

## 12 Autobiographical forgetting, social forgetting, and situated forgetting

### Forgetting in context

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#### Introduction

We have a striking ability to alter our psychological access to past experiences. Consider the following case. Andrew “Nicky” Barr, OBE, MC, DFC (1915–2006), was one of Australia’s most decorated World War II fighter pilots. He was the top ace of the Western Desert’s 3 Squadron, the pre-eminent fighter squadron in the Middle East, flying P-40 Kittyhawks over Africa. From October 1941, when Nicky Barr’s war began, he flew 22 missions and shot down 8 enemy planes in his first 35 operational hours. He was shot down 3 times, once 25 miles behind enemy lines while trying to rescue a downed pilot. He escaped from prisoner-of-war camps four times, once jumping out of a train as it travelled from Italy into Austria. His wife Dot, whom he married only weeks before the war, waited for him at home. She was told on at least three occasions that he was missing in action or dead.

For 50 years, Nicky Barr never spoke publicly, and rarely privately, of his war-time experiences. He was very much a forgotten and forgetting hero (for further details, see Dornan, 2002). In his first public interview in 2002 on the Australian television documentary programme *Australian Story*, Nicky explained his 50-year silence by saying:

I think my reluctance [to talk] comes from a very definite desire to forget all about the war as quickly as I could. I was concerned about how the regurgitating of all the things that I didn’t like, things I wasn’t very proud about, the things I had to do in order to survive – how that would really impact on us . . . We found we couldn’t quite cope . . . the memories got on top. I didn’t need to go through the business of discussing all my adventures . . . some of the things should have stayed forgotten.

Forgetting the past has received a great deal of attention in recent years, both inside and outside psychology (e.g., Connerton, 2008; Erdelyi, 2006; Golding & MacLeod, 1998; McNally, 2005; Schacter, 1996). While the

events Barr strove to forget are extraordinary (at least to a generation who has not lived through war), his desire to forget is not. Functioning in our day-to-day lives involves, or perhaps even requires, forgetting. We forget and remember events from our past in a goal-directed, strategic way (Bjork, Bjork, & Anderson, 1998; Conway, 2005). Bjork et al. (1998) defined goal-directed forgetting as “forgetting that serves some implicit or explicit personal need” (p. 103). Despite this definition, forgetting is often equated with failure (see also Cubelli, this volume, Chapter 3). This is probably because of the influence of the computer metaphor of human memory, which sees human information processing as a sequence of steps where information is encoded, stored, and then retrieved. By this view, recall is expected to be perfect or verbatim, just as a computer can output on command completely and accurately the contents saved in its memory system. But for human memory, this is neither plausible nor functional. Rather, it may be functional to forget certain information that is irrelevant, redundant, out of date, damaging, or distressing (see also Markowitch & Brand, this volume, Chapter 11).

In this chapter, we focus on autobiographical memory, which relates to events and experiences in our personal past. We focus in particular on autobiographical forgetting. Autobiographical remembering and forgetting serve a range of functions, especially in maintaining our identity (Conway, 2005; Nelson, 2003) and guiding our behaviour into the future (Pillemer, 2003). In this chapter, we also extend our discussion of forgetting to social memory, which occurs in conversation or community with other people. We focus in particular on social forgetting – both what is not recalled during joint remembering and what is forgotten subsequent to joint memory activities. Social remembering and forgetting serve a range of functions, such as establishing and maintaining relationships, teaching or entertaining others (Alea & Bluck, 2003), and supporting group identity (Sahdra & Ross, 2007).

Although remembering and forgetting may be functional for individuals, groups or societies, across each of these levels different (and possibly competing) functions may be more or less important. For example, in recent years younger Australians have become increasingly involved in commemorating our wartime heroes, especially on ANZAC Day (April 25, which is the anniversary of Australian and New Zealand troops landing on the Turkish peninsula at Gallipoli in World War I) and especially as the last of our World War I veterans pass away. Commentators have noted a swell in the social or national desire to remember these events and individuals. Attendance at ANZAC Day ceremonies has surged, descendants of servicemen are marching in greater numbers in ANZAC Day parades, and each year more and more young Australians make the journey to Turkey to pay their respects at the site of the Gallipoli landing (Wilson, 2008). This contrasts with the individual desire of many veterans, such as Nicky Barr, to forget their wartime experiences. Some war veterans, for instance, avoided ANZAC Day marches and ceremonies entirely (see the case of Marcel Caux; “Marcel Caux, 105”,

2004). In other words, an individual's goal to forget may be threatened by a broader goal to remember (or vice versa).

Forgetting may occur for a number of reasons (see Cubelli, this volume, Chapter 3; Levy, Kuhl & Wagner, this volume, Chapter 7). In this chapter, we focus on the inability to retrieve information that has been successfully stored in memory. That is, we assume that both encoding and storage were successful, and that forgetting occurs at the retrieval stage. When a particular memory has been encoded and stored successfully but cannot be retrieved, there are at least two possible reasons: reduced memory accessibility and/or reduced memory availability (Tulving & Pearlstone, 1966; see also Kihlstrom & Barnhardt, 1993). Memories that are both available and accessible can be consciously brought to awareness, and can be indexed by explicit memory tests (tests which involve the conscious, intentional recall of target material; Schacter, 1987). Memories that are available but not currently accessible remain outside awareness but can influence ongoing behaviour, and can be indexed by implicit memory tests (tests which do not require conscious recall but where prior learning can aid performance, e.g., priming; Schacter, 1987). Although memories may be inaccessible in a particular context or on a particular recall occasion, they may become accessible in another context, with repeated retrieval attempts or with an appropriate cue (Rubin, 2007). Memories that are neither available nor accessible do not influence either conscious or unconscious processing, so that the likelihood of recalling these memories is low and they may be effectively lost over time.

Adopting a functional view of autobiographical memory (Conway, 2005), in this chapter we consider research that has extended studies of remembering and forgetting to a broad range of “memory cases” (Barnier, Sutton, Harris, & Wilson, 2008). We describe experimental paradigms for studying goal-directed forgetting in the laboratory, and review research extending these paradigms towards more autobiographical remembering and forgetting, and towards more social remembering and forgetting. Finally, we link these experimental findings to interdisciplinary work from social science and philosophy on autobiographical forgetting and social forgetting.

### **Autobiographical memory: forgetting the personal past**

#### *The self-memory system*

Autobiographical memories are our recollections of specific episodes from the past. Tulving (2002) described autobiographical remembering as “mental time travel”, in which we relive the best, the worst, and the everyday occurrences of our lives. In the absence of significant disruption, we remember many things from our past. However, autobiographical memory is selective. We tend to remember events that place us in a good light, support our current self-image, or promote ongoing activities. And we try to forget – with varying

success – memories of experiences that undermine the current self, contradict our beliefs, plans, and goals, and increase anxiety or other negative emotions (Conway, 2005; Conway & Pleydell-Pearce, 2000).

Conway (2005; Conway & Pleydell-Pearce, 2000) proposed the self-memory system (SMS) to describe the structure of autobiographical memory and the relationship between autobiographical memory and self-identity. In the SMS, people's knowledge about their lives is organized hierarchically across three levels of increasing specificity: lifetime periods (e.g., when I was in high school), general events (e.g., going to maths class), and event-specific knowledge (e.g., the day I had our final maths exam). A specific autobiographical memory is generated by a stable pattern of activation across all three levels of knowledge. However, the construction of this pattern of activation is constrained by executive control processes that coordinate access to the knowledge base and modulate output from it (Conway, 2005; Conway & Pleydell-Pearce, 2000). These control processes are termed the “working self”. The working self can facilitate or inhibit retrieval of certain memories depending on current goals. In the SMS, goals influence the encoding, storage, and retrieval of information to determine the content and accessibility of autobiographical memories (Conway, 2005).

Conway (2005; Conway, Singer, & Tagini, 2004) identified two fundamental principles underlying autobiographical memory. The first is “coherence”, which refers to the need to maintain an integrated and consistent sense of one's life experiences. The second is “correspondence”, which refers to the need for episodic memory to correspond with reality. These principles are not mutually exclusive. Rather, a balance between them is required for a functioning autobiographical memory system. This distinction between coherence and correspondence is not new. Bartlett (1932) emphasized that the purpose of remembering, particularly in a social context, is to share our impressions with others, so people are likely to construct and embellish upon their memories rather than generate a strictly accurate representation of what happened. Conway (2005) argued that over time, in long-term memory, coherence takes precedence over correspondence.

One main idea from the SMS is that what is remembered from our lives, and what in turn is forgotten, is determined by our current working self (the image of ourselves we have at any given time). As noted above, autobiographical memories that are consistent with the goals and values of our working self are prioritized for remembering, whereas memories that conflict with our working self are likely to be forgotten (Barnier, Conway, Mayoh, Speyer, Avizmil, & Harris, 2007; Conway, 2005; Conway & Pleydell-Pearce, 2000). Within the SMS model then, autobiographical forgetting is a goal-directed, executive process, where certain memories are actively gated from consciousness. Those memories that are irrelevant, inconsistent with current identity goals, or upsetting are particularly likely to be forgotten.

***Studying autobiographical forgetting***

Research within different traditions and paradigms supports the view that certain kinds of memories are forgotten in apparently goal-directed ways. For instance, diary studies have suggested that, but people are more likely to forget events about themselves that are negative rather than positive, they are more likely to forget events about others that are positive rather than negative (Thompson, Skowronski, Larsen, & Betz, 1996; Walker, Skowronski, & Thompson, 2003). Also, people tend to organize their life story in terms of well-remembered turning points (Thorne, 2000), and forget events that are inconsistent with their current goals and motivations (Habermas & Bluck, 2000). In the clinical domain, some people with posttraumatic stress disorder deliberately and persistently try to forget memories of their trauma (Brewin, 1998), people with functional amnesia forget whole chunks or even their entire autobiographical history following a traumatic experience (Kihlstrom & Schacter, 1995), and people with a repressive coping style (low reported anxiety but high defensiveness) are much more likely to forget negative childhood events than nonrepressors and will actively suppress negative life events whether instructed to or not (Barnier, Levin, & Maher, 2004; Myers & Brewin, 1994).

