RUNNING HEAD: Dissociation, trauma & suggestibility

Trauma and anxious attachment influence the relationship between suggestibility and dissociation: A moderated-moderation analysis

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Abstract

Introduction: Hypnotic suggestibility is elevated in the dissociative disorders but the relationship between dissociative tendencies and suggestibility in the general population seems to be constrained by additional factors. The diathesis-stress (DS) model stipulates that suggestibility interacts with trauma exposure to augment the propensity for dissociative states whereas the dual pathway to suggestibility (DPS) model proposes two developmental routes involving either dissociation preceded by trauma, or a healthy cognitive profile characterized by superior imagination.

Methods: This study sought to discriminate between these partially competing accounts and further considered the moderating role of anxious attachment. 209 participants completed psychometric measures of dissociative tendencies, trauma, and attachment, and a behavioural measure of suggestibility.

Results: In support of the DS model, trauma moderated the relationship between suggestibility and dissociation and, as predicted by the DPS model, dissociation moderated the relationship between trauma and suggestibility. Anxious attachment additionally moderated both effects. Model comparisons indicated that the DS model consistently provided a superior fit to the data. Further analyses showed that secure attachment independently predicted suggestibility, thereby supporting the non-dissociative pathway in the DPS model.

Conclusions: These results suggest that high suggestibility confers vulnerability to dissociative states in individuals exposed to trauma and displaying an anxious attachment style.

Keywords: attachment; dissociative disorders; heterogeneity; hypnotizability; trauma

Introduction

Dissociation and suggestibility have long been historically intertwined (Ellenberger, 1970; E. R. Hilgard, 1986). Dissociation is defined as the disruption of usually integrated dimensions of consciousness, such as awareness, memory, and identity (Spiegel et al., 2013). It is widely hypothesized to trigger heightened suggestibility, the propensity to experience involuntary shifts in conscious states, behaviour, and physiology, in response to suggestions (Terhune et al., 2017; Woody & Barnier, 2008), by disrupting awareness of mental states (metacognition) or cognitive control functions (Woody & Sadler, 2008). Suggestibility assessment typically involves the measurement of dissociative (e.g., amnesia) and functional neurological (e.g., paralysis) symptoms in response to suggestion (Kirsch, 1990) and patients with dissociative and functional neurological disorders and germane conditions seem to display elevated hypnotic suggestibility (Bell et al., 2011; Dell, 2017; Terhune & Cardeña, 2015). Nevertheless, the link between dissociation and suggestibility remains controversial in part because many researchers conflate elevated suggestibility with proneness to false memories rather than conceptualizing it as a multi-dimensional cognitive-perceptual function. Furthermore, suggestibility does not reliably correlate with dissociation in the general population (Alganami et al., 2017; P. V. Butler & Bryant, 1997; Dienes et al., 2009), and it has a mixed relationship with trauma exposure (Eisen & Carlson, 1988; Nash & Lynn, 1985; Rhue et al., 1990), which is widely considered to be the principal antecedent of dissociation (Dalenberg et al., 2012; Vonderlin et al., 2018).

Two partially competing accounts have been advanced to elucidate the relationships between dissociation and suggestibility (see Fig. 1), both of which are based on the observation that highly suggestible individuals represent a heterogeneous population (Brown & Oakley, 2004; Terhune & Cardeña, 2015). According to the *diathesis-stress* (DS) model (L. D. Butler et al., 1996; Dell, 2017), exposure to trauma among highly suggestible individuals will confer a greater propensity for dissociative states, including pathological forms of dissociation. By contrast, the *dual pathway to suggestibility* (DPS) model (Barber, 1999; Carlson & Putnam, 1989; J. R. Hilgard, 1979) proposes

one subset of participants who achieve high suggestibility through parental encouragement of imagination and a concomitant tendency to fantasize (imagery subtype), and another subset who achieve suggestibility through exposure to severe stress (dissociative subtype).

