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The effects of thought suppression on autobiographical memory recall

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ABSTRACT

While it is well documented that autobiographical memory (ABM) recall is affected in Posttraumatic Stress Disorders (PTSD), less is known about the cognitive mechanisms that underlie this pattern. This paper presents two research studies which investigated the role of thought suppression in the recall of ABMs. Study 1 assessed the role of thought suppression as a correlate of ABM retrieval in an undergraduate student sample ($n = 50$). The results showed that higher levels of trait thought suppression were significantly correlated with faster recall of negative episodic memories as well as reduced recall of personal semantic memories. Thought suppression remained as a significant predictor of ABM recall, even when the participants' levels of depression and post-traumatic stress reactions were considered. Study 2 investigated the causal effects of thought suppression on ABM recall. 64 undergraduate students were shown a negative video clip and were asked either to suppress any thought of the video or simply to monitor their thoughts immediately thereafter. Results showed that suppression directly led to significantly enhanced negative episodic ABM recall, as well as a significantly reduced ability to recall personal semantic memories.

Introduction

There is clear evidence that Autobiographical Memory (ABM) recall displayed by individuals showing symptoms of Posttraumatic Stress Disorder (PTSD) differs from that of healthy controls. Specifically, individuals with PTSD recall fewer personal semantic memories (i.e. factual knowledge about their pasts) than controls (e.g., Hunter & Andrews, 2002; Meesters, Merckelbach, Muris, & Wessel, 2000; Stokes, Dritschel, & Bekerian, 2004). Individuals with PTSD also have less accessible specific positive episodic ABMs than controls (e.g. McNally, Lasko, Macklin, & Pitman, 1995; Parks & Balon, 1995). The accessibility of negative memories may also be affected in PTSD, with the majority of studies finding that, like positive memories, negative ABMS are also less accessible (e.g. McNally et al., 1995, Wessel, Meeren, Peeters, Arntz, & Merckelbach, 2001). However, some studies have found *increased* specificity for negative memories (Burnside, Startup, Byatt, Rollinson, & Hill, 2004; Peeters, Wessel, Merckelbach, & Boon-Vermeeren, 2002; Swales, Williams, & Wood, 2001; Williams & Dritschel, 1988). A common feature of these studies where increased accessibility of negative ABMs was observed is that the participants had a history of trauma and/or parasuicidal behaviour. These studies indicate that negative memories may be more accessible than positive memories, particularly when there is a history of trauma and/or parasuicidal behaviour

The critical question here is the extent to which the availability of negative memories is related to PTSD and self-harm, and if so, what mechanism underlies this enhanced negative memory recall. One of the factors that differentiate PTSD sufferers from controls is that they have memories of traumatic events that are often associated with unwanted and upsetting emotions. Therefore, in order to function adaptively, people who have suffered a traumatic event may implement some form of avoidant coping strategies in order to deal with the unwanted and upsetting emotions that accompany memories of the traumatic event (Hermans, Defranc, Raes, Williams, & Eelen, 2005). Thought suppression may be one strategy involved in preventing trauma-related stimuli from being processed (Ehlers & Clark, 2000). Thought suppression refers to the conscious effort that is made in order to NOT think about a particular thought (Wegner, Schneider, Carter, & White, 1987) and is used to regulate affect (Hermans et al., 2005).

A seemingly paradoxical consequence of suppression, however, is that it can lead to the hyperaccessibility of the suppressed material, that is, the memory that one is trying to suppress may actually becomes *more* accessible as a result of the suppression (see Abramowitz, Tolin, & Street, 2001 for a review). Thus, to some extent at least, thought suppression can be considered a maladaptive coping strategy. Thought suppression may only be

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a successful coping mechanism when it effectively blocks access to unwanted memories. In those instances where it is ineffective, attempts to suppress unwanted memories may serve to exacerbate the problems typically associated with PTSD, such as cognitive avoidance and intrusions of trauma-related stimuli.

Furthermore, thought suppression may affect the recall of episodic non-autobiographical memories. Wegner, Quillian, and Houston (1996) found that the ability to recall episodic information in a correct chronological order was negatively affected by thought suppression. However, a subsequent study by Rassin, Merckelbach, and Muris (1997) failed to replicate these effects, which may have been a result of differences in the methodologies between these studies. Wegner et al. (1996) used both a questionnaire and free recall task to measure the ability to remember the suppressed material, whereas Rassin et al. (1997) used a questionnaire only. It is possible therefore that the hyperaccessibility of memory for suppressed material may only be observed when free recall methods are used. The extent to which thought suppression impacts upon retrieval of ABMs, however, remains to be examined.