In the next section, we review three major experimental paradigms of goal-directed forgetting: retrieval-induced forgetting (RIF; Anderson, Bjork, & Bjork, 1994), directed forgetting (DF; Bjork, 1970; Bjork et al., 1998), and Think/No-think (Anderson & Green, 2001). Directed forgetting is claimed to operate at the level of accessibility, temporarily reducing access to the memory. Retrieval-induced forgetting and Think/No-think are claimed to operate on availability, degrading the memory representation itself (for a review of these paradigms and their claims, see Anderson 2005). Each of these paradigms has been adopted and extended to explore the functional nature of memory, for example by using emotional words as stimuli or by examining specific clinical populations. Studies of clinical populations are important because it has been suggested that people with certain disorders develop memory biases that can maintain their illnesses; that is, their functional remembering and forgetting becomes dysfunctional (Starr & Moulds, 2006). Each of these paradigms has been extended also (to varying degrees) to study the forgetting of autobiographical memories. Studies involving autobiographical material are important because they index the extent to which these paradigms can tell us about everyday remembering and forgetting.

***Retrieval-induced forgetting***

The retrieval-induced forgetting (RIF) paradigm developed by Anderson et al. (1994; see also Anderson, 2005) models the kind of forgetting that occurs unconsciously in response to competition between memories, by

practising some memories at the expense of others. Imagine the woman who thinks of her wedding day, and consistently remembers the things that went according to, rather than contrary to, her careful plans. After repeated rehearsals of the things that went right, she is less likely to remember the things that went wrong. Hence, retrieval-induced forgetting avoids cluttering memory with information that is unwanted, redundant or out of date.

In the standard paradigm, participants learn a set of category–exemplar pairs, such as “fruit–apple”, “fruit–banana”, “instrument–flute”, and “instrument–violin”. Participants are then presented with the cue “fruit–a” a number of times, and practise retrieving “apple” repeatedly when presented with this cue. Finally, participants are presented with the categories (fruit, instrument) and asked to recall all the exemplars for each one (see Figure 12.1). Typically, participants are less likely to recall “banana” than they are to remember “flute” or “violin”. This is the RIF effect: retrieval practice reduces recall of unpractised exemplars from the practised category, relative to exemplars from an unpractised category. It has been suggested that when presented with “fruit–a” all the fruit exemplars are activated to some extent, and so successful retrieval practice of “apple” requires the inhibition of the competing, irrelevant fruit exemplar “banana”. This means that “banana” is subsequently more difficult to recall than noncompeting irrelevant information (like flute, violin), which was not activated during retrieval practice (see Bjork et al., 1998; see also Levy Kuhl, & Wagner, this volume, Chapter 7). It has been argued that RIF impairs both memory accessibility and availability. This is supported by evidence showing that recall of unpractised, related exemplars is still inhibited when tested with a novel, independent cue (Anderson, 2005; Anderson & Spellman, 1995; but see MacLeod, Dodd, Sheard, Wilson, & Bibi, 2003 for a non-inhibitory account).

RIF is considered an automatic, inevitable consequence of practising one piece of information at the expense of another. But researchers have examined whether RIF effects are influenced by motivation. Generally, this has taken the form of comparing RIF for emotional (positive or negative) material with RIF for unemotional material (the standard paradigm uses neutral word pairs). The logic is that people might be motivated to forget certain types of information (e.g., negative information), and so might show greater RIF for these words. Alternatively, people might have difficulty forgetting such information (e.g., in certain clinical populations), and so RIF may not occur for emotional material. In other words, are RIF effects

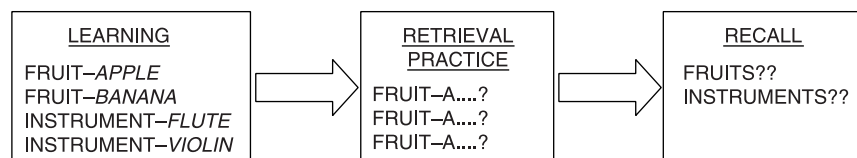


Figure 12.1 The retrieval-induced forgetting procedure (Anderson et al., 1994).

selective consistent with the functional view of remembering and forgetting? For example, Moulds and Kandris (2006) investigated RIF of negative and neutral words in high and low dysphoric participants (dysphoria is a measure of negative mood, and is used as an analogue for depression in nonclinical samples). In general, high dysphoric participants tend to recall more negative than positive memories (Mineka & Nugent, 1995). However, Moulds and Kandris (2006) found that both high and low dysphoric participants showed RIF for neutral but not negative words; that is, in both groups negative words were not forgotten. Similarly, Kuhbandner, Bäuml, and Stiedl (in press) examined RIF for negative pictures and found that the more intensely negative the picture was, the less likely participants were to show RIF for it; this was particularly so for participants in a negative mood. Relatedly, Amir, Coles, Brigidi, and Foa (2001) found that people with generalized social phobia showed RIF for nonsocial words and positive social words, but not for negative social words. In other words they had difficulty forgetting words that were particularly relevant to their phobia (category–exemplar pairs included, for example, dating–rejection, dating–clumsy, conversation–babble, conversation–silence). Taken together, these results suggest that motivational factors do influence forgetting in the RIF paradigm. Emotionally negative material may be less likely forgotten, and individual memory biases can moderate the effects of retrieval practice. What then might this predict for RIF of autobiographical memories, which are not only emotional, but meaningful, complex, and self-relevant?

Macrae and Roseveare (2002) suggested that the personal relevance of the information to be remembered vs. forgotten might influence RIF. In their study, participants learned a list of “gift” words by either imagining themselves purchasing the gift (“self” condition) or imagining another person purchasing the gift (“other” condition). Interestingly, whereas participants in the other condition showed a standard RIF effect, participants in the self condition did not; that is, participants did not forget the gifts they imagined themselves buying, even when these gifts competed for retrieval with practised items. Macrae and Roseveare (2002) argued that self-relevant material might be protected from RIF. Given that autobiographical memories are by definition self-relevant (Conway, 2005), are they susceptible to RIF? Is RIF a good model of autobiographical forgetting?

To test this, Barnier, Hung, and Conway (2004a) adapted the RIF paradigm to examine forgetting of positive, neutral, and negative autobiographical memories. In their procedure, participants elicited four memories to each of a number of cues such as “happy”, “tidy” and “sickness”. Subsequently, participants practised retrieving half their memories in response to half the cues, before being asked to remember all the memories for each cue. Barnier et al. (2004a) found an overall RIF effect. Participants were less likely to recall unpractised memories that competed with practised memories than they were to recall baseline memories. That is, retrieval practice resulted in forgetting of competing, irrelevant autobiographical memories. However, in contrast to

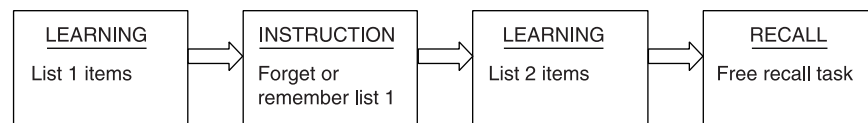
RIF research using words and other simple materials, Barnier et al. (2004a) found that emotional valence of the memories did not influence the RIF effect. Rather, independent of retrieval practice, participants were simply less likely to elicit and more likely to forget emotional than unemotional memories.

In a follow-up study, Wessel and Hauer (2006) replicated Barnier et al.'s (2004a) finding of RIF for autobiographical memories. But unlike Barnier et al., however, they found RIF for negative but not positive memories. This suggests that negative memories are sometimes forgotten in the RIF paradigm. It may be that manipulating memory valence – positive vs. negative. vs. neutral – does not fully capture memory biases (see Barnier et al., 2007), and that more subtle manipulations (such as whether memories are personally significant or not and whether memories are self-defining or not) may be required to determine when retrieval practice leads to forgetting of autobiographical memories.

### ***Directed forgetting***

The directed forgetting (DF) paradigm models the type of forgetting that occurs when we are explicitly instructed that certain information is unnecessary or unwanted (Bjork et al., 1998). This can occur when old information is updated with new, competing information. Imagine a jury is presented with one set of facts about a defendant, but then promptly told by a judge to forget this information and to focus on a new set of facts instead.

In the standard list-method directed forgetting (DF) paradigm, participants study two lists of words (list 1 and list 2). After studying list 1, half the participants are told to forget list 1 items, and half are told to remember list 1 items. Both groups are told to remember list 2 items, which are subsequently presented (see Figure 12.2). Participants told to forget list 1 items recall fewer items from this list than participants told to remember list 1 items: this is the DF effect (Bjork et al., 1998). Notably, competition between to-be-forgotten (list 1) material and to-be-remembered (list 2) material is necessary for DF; there is no forgetting in the absence of list 2 learning (Bjork et al., 1998). DF impairs explicit memory while leaving implicit memory intact, as demonstrated by Basden, Basden, and Gargano (1993) using a word stem completion task. Also, DF can be abolished using a recognition test rather than a recall test (Basden et al., 1993; Bjork et al., 1998). Thus, it has been argued that DF impairs memory accessibility, but not availability, since these items



*Figure 12.2* The list-method directed forgetting procedure (Bjork, 1970).



can still be recalled given sufficient cues, as in a recognition task (but see Sahakyan & Delaney, 2005, for an alternative, non-inhibitory account of DF).

Like the RIF paradigm, researchers have examined whether DF effects are influenced by motivation. Again, this has generally taken the form of comparing DF for emotional (positive or negative) material with DF for unemotional material (for a review, see Koutstaal & Schacter, 1997). Are DF effects selective consistent with the functional view of remembering and forgetting? To test this Payne and Corrigan (2007), for example, examined DF of emotional and neutral pictures, and found a DF effect for neutral pictures but not for emotional pictures; that is, emotional stimuli were not forgotten. In contrast, Wessel and Merckelbach (2006) found DF effects for both emotional and unemotional words. But as Payne and Corrigan (2007) argued, this might be because words are unlikely to elicit emotional responses in a normal population. Laying aside questions about the stimuli, Payne and Corrigan's (2007) findings, as well as some RIF findings, suggest that emotional material – particularly negative material – might be resistant to forgetting. This conclusion is consistent with the functional, selective view of remembering and forgetting outlined above, although it remains controversial whether and why negative material would be particularly resistant to forgetting (Anderson & Levy, 2002; Brewin, 1998; Erdelyi, 2006; Kihlstrom, 2002, 2006; McNally, 2005).

Like RIF, much research on DF has focused on clinical populations. For example, Geraerts, Smeets, Jelicic, Merckelbach, and van Heerden (2006) compared DF of neutral words with DF of words associated with child sexual abuse in either participants who had reported continuous memories of abuse, participants who recovered memories of abuse, and control participants. Unexpectedly, all participants demonstrated less forgetting (no or reduced DF effects) for abuse-related words. This is similar to Payne and Corrigan's finding (2007), which suggested that emotional material may be immune to DF. In contrast, other researchers have reported that certain populations show more forgetting (greater DF effects) of negative material. For example, Moulds and Bryant (2002) examined patients with acute stress disorder. They found that these patients forgot more trauma-related words when given a forget instruction than controls (Moulds & Bryant, 2002). Myers, Brewin, and Power (1998) examined individuals with a repressive coping style (individuals characterized by low reported anxiety and high defensiveness). They found that repressive copers forgot more negative material when given a forget instruction than nonrepressors (Myers et al., 1998). Similarly Myers and Derakshan (2004) found that repressive copers forgot more negative words when given a forget instruction than nonrepressors, but only when they rated the words for self-descriptiveness; when they rated them for other-descriptiveness there was no difference.