In support of the DS model, it has been shown that suggestibility partially mediates the relationship between trauma and symptoms in functional neurological disorder (FND) patients (Roelofs et al., 2002). Independent research implies that suggestibility may confer a predisposition to posttraumatic stress (Yard et al., 2008). Similarly, as predicted by the DPS model, multiple studies of highly suggestible individuals point to the presence of a dissociative subtype characterized by greater automaticity and involuntariness during hypnotic responding, and a history of exposure to stressful life events (King & Council, 1998; Putnam et al., 1995; Terhune et al., 2011b). Another study found that trauma exposure was associated with elevated suggestibility in FND patients (Moene et al., 2001). Despite these results, the predictions of the two models have undergone little empirical scrutiny and neither has incorporated the role of insecure attachment styles (e.g., anxious attachment), which are known to mediate or moderate the relationship between trauma and dissociation (Byun et al., 2016; Gušić et al., 2016). Research has also shown that insecure attachment is associated with high hypnotic suggestibility (Peter et al., 2011) or that highly suggestible subtypes, may be characterized by secure or insecure attachment (Peter et al., 2014), thereby warranting the incorporation of attachment as a moderator in both models (see Fig. 1).

**** Fig. 1 about here ****

The present study aimed to discriminate between the DS and DPS models. Toward this end, a large online sample completed a behavioural measure of non-hypnotic suggestibility and psychometric measures of dissociation, trauma, and attachment. We used moderation analyses to evaluate the predictions that trauma would moderate the relationship between suggestibility and dissociation (DS model) and that dissociative tendencies would moderate the relationship between trauma and suggestibility (DPS model). In addition, we tested our predictions that both effects would be further moderated by anxious attachment, particularly a high need for approval. Previous

research has documented associations between dissociation and anxious attachment (Schimmenti, 2016) and need for approval has been found to moderate the relationship between trauma and dissociation (Gušić et al., 2016). We supplemented these tests with exploratory analyses to identify whether the moderation effects were specific to particular dimensions of dissociation and attachment. A final aim was to evaluate a non-dissociative pathway to high suggestibility characterised by secure attachment and low trauma exposure.

Materials and methods

Participants

We expected that moderation effects would be larger in magnitude than the simple correlation between dissociation and hypnotic suggestibility, which is typically weak in magnitude (e.g., (Dienes et al., 2009). We expected a correlation in the range of r=.20 and thus required 194 participants to detect this effect (assuming two-tailed α=.05, 1-ß=.80); in turn, we pre-specified a minimum sample size of 200 participants, which meets recommended criteria for moderation analyses: $N>50+8k$ (where k=number of predictors) (Tabachnick & Fidell, 2007). We collected data past this number to increase statistical power and account for missing data and stopped data collection when a specific date in the academic term was reached. The final sample consisted of 209 participants (116 females), aged 18-61 (M=30.70, SD=9.27), with 2.8 years of higher education (SD=2.26), completed the study. Of these, 45% identified as British, 11% as American, with fewer than 10% from other countries. 86% identified as Caucasian, 7% as Asian, 6% as Mixed, and 1% as Black. Participants were recruited using the online platform www.prolific.ac and were compensated £3.35 for their time, as per the recommended guidelines of Prolific. All participants provided informed consent after detailed explanation of the procedures in accordance with the Declaration of Helsinki and local ethical approval.

Assessments

The *Traumatic Experiences Checklist* (TEC) is a 29-item self-report questionnaire (Nijenhuis et al., 2002) that measures exposure to potentially traumatic events including actual or threatened death, threat to one's own or others' bodily integrity, emotional neglect, emotional abuse, physical abuse, and sexual abuse. Participants rate each item in a binary fashion (0=no, 1=yes) with total scores ranging from 0-29. The TEC has strong psychometric properties (Nijenhuis et al., 2002; Schimmenti, 2018) and displayed good internal consistency (Cronbach's α=.70).

The *Dissociative Experiences Scale-II* (DES-II) is a 28-item self-report measure of dissociative tendencies (Carlson & Putnam, 1993). Participants rate their experience of each item using a 10-point-scale (0%=never to 100%=always). The DES-II yields total scores and three subscale scores: dissociative amnesia (8 items), absorption (9 items), and depersonalisation/derealisation (6 items). The DES-II exhibits strong test-retest reliability and construct-validity (Carlson & Putnam, 1993) and had good internal consistency (αs: .87-.94).

