

Did I forget to remember or did I forget to remember remembering?

Accuracy and generalization of meta-memory

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Cohort: 2011

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A substantial proportion of individuals, who have experienced childhood sexual abuse actually claim having had periods in which they did not recall their abuse (Fivush & Edwards, 2004). By now we know that in some cases it is not the event per se which has been forgotten, but rather people forgot having thought about the event in question at a given time (Schooler, 2001). This forgetting of one's previous recall (meta-awareness) of an event has been termed forget-it-all-along effect and is not specifically related to traumatic experiences, but also common to our everyday experiences (Parks, 1999). Meta-awareness is one's consciousness of the contents of subjective experience, which is different from the content of an experience. The aim of this article is to give insight into the role of meta-awareness in locating events backwards in time, i.e., retrospective memory. For this purpose, inaccuracies in different memory judgments will be compared, specifically the ability to judge one's own prior recall of personal events and the ability to judge the time of occurrence of events reported in the public news. The implications of the findings for the concept of recovered memories will be discussed.

“DN (a 41-year-old female) reported discovering a memory of being raped in a hospital at the age of nineteen and then taking the case to court. She discovered the memory at age forty-one, while driving home several hours after her group therapist remarked that survivors of childhood abuse, which DN had maintained an intact memory of being, often are victimized as adults. Her characterization of the discovery experience was as follows: ‘I had to just sit there for a while because it was just this extreme emotion of fear and total disbelief. Disbelief that it happened, disbelief that I could have forgotten something that traumatic.’ (Schooler, 2001, pp. 110-111).

The case of DN exemplifies a spontaneous memory recovery of abuse elicited by contextual cues provided during her therapy session. For the person involved as well as for outsiders it is quite intriguing that even a traumatic event like sexual abuse could be forgotten for a long period, as if it had never occurred. However, this example is no rare event. A substantial proportion of individuals, who experienced childhood sexual abuse actually claim that they had periods in which they did not recall their abuse (Fivush & Edwards, 2004). The question about the authenticity of such spontaneously *recovered memories*

of abuse has led to one of the greatest polarizations between and within scientific and clinical communities throughout history. Over decades there has been a battle between science and clinical therapists, which concerned whether these memories were implanted by therapists and therefore constituted false memories or whether they emerged after long being forgotten as a result of repression (Epstein & Bottoms, 2002; Joslyn, Loftus, McNoughton, & Powers, 2001). Back then, the authenticity of recovered memories was questioned, especially those memories which were elicited during therapeutic sessions (Clancy, Schacter, McNally, & Pitman, 2000).

These doubts were, however, in part eliminated by evidence showing that reports about abuse from women with recovered memories are as likely to be confirmed as reports of women having continuous memories about their abuse (Fivush & Edwards, 2004; Schooler, 2001). This gave rise to a new research approach for studying recovered memories. Still, however, it is unclear how many of the reported recovered memories are genuine and which processes might lead to the characterization of a memory as recovered (Schooler, 2001). Theoretical development accounting for these processes have been limited by a lack of well-documented cases of recovered memories, difficulties in corroborating periods of forgetting, and large variability in reported cases (Fivush & Edwards, 2004; Schooler, 2001).

Schooler (2001) provided a new theoretical framework, which provides possible mechanisms underlying and accounting for the periods of forgetting that is present in individuals with recovered memories. This account is based on evidence showing that a substantial amount of women who report having forgotten their abuse during a certain period of time, in fact had memories for these events during those periods. To put it differently, they did not forget the event; rather they forgot having thought about the event. This forgetting of previous recall of autobiographical events has been named *forget-it-all-along* effect and conceptualized as an illusion of forgetting. The ability to remember our own previous recall of a specific event, which is conceptualized as a *meta-memory process*, is a function of *meta-awareness*.

The aim of this article is to give insight into the role of meta-awareness in *retrospective memory* judgments. Furthermore, inaccuracies in different memory judgments will be compared, specifically the ability to judge prior recall of personal events and the ability to judge the time of occurrence of public news events. This is done for exploratory purposes in order to see whether these periods of forgetting can be accounted for by a general imprecision in such judgments, which in turn may create this illusion of forgetting. Finally, the findings will be applied to the concept of recovered memories.

Recovered memories in the light of meta-awareness

Schooler (2001) interpreted the forget-it-all-along effect in the context of meta-awareness, which is one's consciousness of the contents of subjective experience. More specifically, he suggested that the content of experience is distinct from the consciousness of the contents of experience. For instance, the experience 'abuse' is different from the awareness of the appraisal of the abuse, which represents the meta-awareness component. To make the concept of meta-memory more