Taken together, these findings suggest that DF effects are selective. Some research suggests that DF operates on all kinds of material, other research suggests that DF does not operate on emotional material, and still other

research suggests that DF operates particularly for emotional material, and may depend on individuals' memory biases. Although, as suggested above for RIF, memory valence may not fully capture motivational effects on forgetting in the DF paradigm, these findings lead us to ask how DF (like RIF) might influence autobiographical memories.

Joslyn and Oakes (2005) conducted a diary study to examine this. They asked participants to record 10 events from their lives each week over a 2-week period. After 1 week, half the participants were told that the first week was for practice (experiment 1), or that the first week memories were for a different experiment (experiment 2). Finally, participants were asked to recall all the events they had recorded from both weeks. Joslyn and Oakes (2005) reported a significant DF effect: participants in the forget condition recalled fewer week 1 memories than participants in the remember condition. This effect occurred for positive and negative events, and for high-intensity and low-intensity events (Joslyn & Oakes, 2005). In a closer adaptation of the original DF procedure, Barnier et al. (2007) also examined directed forgetting of autobiographical memories. In our adaptation, participants elicited autobiographical memories in response to cue words such as "happy" and "sickness". Halfway through the words, participants were either told to forget or remember the first list, before eliciting memories for a second set of cues (list 2). Barnier et al. (2007) found a DF effect for positive, negative, and neutral autobiographical memories, although unemotional memories were more likely to be forgotten overall than emotional memories. This contrasts with Barnier et al.'s (2004a) findings for RIF, where emotional memories were more likely to be forgotten overall than unemotional memories. Again, more targeted manipulations, such as whether memories are personally significant or not and whether memories are self-defining or not, might help us to better understand these different patterns for emotional and unemotional memories (as well as emotional and unemotional simple material) and better capture the goal-directed nature of remembering and forgetting.

### ***Think/No-think***

The Think/No-think paradigm models the kind of forgetting that occurs when we intentionally suppress or avoid remembering in response to strong reminders of a particular event (Anderson & Green, 2001; Levy & Anderson, 2002). Imagine a man who associates a particular song with an unhappy love affair. Each time he hears the song, he tries to avoid thinking of the failed relationship, and over time he remembers less.

In this paradigm, participants learn a series of cue-target pairs (e.g., "ambition–ballet", "ordeal–roach", "fuss–poodle"). Subsequently, in the Think/No-think phase, participants are presented with some of the cue words again. In this phase, for half the cues (e.g., "ambition") participants recall the associated target, and for half the cues (e.g., "ordeal") participants avoid letting the target come into their mind (see Figure 12.3). On a final cued recall

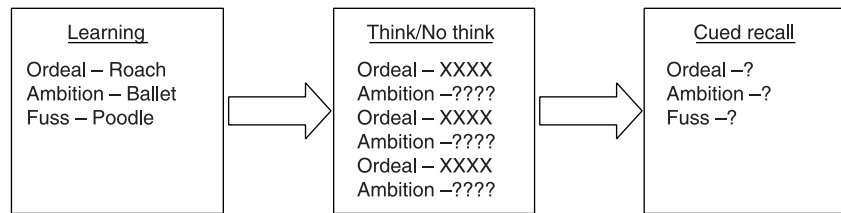


Figure 12.3 The think/no-think procedure (Anderson & Green, 2001).

test, Anderson and Green (2001) found that participants recalled fewer targets that they suppressed (e.g., “roach”) than baseline targets (items that did not appear at all in the Think/No-think phase, e.g., “poodle”). They concluded that this procedure might model Freudian repression, by showing that deliberate attempts to suppress may result in forgetting (Anderson & Levy, 2002; but see Kihlstrom, 2002; see also Erdelyi, 2006; Kihlstrom, 2006). TNT has been argued to impair both memory accessibility and availability. This is supported by evidence that participants show poorer recall for suppressed items even when recall is cued with a novel cue (e.g., “insect” for “roach”; Anderson & Green, 2001).

While some researchers have replicated the forgetting effect following suppression in this paradigm (for review, see Levy & Anderson, 2008), others have had difficulty. For example, across three attempted replications with increasingly precise adherence to Anderson and Green’s (2001) original procedure, Bulevich, Roediger, Balota, and Butler (2006) failed to find a TNT effect. It is worth noting that, compared to RIF and DF, the magnitude of the TNT effect is quite small (Anderson & Green, 2001; Levy & Anderson, 2008). Hertel and Calcaterra (2005) argued that the use of particular strategies during suppression may predict successful forgetting in TNT. They replicated the TNT effect only when participants used the strategy of thinking about an alternative word during suppression, either because they were instructed to do so or did so spontaneously (but see Levy & Anderson, 2008).

Like RIF and DF, some researchers have examined motivational influences on TNT; does TNT differentially impact recall of emotional material? Depue, Banich, and Curran (2006) compared TNT for negative and neutral stimuli, and found stronger forgetting effects for negative stimuli. They argued that cognitive control processes may be activated more strongly for emotional information. Although this finding is consistent with a functional view of forgetting, it contrasts with the mixed findings for emotional material in the RIF and DF paradigms. Also, like RIF and DF, other researchers have focused on whether specific populations might show stronger or weaker TNT effects. For example, Joormann, Hertel, LeMoult, and Gotlib (2009) examined TNT of positive and negative words in depressed and nondepressed participants. They found that, while nondepressed participants forgot positive and negative words they had suppressed, depressed participants did not

show forgetting of negative words. However, when trained to think of an alternative word during suppression (as in Hertel & Calcaterra, 2005), depressed participants successfully forgot negative words. These results suggest that both motivations and strategies may determine the success of suppression in the TNT paradigm.

As with RIF and DF, we have explored whether TNT influences autobiographical memories, using a similar adaptation. In a series of experiments that adapted the TNT procedure to autobiographical memories (similar to our adaptations of RIF and DF), we asked participants to generate autobiographical memories in response to cue words. Then, participants were presented with some of the words, half of which they responded to by recalling the associated memory, and half of which they avoided by suppressing the associated memory. To date, we have conducted five experiments. In the first, participants completed three suppression cycles during the TNT phase. In the second, participants completed 12 suppression cycles. In the third, we instructed participants to think about an alternative memory during suppression (as in Hertel & Calcaterra, 2005). In the fourth, we introduced competition between the memories: participants elicited 6 memories to each of 6 cues (as in the RIF paradigm, see Barnier et al., 2004a), so that the respond memories directly competed for recall with the unwanted avoid memories via a shared cue. In our final experiment, we combined 12 suppression trials, a distraction condition, and a cue structure that created competition between the memories, plus a delay between memory elicitation and the TNT phase to reduce overall recall. We also asked participants about their life experiences, particularly about their exposure to trauma and attempts to suppress memories of this trauma in their daily lives (as suggested by Levy & Anderson, 2008). We have had difficulty finding a robust TNT effect. Overall, participants remember their autobiographical events despite repeated attempts to suppress (their memory performance is mostly at ceiling). However, introducing competition between the memories decreased memory overall and may have aided suppression (at least for a subset of participants), and in our most recent experiment there is some indication that trauma exposure may predict suppression success (Levy & Anderson, 2008).

Results with TNT are interesting in the light of work in the related “thought suppression” paradigm (Wegner, Schneider, Carter, & White, 1987). In our lab, in a thought suppression study comparing repressive copers and non-repressors, we found that nonrepressors were able to suppress positive memories during a suppression period, but experienced a rebound effect following suppression; they were unable to suppress negative memories at all (Barnier et al., 2004b). In other words, nonrepressors’ initial suppression success, at least for positive memories, did not result in later forgetting, which contrasts with findings from the TNT paradigm. However, repressive copers were particularly successful in suppressing negative events, even when they were not instructed to do so (Barnier et al., 2004b; see also Geraerts, Merckelbach, Jelicic, & Smeets, 2006), and they showed no rebound effect (but see Geraerts

et al., 2006). This is similar to findings from the TNT paradigm. Thus, it remains unclear when and why suppression (whether in TNT or thought suppression) might result in successful forgetting of autobiographical memories.

### **Conclusion**

Based on this review, it is clear that the effects of RIF, DF, and TNT paradigms extend from the simple materials used to develop the original methodologies, to emotional words and sometimes to autobiographical memories. However, as the material increases in complexity (emotionality and personal meaningfulness), so do the effects. These paradigms can be argued to model different mechanisms of goal-directed forgetting and provide good laboratory analogues for everyday, real-world forgetting. As noted above, one assumption of a functional view of memory is that people might try to forget upsetting memories. In general, results across these paradigms suggest that sometimes people remember more emotional than unemotional material, sometimes they remember as much, and sometimes they forget more emotional material than unemotional. This implies that in remembering and forgetting the past, people are not just influenced by the simple valence of a piece of information or of an event. It is likely there are other dimensions predicting its self-relevance, and thus, whether it is prioritized for remembering or forgetting.

### **Social forgetting: forgetting with others**

While memory is motivated by individual goals such as maintaining a positive identity, it is also motivated by social goals such as promoting group cohesion, enhancing relationships, negotiating the meaning of shared experiences, and planning joint action or projects (Alea & Bluck, 2003; Barnier, et al., 2008). For instance, consider the following excerpts from interviews with two long-married couples whom we asked (both individually and jointly) to describe their autobiographical memories and their remembering practices. One couple, married for 35 years, remembered together in a genuinely shared way, dynamically constructing the past, and often speaking directly to each other rather than to the interviewers. In his individual interview, the husband described the role of remembering in their relationship:

*Interviewer:* How often do you talk about the past together with [wife]?

*Husband:* A lot. We're big talkers. That has always been a big point of our lives, still is!

In contrast, another couple, who had recently experienced marital difficulties, did not seem to jointly remember in an efficient manner. The wife, in her individual interview, described how recent difficulties in their relationship had resulted in less day-to-day reminiscing with her husband:

*Interviewer:* Do you tend to reminisce together?

*Wife:* Not as much as we used to.

*Interviewer:* Okay, so it's kind of changed you think.

