# Dissociative Symptoms Are Related to Endorsement of Vague Trauma Items

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**In current psychiatric literature, the received view is that dissociative symptoms originate from aversive childhood events. To a large extent, this view is based on cross-sectional studies that do not rule out a scenario in which dissociative tendencies contribute to self-reports of childhood trauma. In two studies, we tested one particular implication of this scenario, namely, that dissociative symptoms are related to endorsement of vague rather than specific items about childhood trauma. In study 1 (N = 43) and study 2 (N = 127), nonclinical participants completed standard measures of dissociation, childhood trauma, and fantasy proneness. We performed correlational and regression analyses on the data. Fantasy proneness and responses to broad trauma items, but not responses to factual trauma items predicted dissociation levels. This pattern of findings shows that the link between trauma and dissociation is considerably more complex than is often assumed. As well, it suggests that at least in nonclinical samples, dissociative symptoms may breed endorsement of vague trauma items.**



DISSOCIATION refers to disruptions and alterations in consciousness, memory, and perception[1] and involves experiences that range from relatively mild phenomena (e.g., feeling absorbed in an activity) to more pathological manifestations (e.g., an inability to recall important life events). In current clinical literature, the received view is that dissociative experiences originate from stressful life events, notably traumatic childhood events.[2] For example, in a recent study by Gast et al.,[3] 115 psychiatric inpatients completed a dissociation scale and a self-report measure of childhood trauma. A correlation of 0.47 ($P < .01$) was found between these two measures, which the authors interpreted as evidence for the idea that traumatic childhood experiences produce persistent dissociative symptoms.

This interpretation of the trauma-dissociation link is reiterated in many clinical[4] as well as nonclinical[5] studies. However, since longitudinal research is notoriously difficult to conduct, the majority of these studies are cross-sectional in nature and rely on self-reports of childhood trauma. And although their interpretation of childhood trauma as the causal antecedent of dissociative symptoms is not unreasonable, there might be other interpretations of the link between trauma and dissociation.[6,7] A case in point is the extensive research about the psychometric overlap between dissociation and a personality trait known as fantasy proneness. Fantasy proneness refers to a deep and long-lasting involvement in daydreaming, imagination, fantasizing, and storytelling. Fantasy proneness is a trait-like characteristic that is not necessarily pathological.[8] One recurrent finding in clinical[9] as well as nonclinical studies[10-16] is that there exists a substantial overlap between dissociative symptoms and fantasy proneness. The implication of this overlap is potentially far reaching. Thus, it may well be the case that individuals scoring high on fantasy proneness employ liberal criteria when they complete self-report scales tapping childhood maltreatment. This would amount to a model in which dissociation and fantasy proneness contribute to trauma self-reports rather than vice versa. Indirect evidence for such an interpretation comes from several sources. To begin with, there are reasons to believe that dissociative individuals overendorse items that address negative, but relatively mundane forms of life stress (e.g., "I have helped friends and not been helped in return").[17] Secondly, a structural equation modeling analysis performed on dissociation, fantasy proneness, absentmindedness, and trauma self-reports gathered in a large nonclinical sample showed that the correlational pattern was consistent with a causal model in which trauma self-reports are the product of the overlap between dissociation, fantasy proneness, and absentmindedness.[18] Thirdly, there is now considerable evidence from experimental studies on memory that relative to control partici-

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pants, individuals high on dissociation are more susceptible to exhibit memory distortions[19] and tend to produce false recognition responses.[11,20]

How might dissociation promote endorsement of trauma items? Self-report scales tapping traumatic childhood experiences usually contain a mix of items that ask for factual information (e.g., "Do you remember any kind of penetration by an adult?") and items that are more broadly formulated (e.g., "Do you recall an adult looking at you when you were less than fully dressed in a way that you suspect might have had a kind of sexual meaning for that adult?").[5] The latter category of items addresses beliefs and opinions and requires, as Schwarz[21] termed it, "disambiguation." In this process of disambiguation, imagination and subjective interpretation are crucial and it is here that fantasy proneness might come into play. If this line of reasoning is correct, one would expect that individuals scoring high on dissociation and fantasy proneness more frequently endorse vague trauma items than factual trauma items. The current studies tested this hypothesis by gathering data on dissociation, fantasy proneness, and childhood trauma in two samples of undergraduate students.