The *Attachment Style Questionnaire* (ASQ) (Feeney et al., 1994) is a 40-item self-report questionnaire in which participants rate themselves on different items pertaining to secure and insecure attachment using a 6-point scale (1=Strongly Disagree to 6=Strongly Agree). The scale measures five dimensions of attachment: Confidence in Self and Others (8 items) reflecting secure attachment; Discomfort with Closeness (10 items) and Relationships as Secondary (7 items) reflecting avoidant attachment; and Need for Approval (7 items) and Preoccupation with Relationships (8 items) reflecting anxious attachment. The ASQ has adequate test-retest reliability and construct-validity (Feeney et al., 1994; Fossati et al., 2003) and had good internal consistency (αs: .76-.86).

The *Brief Suggestibility Scale* (BSS) is a behavioural measure that was used to measure non-hypnotic suggestibility. Participants listened (via headphones) to six verbal suggestions that were drawn from different suggestibility scales (arm heaviness, dream, hands moving together, eye catalepsy, arm paralysis, and music hallucination) (K. S. Bowers, 1998; Shor & Orne, 1962; Weitzenhoffer & Hilgard, 1962) followed by behavioural tests. Participants subsequently rated

their responsiveness to each suggestion based on their behavioural responses using a continuous visual analogue scale (1=did not experience at all to 5=completely experiencing the suggestion) and their experience of involuntariness (0=did not experience at all, 1=voluntary and 5=involuntary (K. S. Bowers, 1981)), in order to capture the classic suggestion effect and correct for compliance (P. Bowers et al., 1988). Both measures had good internal consistency (αs: .76-.86). BSS scores were corrected for compliance by computing the sum of z-transformed BSS and Involuntariness scores (BSS-C). In an independent sample (N=58), BSS-C scores correlated with scores on a standardized hypnotic suggestibility scale (Shor & Orne, 1962), r=.49, p<.001 [95% CI=.31, .65], thereby demonstrating construct validity.

Procedure

Participants were recruited through Prolific (www.prolific.ac) and all measures were completed through Qualtrics (www.qualtrics.com). After reading an information page and providing informed consent, participants completed a demographics questionnaire and then the psychometric measures in counterbalanced order, followed by a debriefing.

Statistical Analyses

The data are freely available here: osf.io/wj9b6. One participant had missing data and was omitted from the analyses (Little, 1988). One multivariate and two univariate outliers were identified based on Mahalanobis distance and z-scores (>3), respectively, and were omitted, resulting in a final sample of 205 participants. Due to positively skewed data, DES-II scores were log-transformed. Other assumptions related to the residuals, distribution, linearity, homoscedasticity, collinearity, and independent errors were all met. Moderation analyses were performed using Hayes's PROCESS macro (v. 3.1) (Hayes, 2017) for SPSS (IBM, v. 22). Bootstrap resampling (5,000 samples) was used to estimate 95% confidence intervals. All analyses included a correction for heteroscedasticity (HC3) (Davidson & MacKinnon, 1993), as recommended by Hayes and Cai

(Hayes & Cai, 2007). Interaction variables were centered to have a mean of 0 prior to the analyses, and the Johnson-Neyman technique was used to compute the range of significance and simple slopes for the interaction analyses (Johnson & Neyman, 1936). We report unstandardized regression coefficients (Hayes, 2017); all analyses were two-tailed and used conventional significance thresholds (α=.05). The primary analyses consisted of two simple moderations and two moderated-moderations, which were followed by exploratory moderations (18 tests), and a single hierarchical regression examining a secure attachment pathway to suggestibility. We contrasted the two models for the moderation and moderated-moderation analyses separately using the Bayesian Information Criterion (BIC), with lower values reflecting superior model fit (Schwartz, 1978).

Results

Descriptive Data

Descriptive and inferential statistics for the dependent measures are presented in Table 1. The presented DES-II total and subscales values are prior to log transformations. BSS-C scores correlated weakly to moderately with all DES-II subscales and the ASQ:CS, but no other measures. TEC and DES-II scores were inter-correlated and tended to correlate with multiple ASQ insecure subscales.