To date, only one study has looked at the direct effects of thought suppression on valanced ABM recall (Dalgleish & Yiend, 2006). A sample of dysphoric adults were asked to recall a specific negative event from their past, and were subsequently either asked to suppress this memory or were given no specific instructions. It was found that thought suppression resulted in the faster recall of negative episodic memories. The present set of studies seeks to build upon this finding by exploring whether such effects can be produced in a non-clinical student sample. Nevertheless, current levels of depression as well as post-traumatic stress reactions will be taken into account. Furthermore, for better experimental control, all participants will be presented with the same material to be suppressed. Baseline measure of ABM recall will be taken before the manipulation, in order to gain better insights into the direct effects of thought suppression on ABM recall. Finally, the effects of thought suppression on both episodic and personal semantic memory recall will be assessed.

The first study presented here was designed to investigate whether or not thought suppression is correlated with ABM retrieval patterns in a non-clinical student sample. The second study employed a suppression manipulation task, in order to establish whether thought suppression directly causes the ABM recall patterns that are typically observed in individuals suffering from PTSD and/or parasuicidal behaviours.

Study 1

The purpose of the first study was to assess the role of thought suppression as a correlate of ABM recall. A sample of undergraduate students were given measures of both episodic and personal semantic memory recall, as well as a measure of the tendency to engage in thought suppression as a way of coping with unwanted thoughts and memories. Levels of post-traumatic stress and depression symptoms were also assessed and controlled for, as these are known to be related to ABM recall. It was hypothesized that thought suppression would be significantly correlated with the ABM recall patterns typically observed in individuals suffering from PTSD, that is, enhanced negative memory recall as well as a reduced ability to recall personal semantic information.

Methods

Participants

The participants were 50 (39 female and 11 male) undergraduate students. The mean age was 21.58 years (s.d. = 3.47).

Materials

Autobiographical memory test (AMT; Williams & Broadbent, 1986)

The AMT consisted of 10 cue words (5 positive and 5 negative: lonely, happy, hurt, safe, clumsy, interested, angry, successful, sorry and surprised). Participants were given 60 s to recall a specific episodic memory to each cue word. A specific memory was defined as an event that took place at a specific time and place and lasted less than one day. Words were presented in the same order for each participant. For each cue word the experimenter recorded the time taken to begin the verbal recall of a specific memory as well as the nature of the first memory that was recalled (specific or overgeneral) for each cue word. If no specific memory was recalled, a time of 60 s was noted, and the next cue word was presented. For the data analysis, the total latency (in seconds) to recall a specific memory to all cue words was used, as well as the total latency to recall positive and negative memories separately as an index for accessibility of valenced autobiographical memories. Inter-rater reliability regarding the coding of the nature of the memory (overgeneral versus specific) conducted on a random sample of 20% of the participants' memories was high (Cohen's Kappa $K = 0.80$).

Student's autobiographical memory interview (S-AMI)

In order to assess participants' ability to recall personal semantic memories, items from the Autobiographical Memory Interview (Kopelman, Wilson, & Baddeley, 1989) were combined with items from the Children's Autobiographical Memory Interview (Bekerian, Dhillon, & O'Neill, 2001; Stokes et al., 2004) to create an interview that would only elicit memories from lifetime periods that are applicable to undergraduate university students. Therefore, the S-AMI elicited episodic and personal semantic information from three lifetime periods: early childhood (including preschool and primary school), adolescence (including secondary school) and university life. An example of a personal semantic question is: "Can you give the names of three of your teachers from primary school?" and an example of an episodic memory question is: "Can you remember something that happened on your first day of school?". The S-AMI used in this study is scored in the same way to the original AMI, with the same possible highest and lowest scores in each section, i.e., one point was given for each personal semantic memory that was recalled, resulting in a total possible score of 63 for personal semantic memory retrieval. Three possible points were assigned for each of the 9 possible episodic memories recalled: one point for time, place and specificity, thereby resulting in a maximum total score of 27 for episodic memory retrieval.

Hospital anxiety and depression scale (HADS; Zidmond & Snaith, 1983)

This 14-item self-report scale was used to measure symptoms of depression and anxiety over the past week. Seven questions assess current symptoms of anxiety and the remaining seven questions assess symptoms of depression. Both the factor stability and internal consistency of the HADS are high (Mykletun, Stordal, & Dahl, 2001).

Impact of event scale – revised (IES – R; Weiss, 1996)

This 22-item self-report questionnaire is used to measure intrusions, avoidance and symptoms of hyperarousal that participants have experienced over the past 7 days in response to a single traumatic event. However, one limitation of the Impact of Event Scale is that it requires participants to complete it with respect to a single traumatic event. To overcome this limitation, the present study employed a "trauma questionnaire", which required participants to identify their most traumatic experience by selecting one of 9 categories (accident, serious medical condition/injury, medical