*Wife:* Yeah, I do. Yeah, there were some circumstances that changed it, a couple of years ago, which were really not, not happy for me, and not happy for him.

Insights from these interviews support our view that studying social influences on remembering and forgetting is a natural extension of the functional approach to autobiographical memory.

We are likely to discuss a whole range of events with others: recent and distant, significant and mundane, shared and unshared. However, just as individual autobiographical memory is selective and goal directed, social memory is also likely to be selective, depending on the norms and values of the group that might prioritize certain items for retrieval and others for forgetting. The social context might also shape what is remembered and what is forgotten more subtly, by dictating the appropriate style and contents of recall, the social dynamics of who speaks when and whose recollections are given the most weight, and the purpose of remembering (Weldon & Bellinger, 1997). According to Schudson (1995, p. 360), people remember “collectively, publicly and interactively”, in the sense that remembering occurs for a particular audience and with input from that audience. Listeners’ responses can guide what is recalled during conversation (Pasupathi, 2001), and recalling selectively in a social context can shape subsequent individual memory (Tversky & Marsh, 2000). Based on these ideas, autobiographical memory has been labelled “relational” (Campbell, 2003). It originates with an individual’s experience of an event but is maintained, shaped, and elaborated through interaction with others (Hayne & MacDonald, 2003), as well as through individual identity goals.

In terms of forgetting, the selective nature of social remembering suggests that information that conflicts not just with individual goals, but also with social goals, is unlikely to be recalled during conversation. Fivush (2004) described “silencing”, the self- or other-censorship that can occur when recalling the past with others. She argued that this silencing during social interaction can cause subsequent forgetting of material that was not mentioned during the conversation (Fivush, 2004). Thus, social influence may cause forgetting, particularly of memories that conflict with the group’s goals. An alternative (but not conflicting) view is that social influence may reduce forgetting by providing social support for memory, and we elaborate further on this later in the chapter. We do not focus on social influences on misremembering, which have been extensively studied and are covered in detail elsewhere (see Loftus, 2005 for a review).

***Studying social forgetting***

Social aspects of remembering and forgetting have received a great deal of attention from psychologists, at least since Bartlett's (1932) *Remembering*. In the developmental domain, researchers have focused on how parents talk to children about the past and teach them the narrative structures of autobiographical remembering (Reese & Fivush, 2008). In the forensic domain, researchers have examined how eyewitnesses influence each other's memories, and whether interactions between witnesses can distort later testimony (Paterson & Kemp, 2006). In the organizational domain, researchers have focused on how groups coordinate performance to enhance workplace productivity (Brandon & Hollingshead, 2004). In contrast, cognitive psychology has traditionally been more individualistic in its approach to studying memory, and it is only relatively recently that cognitive, experimental paradigms have been developed to examine how remembering with others is different from remembering alone. Below, we review two major experimental paradigms that have been used to study social forgetting in the laboratory. The first is socially shared retrieval-induced forgetting (SS-RIF), which is an extension of the RIF paradigm into a social context (Cuc, Koppel, & Hirst, 2007). The second is collaborative recall, which was developed to directly measure how what is remembered and forgotten in a group compares to what is remembered and forgotten by the same number of individuals recalling alone (Weldon & Bellinger, 1997). These paradigms demonstrate the ways in which individual and social processes combine to influence both remembering and forgetting.

***Socially shared retrieval-induced forgetting (SS-RIF)***

The RIF paradigm (described in the previous section) has been extended to examine forgetting in a social context. This paradigm models the kind of forgetting that is the result of selective remembering in conversation with others. Imagine a politician who repeatedly directs her audience's attention to her successful, popular policies, and avoids mentioning her unpopular policies and scandals. She might hope that this would cause her listeners to subsequently forget her misdeeds. Cuc et al. (2007) argued that the selective remembering that happens in a conversation (where only information consistent with conversational goals is mentioned; Tversky & Marsh, 2000) is a form of retrieval practice that should result in forgetting of unpractised, related information.

To test this, Cuc et al. (2007) replicated the standard RIF procedure of Anderson et al. (1994) but introduced a "listener" who observed the "speaker's" retrieval practice and monitored them for either accuracy or fluency. Speakers showed RIF as expected. Most importantly, listeners showed RIF as well but only when they monitored the speaker's accuracy, presumably because this encouraged listeners to perform the retrieval

practice themselves as they observed the speaker. To examine whether SS-RIF might also operate in a natural discussion, where participants were not explicitly instructed to monitor for accuracy and where the role of speaker and listener shifted back and forth, in a second experiment Cuc et al. (2007) modified the SS-RIF procedure so that the retrieval practice phase consisted of a free-flowing conversation between two participants. They found that both speaker and listener showed RIF (Cuc et al., 2007; see also Stone, Barnier, Sutton & Hirst, 2010). Thus, SS-RIF appears to be one plausible explanation for forgetting in social interactions, and in our lab we are currently extending this effect to autobiographical memories. This research suggests that the content of a conversation could be shaped either intentionally or unintentionally to induce forgetting of unwanted information. In this way, social interaction could lead to individual forgetting (Hirst & Manier, 2008).

### ***Collaborative recall***

Another major experimental paradigm used to measure the impact of recalling the past with others is collaborative recall (Basden, Basden, Bryber, & Thomas, 1997; Blumen & Rajaram, 2008; Finlay, Hitch, & Meudell, 2000; Weldon & Bellinger, 1997), which was designed to assess the “costs and benefits” of remembering in a group (Basden, Basden, & Henry, 2000; for review, see Harris, Paterson, & Kemp, 2008). Collaborative recall models the kind of remembering and forgetting that occurs around the dinner table when a family reminisces about the last holiday they took together. In this paradigm, the recall performance of collaborative groups (people recalling together) is compared to the recall performance of nominal groups (the pooled recall of the same number of individuals recalling alone; see Figure 12.4). We might assume that recalling with others should help our individual performance, but the opposite is true. Research on collaborative recall has consistently demonstrated that collaborative groups recall less than nominal groups; this effect is termed “collaborative inhibition” (Basden et al., 2000; Weldon & Bellinger, 1997).

The best-supported explanation for collaborative inhibition is the retrieval strategy disruption hypothesis: recalling information in a group disrupts each individual’s retrieval strategies, making them less efficient (Basden et al., 1997). That is, recalling with others results in each individual forgetting items that they would have been able to recall alone. Evidence for this account comes from research showing that collaborative inhibition is abolished when each group member is responsible for recalling a different part of a categorized list (Basden et al., 1997). Also, collaborative inhibition is abolished when recall is cued (Finlay et al., 2000), when group members are forced to organize their recall by category (and hence, presumably, use the same retrieval strategies, Basden et al., 1997), or when group members are unable to hear or see the items recalled by other group members (Wright & Klumpp, 2004).



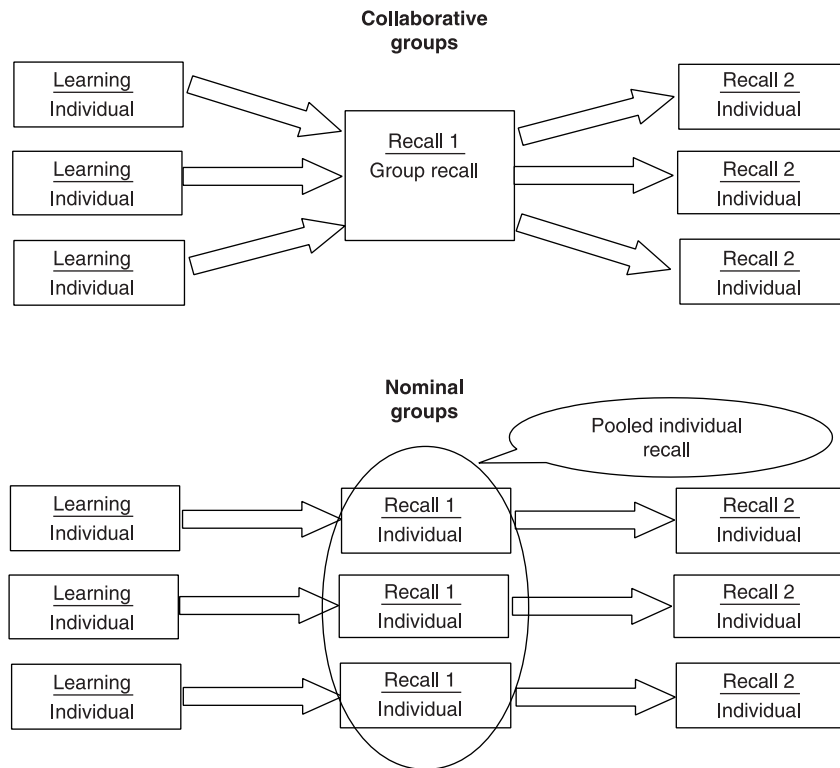


Figure 12.4 The collaborative recall procedure (Basden et al., 2000).

Essentially, collaborative inhibition is abolished when individuals in a group remember not as a group but as individuals, that is, when the group cannot hinder, but also cannot help, recall.

Collaboration has ongoing influences on individual memory. Prior collaboration results in an inhibition of hypermnesia; participants who have collaborated are subsequently more likely to recall items mentioned in the collaboration, but less likely to recall new items from the original list (Basden et al., 2000). That is, collaboration shapes subsequent individual recall, both in terms of remembering (mentioned items) and forgetting (unmentioned items). Interestingly, recent results from our lab suggest that collaboration can improve accuracy (if not amount recalled), both during collaboration and on subsequent individual tests, but only when collaborating groups are instructed to reach a consensus about each item recalled (Harris, Barnier, & Sutton, submitted).

Much like standard RIF, DF, and TNT, most of the research on collaborative recall has focused on relatively neutral material. If remembering with others does influence what we remember and forget, we might expect this influence to operate particularly for important or emotional memories, when

recalling with our social groups (e.g., family, friends) or when recalling shared events. In terms of emotional events, Yaron-Antar and Nachson (2006) examined whether collaboration impaired recall of the details of the assassination of Israeli Prime Minister Rabin: it still did; collaborative groups still showed collaborative inhibition. In terms of recalling with our social groups, studies of whether collaborative inhibition is reduced or abolished when in groups of acquaintances have yielded mixed results. Andersson and Rönnerberg (1995) reported less collaborative inhibition for groups of friends, while Gould, Osborne, Krein, and Mortenson (2002) reported no difference between married and unacquainted dyads. Other aspects of the group, apart from familiarity, may also be important in determining the outcomes of collaboration. Social and motivational factors – such as whether the interaction is face to face or electronic, and the perceived output level of the group – impact the amount remembered and forgotten by the individuals in a group (Ekeocha & Brennen, 2008; Reysen, 2003). Notably, in a recent study of collaboration between expert pilots, who are skilled at communicating in order to perform tasks together, Meade, Nokes, and Morrow (2009) found facilitation not inhibition. In terms of shared and unshared events, we recently conducted a study of collaborative recall among friends and strangers, who encoded information either together or individually. Our results suggest that when information is encoded individually, collaboration results in inhibition for both groups of strangers and groups of friends. But when information is encoded as a group, collaboration results in no inhibition for groups of strangers or groups of friends (Harris, Barnier, & Sutton, 2009).