**** Table 1 about here ****

Contrasting moderation models

Our first aim was to compare the DS and DPS models of dissociation and suggestibility (Fig. 1). The moderation analysis evaluating the DS model was significant, $F(3, 201)=10.84$, $p<.001$, accounting for approximately 10% of the variance in dissociation (DES-II), $R^2=.10$, BIC=143.14 (Fig. 2). Suggestibility (BSS-C), $b=.04$, $t(201)=2.99$, $p=.003$, and trauma (TEC), $b=.02$, $t(201)=2.91$, $p=.004$, were both independent significant predictors of dissociation. Critically, the central prediction of the model was supported: the suggestibility × trauma interaction was significant, $b=.01$, $t(201)=2.14$, $p=.03$, reflecting a significant improvement in the model, $\Delta R^2=.01$.

The simple slopes show that suggestibility did not significantly predict dissociation in participants reporting low trauma, b=.01, t(201)=.72, p=.47, but was a significant predictor in those who exhibited moderate, b=.04, t(201)=2.99, p=.003, and high levels of trauma, b=.06, t(201)=3.93, p<.001. The relationship between suggestibility and dissociation achieved significance when TEC scores were 2.65 or greater, b=.03, t(201)=1.97, p=.050, and this relationship was greatest for those exhibiting the highest TEC score (13), b=.11, t(201)=3.13, p=.002. Hence, these results support the DS model: suggestibility was associated with higher dissociative experiences only in those who had experienced a moderate to high level of trauma.

The analysis evaluating the DPS model was also significant F(3, 201)=6.70, p<.001, R^2=.07, BIC=844.93 (see Fig. 2). Dissociation was an independent significant predictor of suggestibility, b=1.14, t(201)=2.76, p=.006, whereas trauma was not, b=.02, t(201)=0.54, p=.59. Critically, the dissociation × trauma interaction significantly improved the model, b=.24, t(201)=2.16, p=.03, ΔR^2=.02. Trauma was not a predictor of suggestibility among low, b=-.06, t(201)=-0.89, p=.38, or medium, b=.02, t(201)=0.54, p=.59, dissociative participants, but was a significant predictor among high dissociative participants, b=.11, t(201)=2.29, p=.02. Trauma only began to predict suggestibility when log-transformed DES-II scores were 1.36 (DES-II: ~23) or greater, b=.08, t(201)=1.97, p=.050, with the highest DES-II score (log-transformed: 1.82; [~67]) exhibiting a stronger relationship, b=.20, t(201)=2.58, p=.01. These results indicate that participants were more suggestible when they exhibited higher levels of dissociation and trauma. However, the BIC was substantially lower for the DS than the DPS model, which suggests that the former provides a better fit to these data.

**** Fig. 2 about here ****

Contrasting moderated-moderation models

The second predictions of this study were that both moderation effects would be further moderated by need for approval (ASQ:NA), which was previously highlighted as representing a critical facet of anxious attachment in the relationship between trauma and dissociation (Gušić et al., 2016).

The moderated-moderation analysis evaluating the DS model was significant, $F(7, 197)=8.61$, $p<.001$, $R^2=.15$, BIC=160.07 (Fig. 3). Suggestibility, $b=.03$, $t(197)=2.64$, $p=.009$, and trauma, $b=.02$, $t(197)=2.06$, $p=.04$, were both independent significant predictors of dissociation, whereas, need for approval was not, $b=.01$, $t(197)=1.71$, $p=.09$. The two-way interactions did not achieve significance, suggestibility × trauma, $b=.01$, $t(197)=1.13$, $p=.26$; suggestibility × need for approval, $b=-.001$, $t(197)=-.57$, $p=.57$; trauma × need for approval, $b=.001$, $t(197)=.86$, $p=.39$. However, the central prediction was supported: the suggestibility × trauma × need for approval interaction was significant, $b=.002$, $t(197)=2.37$, $p=.02$, $\Delta R^2=.02$. Suggestibility predicted dissociation among participants with a low need for approval who had low, $b=.05$, $t(197)=2.01$, $p=.046$, or medium, $b=.04$, $t(197)=2.19$, $p=.03$, trauma scores but not in those with high trauma scores, $b=.02$, $t(197)=.88$, $p=.38$. By contrast, suggestibility was not a predictor of dissociation among participants with an average need for approval with low trauma scores, $b=.02$, $t(197)=1.01$, $p=.32$, but was significant among those with medium, $b=.03$, $t(197)=2.64$, $p=.009$, and high scores, $b=.05$, $t(197)=2.62$, $p=.009$. Finally, among participants with a high need for approval, suggestibility significantly predicted dissociation in those with high trauma scores, $b=.07$, $t(197)=3.80$, $p<.001$, but not low, $b=-.02$, $t(197)=-.74$, $p=.46$, or medium scores, $b=.03$, $t(197)=1.56$, $p=.12$. The interaction between suggestibility and trauma only began to predict dissociation when ASQ-NA scores were 27.5 or greater, $b=.01$, $t(197)=1.97$, $p=.050$, with the highest need for approval score (42) exhibiting a stronger relationship, $b=.03$, $t(197)=3.13$, $p=.002$. These results are consistent with our extension of the DS model and suggest that anxious attachment moderates the extent to which trauma moderates the relationship between suggestibility and dissociation.