## STUDY 1: METHOD

### *Participants*

The sample consisted of 43 female psychology undergraduates who volunteered to participate in the current study in return for a small financial compensation. Participants were recruited from large undergraduate pools via advertisements that were hung among the psychology building and that invited people to participate in a study on personality characteristics. Written informed consent was obtained from all participants. Their mean age was 20.6 years (SD 2.4; range, 18 to 28 years). Participants completed several questionnaires in a small and quiet room. They were tested individually and were told that all information would be anonymous and confidential.

### *Instruments*

Participants completed the Dissociative Experiences Questionnaire (DES),[22] the Creative Experiences Questionnaire (CEQ),[23] and the short form of the Childhood Trauma Questionnaire (CTQ).[24] The DES (Cronbach's alpha = 0.94) is the standard measure of dissociative experiences. It contains 28 items that address typical dissociative phenomena like feelings of derealization, depersonalization, amnesia, and identity confusion. Sample items are "Some people have the experience of not being sure whether things they remember happening really did happen or whether they just dreamed them" and "Some people find that when they are watching television or a movie they become so absorbed in the story that they are unaware of other events happening around them." Respondents indicate on 100-mm visual analog scales (anchored 0% = never; 100% = always) how often they experience these phenomena in daily life. Scores are averaged across items to obtain a total DES score, with higher scores indicating higher levels of dissociative symptoms. Dubester and Braun[25] summarize evidence that supports the psychometric qualities of the instrument.

The CEQ (Cronbach's alpha = 0.76) is a brief self-report measure of fantasy proneness. Some CEQ items allude to the developmental antecedents of fantasy proneness. Other items have to do with intense elaboration of and profound involvement in fantasy and daydreaming. Still others pertain to the concomitants and consequences of fantasizing. Items were derived from Wilson and Barber's[26] typology of fantasy proneness. Sample item are: "As a child, I could very easily identify with the main character of a story or movie," "When I recall my childhood, I have very vivid and lively memories," and "I can recall many occurrences before the age of three." Yes-answers are summed to obtain a total score (range, 0 to 25), with higher scores indicating higher levels of fantasy proneness. Psychometric research shows that the CEQ possesses adequate reliability in terms of internal consistency and test-retest stability. Furthermore, the CEQ has predictive validity in the sense that certain categories of individuals who are known to exhibit fantasy prone characteristics display higher scores on this scale than do control individuals. For example, so-called fantasy role players were found to have a mean CEQ score of 13 while that of undergraduate samples is well below 8.[23]

The CTQ (Cronbach's alpha = 0.83) is a widely used self-report scale of traumatic childhood events. A number of recent nonclinical[8,27] as well as clinical[3,28] studies on trauma and dissociation employed this measure. The short form consists of 25 items that address five areas of childhood maltreatment, namely, emotional, physical, and sexual abuse and emotional and physical neglect. Each area is represented with five items. Items are rated on 5-point scales anchored 1 (never) and 5 (very often). A total CTQ score can be obtained by summing scores on individual items, of which some have to be recoded before this sum can be calculated. Bernstein et al.[29] showed that the psychometric qualities of the CTQ are satisfactory.

