

Emotional Memory Failures: On forgetting and reconstructing emotional experiences

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It was dubbed the *memory wars*. Psychology and psychiatry were showing their dirty laundry in full view of the courts, the media, and heated debates at conferences and workshops (McNally, 2003). As memory researchers we felt a sense of importance. Instead of writing articles just for fellow academics, we were addressing critical questions about *recovered memories* that were of interest to the readers of Time and Newsweek. The term “recovered memories” referred to recollections of trauma (usually sexual abuse) that emerged in individuals who previously thought that their life had been uneventful. The debate was between those who believed that many of the memories were created in people’s imagination (sometimes with guidance from mental health professionals) and those who believed that many of the memories were previously inaccessible, but basically accurate, accounts of past events. There are two distinct questions here. Can false memories for entire events be created in people’s memories? And, what happens to memories of true emotional events?

The first wave of memory research addressed the first question. Loftus (e.g., 1997) and others showed that memories for entire events could be added to people’s autobiography. While these researchers were constrained by research ethics committees not to try to add highly emotive events to people’s memories, others did not have these constraints. As shown in high profile court cases, like those against mental health professionals Bennett Braun and Judith Peterson, highly emotive events, like satanic ritual abuse, can be added to people’s memories. Even those who argue that trauma often leads to psychogenic amnesia (through repression, dissociation, etc.) recognise that false memories can be implanted into people’s memories (Ross, 2001). Of course showing that

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false memories can be created does not show that all recovered memories are false. It only shows that some may be false.

The second question, how emotional events are remembered, is addressed in this Special Issue. It is clear that much trauma exists: Every day many people become victims of war, disasters, abuse, etc. Many experimental psychologists have learned how to appreciate the value of clinical case studies. In addition, field studies of trauma and memory are informative. For example, anthropologist Judith Zur (1998) studied the war widows in El Quiché, Guatemala. In an Orwellian fashion, the widows were to forget their memories, not to commemorate the dead, and even to remarry. The resulting memories show elements of both recovery, “the event triggered memories which previously had not seemed to exist at all” (p. 167), and distortion, “women incorporate into their own memories the details of other people’s memories, even those details they may have denied earlier” (p. 171).

While case studies and field research can show how psychological phenomena manifest themselves in the frontline of the memory wars, they lack the control that many psychologists want in order to understand the causal mechanisms involved. The papers in this Special Issue examine how people remember emotional material with the aim of teasing apart some of the causal mechanisms. The papers ask what mechanisms underlie forgetting of emotive events, if certain people process memories for emotive events differently, and if memory distortions can be shown for major events.

Forgetting of emotional material

Over the past decade, the study of mechanisms underlying forgetting has become increasingly popular. The retrieval-induced forgetting (RIF; Anderson, Bjork, & Bjork, 1994) paradigm has been used particularly often, with a variety of materials (e.g., words, visuospatial objects, mock crimes, personality traits, see Levy & Anderson, 2002 for an overview). In their current contribution, Barnier, Hung, and Conway extend these findings to memories of personally experienced events. They asked their participants to generate positive, negative, and neutral autobiographical memories. Next, they used this material in a basic RIF procedure. That is, in a retrieval practice phase, participants repeatedly retrieved and elaborated upon only a selection of the memories (but in all affective valence categories). Unsurprisingly, a later recall test rendered good performance for these practised items. However, recall of items that were related to the practised items was impaired relative to a baseline of unrelated items. This was the case for memories in all affective categories. Barnier et al.’s findings are important in that they are the first to report RIF for highly complex and emotional memories.

In RIF, forgetting is more or less a by-product of extensively rehearsing other related material. What happens if people try their best to wilfully forget

emotional experiences? McNally, Clancy, Barrett, and Parker employed a directed forgetting procedure to examine the often-heard claim in the recovered memory debate that survivors of child sexual abuse would be skilled forgetters of trauma-related memories (e.g., Cloitre, 1998). The authors tested participants who reportedly had repressed (i.e., who believed they were abused, but had no memories of it), recovered (i.e., had memories of abuse that were previously forgotten), or continuous (i.e., had memories of abuse that they always remembered) memories and a never-abused control group. McNally and co-workers aimed at finding out whether these groups differed in the extent to which they were able to intentionally forget positive and trauma-related words when instructed to do so. Their findings indicate that overall, less to-be-forgotten than to-be-remembered words were recalled. However, groups did not differ in their forgetting abilities, not for positive and not for trauma-related words. Thus, the claim that people with repressed or recovered memories are better forgetters could not be corroborated.