In an extension of the collaborative recall paradigm to memory for personal experiences, we examined how conversation about a shared, significant event might shape memory for and feelings about that event (Harris, Barnier, Sutton, & Keil, 2010). Following the sudden death of the Australian celebrity, “Crocodile Hunter” Steve Irwin, we asked participants to come to the lab and either discuss their memories for hearing of Irwin’s death in a group of three, or to spend time thinking about their memory alone. We indexed participants’ memories for and feelings about the event on 3 occasions – before the discussion phase, 1 week later, and 1 month later. We found that, during discussion, references to personally being upset by Irwin’s death were silenced. Consider the following excerpt from a group conversation between a female participant (K) and two male participants (M and E):

- K:* I know people that cried when they were watching the memorial service when Bindi was doing her speech.  
*M:* Yeah, that was really sad! I don’t know anybody who actually cried . . .  
*E:* Did you cry?  
*K:* Can’t say that I did.  
*E:* Do you know anybody that cares at all?  
*M:* I don’t think a lot of people . . .

- K:* I think people feel bad for him. A lot of people.  
*E:* People die every day.

This excerpt illustrates the process of negotiation that occurred during conversations, such that personal emotion was silenced. This silencing influenced subsequent memory – participants who discussed their memory reduced their ratings of how upset they had been when they heard the news, relative to participants who thought about the event alone. In this case, discussion resulted in forgetting of emotion, rather than the factual details of the event. While the collaborative recall paradigm suggests that remembering with others results in forgetting, our research suggests that this forgetting is targeted – that collaboration may result in forgetting of specific aspects of an event depending on the group norms that emerge during discussion (Harris et al., 2010). That is, social motivations, such as fitting into a group of peers or agreeing with others, can drive what is remembered and forgotten, even for emotional events that are well remembered (cf., Fivush, 2004).

### ***Conclusion***

Overall, research on SS-RIF and collaborative recall suggests that a range of individual and social factors can influence what is remembered and what is forgotten when people talk about the past together. This research highlights that laboratory paradigms of individual and social forgetting can be extended to examine more complex questions about ways in which our social interactions influence what we remember and what we forget.

### **Situated forgetting: forgetting in context**

As mainstream cognitive psychology has moved towards the functional (constructive, motivated, selective) view of remembering that we have described, it has increasingly stressed the central role of the “context” in determining what is remembered vs. forgotten. So far we have highlighted two aspects of the remembering context that might influence forgetting: individual motivations and goals, and social motivations and goals. In this section, we discuss a view of forgetting where context plays an even more pivotal role: situated forgetting. Over the past 20 years, philosophers of cognitive science have proposed that human cognitive processing is “hybrid”: including not only the individual brain and body, but also the environment with its social and technological resources. This view has been labelled as “situated”, “distributed”, “extended” or “embedded” cognition, proposing that an individual’s neural system does not act in causal isolation from its environmental and social context (see Barnier et al., 2008).

***Distributed cognition and situated forgetting***

Within the situated cognition framework, the human brain is seen as embedded in and extended into its world (Clark & Chalmers, 1998; Wheeler, 2005), where it rarely performs cognitive operations in isolation. Rather, intelligent action is conceptualized as the outcome of the cooperation or “coupling” of neural, bodily, and external systems in complex webs of “continuous reciprocal causation” (Clark, 1997, pp. 163–166). Applying this framework to memory, philosophers argue that humans augment their relatively unstable individual memories, which are not typically stored as discrete, fully formed units but as distributed representations, with more stable external “scaffolding” (Sutton, 2009; Wilson, 2005). They form temporarily integrated larger cognitive systems that incorporate distinct, but complementary, internal and external components. As Andy Clark puts it: “our brains make the world smart so that we can be dumb in peace” (Clark, 1997, p. 180). Memory systems are seen as extending the natural, technological, and social environment. This approach builds on Bartlett’s (1932) work on remembering as the context-dependent compiling of materials from changing “interest-carried traces”; Vygotsky’s (1978) analysis of how children’s memory is transformed as they incorporate the ability to use artificial signs and cultural operations; and Halbwachs’ (1980) stress on “the necessity of an affective community” in structuring and maintaining memory. A rich interdisciplinary literature now seeks to update and implement these ideas (Bloch, 1998; Connerton, 1989; Donald, 1991; Hirst & Manier, 2008; Middleton & Brown, 2005; Nelson & Fivush, 2004; Olick, 1999; Rowlands, 1999; Rubin, 1995; Welzer & Markowitsch, 2005; Wertsch, 2002; Zerubavel, 2003).

Most discussions of situated or distributed cognition have focused on the way an individual’s memory system might extend to incorporate various technologies. For instance, an abstract artist may work incessantly with a sketchpad because imagining an artwork in the mind’s eye will not successfully allow the perception, creation, and transformation of the right aesthetic patterns (van Leeuwen, Verstijnen, & Hekkert, 1999). The sketchpad isn’t just a convenient storage bin for pre-existing visual images: the ongoing externalizing and re-perceiving is an intrinsic part of artistic cognition itself (Clark, 2001). Other frequently cited examples include the tools and objects used to process orders in a café, the notes and records used to write an academic paper, or the use of particular glasses by bartenders in remembering cocktail orders (Beach, 1988; Clark, 1997; Hutchins, 1995; Kirsh, 2006).

In this context, forgetting can be seen as complementary to remembering. The storage of information which is less self-relevant or which is computationally costly might be offloaded on to the world, so that individuals can safely forget some information that they would have to hold internally if the environment was less structured or stable. Nevertheless, it is fair to say that researchers’ focus has generally been on how situated memory, memory extended beyond the brain, can reduce forgetting. There has been

less discussion of ways in which the use of objects may promote forgetting of material that is redundant, unnecessary, or unwanted. However, the functional approach to remembering and forgetting recognizes that what and how we forget is as important as what and how we remember. More work could be done to identify how people use technological resources to manage the balance between remembering and forgetting.

An individual's memory is also situated more broadly in their physical and cultural environment. Broader cultural symbols – such as museums, memorials, and monuments – may serve to shape and support an individual's memory, which is seen in these interdisciplinary literatures as notoriously fallible. These external objects are considered relatively stable and secure supplements to our internal storage systems. By this view, because neural processes are active, constructive, and selective, we rely on information outsourced to more enduring and unchanging cultural symbols (Clark, 1998; Donald, 1998). Similar to the research on memory-supporting technologies, research has focused mostly on how cultural symbols promote remembering, with less discussion of the balance between remembering and forgetting.

There are some notable exceptions, however, which promise an interesting integration of approaches to forgetting from the social sciences and from cognitive psychology (Connerton, 2008; Erdelyi, 2008; Singer & Conway, 2008; Wessel & Moulds, 2008). Objects that act as cultural symbols are not always intended to persist unchanged, and even those that are intended to last may not do so (Bowker 2005; Kwint 1999; Malafouris 2004; Sutton 2008). By preserving or highlighting certain features of the past, or rendering others open to dispute or renegotiation, cultural symbols can act as agents of forgetting. This is most obvious in cases of “repressive erasure” (Connerton 2008, pp. 60–61) such as the politically motivated airbrushing of a person from a photograph (e.g., the case of Vladimír Clementis described by Kundera, 1980). But objects can also play more subtle roles in encouraging forgetting. In certain African and Melanesian cultures, for example, some artifacts and structures “are made only to be abandoned immediately to decay”, ephemeral monuments which may be the means by which “the members of the society get rid of what they no longer need or wish to remember” (Forty, 1999, pp. 4–5). In the Melanesian society described by Küchler (1999), an elaborate memorial device called a “malangann” is carved after someone's death. But instead of being installed as a permanent physical reminder, it stands on the grave for one night only before being abandoned or destroyed. Likewise, while places, buildings, or other physical locations do often support remembering, acting as key features of the cognitive (and affective and social) environment in which we reinstate or reconstruct the past, geographical sites too are vulnerable to change, reinterpretation, or erasure (Casey, 1987, 1992). In many projects of “urban renewal”, for example, the physical destruction of existing communities is accompanied by a loss of the memories and traditions of the neighbourhoods in question, leaving only partial clues in a landscape of scars (Klein, 1997).

***Socially situated forgetting and transactive memory***

In our own work, we particularly focus on one form of situated or extended memory: how memory is shared among people in social groups. We investigate how small groups influence individual memory and how this reliance on the group may, in turn, lead to collective memory that is more than the sum of individual memories. Social influences on memory can be seen as so pervasive that some have argued that memory is inherently social and individual memory does not exist. For instance, Halbwachs (1980) suggested that even when we are superficially alone, we carry our groups with us, so that nothing much like memory at all would be left if all the social contexts of autobiographical remembering were truly stripped away. This view may seem extreme, especially to cognitive psychologists, but it draws our attention to theoretical accounts that try to reconcile individual and social memory, and within which we might place our laboratory studies of forgetting (see also Barnier, et al., 2008; Sutton, 2009; Tollefsen, 2006; Wilson, 2005).

For example, some theorists highlight the specific social and narrative environments in which we first learn to think and talk about the past. These environments, each with their own norms and dynamics, influence the subsequent selection principles and style of our own spontaneous remembering (Nelson & Fivush, 2004; Reese, 2002). Other theorists argue that as adults “sharing memories is our default” (Campbell, 2008, p. 43; Sutton, 2009). Where there is a rich shared history of joint actions in a couple or a small group, this history of interactions and negotiations dictates what is most commonly and comfortably forgotten or passed over, and in what contexts. The common ground on which successful communication within a dyad or group rests is itself partly constituted by shared memories, and in turn underlies the members’ ongoing ways of thinking about the past whether together or alone.