In study 1 and 2, we employed two additional CTQ indices, namely, CTQ-broad and CTQ-facts. CTQ-broad refers to the summed scores on 11 broadly formulated items or items that allude to beliefs and opinions about pas abuse (i.e., items 2, 5, 7, 8, 12, 14, 16, 17, 22, 24, and 25). Examples of such items are: "There was someone in my family who helped me feel important or special"; "I believe that I was emotionally abused," and "I believe that I was sexually abused." CTQ-facts refers to 14 items (i.e., items 1, 3, 4, 6, 9, 10, 11, 13, 15, 18, 19, 20, 21, and 23) that pertain to factual events like "I had to wear dirty clothes," "I got hit or beaten so badly that it was noticed by someone like a teacher, neighbor, or doctor," and "Someone threatened to hurt me or tell lies about me unless I did something sexual with them."

As a check on our assignment of items to the broad or the factual CTQ subscale, we had three naive psychologists rate CTQ items on a 3-point scale (0 = does not refer to facts; 1 = I'm not sure whether this item asks for facts or opinions; 2 = definitely refers to facts). Weighted inter-rater kappa circled around 0.75 and broad items received a lower score from the three raters than the factual items, means being 0.27 (SD 0.45) and 1.82 (SD 0.47): paired $t(32) = 14.4$, $P < .01$.

**Table 1. Mean Scores (and SD) on Dissociation (DES), Fantasy Proneness (CEQ), and Self-Reported Childhood Trauma (CTQ)**

| | Mean | SD | CEQ | Total CTQ | CTQ-broad | CTQ-facts |
|---|---|---|---|---|---|---|
| DES | 13.6 | 10.4 | 0.50* | 0.33* | 0.34* | 0.18 |
| CEQ | 6.0 | 3.7 | | 0.24 | 0.27 | 0.10 |
| Total CTQ | 31.9 | 5.9 | | | 0.94* | 0.75* |
| CTQ-broad | 15.7 | 2.3 | | | | 0.49* |
| CTQ-facts | 16.2 | 4.4 | | | | |

NOTE. Relevant Pearson product-moment correlations between measures are also shown (N = 43).

Abbreviations: Total CTQ, summed scores on CTQ items; CTQ-broad, summed scores on 11 broadly formulated CTQ items; CTQ-facts, summed scores on 14 factual CTQ items.

*$P < .05$, two-tailed.

## RESULTS

Table 1 shows mean DES, CEQ, and CTQ scores. Mean DES and CEQ scores are very similar to those found by other studies relying on undergraduate samples.[10,18] Eight participants (16%) had a DES score exceeding the clinical cut-off of 20 that has been recommended by some authors.[30] Gast et al.[3] reported for their psychiatric inpatients a mean CTQ score of 42.4 Not surprisingly, mean CTQ score in our nonclinical sample was well below that value, with only three participants (7%) displaying a mean CTQ score exceeding the mean CTQ score of the Gast et al. study.

Table 1 also shows Pearson product-moment correlations between DES, CEQ, and CTQ. As expected, dissociation not only correlated significantly with self-reported trauma, but also, and even more so, with fantasy proneness. Furthermore, the correlation of fantasy proneness with overall self-reported trauma (Total CTQ) remained nonsignificant, but that with endorsement of vague trauma items (CTQ-broad) approached significance ($r = 0.27$, $P = .09$; two-tailed). Most importantly, vague trauma items carried the significant association between dissociation and trauma. That is, the correlation between DES and CTQ-broad was significant, while that between DES and CTQ-fact fell short of significance.

The partial correlation between DES and CTQ-broad when controlling for the influence of fantasy proneness was 0.26 ($P = .10$; two-tailed). Thus, correcting for the influence of fantasy proneness led to a drop in associative strength (from 0.34 to 0.26).

