

# Dissociation, memory commission errors, and heightened autonomic reactivity

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## Abstract

If dissociative symptoms are manifestations of a psychological defense mechanism, one would expect people who have such symptoms to react with lower levels of physiological arousal and with memory omissions to emotionally provocative material. The current study tested this assumption in a sample of undergraduates. Sixty-two undergraduate students viewed a highly emotional video fragment. Pearson's product–moment correlations were calculated between dissociation (as indexed by the Dissociative Experiences Scale, DES) and all dependent measures. High dissociators exhibited elevated skin conductance responses (SCRs) to the fragment. Memory for the video fragment was then tested. While omission errors were unrelated to dissociation, high dissociators exhibited a tendency to produce commission errors. This could not be explained by a reduced working memory capacity. However, fantasy proneness was found related to high dissociators' commission errors. Thus, it seems that a pattern of heightened emotional reactivity and commission errors is typical for people with elevated dissociation scores. This pattern is difficult to reconcile with the defensive function ascribed to dissociation.

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## 1. Introduction

According to [Bernstein and Putnam \(1986, p. 727\)](#), dissociation is “a lack of normal integration of thoughts, feelings, and experiences into the stream of consciousness and memory”. Many authors believe that it “functions to fragmentize, derealize, and depersonalize traumatic experiences” ([Markowitsch, 2003, p. S133](#)). Dissociation can be conceptualized as forming a continuum that ranges

from the minor dissociation of everyday life to major forms of psychopathology ([Fischer and Elnitsky, 1990](#)). Historically, dissociation has been considered a defense mechanism that enables the individual to withdraw psychologically from the impact of overwhelming traumatic events ([Gershuny and Thayer, 1999](#)). This view dates back to the 19th century psychologist [Pierre Janet \(1894\)](#), who coined the term “dissociation” and emphasized its role as a defensive maneuver in response to psychological trauma. A habitual tendency to dissociate would, however, promote psychopathology ([Hacking, 1995](#)). Following this tradition, recent clinical literature emphasizes the causal relationship between dissociation and trauma ([Irvin, 1998; Gershuny and Thayer, 1999; Gast et al., 2001](#)).

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While the view that dissociation is caused by exposure to traumatic events is widely accepted, empirical studies providing unequivocal support for this causal direction are still lacking. For example, Zlotnick et al. (1996) found a correlation of 0.40 between dissociation, as measured with the Dissociative Experiences Scale, and their own Sexual Assault Questionnaire (SAQ). Yet, the authors admit that the validity and the reliability of the SAQ are unknown. Similarly, Nash et al. (1993) investigated the link between trauma and dissociation in a sample of 105 women. They found that participants with a self-reported history of sexual abuse endorsed significantly more dissociative symptoms compared with women without such a history. However, this connection disappeared when a measure of family pathology was entered as a covariate in the analysis. This suggests that the connection between trauma and dissociation might be less straightforward than is often thought. This point is emphasized by Mulder et al. (1998), who summarized their findings in a large community study ( $n=1000$ ) as follows:

Any causal influence of childhood sexual abuse on dissociation is likely to be indirect and mediated by more general linkages between childhood sexual abuse and risks of mental disorder. (p. 809)

Another study yielding problematic results for the trauma-dissociation hypothesis is that by Sanders and Giolas (1991). These authors found retrospective self-reports of traumatic experiences and dissociative symptoms to be modestly correlated in a sample of adolescent psychiatric patients. Curiously, when hospital records were scored by a “blind” rater for indications of trauma, a slightly negative correlation emerged between ratings of traumatic experiences based on hospital records and dissociation. This suggests that dissociation is related to retrospective self-reports of traumatic experiences, while being unrelated to more objective and specific indices of such experiences. Recently, Merckelbach and Jelicic (2004) offered an explanation for this phenomenon. In two samples of undergraduate students ( $n=43$  and  $n=127$ ), they found that dissociative experiences are related to the endorsement of vague, but not specific trauma items. This response tendency might also have played a role in other studies that found a link between dissociation and trauma as measured by retrospective self-report scales of traumatic experiences.

Mild dissociative symptoms are rather common in the general population, with 80% to 90% of the respondents indicating that they sometimes experience these symptoms (Gershuny and Thayer, 1999). This is difficult to reconcile with the alleged traumatic etiology of dissociative symptoms, which implies that they should have a

lower base rate. In addition, Lang et al. (1998) investigated the influence of heritability on dissociative experiences using a twin study. They report that about half of the variability in dissociative experiences can be attributed to heritability. The evidence concerning the genetic predisposition of dissociative experiences is, however, mixed, as another study (Waller and Ross, 1997) reports no genetic influence, while a recent study in children and adolescents lends support to the notion of a genetic predisposition of dissociation (Becker-Blease et al., 2004). Thus, the high prevalence and the possible heritable basis of dissociative phenomena make a direct causal link between dissociation and trauma less likely. It also underlines the importance of a different research perspective, namely one that focuses on the trait-like features of dissociation. One robust finding in this domain is that there exists a substantial overlap between dissociation and fantasy proneness (Rauschenberger and Lynn, 1995; Merckelbach et al., 2000; Waldo and Merritt, 2000). Fantasy proneness refers to a deep and extensive involvement in fantasizing and daydreaming (Merckelbach and Muris, 2001). While fantasy proneness is integral to healthy psychological functioning, an inability to control the cognitive processes implicated in imaginative involvement may be associated with psychopathology (Rauschenberger and Lynn, 1995). Fantasy proneness has repeatedly been shown to be related to dissociation in both clinical (Pekala et al., 1999–2000; Merckelbach et al., 2005) and non-clinical samples (Merckelbach et al., 1999, 2000) with correlations ranging from 0.41 (Pekala et al., 1999–2000) to 0.55 (Merckelbach et al., 2000).

Given the fact that fantasy proneness is associated with susceptibility to pseudo-memories, dissociation might also be related to a tendency to confabulate. Evidence for this comes from a study by Merckelbach et al. (2000). Participants watched 40 slides, with 20 depicting photographs of common objects or situations and the other 20 being a short paragraph describing a scene or situation. Following this, participants were given a surprise recognition test in which they had to identify slides they had seen earlier in a series of old and new slides. They also had to indicate whether they had seen the “old” slide as a photograph or a paragraph. Two types of errors may occur during this task. Participants may erroneously confuse a picture with a text or vice versa. This would be a reality-monitoring error. Participants might also claim that they recognize a slide, which was not presented earlier. This would be a pseudo-memory, i.e., a commission error. Dissociative experiences were found to be related to commission errors, but not to reality-monitoring errors.

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