The theory of transactive memory developed by Wegner and colleagues emphasizes the potential benefits of sharing memories, and gives rise to a clear picture of the interpersonal dimensions of forgetting. A transactive memory system is a combination of the information held by the individuals in a group, and the communication processes that occur between them. Transactive memory is a real property of the group, not merely the sum of its component members, because information is often transformed as it is encoded, modified, and retrieved across the distributed but coordinated system (Wegner, 1986; Wegner, Giuliano, & Hertel, 1985; Tollefsen, 2006). For example, as a couple struggle to recall information about something they did together years before, they may exchange suggestions (often partial or idiosyncratic) in an iterative process of interactive cueing which may, in the extreme, be the only way that either of them could have produced the item sought (Wegner et al., 1985, p. 257). Consider the following exchange from one of our own interviews with a couple who jointly discussed their honeymoon 40 years before.

- Wife:* And we went to two shows, can you remember what they were called?
- Husband:* We did. One was a musical, or were they both? I don't . . . no . . . one . . .
- Wife:* John Hanson was in it.
- Husband:* *Desert Song*.
- Wife:* *Desert Song*, that's it, I couldn't remember what it was called, but yes, I knew John Hanson was in it.
- Husband:* Yes.

This is a particularly striking example because neither member of the couple can remember the name of the show individually (they have both forgotten). Yet through a process of communicative cross-cueing the couple as a group can recall this information. Thus, the other person in such a long-standing and successful transactive system is a crucial component of the retrieval context.

Transactive memory theory focuses on the way in which socially shared remembering supports memory, and by extension protects against forgetting. One application of transactive memory to problems of forgetting is in the arena of social-cognitive supports for memory in ageing (Dixon, 1996). In transactive memory theory, the fact that I do not store certain detailed memories internally does not equate to memory failure, since the relevant information might still be accessible given the right reliable remembering environment, such as being in the company of my spouse (as in the example described above). "I forget" does not entail "we forget". As long as I retain sufficient "labelling" information about the location of the information, and as long as the external storage is in fact available, retrieval success can be achieved within the context of a broader transactive system. What would look like a failure of individual memory, particularly when people are tested in isolation from their usual contexts and supports, can in fact be a functional, computationally efficient distributed system (Wegner, 1986, p. 189).

Notably, transactive memory theory predicts that changes or disruptions to the remembering system should result in forgetting for the people who make up the group. This is the case in the breakdown of intimate relationships, for example, when an individual can no longer "count on access to a wide range of storage in their partner" and when their partner is no longer around to reinstate the settings of to-be-recalled experience (Wegner, 1986, p. 201). Further, one "loses access to the differentiated portion of transactive memory held by the other", so that in the extreme "because transactive retrieval is no longer possible, there will be entire realms of one's experience that merely slip away, unrecognized in their departure, and never to be retrieved again" (Wegner et al., 1985, p. 273). This theory also predicts that a decline in cognitive function in one partner, perhaps due to ageing or disease, could result in reduced memory performance in both members of the couple, unless they update their transactive system based on new strategies to overcome the deficit.

Despite its origins in the study of intimate couples, transactive memory

theory has arguably had its greatest influence in organizational psychology and small group research (Austin, 2003; Peltokorpi, 2008). In this context, change to the remembering system occurs when there is turnover in the personnel in teams or small groups, where a departing team member may remove knowledge from the whole transactive system. For example, Lewis and colleagues argued that groups tend to retain an earlier transactive memory system, developed by former members of the group, even when the distribution of expertise and knowledge has changed or needs to change; this ineffective transactive system would result in forgetting by the group. They suggest, however, that the negative effects of failing to update the transactive system can be overcome when group members are instructed to reflect on who knows what; that is, when they reflect on the nature and distribution of collective knowledge (Lewis, Belliveau, Herndon, & Keller, 2007).

It is interesting to note here that work on the socially situated and embedded nature of remembering, including the theory of transactive memory, emphasizes the benefits of shared remembering. Shared remembering is seen as a way of reducing forgetting by sharing the cognitive load between members of a stable social group, and thus improving joint memory performance consistent with their shared goals. However, in laboratory work, such as the work on collaborative recall reviewed above, shared remembering appears to be detrimental to the individual. Individuals who remember in groups show collaborative inhibition (at least in terms of amount recalled; accuracy of recall may be boosted; Harris et al., 2008). How should we reconcile these laboratory findings and work on socially situated memory? Perhaps work in the laboratory does not yet fully capture the richly shared remembering that is the focus of other disciplines (see Barnier et al., 2008). For instance, transactive memory theory predicts that the benefits of remembering with others might only emerge over time in stable groups (see also Tollefsen, 2006). Future work needs to investigate a broader range of remembering cases in the laboratory. Just as RIF, DF, and TNT have moved from neutral words to more emotional and complex personal memories, SS-RIF and collaborative recall could move to study more real-world groups and their memories.

### **Final thoughts**

In this chapter, we have focused on ways in which individuals and groups manage their memories. We have adopted a functional approach (Conway, 2005), which suggests that both remembering and forgetting are important and adaptive for individuals and groups. What is remembered vs. forgotten at any particular time is driven by a range of individual and social goals and motivations. For individuals and groups alike, the goals and motivations that influence access to memories of the past may compete and need to be balanced. Think back to the case of Nicky Barr, who reluctantly recalled long-past, distressing wartime experiences for a television interview, after years of trying to forget them. He described the personal cost of remembering these



events. But was there a broader, cultural benefit of not letting him forget, of persuading him to let us commemorate his heroic actions? Equally, for many years, as individual Indigenous Australians remembered the trauma of being forcibly removed from their families as members of the Stolen Generation, there seemed to be a national climate of forgetting these events. This seemed to change when the Australian Government formally apologized for past wrongs in February 2008, signalling that we could now all “remember” (National Inquiry into the Separation of Aboriginal and Torres Strait Islander Children from their Families, 1997). The functional, selective, constructive account of memory described above views neither remembering nor forgetting as intrinsically better; both serve important roles for individuals, groups, and societies.

In this chapter, we have walked through forgetting, from the individual, to individuals in groups, and finally to groups themselves. We have reviewed experimental paradigms and findings as well as broader theoretical views of social memory, situated cognition and transactive memory, hopefully to give the sense that the forgetting that we as individuals experience lies on a continuum with the forgetting that happens between couples, families, members of community groups, and even nations. The challenge is to identify ways to investigate the processes that underlie these forms of forgetting and how they are related. We believe that laboratory paradigms from cognitive psychology can be extended to map a full range of remembering cases within a broader interdisciplinary framework (Barnier et al., 2008). We believe that a picture of remembering and forgetting as functional and selective can unify our understanding of both autobiographical and social memory. These forms of memory alike serve, drive, and reflect the goals and motivations of individuals and groups.

## References

- Alea, N., & Bluck, S. (2003). Why are you telling me that? A conceptual model of the social function of autobiographical memory. *Memory, 11*(2), 165–178.
- Amir, N., Coles, M. E., Brigidi, B., & Foa, E. B. (2001). The effect of practice on recall of emotional information in individuals with generalized social phobia. *Journal of Abnormal Psychology, 110*, 76–82.
- Anderson, M. C. (2005). The role of inhibitory control in forgetting unwanted memories: A consideration of three methods. In C. MacLeod & B. Uttl (Eds.), *Dynamic cognitive processes* (pp. 159–190). Tokyo: Springer-Verlag.
- Anderson, M. C., Bjork, R. A., & Bjork, E. L. (1994). Remembering can cause forgetting: Retrieval dynamics in long-term memory. *Journal of Experimental Psychology: Learning, Memory, & Cognition, 20*, 1063–1087.
- Anderson, M. C., & Green, C. (2001). Suppressing unwanted memories by executive control. *Nature, 410*, 366–369.
- Anderson, M. C., & Levy, B. (2002). Repression can (and should) be studied empirically. *Trends in Cognitive Sciences, 6*, 502–503.
- Anderson, M. C., & Spellman, B. A. (1995). On the status of inhibitory

- mechanisms in cognition: Memory retrieval as a model case. *Psychological Review*, *102*, 68–100.
- Andersson, J., & Rönnerberg, J. (1995). Recall suffers from collaboration: Joint recall effects of friendship and task complexity. *Applied Cognitive Psychology*, *9*, 273–287.
- Austin, J. R. (2003). Transactive memory in organizational groups: The effects of content, consensus, specialization, and accuracy on group performance. *Journal of Applied Psychology*, *88*, 866–878.
- Barnier, A. J., Conway, M. A., Mayoh, L., Speyer, J., Avizmil, O., & Harris, C. B. (2007). Directed forgetting of recently recalled autobiographical memories. *Journal of Experimental Psychology: General*, *136*, 301–322.
- Barnier, A. J., Hung, L., & Conway, M. A. (2004a). Retrieval-induced forgetting of autobiographical episodes. *Cognition & Emotion*, *18*, 457–477.
- Barnier, A. J., Levin, K., & Maher, A. (2004b). Suppressing thoughts of past events: Are repressive copers good suppressors? *Cognition and Emotion*, *18*, 513–531.
- Barnier, A. J., Sutton, J., Harris, C. B., & Wilson, R. A. (2008). A conceptual and empirical framework for the social distribution of cognition: The case of memory. *Cognitive Systems Research*, *9*, 33–51.
- Bartlett, F. C. (1932). *Remembering: A study in experimental and social psychology*. Cambridge: Cambridge University Press.
- Basden, B. H., Basden, D. R., Bryber, S., & Thomas, R. L. III (1997). A comparison of group and individual remembering: Does collaboration disrupt retrieval strategies? *Journal of Experimental Psychology: Learning, Memory and Cognition*, *23*, 1176–1189.
- Basden, B. H., Basden, D. R., & Gargano, G. J. (1993). Directed forgetting in implicit and explicit memory tests: A comparison of methods. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *19*, 603–616.
- Basden, B. H., Basden, D. R., & Henry, S. (2000). Costs and benefits of collaborative remembering. *Applied Cognitive Psychology*, *14*, 497–507.
- Beach, K. (1988). The role of external mnemonic symbols in acquiring an occupation. In M. M. Gruneberg & R. N. Sykes (Eds.), *Practical aspects of memory* (pp. 342–346). New York: Wiley.
- Bjork, R. A. (1970). Positive forgetting: The noninterference of items intentionally forgotten. *Journal of Verbal Learning and Verbal Behavior*, *9*, 255–268.
- Bjork, R. A., Bjork, E. L., & Anderson, M. C. (1998). Varieties of goal-directed forgetting. In J. M. Golding & C. M. MacLeod (Eds.), *Intentional forgetting: Interdisciplinary approaches* (pp. 103–137). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Bloch, M. (1998). *How we think they think: Anthropological approaches to cognition, memory, and literacy*. Boulder, CO: Westview Press.
- Blumen, H. M., & Rajaram, S. (2008). Re-exposure and retrieval disruption during group collaboration as well as repeated retrieval influence later individual recall. *Memory*, *16*, 231–244.
- Bowker, G. (2005). *Memory practices in the sciences*. Cambridge, MA: MIT Press.
- Brandon, D. P., & Hollingshead, A. B. (2004). Transactive memory systems in organizations: Matching tasks, expertise and people. *Organization Science*, *15*, 633–644.
- Brewin, C. R. (1998). Intrusive autobiographical memories in depression and post-traumatic stress disorder. *Applied Cognitive Psychology*, *12*, 359–370.
- Bulevich, J. B., Roediger, H. L. III, Balota, D. A., & Butler, A. C. (2006). Failures to