To recapitulate, study 1 shows that in a small, nonclinical sample, it is responses to vague, but not specific trauma items that are related to dissociative symptoms. One could argue that due to its small sample size, study 1 was not able to catch sufficient variability in trauma self-reports. Another limitation of study 1 is that it employed a broad index of dissociation. Indeed, some authors have emphasized that there are two distinct types of dissociation.[31,32] One is a nonpathological form of dissociation that is relatively common among healthy samples and is closely related to absorption and imaginative involvement. The other type is pathological dissociation, but only a subset of DES items (i.e., DES-T items) would tap this malign form of dissociation. Eisen and Carlson[32] (p. 49) reasoned that "high scores on this subset of items are found almost exclusively among those with trauma-related or dissociative disorders." Following this line of reasoning, one would expect that positive responses to factual trauma items, but not responses to vague trauma items or fantasy proneness predict DES-T scores. Study 2 sought to test this prediction. More specifically, this study relied on a large nonclinical sample and focused on how DES-T scores relate to fantasy proneness as well as responses to broad and factual trauma items.

## STUDY 2: METHOD

### *Participants and Instruments*

Study 2 relied on a sample of 127 undergraduates at Maastricht University (92 women) with a mean age of 21.7 years (SD 2.3; range, 19 to 25). As in study 1, students were recruited from undergraduate pools via advertisements that invited students to participate in a study on personality characteristics. After their written informed consent had been obtained, participants volunteered to complete the scales that were also used in study 1: the DES (Cronbach's alpha = 0.94), the CEQ (Cronbach's alpha = 0.80), and the CTQ (Cronbach's alpha = 0.88). In study 2, however, we focused on a subset of DES items (i.e., items 3, 5, 7, 8, 12, 13, 22, and 27) that are thought to be especially sensitive to pathological forms of dissociation.[31] In short, DES-T items refer to the more severe forms of dissociation like, for example, hearing voices inside one's head and feeling as though one's body is not one's own. Following Eisen and Carlson,[32] individual responses to the DES-T items were averaged. Cronbach's alpha for the DES-T subscale was satis-

**Table 2. Mean Scores (and SD) on Pathological Dissociation Items (DES-T), Fantasy Proneness (CEQ), and Self-Reported Childhood Trauma (CTQ)**

| | Mean | SD | CEQ | Total CTQ | CTQ-broad | CTQ-facts |
|---|---|---|---|---|---|---|
| DES-T (DES) | 7.1 (14.4) | 10.5 (11.7) | 0.44* (0.49*) | 0.54* (0.49*) | 0.53* (0.47*) | 0.43* (0.41*) |
| CEQ | 5.9 | 4.0 | | 0.25* | 0.23* | 0.23* |
| Total CTQ | 31.4 | 7.7 | | | 0.91* | 0.89* |
| CTQ-broad | 14.6 | 4.4 | | | | 0.64* |
| CTQ-facts | 16.7 | 4.1 | | | | |

NOTE. Pearson product-moment correlations between measures are also shown (N = 127).
*$P < .05$, two-tailed.

factory (i.e., 0.87). Participants were tested individually and were informed that their responses were treated anonymously and confidential.

## RESULTS

Table 2 shows mean DES-T, CEQ, and CTQ scores. For the sake of completeness, psychometric information about the full DES scale is also shown. Note that mean DES, CEQ, and CTQ scores were similar to those found in study 1. Eight participants (6%) had a CTQ score above the mean that has been reported for psychiatric patients (i.e., 42.4).[3] Table 2 also gives Pearson product-moment correlations. As can be seen, the traditional DES measure was related to both fantasy proneness (CEQ) and self-reported trauma (CTQ). It was not the case that this pattern was completely different for the DES-T, because scores on this index were also significantly related to fantasy proneness and self-reported trauma. Additionally, DES-T correlated with broad, but also factual trauma items. However, unlike study 1, there was now a significant association between fantasy proneness and self-reported trauma. This connection was true for responses to broadly formulated (CTQ-broad) as well as those to factual trauma items (CTQ-factual).

