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Dissociation and Autobiographical Memory Specificity

Ineke Wessel,* Harald Merckelbach, Chantal Kessels and Robert Horselenberg

Maastricht University, The Netherlands

Overgeneral autobiographical memory refers to a relative inability to respond to cue-words with memories for specific events. The present study explored the relation between overgeneral memories and dissociative tendencies. Autobiographical memory performance of college students with high self-reported dissociation was compared to that of students with low dissociation scores. Two different hypotheses were tested. The first assumes that dissociation reflects an avoidant information processing style. If true, the high dissociation group would be expected to display fewer specific memories than low-dissociative individuals. The second hypothesis builds on the finding that dissociation overlaps with fantasy proneness. To the extent that fantasy proneness implicates good story-telling abilities, one expects high dissociation individuals to display more rather than less specific memories. The results show that autobiographical memory did not differ between high and low dissociation groups, although group differences were found with regard to fantasy proneness. Copyright © 2001 John Wiley & Sons, Ltd.

INTRODUCTION

Over the past 15 years, research has established a robust link between psychopathology and overgeneral autobiographical memory. The phenomenon of overgeneral memory reflects a relative inability to respond with specific (i.e. referring to one particular event) memories to cue-words (Williams and Broadbent, 1986). This memory dysfunction has been found in various clinical groups, including parasuicide patients (e.g. Williams and Broadbent, 1986), clinically depressed individuals (e.g. Moore *et al.*, 1988; Wessel *et al.*, 2001), patients

with Borderline Personality Disorder (BPD; Jones *et al.*, 1999) and post-traumatic symptomatology (Posttraumatic Stress Disorder, PTSD; McNally *et al.*, 1995; Acute Stress Disorder, ASD; Harvey *et al.*, 1998). Although the phenomenon of overgeneral memories is absent in patients with anxiety disorders other than PTSD and ASD (see Wilhelm *et al.*, 1997; Wessel *et al.*, 2001), the fact remains that it occurs in a broad variety of emotional disorders. This raises the question of what, if any, shared characteristics underly the phenomenon. Williams and associates (e.g. Williams *et al.*, 1999) suggest that experiencing psychological trauma serves as an important antecedent of the categorical retrieval style that produces overgeneral memories. Yet, the finding that the phenomenon is absent in control groups with a comparable history of trauma but no psychopathology (e.g. Vietnam veterans, McNally *et al.*, 1995; concentration camp survivors, I. Wessel *et al.*, unpublished data), casts doubts on the assumption

*Correspondence to: Dr I. Wessel, Department of Psychology, Maastricht University, PO Box 616, 6200 MD Maastricht, the Netherlands. Tel: (+31) 43 3881941/1908. Fax: (+31) 43 3884196. E-mail: i.wessel@psychology.unimaas.nl

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that trauma is the only prerequisite for this phenomenon to occur. Thus, it is likely that other variables which are commonly, but not invariably associated with trauma contribute to overgeneral memory. One such variable might be dissociation.

Dissociation is usually defined as a lack of integration of mental processes such as thoughts and feelings in the stream of consciousness and memory (Bernstein and Putnam, 1986). Memory problems are thought to represent an important aspect of dissociation (Gershuny and Thayer, 1999). Interestingly, correlations between dissociation and overgeneral autobiographical memory have been reported for patients with ASD (Harvey *et al.*, 1998) and patients with BPD (Jones *et al.*, 1999). Note however, that these patient groups exhibit more psychopathology than just elevated levels of dissociation. To further explore the precise contribution of dissociation to overgeneral memories, the present study compared autobiographical memory specificity of high and low dissociative college students. Drawing on previous research concerned with dissociative experiences and memory, two conflicting predictions were formulated. The first is inspired by the commonly voiced view that dissociation reflects cognitive avoidance of traumatic memories (van IJzendoorn and Schuengel, 1996; Gershuny and Thayer, 1999; Jones *et al.*, 1999). Interestingly, this idea closely resembles the notion that an avoidant memory retrieval style underlies overgeneral autobiographical memory (Williams *et al.*, 1999; Jones *et al.*, 1999). If an avoidant strategy of coping with autobiographical memories is, indeed, a hallmark feature of dissociation, one would expect dissociative individuals to display a poor (i.e. overgeneral) autobiographical memory.

The second hypothesis was motivated by research showing that there is a considerable overlap between dissociative symptoms and a trait known as fantasy proneness (for a review see Merckelbach and Muris, 2001). Fantasy proneness refers to a tendency to become deeply and profoundly involved in fantasy and imagination (Lynn and Rhue, 1988). One striking characteristic of individuals scoring high on fantasy proneness is their ability to develop unusually vivid memories for personal experiences (Wilson and Barber, 1983). From this perspective, one should expect high dissociative individuals to exhibit more specific (i.e. less overgeneral) memories than low dissociative individuals.