- find suppression of episodic memories in the think/no-think paradigm. *Memory and Cognition*, 34, 1569–1577.
- Campbell, S. (2003). *Relational remembering: Rethinking the memory wars*. Lanham, MD: Rowman and Littlefield.
- Campbell, S. (2008). The second voice. *Memory Studies*, 1, 41–48.
- Casey, E. S. (1987). *Remembering: A phenomenological study*. Bloomington, IN: Indiana University Press.
- Casey, E. S. (1992). Forgetting remembered. *Man and World*, 25, 281–311.
- Clark, A. (1997). *Being there: Putting brain, body, and world together again*. Cambridge, MA: MIT Press.
- Clark, A. (1998). Author's response: Review symposium on *Being There*. *Metascience*, 7, 95–103.
- Clark, A. (2001). *Mindware: An introduction to the philosophy of cognitive science*. Oxford: Oxford University Press.
- Clark, A., & Chalmers, D. (1998). The extended mind. *Analysis*, 58, 7–19.
- Connerton, P. (1989). *How societies remember*. Cambridge: Cambridge University Press.
- Connerton, P. (2008). Seven types of forgetting. *Memory Studies*, 1, 59–71.
- Conway, M. A. (2005). Memory and the self. *Journal of Memory and Language*, 53, 594–628.
- Conway, M. A., & Pleydell-Pearce, C. W. (2000). The construction of autobiographical memories in the self-memory system. *Psychological Review*, 107, 261–288.
- Conway, M. A., Singer, J. A., & Tagini, A. (2004). The self and autobiographical memory: Correspondence and coherence. *Social Cognition*, 22, 491–529.
- Cuc, A., Koppel, J., & Hirst, W. (2007). Silence is not golden: A case for socially shared retrieval-induced forgetting. *Psychological Science*, 18, 727–733.
- Depue, B. E., Banich, M. T., & Curran, T. (2006). Suppression of emotional and nonemotional content in memory: Effects of repetition on cognitive control. *Psychological Science*, 17, 441–447.
- Dixon, R. A. (1996). Collaborative memory and aging. In D. J. Herrman, M. K. Johnson, C. L. McEvoy, C. Herzog, & P. Hertel (Eds.), *Basic and applied memory research: Theory in context* (pp. 359–383). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Donald, M. (1991). *Origins of the modern mind: Three stages in the evolution of culture and cognition*. Cambridge, MA: Harvard University Press.
- Donald, M. (1998). Material culture and cognition. In C. Renfrew & C. Scarre (Eds.), *Cognition and material culture: The archaeology of symbolic storage* (pp. 181–187). Cambridge: McDonald Institute for Archaeological Research.
- Dornan, P. (2002). *Nicky Barr: An Australian air ace*. Sydney: Allen & Unwin.
- Ekeocha, J. O., & Brennen, S. E. (2008). Collaborative recall in face-to-face and electronic groups. *Memory*, 16, 245–261.
- Erdelyi, M. (2006). The unified theory of repression. *Behavioral and Brain Sciences*, 29, 499–511.
- Erdelyi, M. (2008). Forgetting and remembering in psychology: Commentary on Paul Connerton's "Seven Types of Forgetting" (2008). *Memory Studies*, 1, 273–278.
- Finlay, F., Hitch, G. J., & Meudell, P. (2000). Mutual inhibition in collaborative recall: Evidence for a retrieval-based account. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 26(6), 1556–1567.
- Fitzgerald, J. M. (1992). Autobiographical memory and conceptualisations of the self.

- In M. A. Conway, D. C. Rubin, H. Spinnler, & W. A. Wagenaar (Eds.), *Theoretical perspectives on autobiographical memory* (pp. 99–114). Netherlands: Kluwer.
- Fivush, R. (2004). Voice and silence: A feminist model of autobiographical memory. In J. Lucariello, J. A. Hudson, R. Fivush, & P. J. Bauer (Eds.), *The development of the mediated mind: Sociocultural context and cognitive development*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Forty, A. (1999). Introduction: The art of forgetting. In A. Forty & S. Küchler (Eds.), *The art of forgetting* (pp. 1–18). Oxford: Berg.
- Geraerts, E., Merckelbach, H., Jelicic, M., & Smeets, E. (2006). Long term consequences of suppression of intrusive thoughts and repressive coping. *Behaviour Research and Therapy*, *44*, 1451–1460.
- Geraerts, E., Smeets, E., Jelicic, M., Merckelbach, H., & van Heerden, J. (2006). Retrieval inhibition of trauma-related words in women reporting repressed or recovered memories of childhood sexual abuse. *Behaviour Research and Therapy*, *44*, 1129–1136.
- Golding, J. M., & MacLeod, C. M. (Eds.) (1998). *Intentional forgetting: Interdisciplinary approaches*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Gould, O. N., Osborn, C., Krein, H., & Mortenson, M. (2002). Collaborative recall in married and unacquainted dyads. *International Journal of Behavioral Development*, *26*(1), 36–44.
- Habermas, T., & Bluck, S. (2000). Getting a life: The emergence of the life story in adolescence. *Psychological Bulletin*, *126*, 748–769.
- Halbwachs, M. (1980). *The collective memory*. F. J. Ditter and V. Y. Ditter (Trans), M. Douglas (Ed.). New York: Harper and Row.
- Harris, C. B., Barnier, A. J., & Sutton, J. (2009). Is collaborative inhibition inevitable? Invited paper presented in A. Memon (Chair), “Interpersonal Dimensions of Remembering: Memory Performance and Biases in a Social Context”, Symposium at the 21st Annual Convention of the Association for Psychological Science, Marriot Hotel, San Francisco, California, USA.
- Harris, C. B., Barnier, A. J., & Sutton, J. (submitted). Minimal vs. interactive collaboration: Costs and benefits of remembering with others.
- Harris, C. B., Barnier, A. J., Sutton, J., & Keil, P. G. (2010). How did you feel when “The Crocodile Hunter” died? Silencing in conversation influences memory for a shared national event. *Memory*, 185–197.
- Harris, C. B., Paterson, H. M., & Kemp, R. I. (2008). Collaborative recall and collective memory: What happens when we remember together? *Memory*, *16*, 213–230.
- Hayne, H., & MacDonald, S. (2003). The socialization of autobiographical memory in children and adults: The role of culture and gender. In R. Fivush & C. A. Haden (Eds.), *Autobiographical memory and the construction of a narrative self: Developmental and cultural perspectives* (pp. 99–120). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Hertel, P. T., & Calcaterra, G. (2005). Intentional forgetting benefits from thought substitution. *Psychonomic Bulletin & Review*, *12*, 484–489.
- Hirst, W., & Manier, D. (2008). Towards a psychology of collective memory. *Memory*, *16*, 183–200.
- Hutchins, E. (1995). *Cognition in the wild*. Cambridge, MA: MIT Press.
- Joormann, J., Hertel, P. T., LeMoult, J., & Gotlib, I. H. (2009). Training forgetting of negative material in depression. *Journal of Abnormal Psychology*, *118*, 34–43.

- Joslyn, S. L., & Oakes, M. A. (2005). Directed forgetting of autobiographical events. *Memory and Cognition*, *33*, 577–587.
- Kihlstrom, J. F. (2002). No need for repression. *Trends in Cognitive Sciences*, *6*, 502.
- Kihlstrom, J. F. (2006). Repression: A unified theory of will-o-the-wisp. *Behavioral and Brain Sciences*, *29*, 523.
- Kihlstrom, J. F., & Barnhardt, T. M. (1993). The self regulation of memory: For better and for worse, with and without hypnosis. In D. M. Wegner and J. Pennebaker (Eds.), *Handbook of mental control* (pp. 88–125). Englewood Cliffs, NJ: Prentice Hall.
- Kihlstrom, J. F., & Schacter, D. L. (1995). Functional disorders of autobiographical memory. In A. D. Baddeley, B. A. Wilson, & F. N. Watts (Eds.), *Handbook of memory disorders* (pp. 337–364). Chichester: Wiley.
- Kirsh, D. (2006). Distributed cognition: A methodological note, *Pragmatics and Cognition*, *14*, 249–262.
- Klein, N. M. (1997). *The history of forgetting: Los Angeles and the erasure of memory*. London: Verso.
- Koutstaal, W., & Schacter, D. L. (1997). Intentional forgetting and voluntary thought suppression: Two potential methods for coping with childhood trauma. In L. J. Dickstein, M. B. Riba, & J. M. Oldham (Eds.), *Review of Psychiatry: Vol. 16* (pp. II-79–II-121). Washington, DC: American Psychiatric Press.
- Küchler, S. (1999). The place of memory. In A. Forty & S. Küchler (Eds.), *The art of forgetting* (pp. 55–72). Oxford: Berg.
- Kuhbandner, C., Bäuml, K.-H., & Stiedl, F. C. (in press). Retrieval-induced forgetting of negative stimuli: The role of emotional intensity. *Cognition and Emotion*.
- Kundera, M. (1980). *The book of laughter and forgetting*. Harmondsworth: Penguin.
- Kwint, M. (1999). Introduction: The physical past. In M. Kwint, C. Breward, & J. Aynsley (Eds.), *Material memories* (pp. 1–16). Oxford: Berg.
- Levy, B. J., & Anderson, M. C. (2002). Inhibitory processes and the control of memory retrieval. *Trends in Cognitive Sciences*, *6*, 299–305.
- Levy, B. J., & Anderson, M. C. (2008). Individual differences in the suppression of unwanted memories: The executive deficit hypothesis. *Acta Psychologica*, *127*, 623–635.
- Lewis, K., Belliveau, M., Herndon, B., & Keller, J. (2007). Group cognition, membership change, and performance: Investigating the benefits and detriments of collective knowledge. *Organizational Behavior and Human Decision Processes*, *103*, 159–178.
- Loftus, E. F. (2005). Planting misinformation in the human mind: A 30-year investigation of the malleability of memory. *Learning and Memory*, *12*, 361–366.
- MacLeod, C. M., Dodd, M. D., Sheard, E. D., Wilson, D. E., & Bibi, U. (2003). In opposition to inhibition. In B. H. Ross (Ed.), *The psychology of learning and motivation* (pp. 163–214). San Diego, CA: Academic Press.
- McNally, R. J. (2005). *Remembering trauma*. Cambridge, MA: Harvard University Press.
- Macrae, C. N., & Roseveare, T. A. (2002). I was always on my mind: The self and temporary forgetting. *Psychonomic Bulletin & Review*, *9*, 611–614.
- Malafouris, L. (2004). The cognitive basis of material engagement: Where brain, body and culture conflate. In E. DeMarras, C. Gosden, & C. Renfrew (Eds.), *Rethinking materiality: The engagement of mind with the material world* (pp. 53–62). Cambridge: McDonald Institute for Archaeological Research.