**** Fig. 3 about here ****

The analysis evaluating the DPS model was also significant, $F(7, 197)=5.26$, $p<.001$, $R^2=.09$, BIC=866.89 (Fig. 3). Dissociation was an independent significant predictor of suggestibility, $b=.94$, $t(197)=2.08$, $p=.04$, but not trauma, $b=.01$, $t(197)=.20$, $p=.84$, or need for approval, $b=-.03$, $t(197)=-1.23$, $p=.22$. None of the two-way interactions achieved significance, trauma × dissociation, $b=.22$,

$t(197)=1.59$, $p=.11$, trauma × need for approval, $b=.003$, $t(197)=.35$, $p=.73$, and dissociation × need for approval, $b=-.03$, $t(197)=-.39$, $p=.70$. The predicted trauma × dissociation × need for approval interaction was suggestive, $b=.04$, $t(197)=1.86$, $p=.064$, $\Delta R^2=.01$. Trauma was not a significant predictor of suggestibility among those with a low need for approval in all dissociation groups, low: $b=.003$, $t(197)=.02$, $p=.98$; medium: $b=-.01$, $t(197)=-.14$, $p=.89$; high: $b=-.02$, $t(197)=.26$, $p=.79$. The same held for those with an average need for approval, low: $b=-.07$, $t(197)=.91$, $p=.36$; medium: $b=.01$, $t(197)=.20$, $p=.84$; high: $b=.08$, $t(197)=1.41$, $p=.16$. However, among participants with a high need for approval, trauma significantly predicted suggestibility in those who were highly dissociative, $b=.19$, $t(197)=2.85$, $p=.005$, but not in those who were low, $b=-.13$, $t(197)=1.21$, $p=.23$, or medium, $b=.03$, $t(197)=.42$, $p=.68$. The interaction began to predict suggestibility when ASQ-NA scores were 26.62 or greater, $b=.26$, $t(197)=1.97$, $p=.050$, with the highest score (42) exhibiting a stronger relationship, $b=.85$, $t(197)=2.51$, $p=.01$. These results are consistent with our proposal that the extent to which dissociation moderates the relationship between trauma and suggestibility is moderated by anxious attachment. Nevertheless, as in the moderation analyses, the BIC was substantially lower for the DS than the DPS model, thereby indicating that the former provides a better fit to these data.

Exploratory moderation analyses

Exploratory analyses sought to repeat the primary analyses using different DES-II and ASQ subscales to determine if the observed results were specific to particular dissociative experiences and attachment styles. In the evaluation of the DS model, only dissociative amnesia (DES-II-AMN) was predicted by the suggestibility × trauma interaction, $b=.01$, $t(201)=2.46$, $p=.01$, and the suggestibility × trauma × need for approval interaction, $b=.002$, $t(197)=2.02$, $p=.04$. The moderated-moderation model was significant with ASQ-DC with DES-II scores as the outcome, $b=.001$, $t(197)=2.16$, $p=.03$, and with ASQ:PR with dissociative amnesia as the outcome, $b=.002$, $t(197)=2.16$, $p=.03$. Similarly, for the DPS model, suggestibility was predicted by the trauma ×

dissociative amnesia interaction, b=.16, t(201)=1.99, p=.048, and the trauma × dissociative amnesia × need for approval interaction, b=.03, t(197)=2.02, p=.04. All other analyses were not significant, ps<.05. Although these exploratory analyses should be treated with caution, they highlight dissociative amnesia and the need for approval feature of an anxious attachment as the potential central driving factors in the moderation analyses.