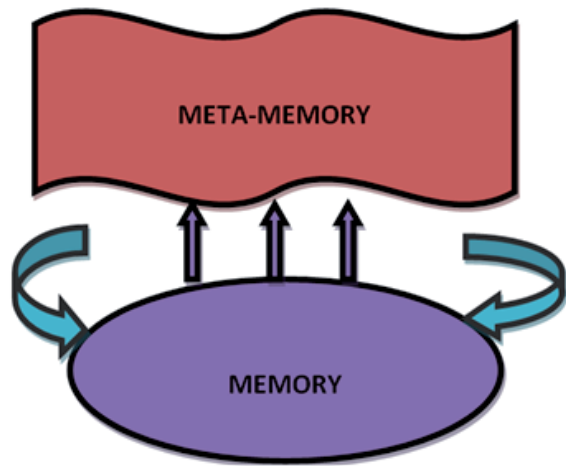


Fig.1: Relation among meta-memory and memory. Meta-memory monitors (up arrows) and controls (down arrows) the contents of memory

explicit imagine watching the moon and you find it so beautiful that you consciously attempt to remember THIS specific moon on THAT specific night. Next time recalling the experience of the moon, you may also recall that back then you also attempted to really keep it in mind. That is, you activate an additional process that is related to your memory, which may include intentions about a memory or just normal thoughts and evaluations about the content of your memories (see Figure 1). Additionally you may also realize that it is this process that helped remembering it so well. This everyday example of memory demonstrates how meta-memory operations can support normal memory processes.

Although meta-memory may critically depend on memory, it is not memory itself. Rather, it is the assessment and judgment that can be made about memory (Joslyn et al., 2001). Most of the time, however, we are not aware of our interpretations, goals, and



contents of our own memory (Schooler, 2001). Following the work by Schooler (2001), various studies have investigated recovered memories in light of this theory (see Raymaekers, Peters, Otgaar, & Smeets, 2010, for an overview). Yet, the possible separation between contents of consciousness and awareness of the own interpretation does not exclusively characterize recovered memories of

traumatic events. It is well established that locating past events backwards in time (retrospective memory) in general, be it autobiographical, historical or public, is very much imprecise (Kemp, 1999; Mayes et al., 1994; Parks, 1999).

The forget-it-all-along effect has been shown to be typical to common autobiographical childhood memories (Parks, 1999). In Park's study (1999), for example, participants were asked to recall specific events from their childhood. Within the same experimental session they were later asked how recently they had thought about some of the before presented events. The majority of the participants tended to estimate their previous recall to be more remote in time than true. Further studies aiming at extending this work, established that accuracy declines even more with increased delays between remembering the event and dating its last recall (Merckelbach et al., 2006), age and less contextual cues (Abenavoli & Henkel, 2009). Interestingly, although the forget-it-all-along effect is also present in individuals with continuous memories or no memories of abuse, it is more pronounced in women who recovered memories about childhood sexual abuse (Geraerts, McNally, Jelilic, Merckelbach, & Raymaekers, 2006; Merckelbach et al., 2006). These kinds of temporal 'mis-estimations' have also been found for other types of retrospective time estimations.

Asking people about the date of public news events offers a good assessment measure of everyday memory function and dating accuracy, because the true date is known. Studies examining potential underlying mechanisms of memory loss have used this paradigm and confirmed a general inaccuracy in estimating when a certain event has taken place (Mayes et al., 1994). Two biases have been established in time estimations for public news events: *forward telescoping*, i.e., the tendency to estimate events as being more recent in time and conversely *backward telescoping*, which is the tendency to estimate events as being more remote in time than they actually occurred (Kemp, 1994; Wright et al., 1997).

The question that remains, however, concerns the specificity of imprecision in retrospective time estimations. Is there a relationship between dating one's own recall of events and dating the occurrence of news events? More specifically: does imprecision in dating one's own recall account for imprecision in dating news events?

Relationship between inaccuracy in judging last recall of childhood events and judging the occurrence of public news events

To investigate the relationship between dating public news events and estimating one's own previous recall of autobiographical childhood events we conducted an explorative study in a population composed of 64 undergraduate students from Maastricht University (Abiad & Raymaekers, 2011).

With regard to estimations about prior recall of childhood events, participants received two questionnaires with 23 yes/no items, asking whether they had vivid memories about certain events. Examples include: 'Do you have vivid memories of your first bike?' or 'Do you have vivid memories of the first time you went to a funeral?' After a delay of one hour, participants were given an additional questionnaire in which they were asked how long ago they had thought about particular events, including nine of the events asked about in the first questionnaire. Participants received the explicit instruction to have the earlier questionnaire in mind for this task. These estimations were compared with scores obtained from a recency judgment questionnaire on news events, which required participants to date the occurrence of 10 public news events (e.g., day of death of Princess Diana). Finally, we asked subjects whether they had experienced any recovered memories, and if so to describe the trigger, content and context in which these had emerged.

In line with previous findings, the majority of our participants (65%) indicated that they had thought about the childhood events a few days, weeks or a year ago despite the fact that they had thought about them one hour ago. About 33% of the sample made correct estimates about recent recall of autobiographical events. A minority of students, i.e., 2%, did not have vivid memories for any of the nine events, which were included in both questionnaires and were therefore excluded from analysis. Participants placed their last recall of childhood events more remote in time than they had occurred. Responses covered the whole range of possibilities: from a few days up to several years ago, which is in accordance with Parks' (1999) findings. Thus, it seems that people have a dominant tendency to think their last recall of a memory is farther away in time, even if the actual recall has been only one hour ago.

