see, for example, Middleton and Edwards 1990; Antze and Lambek 1996; Pennebaker, Páez and Rimé 1997; Straub 2005; Tomasello 1999; Echterhoff and Saar 2002; Boyer and Wertsch 2009). The theoretical and methodological possibilities and limitations of such combinations have since been a frequent topic of debate. The spectrum of psychological contributions to this discussion spans all the way from a critical distancing from the concept of 'collective memory' to a presentation of various integrative models which demonstrate the interfaces of historical, social, literary, and psychological memory research.

In an article called 'Searching for Cultural Memory,' Jens Brockmeier (2002) suggests 'hybrid perspectives that aim to overcome categories and research agendas set up by what Latour called the "work of purification"' (ibid. 12). One of the 'underlying assumptions' of such hybrid memory studies is the conviction that

> there is no principal separation of what traditionally is viewed as individual or personal memory from what traditionally is viewed as social, collective or historical memory. ... As a consequence, the investigative focus shifts to the forms of interaction and co-construction, interplay and mutual dependence, fusion and unity between the previously separated spheres of the individual and the collective, the private and the public, the timeless and the historical. (ibid., 9)

One of the most comprehensive examples thus far for such a synthesis has been put forth by James Wertsch who, in his *Voices of Collective Remembering* (2002), draws on psychology, history, literary theory, semiotics, sociology and political science to provide a sophisticated theoretical model of collective memory as multivoiced and distributed 'mediated action' (ibid., p. 6). Another example for truly integrative work on memory is the research conducted by the social psychologist Harald Welzer. In his book *Das kommunikative Gedächtnis* (2002, 'The Communicative Memory'), Welzer combines insights of neuroscientific research, developmental psychology and social psychology with the results he gained in oral history interviews in order to highlight and theorize the social and communicative aspects of individual memory (for a concise summary of his work, see Welzer 2008).

In designing models for research that integrate psychology and cultural studies, many psychologists start with the distinctions among various systems of memory. Harald Welzer and the neuroscientist Hans J. Markowitsch, for example, foreground the autobiographical memory. They outline a 'bio-psycho-social developmental model of the autobiographical memory' which is based on the discovery of the 'plasticity of the brain', that is, the fact that environmental influences exert an enormous influence on the brain's form and functioning:

> The finding that a significant part of the development of the neuronal network patterns and decisive phases of the organic development of the brain take place after birth, that is, under social and cultural influences, marks from our point of view a central interface between research done on memory and remembering in the social sciences and that in the natural sciences. (Welzer and Markowitsch 2001, 206)

In contrast, Edgar Erdfelder (2002), a representative of experimental memory psychology, makes an argument for conceiving of the semantic memory as a junction between the individual and the collective memory, that is, as 'the part of the individual memory in which collective and cultural memory are mirrored, partly incompletely and partly also idiosyncratically warped' (ibid., 199). Integrative models of psychological memory research, thus, look at the sociocultural and communicative creation of episodic-autobiographical memory as well as the representation of history and cultural knowledge in the semantic memory of the individual.

Combining both perspectives, the social psychologists David Manier and William Hirst have proposed a 'cognitive taxonomy of collective

memories' (2008). They proceed from cognitive psychology's differentiation of various systems of memory (see chapter III.3.1) and distinguish between three forms of the representation of collective memory in individual minds:

1. Collective-episodic memory: This includes memories that members of a social group unanimously hold of their shared experiences (say, a picnic); everyone remembers the specific context, time, and place of the event. Such memories can even become a collective-autobiographical memory if everyone in equal measure locates the shared experience within the framework of a specific narrative which helps establish a collective identity. Determining the rules which govern the creation of collective-episodic memory is the object of studies on conversational remembering (see chapter III.3.2).
2. Collective-semantic memory: This is the memory of historical events not personally experienced. Manier and Hirst distinguish between 'lived semantic memory' and 'distant semantic memory'. An example of the former would be memories many Americans over age fifty have of the Vietnam War. Even those who did not actively participate in the fighting followed the events in the press and discussed them with their friends. The deciding factor for lived semantic memory is precisely its 'lived quality' (ibid., 258). As an example of distant semantic memory, Manier and Hirst cite the memory of Washington's crossing of the Delaware; this is also indirect knowledge, but in this case, the feeling of vitality and immediacy which characterize lived semantic memories are lacking during the recall of this more distant event. Lived semantic memory is a typical object of the memory that is formed between generations, while distant semantic memory is communicated by means of institutions. The transitions between the two forms of memory are, however, never truly distinct.