Given this complex correlational pattern, we performed stepwise backward regression analysis with DES-T as the dependent variable and fantasy proneness, broad trauma items, and factual trauma items as predictors. Together, the three predictors explained 40% of the variance in DES-T [$R^2 = 0.40$, $F(3, 123) = 26.7$, $P < .01$]. However, in the final equation, only fantasy proneness and broad trauma items were retained. Removing factual trauma items did not lead to a significant drop in explained DES-T variance [$R^2 = 0.38$, $\Delta R^2 = -0.01$; $F(2, 124) = 38.9$, $P < .01$]. Thus, fantasy proneness and responses to broad trauma items are independent predictors of pathological dissociation, while responses to factual trauma items do not possess predictive power.

## DISCUSSION

The current results replicate the well-documented link between dissociative experiences and self-reported trauma.[2-5,27,28,33] However, they also demonstrate that at least in nonclinical samples, broadly formulated trauma items and/or trauma items that ask for beliefs or opinions carry this link. Furthermore, results of study 2 clearly indicate that fantasy proneness not only overlaps with dissociativity, but also with endorsement of trauma items. Note that several other recent studies found that fantasy proneness is related to self-reports of trauma.[9,18] For example, in their study on dissociation and trauma in substance abuse patients, Pekala et al.[9] found that the correlation between dissociative symptoms and self-reported childhood trauma was of a similar magnitude as that between fantasy proneness and self-reported childhood trauma, both *r*'s being 0.26 ($P < .05$). However, regression analyses led these authors to conclude that fantasy proneness was a far better predictor of dissociativity than self-reported sexual abuse. The current studies extend this finding by showing that in non-clinical samples, the overlap between fantasy proneness and dissociation is substantial, while that between responses to factual trauma items and dissociation is relatively small. Although we found in study 1 that fantasy proneness modulates the connection between dissociation and responses to vague trauma items, fantasy proneness did not fully explain this trauma-dissociation link. As well, the regression analysis of study 2 clearly showed that fantasy proneness and responses to vague trauma items are largely independent pre-

dictors of the more serious dissociative symptoms (DES-T).

One could argue that the difference between mild and severe abuse confounds our distinction between factual and broadly defined trauma items. Indeed, of the 11 CTQ items that constituted the broad childhood trauma dimension, five came from the emotional neglect subscale, three came from the emotional abuse subscale, while the physical and sexual abuse and physical neglect subscales were represented with only one item each. Of course, in nonclinical samples, mild childhood trauma will have a higher prevalence than severe childhood trauma and this may have contributed to our finding that the link between trauma and dissociation is largely carried by responses to vague trauma items. On the other hand, a recent study by Brunner et al.[33] illustrates that significant correlations between broad/mild trauma items and dissociativity do also emerge in a clinical context. There it inspires theoretical refinements of the traditional trauma-dissociation model. For example, Brunner et al. (p. 71) concluded that "therapists and researchers should be aware that even less severe forms of abuse and neglect may have a significant impact on the development of dissociative psychopathology in adolescents." Our data raise the possibility that in these cases, the causal direction may flow from dissociativity to disambiguating and endorsing vague trauma items. Our data also suggest that fantasy proneness may contribute to, but is not fully responsible for this process. Perhaps, then, other correlates of dissociativity are involved in the disambiguation and endorsement of vague trauma items. Neuroticism[16] and absentmindedness[34] may be relevant candidates in this respect. Their precise role in the trauma-dissociation link warrants further study.

One clear limitation of the current studies is that they relied on nonclinical samples. Thus, our findings require replication in clinical groups (e.g., patients with borderline personality disorder or patients selected for childhood abuse) and it might well be the case that our findings do not hold up in such samples. Meanwhile, the idea that traumatic childhood events cause dissociative symptomatology owes much of its popularity in current psychiatric literature to nonclinical studies demonstrating significant correlations between self-reports of trauma and dissociative symptoms. Our results indicate that this trauma-dissociation link might be primarily carried by responses to vague trauma items. Therefore, one should take seriously the possibility that at least in some samples, dissociativity may breed endorsement of vague trauma items.

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