With regard to public news events we found that 52% of the participants overestimated the date of the event, i.e., they placed it more remote in time than it actually had occurred. About 44% estimated the event as being closer in time and 5% accurately dated the events. This is consistent with studies showing that forward and backward telescoping are common when people estimate the date of public news, historical and personal events (Kemp, 1994; Wright et al., 1997).

Additionally, we found a positive relationship between the accuracy of dating public news events and the accuracy in recollection of previous recall of autobiographical memories. Thus, those participants who estimated the news events as being longer ago than true also tended to estimate their recall of childhood events as more remote. This link indicates that the process underlying the ‘misremembrance’ of prior recall may be similar to the process underlying inaccurate dating of public news events. An earlier study provides a potential explanation for this result. Larsen and Thompson (1995) demonstrated that memory for personal context, e.g., the place, people present and ongoing activities, yields supporting cues in making more accurate dating estimations for both types of events. Memory for time of news events and personal events is bound to information from our personal context circumventing the event at the moment it occurs. Personal context seems to be a connecting link between different types of recency judgments, which indicates that there must be a common mechanism between these time estimations. Concurrently, personal context as well as meta-memory processes both have in common that they relate to information and processes relevant to the self. Consequently, self-significance of events might determine the vividness and accuracy of memories and might as well constitute an underlying common mechanism. However, this is to be determined yet.

Although our finding does not allow for further conclusions about causality, it does indicate that the presence of bias in one of these meta-awareness judgments can speak to a bias in another type of meta-awareness judgment. However, given that dating one’s own recall comprises a more explicit meta-memory function than dating news events it seems quite plausible to attribute the failure in making accurate judgments to a failure in meta-memory. Overall, this finding provides strengthening support for research lines arguing for a theoretical framework, which includes meta-awareness as underlying mechanism of memory recovery. In accordance, it has been shown that although our conscious experience is continuous, our awareness of our awareness is not, which could yield a thorough explanation as to why retrospective memory, as a function of meta-awareness, is prone to such inaccuracies (see Schooler, 2001, for an explanation). These inaccuracies may, in turn, underlie the forget-it-all-along effect.

Finally, we found no significant differences between students reporting having experienced recovered memories and those who did not, neither in memory recall of public news events nor in dating previous recall. Different from prior studies, which found a superior forget-it-all-along effect in subjects reporting recovered memories of childhood sexual abuse (Fivush & Edwards, 2004; Geraerts et al., 2008; Geraerts et al., 2006), the described recovered memories of individuals in this study included only everyday

experiences. Childhood sexual abuse may be a special case in its impact on dating accuracy as compared to ‘normal’ positive and negative events or even other traumatic experiences (for further details see Bottoms, Najdowski, Epstein, & Badanek, 2012).

Future Directions

What does the link between dating news events and dating our last recall of personal events tell us about the concept of recovered memories? The ability to estimate one’s recent recall of events determines the vividness and accessibility of memories, but is largely prone to inaccuracies (Schooler, 2001). The link supports research lines arguing that the cause of recovered memories lies in biases and failures in our everyday memory operations. Events do not seem to be forgotten, especially if there is evidence of abuse from a third person or even physical signs of abuse. Rather, the last occasion, in which one remembered the event, has failed to be brought into conscious awareness.

To locate an event in time follows the same accuracy trend as locating one’s own remembrance in time. Given that personal context provides the necessary cues to make recency judgments of any kind (Larsen & Thompson, 1995) it could be suggested that the failure in dating one’s own recent recall, i.e., a meta-memory dependent process, might underlie dating accuracy in general. It is up to future research to investigate if this is true by e.g., examining if this link is even stronger in dating personal events as compared to dating recent recall of personal events. All in all, the given results assign an important role of meta-memory processes in recency judgments as previously proposed (Merckelbach et al., 2006; Schooler, 2001). Furthermore, the ability to appropriately monitor and control one’s own memory content might influence how well one can remember internal processes and external events and should therefore be explicitly considered in future research.

Glossary

Backward telescoping: The tendency to estimate events more remote in time than they occurred

Forward telescoping: The tendency to estimate events as being more recent in time than they occurred

Forget-it-all-along effect: The failure to remember one's previous recall of an event

Memory-processes: The ability to encode, store, and recall information after perceiving external or internal stimuli

Meta-memory: Knowledge of one's own memory including, among others, intentions, judgments and evaluations about the content of memory

Meta-memory processes: The ability to encode, store, and recall information that are rather internal, for example thoughts and emotions about one's own memory content

Meta-awareness: A third dimension of consciousness, which describes one's awareness of what one is conscious about

Recovered memories: Memories that are characterized as having been completely forgotten, but spontaneously remembered after a period of time

Retrospective memory: Locating past experience backwards in time, for example dating events or estimating how long ago something occurred

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