Evaluating a secure pathway to high suggestibility

Our final analysis consisted of a hierarchical regression analysis examining secure attachment as a predictor of suggestibility. Trauma, dissociation, and need for approval were included as nuisance variables in the first block whereas confidence in self and others (ASQ:CS) was entered into the model in the second block. The first block was significant, F(3, 201)=3.88, p=.01, R^2=.06. Dissociation was an independent significant predictor of suggestibility, b=.21, t(201)=2.88, p=.004, sr^2=.04, but not trauma, b=.09, t(201)=1.19, p=.24, sr^2=.01, or need for approval, b=-.05, t(201)=.73, p=.46, sr^2<.01. Adding confidence in self and others in the second block significantly improved the model, ΔF(1, 200)=8.21, p=.005, ΔR^2=.04, b=.06, with the first-block predictors largely unchanged, dissociation: sr^2=.04; trauma: sr^2=.01; need for approval: sr^2<.01. These results suggest that secure attachment predicts suggestibility independently of dissociation, trauma, and insecure attachment, thereby corroborating the proposal of a non-dissociative pathway to high suggestibility in the DPS model.

Discussion

This study sought to contrast two models regarding the relationships among dissociation, trauma, suggestibility, and attachment. The first model (diathesis-stress [DS]) hypothesizes that trauma moderates the suggestibility-dissociation association (L. D. Butler et al., 1996) whereas the second (dual pathway to suggestibility [DPS]) proposes that dissociation moderates the trauma-suggestibility association (Barber, 1999; Carlson & Putnam, 1989; Terhune et al., 2011b). We

further sought to extend both models by incorporating the additional moderating influence of need for approval (a feature of anxious attachment), as suggested by previous research (Gušić et al., 2016). Although the two models were significant (or suggestive) in both sets of analyses, the DS model reliably provided superior fit, thereby suggesting it provides a more robust theoretical framework for studying the relations among these variables. Further analyses also identified a positive association between secure attachment and suggestibility that was independent of dissociation, trauma, and need for approval, thereby supporting the DPS proposal of distinct developmental pathways toward high suggestibility (Barber, 1999; J. R. Hilgard, 1979). These results suggest that the presence of an association between suggestibility and dissociation is constrained by exposure to traumatic events and the high need for approval feature an anxious attachment style.

The proposal that suggestibility confers a predisposition to dissociation when exposed to trauma (the DS model) is widely endorsed (L. D. Butler et al., 1996; Dell, 2017) but has not been the subject of systematic empirical scrutiny. In support of this account, one study showed that hypnotic suggestibility partially mediated the relationship between trauma and symptom severity in FND patients (Roelofs et al., 2002). The present results expand upon this work by corroborating this account within a moderation model, including a substantially larger sample size, and incorporating the role of anxious attachment, a recognized contributing factor to dissociation (Byun et al., 2016; Gušić et al., 2016; Ogawa et al., 1997; Schimmenti, 2016). In particular, we conceptually replicated results highlighting the specific importance of need for approval as a dimension of anxious attachment that seems to impact dissociation (Gušić et al., 2016). The present results also highlight the importance of the interaction among these variables and the need to move past simple bivariate models. For example, although a high need for approval was a significant second-order moderator it did not independently significantly predict dissociation or suggestibility, as previously observed (Gušić et al., 2016; Peter et al., 2011). However, in contrast to the widespread view that absorption represents a fundamental personality characteristic related to suggestibility (for a review, see

(Cardeña & Terhune, 2014), exploratory analyses highlighted the specific role of dissociative amnesia as a consistently robust variable in the moderation analyses. This result is consistent with research showing that patients with dissociative disorders and (highly dissociative) highly suggestible individuals have impaired short term memory and working memory (Farvolden & Woody, 2004; Guralnik et al., 2007; Khodaverdi-Khani & Laurence, 2016; Roca et al., 2006; Terhune et al., 2011b) (for counterevidence, see (Elzinga et al., 2007)). It also potentially aligns with the findings that these sub-populations are more responsive to amnesia suggestions (Bryant et al., 2001; Frischholz et al., 1992; Terhune & Brugger, 2011).