Do some people forget more easily than others?

Even if people who report that they were molested as a child are not more skilled at forgetting trauma-related material, the question remains whether there are other variables that predict forgetting. Three studies in this issue concentrate on the personality characteristic of repressive coping. Repressive copers (or repressors) are people who do not easily report negative affect, but do react physiologically to emotional stimuli (Myers, 2000). Interestingly, there is evidence that repressors also show a specific memory deficit. For example, Myers, Brewin and Power (1998) found that repressors show more directed forgetting than nonrepressors, but only for negative and not for positive self-referent material. In their current contribution, Myers and Derakshan add two important manipulations to the directed forgetting (DF) procedure of Myers et al.'s earlier study. First, for purpose of manipulating self-referent encoding, participants rated to what extent negative or positive adjectives described either themselves or their peers. Second, participants were led to believe that they were tested under private (alone) or public (under scrutiny of an experimenter) conditions. Myers and Derakshan's results replicate earlier findings that repressors show more directed forgetting than nonrepressors. However, they also found that this effect was specific: It was restricted to negative self-referent words under private testing conditions.

Barnier, Levin, and Maher wondered whether repressors are better than nonrepressors in not thinking of unwanted emotional personal memories. In order to test this, they adapted Wegner's (see Wegner, 1989) well-known thought suppression (TS) paradigm. Rather than not thinking of white bears as in the original paradigm, Barnier and colleagues instructed their participants not to think of an emotional personal memory (about being extremely proud or

extremely embarrassed). They found that repressors, compared to nonrepressor control groups, tended to be more successful in avoiding thoughts of the embarrassed event. In contrast, repressive copers showed no suppression advantage for the proud event.

Taken together, the results of these two studies suggest that the mechanism underlying repressors' specific impairment in recalling negative self-referent material should be in the retrieval stage of memory processing. However, on an individual level, these studies are not conclusive that, indeed, differences in retrieval strategy explain differences between repressors and nonrepressors. That is, the DF results of Myers and Derakshan still leave room for an interpretation in terms of differential encoding. Likewise, Barnier, Levin, and Maher's findings are silent about whether successful suppression results in a poorer quality of the target memory. In their contribution, Shane and Peterson set out to disentangle to what extent encoding and retrieval contribute to the specific memory patterns found in repressors. Participants studied positive, negative, and neutral words that were later tested with a free recall test. In addition, they participated in a go/no go task that was designed to differentiate to what extent people allocate processing resources to negative feedback during encoding and retrieval. Shane and Peterson found that defensiveness was associated with less recall of negative words. Note that in contrast with the findings of Myers and Derakshan, these words were not encoded under self-referential conditions. Interestingly, Shane and Peterson's results also suggest that the relation between defensiveness and memory was mediated by the tendency to allocate less processing resources to retrieval of instances of earlier failure. Thus, repressors' tendency to avoid retrieval of negative material may be the most likely candidate to explain their specific recall patterns. Shane and Peterson refer to these recall patterns in terms of self-induced memory distortion: A tendency to distort reality for such varied purposes as mood regulation, justification of goals, maintaining self-concept, etc. It is important to note that this type of distortion refers to a bias (away from negative and towards positive material) rather than incorporating incorrect, nonexistent information into memory. We turn to this latter type of distortion—false memories—next.

Emotion and memory errors

A frequently criticism on false memory studies has been that the events or stimuli used in those studies were not sufficiently emotional to resemble real life. That poses a dilemma for researchers: On the one hand, field studies looking at memory for real life emotional events lack rigorous experimental control in general and a baseline in particular (i.e., it is difficult to know what really happened). On the other hand, for obvious ethical reasons one cannot manipulate memory for really traumatic events in the laboratory. The two

studies of memory errors in the present issue have partly solved this dilemma by relying on memories for highly significant and shocking news events. The advantage is that it is relatively certain from media reports what really happened, while studies on flashbulb memories (Wright & Gaskell, 1995) indicate that hearing these events for the first time leads to reports of high emotionality (e.g., Conway et al., 1994).