METHOD

Participants

Participants were 48 psychology undergraduates (nine men) at Maastricht University. Their mean age was 19.3 years (range 18–23 years). Participants were contacted by telephone and invited to participate in the experiment on basis of the results of a mass testing session ($N = 203$) conducted 6 to 7 months before the present experiment. More specifically, they were selected according to their scores on the Dissociative Experiences Scale (DES; see below). The *high dissociation group* ($n = 23$), consisted of participants who scored 30 or higher on this instrument ($M = 41.3$; $SD = 7.6$). The *low dissociation group* ($n = 25$) contained participants with DES scores below 15 ($M = 8.7$; $SD = 3.4$). Groups did not differ with regard to age, $t(46) = -0.18$. However, there were significantly more men ($n = 7$) in the high dissociation group than in the low dissociation group ($n = 2$), $\chi^2(1) = 3.96$, $p < 0.05$. Participants were paid for their participation.

Assessment

Autobiographical Memory Test (AMT; Williams and Broadbent, 1986)

Five positive (*happy, surprised, interested, successful, safe*) and five negative (*clumsy, angry, sorry, hurt, lonely*) words served as memory cues. Words were printed in lower case letters (maximum height of 12 mm) on separate 15 × 21 cm cards. The cards were presented with positive and negative cues strictly alternating. The specificity of the memories was judged by a rater (I.W.) who was unaware of the participants' dissociation status. A response was coded specific if it referred to an event that happened within 1 day (e.g. 'When I received my high school degree'). Earlier studies using this scoring procedure (Wessel *et al.*, 2001; I. Wessel *et al.*, unpublished data) show that it has good inter-rater reliability. The number of specific responses were summed and transformed into proportions. In addition, separate proportions were calculated for both positive and negative cues.

Dissociative Experiences Scale (DES; Bernstein and Putnam, 1986)

This is a 28-item self-report measure that quantifies dissociative experiences. Items are scored on 100-mm Visual Analogue Scales (VASs). Scores on separate items are averaged to obtain a total dissociation score (range 0–100), with higher scores indicating higher dissociative tendencies. Note that

a total DES score of 30 has been recommended as a cut-off score for the diagnostic screening of dissociative disorders (Putnam *et al.*, 1996).

Creative Experiences Questionnaire (CEQ; Merckelbach et al., 1998)

The CEQ was employed as a measure of fantasy proneness. The CEQ includes 25 dichotomous (yes/no) items that cover experiences related to daydreaming, intense fantasizing and imagining. Items were derived from Wilson and Barber's (1983) extensive case descriptions of fantasy prone individuals. Merckelbach and colleagues (Merckelbach *et al.*, 2001) reported a correlation of 0.81 in their undergraduate sample between the CEQ and the 44-item Inventory of Childhood Memories and Imaginings (ICMI; Myers, 1983), which is often used as an index of fantasy proneness. The CEQ total score ranges from 0 to 25.

Beck Depression Inventory (BDI; Beck et al., 1979)

The Beck Depression Inventory measured depressive symptoms. The BDI has 21 items that are scored on a 4-point scale (range 0–3) and summed (range 0–63), with higher scores indicating higher depressive symptomatology.

Procedure

At the beginning of the academic year, a large-scale questionnaire survey including the DES and the CEQ was conducted among undergraduate students. Based on their DES scores in this survey (see 'Participants' section), they were invited to participate in an experiment that took place 6 to 7 months later.

During the experimental session, participants were tested individually. First, they completed the BDI. Subsequently, the AMT was administered. Participants were instructed to give a specific memory for each cue-word. It was explained to them that a specific memory refers to a personally experienced event that happened at a particular time (within 1 day) and place. Neutral items (e.g. car, shop) were given for practice. The actual AMT did not start until the experimenter was confident that the participant understood the instructions and had provided at least three specific memories in response to the practice words. Participants were given a maximum of 30 s to come up with a memory. Following the AMT, they completed the DES (DES-Exp) in order to verify that participants had high or low DES scores. Finally, participants were debriefed and paid.

RESULTS

High Versus Low Dissociation Groups

Table 1 summarizes mean scores of the high and low dissociation groups on the questionnaires and the AMT. The results were analysed using independent samples *t*-tests.¹ As expected, the groups differed significantly on the DES-Exp, $t(33.9) = -6.35$, $p < 0.001$, adjusted DF. In addition, the high DES group had significantly higher BDI scores than the low DES group, $t(46) = -3.13$, $p < 0.01$. Furthermore, high dissociative individuals displayed higher CEQ scores than low dissociative individuals, $t(46) = -3.19$, $p < 0.01$. In contrast, no group differences were found for AMT total scores, or AMT positive or negative items, largest $t(46) = 0.43$.

The correlation between DES scores obtained during the experiment (DES-Exp) and scores obtained 6–7 months earlier was 0.75. To examine whether inadequate participant selection was responsible for the lack of difference in AMT performance between groups, the sample was restricted to participants whose DES scores at the time of the experiment still fell within the initial selection criteria (i.e. DES ≥ 30 and DES ≤ 15 , for the high and low DES groups, respectively). Table 2 shows mean DES-Exp and AMT scores for this subsample ($n = 29$). Again, *t*-tests did not reveal significant differences in AMT performance between the high and low DES groups, largest $t(27) = -1.48$.