Clearly, these terms introduce yet again a distinction that would be marked in the Assmanns' terminology as 'communicative vs Cultural Memory'. The contrast is memory of recent events on the one hand and history, myth, and tradition on the other – a difference which, in one form and under one label or another, is a common thread in many studies of collective memory (see chapter II.4.1).

With both forms of collective-semantic memory, as Gerald Echterhoff (2004, 79f.) points out, the importance is 'on the one hand the explicit reference to past (historical) events, and on the other hand the "valence" or relevance of these contents in light of current actions'. 'The retrieved and invoked events from the past are

anything but neutral historical data; they are used for orientation in the current context, useful, and thus also valuable' (ibid.). In addition, Echterhoff calls attention to the central intersection between memory research in social psychology and cultural studies' interest in media and institutions of remembering: Collective-semantic bodies of knowledge become such only 'as the result of a series of social processes of construction and validation' (ibid., 78). Thus 'the collectivization of what are at first simply contents of the semantic memory are presumably tied to a number of cognitive, technical, social, and societal conditions' (ibid., 82).

3. Collective-procedural memory: In this last category, Manier and Hirst subsume traditions and rituals, which the individual often carries out and passes on without being aware of it. 'Rituals and traditions, or more generally, procedural memories, can serve as mnemonic tools that shape the collective identity of their practitioners, collectively reminding them of declarative memories' (Manier and Hirst 2008, 259).

To sum up, in recent decades almost no other topic has inspired such a stimulating and productive interdisciplinary dialogue, one which also blurs the boundaries between the humanities and the natural sciences. Of course, the fact that 'memory' figures as a shared object of study for disciplines with significantly different basic assumptions, research interests, and methods can have explosive results. And, of course, it is also true that researchers are far from establishing a 'super theory' of memory which would perfectly interweave the 'two cultures'. However, many scholars and scientists have at least cast off some of their reservations and shown themselves to be open to 'memory as a convergent field' (Welzer 2008, 295) and the interdisciplinary exchange that goes along with it, so that we can look forward to interesting new developments.

IV
Memory and Culture:
A Semiotic Model

In light of the broad multidisciplinarity of memory studies and the great variety of concepts of memory it has yielded, should one even attempt a definition of 'cultural memory'? Nicholas Pethes and Jens Ruchatz find this goal neither realistic nor desirable. Thus, they did not even include entries for 'memory' or 'remembering' in their interdisciplinary encyclopedia (2001) of the same name. They certainly have a point. The 'supertheory' of memory that integrates all the existing approaches has yet to be conceived (on some far-reaching attempts, though, see chapter III.3.3). The goal of this chapter is to outline an heuristic model of cultural memory. This model is rooted in anthropological and semiotic approaches to culture, but at the same time it should leave room for as many points of contact with other approaches as possible.

We cannot conceive of memory without using metaphors; in fact, throughout history, the phenomenon of 'memory' has itself generated a great many metaphors. In a first step, therefore, the possibilities, limits, and dangers of the metaphorical reference to cultural memory will be carefully examined and two fundamentally different uses of Halbwachs's term 'collective memory' – *collective* and *collected* – will be explained. A second step then introduces categories of cultural semiotics and distinguishes among three dimensions of memory culture (material, social, and mental). Third, concepts of cognitive psychology are transferred to the level of culture, in order to locate acts of remembering within a framework of various systems of cultural memory. And fourth, the relationship of memory to the neighboring terms 'identity' and 'experience' is considered.