In their contribution, Levine and Bluck looked at memories for hearing the verdict in the O. J. Simpson trial—an event viewed as significant by many North Americans. The authors' goal was to test the idea that valence matters for the extent to which reconstructive activities in memory lead to errors. They cleverly made use of the fact that hearing the outcome of the O. J. Simpson case led to different emotions in different people: some felt negative (sadness/anger), but others felt positive (happiness) about the verdict. Levine and Bluck's results show that positive people were more prone to making memory errors after 2 and 14 months than negative people. Apparently, happy people relied on a more schematic mode of information processing than people in a negative mood.

Levine and Bluck looked at naturally occurring memory errors, that is, they did nothing to suggest false information other than including foils in a recognition task. In contrast, Nourkova, Bernstein, and Loftus employed a much stronger manipulation. First, they asked their Russian participants to describe their memories of either the bombings of an apartment complex in Moscow or the planes crashing in the World Trade Center towers in New York. Six months later, the authors suggested to their participants that they had described a wounded animal in their first report. One eighth of the participants that recalled the Moscow bombings accepted this suggestion and subsequently described details of the false animal memory, whereas none of the participants in the WTC group did. Nourkova et al. acknowledge that 12.5% is not a very large proportion. Their point is, however, that misinformation even works when memories are about real life, highly emotional events.

Implications

More than a decade has passed since the debate about repression and malleability of traumatic memory reached its heated peak. The studies in the present special issue clearly show that the field has moved from establishing that both forgetting and falsely remembering emotional events is possible to attempting to pinpoint the mechanisms underlying these phenomena. Still, it is equally clear that many questions remain, and more research is needed to answer them.

As for forgetting, both Barnier, Hung, and Conway's work on retrieval-induced forgetting (RIF) and McNally et al.'s study on directed forgetting (DF) show that these paradigms can be successfully applied to emotional

material. Barnier, Hung, and Conway are the first to report RIF in autobiographical memory. Their findings indicate that the highly complex and self-referential nature of autobiographical memories does not provide a boundary condition for obtaining an effect, as has sometimes been suggested (e.g., Macrae & Roseveare, 2002). McNally et al.'s finding that participants reporting repressed or recovered memories do not seem to possess special forgetting skills stresses the importance of investigating alternative explanations for why some people recover memories of abuse. The results of both studies are exciting and will spur on others in this area. In particular, researchers will want to know what mechanisms are responsible for the effects. Although the studies built upon work using techniques suggestive of an explanation in terms of (retrieval) inhibition (e.g., Anderson & Spellman, 1995), this does not necessarily mean that such a mechanism can be inferred from all results obtained with forgetting paradigms. We will not reiterate the excellent discussion of this topic offered by Barnier, Hung and Conway, but wish to stress that unless alternative explanations can be dismissed, researchers should remain cautious (see MacLeod, Dodd, Sheard, Wilson & Bibi, in press, for a critical discussion of the concept of inhibition).

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The three studies on repressive coping in this issue show that repressors are better at directed forgetting, but only for self-referent information under private conditions (Myers & Derakshan); that they are skilled at suppressing an unwanted negative, but not positive autobiographical memory (Barnier, Levin, & Maher) and that their unwillingness to process negative feedback at retrieval plays a role in their relatively poor recall of negative words (Shane & Peterson). These studies help to build a cognitive profile of what it is like to be a repressor. Repressive coping style is associated with poor health outcomes (Myers, 2000) so it is interesting to see how the results of these studies can help account for this association. If repressors truly experience less frequent intrusions of unwanted memories in consciousness, then they may be less prone to developing disorders that are characterised by frequent unwanted memories, such as posttraumatic stress disorder.

The studies of Levine and Bluck and Nourkova et al. confirm that emotional memory is malleable. Levine and Bluck's finding that positive rather than negative event valence gave rise to more errors in memory is interesting. Their interpretation that being in a positive or negative mood renders different styles of information processing calls for systematic research into how different discrete emotions affect memory. Finally, the critical aspect of Nourkova et al.'s study is that it was about very emotional memories. This study adds to a growing body of research showing that false information (details or entire memories) may be incorporated in autobiographical memory, and that emotion does not protect against it.

All in all, the studies in the present Special Issue show how emotional events may be forgotten and misremembered. Both the methods employed and the

results obtained provide an excellent starting point for further unravelling the mechanisms underlying omissions and distortions in emotional memory. We expect that researchers will follow this lead and continue to pursue the important question of what causes emotional memory failures.

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Q1 6 MacLeod et al. (in press): any update?

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Q2 7 Ross (2001): please provide place of publication