- Marcel Caux, 105. (2004, 25 April). *The Age*. Retrieved April 14, 2009, from <http://www.theage.com.au/articles/2004/04/24/1082719676658.html>.
- Meade, M. L., Nokes, T. J., & Morrow, D. G. (2009). Expertise promotes facilitation on a collaborative memory task. *Memory, 17*, 39–48.
- Middleton, D., & Brown, S. D. (2005). *The social psychology of experience: Studies in remembering and forgetting*. London: Sage.
- Mineka, S., & Nugent, K. (1995). Mood-congruent biases in anxiety and depression. In D. L. Schacter (Ed.), *Memory distortion: How minds, brains and societies reconstruct the past*. Cambridge, MA: Harvard University Press.
- Moulds, M. L., & Bryant, R. A. (2002). Directed forgetting in acute stress disorder. *Journal of Abnormal Psychology, 111*, 175–179.
- Moulds, M. L., & Kandris, E. (2006). The effect of practice on recall of negative material in dysphoria. *Journal of Affective Disorders, 91*, 269–272.
- Myers, L. B., & Brewin, C. R. (1994). Recall of early experience and the repressive coping style. *Journal of Abnormal Psychology, 103*, 288–292.
- Myers, L. B., Brewin, C. R., & Power, M. J. (1998). Repressive coping and the directed forgetting of emotional material. *Journal of Abnormal Psychology, 107*, 141–148.
- Myers, L. B., & Derakshan, N. (2004). To forget or not to forget: What do repressors forget and when do they forget? *Cognition and Emotion, 18*, 495–511.
- National Inquiry into the Separation of Aboriginal and Torres Strait Islander Children from their Families (1997). *Bringing them home: Report of the national inquiry into the separation of Aboriginal and Torres Strait Islander children from their families*. Retrieved April 14 2009, from [http://www.hreoc.gov.au/pdf/social\\_justice/bringing\\_them\\_home\\_report.pdf](http://www.hreoc.gov.au/pdf/social_justice/bringing_them_home_report.pdf).
- Nelson, K. (2003). Self and social functions: Individual autobiographical memory and collective narrative. *Memory, 11*, 125–136.
- Nelson, K., & Fivush, R. (2004). The emergence of autobiographical memory: A social cultural developmental theory. *Psychological Review, 111*, 486–511.
- Olick, J. (1999). Collective memory: The two cultures. *Sociological Theory, 17*, 333–348.
- Pasupathi, M. (2001). The social construction of the personal past and its implications for adult development. *Psychological Bulletin, 127*(5), 651–672.
- Paterson, H., & Kemp, R. (2006). Comparing methods of encountering postevent information: The power of co-witness suggestion. *Applied Cognitive Psychology, 20*, 1083–1099.
- Payne, B. K., & Corrigan, E. (2007). Emotional constraints on intentional forgetting. *Journal of Experimental Social Psychology, 43*, 780–786.
- Peltokorpi, V. (2008). Transactive memory systems. *Review of General Psychology, 12*, 378–394.
- Pillemer, D. B. (2003). Directive functions of autobiographical memory: The guiding power of the specific episode. *Memory, 11*, 193–202.
- Reese, E. (2002). A model of the origins of autobiographical memory. In J. W. Fagen & H. Hayne (Eds.), *Progress in infancy research, Vol. 2* (pp. 215–260). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Reese, E., & Fivush, R. (2008). The development of collective remembering. *Memory, 16*, 202–212.
- Reysen, M. B. (2003). The effects of social pressure on group recall. *Memory & Cognition, 31*, 1163–1168.

- Rowlands, M. (1999). *The body in mind: Understanding cognitive processes*. Cambridge: Cambridge University Press.
- Rubin, D. C. (1995). *Memory in oral traditions: The cognitive psychology of epic, ballads, and counting-out rhymes*. Oxford: Oxford University Press.
- Rubin, D. C. (2007). Forgetting: Its role in the science of memory. In H. L. Roediger III, Y. Dudai, & S. M. Fitzpatrick (Eds.), *Science of memory: Concepts* (pp. 325–328). Oxford: Oxford University Press.
- Sahakyan, L., & Delaney, P. F. (2005). Directed forgetting in incidental learning and recognition testing: Support for a two factor account. *Journal of Experimental Psychology: Learning, Memory & Cognition*, 31(4), 789–801.
- Sahdra, B., & Ross, M. (2007). Group identification and historical memory. *Personality and Social Psychology Bulletin*, 33, 384–395.
- Schacter, D. L. (1987). Implicit memory: History and current status. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 13, 501–518.
- Schacter, D. L. (1996). *Searching for memory: The brain, the mind, and the past*. New York: Basic Books.
- Schudson, M. (1995). Dynamics of distortion in collective memory. In D. L. Schacter (Ed.), *Memory distortions: How minds, brains and societies reconstruct the past* (pp. 346–364). Cambridge, MA: Harvard University Press.
- Singer, J. A., & Conway, M. A. (2008). Should we forget forgetting? *Memory Studies*, 1, 279–285.
- Starr, S., & Moulds, M. L. (2006). The role of negative interpretations of intrusive memories in depression. *Journal of Affective Disorders*, 93, 125–132.
- Stone, C., Barnier, A. J., Sutton, J., & Hirst, W. (2010). Building consensus about the past: Schema-consistency and integration in socially-shared retrieval-induced forgetting and the consequences for joint recall. *Memory*, 18, 170–184.
- Sutton, J. (2008). Material agency, skills, and history: Distributed cognition and the archaeology of memory. In C. Knappett & L. Malafouris (Eds.), *Material agency: Towards a non-anthropocentric approach* (pp. 37–55). New York: Springer.
- Sutton, J. (2009). Remembering. In P. Robbins & M. Aydede (Eds.), *The Cambridge handbook of situated cognition* (pp. 217–235). Cambridge: Cambridge University Press.
- Thompson, C. P., Skowronski, J. J., Larsen, S. F., & Betz, A. (1996). *Autobiographical memory: Remembering what and remembering when*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Thorne, A. (2000). Personal memory telling and personality development. *Personality & Social Psychology Review*, 4, 45–56.
- Tollefsen, D. P. (2006). From extended mind to collective mind. *Cognitive Systems Research*, 7, 140–150.
- Tulving, E. (2002). Episodic memory: From mind to brain. *Annual Review of Psychology*, 53, 1–25
- Tulving, E., & Pearlstone, Z. (1966). Availability versus accessibility of information in memory for words. *Journal of Verbal Learning and Verbal Behavior*, 5, 381–391.
- Tversky, B. & Marsh, E. J. (2000). Biased retellings of events yield biased memories. *Cognitive Psychology*, 40, 1–38
- van Leeuwen, C., Verstijnen, I. M., & Hekkert, P. (1999). Common unconscious dynamics underly uncommon conscious effect: A case study in the iterative nature of perception and creation. In J. S. Jordan (Ed.), *Modeling consciousness across the disciplines*. Lanham, MD: University Press of America.

- Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Walker, W. R., Skowronski, J. J., & Thompson, C. P. (2003). Life is pleasant – and memory helps to keep it that way! *Review of General Psychology*, *7*, 203–210.
- Wegner, D. M. (1986). Transactive memory: A contemporary analysis of the group mind. In B. Mullen & G. R. Goethals (Eds.), *Theories of group behaviour* (pp. 185–208). New York: Springer-Verlag.
- Wegner, D. M., Giuliano, T., & Hertel, P. T. (1985). Cognitive interdependence in close relationships. In W. Ickes (Ed.), *Compatible and incompatible relationships* (pp. 253–276). New York: Springer-Verlag.
- Wegner, D. M., Schneider, D. J., Carter, S. R. III, & White, T. L. (1987). Paradoxical effects of thought suppression. *Journal of Personality and Social Psychology*, *53*, 636–647.
- Weldon, M. S., & Bellinger, K. D. (1997). Collective memory: Collaborative and individual processes in remembering. *Journal of Experimental Psychology: Learning, Memory and Cognition*, *23*(5), 1160–1175.
- Welzer, H., & Markowitsch, H. J. (2005). Towards a bio-psycho-social model of autobiographical memory. *Memory*, *13*, 63–78.
- Wertsch, J. V. (2002). *Voices of collective remembering*. Cambridge: Cambridge University Press.
- Wessel, I., & Hauer, B. (2006). Retrieval-induced forgetting of autobiographical memory details. *Cognition and Emotion*, *20*, 430–447.
- Wessel, I., & Merckelbach, H. (2006). Forgetting “murder” is not harder than forgetting “circle”: Listwise-directed forgetting of emotional words. *Cognition and Emotion*, *20*, 129–137.
- Wessel, I., & Moulds, M. (2008). How many types of forgetting? Comments on Connerton (2008). *Memory Studies*, *1*, 287–294.
- Wheeler, M. (2005). *Reconstructing the cognitive world: The next step*. Cambridge, MA: MIT Press.
- Wilson, P. (2008, April 25). War pilgrims flock to the corner of a foreign field. *The Australian*. Retrieved April 14, 2009, from <http://www.theaustralian.news.com.au/story/0,25197,23595543-22242,00.html>.
- Wilson, R. A. (2005). Collective memory, group minds, and the extended mind thesis. *Cognitive Processing*, *6*, 227–236.
- Wright, D. B., & Klumpp, A. (2004). Collaborative inhibition is due to the product, not the process, of recalling in groups. *Psychonomic Bulletin and Review*, *11*, 1080–1083.
- Yaron-Antar, A., & Nachson, I. (2006). Collaborative remembering of emotional events: The case of Rabin’s assassination. *Memory*, *14*, 46–56.
- Zerubavel, E. (2003). *Time maps: Collective memory and the social shape of the past*. Chicago: University of Chicago Press.