Table 1. Mean scores on questionnaires and mean proportion specific memories for high and low dissociation groups

	Low dissociation group ($n = 25$)	High dissociation group ($n = 23$)
DES	10.08 (6.71)	28.12 (12.01)
CEQ	7.32 (3.26)	10.57 (3.78)
BDI	2.76 (2.98)	5.65 (3.43)
AMT		
Total	0.78 (0.16)	0.76 (0.16)
Positive cues	0.38 (0.10)	0.38 (0.09)
Negative cues	0.40 (0.10)	0.38 (0.12)

DES, Dissociative Experiences Scale; CEQ, Creative Experiences Questionnaire; BDI, Beck's Depression Inventory; AMT, Autobiographical Memory Test. Standard deviations are in parentheses.

¹ Because there were more men in the high dissociation group than in the low dissociation group, the analyses were repeated for a sample restricted to women. Similar results were obtained for this subsample.

Table 2. Mean DES scores and mean proportion specific memories for high and low dissociators according to dissociation scores obtained during the experiment

	Low dissociation group ($n = 19$)	High dissociation group ($n = 10$)
DES-Exp	6.94 (3.76)	32.17 (10.03)
AMT		
Total	0.75 (0.17)	0.77 (0.16)
Positive cues	0.37 (0.10)	0.37 (0.08)
Negative cues	0.37 (0.10)	0.40 (0.11)

DES, Dissociative Experiences Scale; AMT, Autobiographical Memory Test. Standard deviations are in parentheses.

DISCUSSION

The present study compared autobiographical memory performance of college students scoring high or low on dissociation. The results can be summarized as follows. First, no evidence was found to suggest that participants with high dissociation scores respond with more overgeneral memories to cue-words than participants with low dissociation scores. This is inconsistent with previous work reporting significant correlations between dissociative symptoms and overgeneral autobiographical memory in clinical samples (Harvey *et al.*, 1998; Jones *et al.*, 1999). Second, the pattern of results obtained in the current study lends no support to the alternative hypothesis that due to their heightened fantasy proneness levels, high dissociators would display more specific autobiographical memories than low dissociators. While it was the case that high dissociators had higher fantasy proneness scores than low dissociators, groups did not differ on any of the autobiographical memory parameters. This pattern is difficult to reconcile with the idea that dissociation fosters memory specificity through its overlap with fantasy proneness.

The hypothesis that dissociation is related to overgeneral memories rests on two assumptions. The first is that dissociative symptoms reflect an avoidant information processing style (e.g. van IJzendoorn and Schuengel, 1996; Gershuny and Thayer, 1999; Jones *et al.*, 1999). The second assumption is that cognitive avoidance interferes with memory retrieval resulting in overgeneral autobiographical memory (Williams *et al.*, 1999). Both assumptions may be incorrect. For example, some recent data on directed forgetting are inconsistent with the idea that abuse survivors (McNally, *et al.*, 1998) and high dissociators (Elzinga

et al., 2000) are characterized by avoidant information processing. Also, in light of the available literature it is difficult to determine whether avoidant memory retrieval (e.g. Williams *et al.*, 1999), limited working memory due to intrusive memories (e.g. Kuyken and Brewin, 1995) or other and largely unknown factors (e.g. Wessel *et al.*, 2001) underlie the phenomenon of overgeneral memories. Together with the present data, these considerations cast doubts on the idea that a link between dissociation and overgeneral memory must be mediated by cognitive avoidance (Jones *et al.*, 1999).

The present study's failure to detect an association between fantasy proneness and superior memory performance stands in sharp contrast to the observation of Wilson and Barber (1983) that fantasy prone individuals have highly vivid personal memories. It may well be the case that these authors' observation only applies to extreme cases of fantasy proneness. Another distinct possibility is that fantasy proneness is related to high levels of narrative specificity, but only so if participants' task is to fantasize. This issue warrants further study.

A final point concerns the stability of the DES. It is often reported that the DES has excellent test-retest reliability (for an overview see van IJzendoorn and Schuengel, 1996). Indeed, the present findings indicate that DES scores were reasonably stable ($r = 0.75$) over a period of at least 6 months. However, the magnitude of this correlation also suggests that some fluctuation did occur and that there is room for improvement. More specifically, of the 23 participants who had DES scores above the cut-off point during the survey, only 10 had similar scores at the 6–7-month follow-up. This finding underlines attempts to develop sensitive dissociation measures suitable for non-clinical samples (e.g. Wright and Loftus, 1999).

In sum, then, the present study found no evidence for overgeneral autobiographical memory in highly dissociative individuals. This casts doubts on the avoidant information processing account of dissociation. Furthermore, high dissociators did not display better memory performance, a finding to be expected if an important correlate of dissociation, fantasy proneness, was related to memory specificity. It may still be possible that overgeneral memory results from the joint action of dissociation and other variables (e.g. frequent intrusive memories). Future studies in both clinical and non-clinical groups may shed more light on this issue.

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