Although the DS model exhibited better fit to the data than the DPS model, the latter should not yet be discounted. In particular, it is the only theoretical account of heterogeneity among highly suggestible individuals (Terhune & Cardeña, 2015) and it provides a set of testable predictions for why patients with dissociative disorders exhibit high suggestibility and yet another subset of highly suggestible individuals are characterized by a healthy cognitive profile and a developmental trajectory involving parental encouragement of imagination (Barber, 1999; Carlson & Putnam, 1989; J. R. Hilgard, 1979). The present work provides further corroboration for these pathways and expands upon the proposed mechanisms of this model by highlighting the potential (moderating) roles of anxious and secure attachment, respectively (see also (Peter et al., 2011; Peter et al., 2014)). Elsewhere it has been hypothesized that a secure upbringing involving high quality parenting allows individuals to develop executive control and a reduced predisposition to an orienting system in childhood that relies upon parental intervention, resulting in low or moderate responsiveness to verbal suggestion (Posner & Rothbart, 2011). Insofar as suggestibility is heritable (Morgan, 1973), one way of reconciling these accounts is that a secure attachment style will only be associated with elevated suggestibility when coupled with parental encouragement of imagination (J. R. Hilgard, 1979) and/or a genetic predisposition for germane cognitive functions (Rominger et al., 2014). Aside from secure attachment and superior imagery abilities (Terhune et

al., 2011b), the cognitive and developmental characteristics of the non-dissociative pathway to suggestibility remain poorly understood and warrant further attention.

The present results suggest multiple potentially fruitful directions for future research on the association between dissociation and suggestibility. The effect sizes for both moderation results were small, with higher-order interactions uniquely accounting for only 1-2% of the variance in dissociation or suggestibility. Hence, these models can be easily extended by incorporating cognitive and perceptual functions, personality characteristics, genetic assays, and neurophysiological measures. Within a cross-sectional design, such as the present one, it is difficult to distinguish between the DS and DPS models and thus further research will benefit from longitudinal designs that examine how changes in each of these variables reciprocally influence the others. Further research should also aim to more carefully consider the extent to which different types of traumatisation may impact symptom expression (Şar et al., 2010; Schimmenti, 2018). Similarly, we did not consider the role of age of trauma exposure; future research will benefit from incorporating this potentially important factor into the design and analysis. The present methodology would be further strengthened through the use of structured interviews (George et al., 1985), and by incorporating the role of metacognition, which seems to be selectively impaired in high hypnotic suggestibility (Lush et al., 2016; Terhune & Hedman, 2017) and potentially in high dissociation (Perona-Garcelán et al., 2012). Independent research has implicated atypical activity, connectivity, or structural characteristics in anterior or posterior nodes of the default mode network in both posttraumatic stress disorder (Bluhm et al., 2009; Bremner, 2006; Menon, 2011) and high hypnotic suggestibility (Jiang et al., 2017; McGeown et al., 2009), and both dissociative tendencies and hypnotic suggestibility appear to be characterized by reduced frontal functional connectivity (Jamieson & Burgess, 2014; Soffer-Dudek et al., 2018; Terhune et al., 2011a). Finally, multiple studies have implicated the Val/Val polymorphism in the catechol-O-methyltransferase (COMT) gene in dissociation (Honma et al., 2018; Savitz et al., 2008) although the evidence for its role in suggestibility is more equivocal (Rominger et al., 2014; Szekely et al., 2010). Further research on

the DS and DPS models should aim to integrate these diverse literatures in order to elucidate the mechanisms underlying the associations observed here.

Despite the convergence of results and support for the two models, the present results need to be considered within the context of the study's limitations. First, the study used a cross-sectional design rendering us unable to determine the impact of changes in one or another variable on the remainder of the variables, such as the potential impact of trauma on dissociation. Although we have modelled the inter-relations among the variables with specific directions, it is likely that they interact in a reciprocal manner and this requires further consideration within the context of a longitudinal study. Second, although running the study online afforded us the opportunity to recruit a large sample, and thus achieve strong statistical power, we were unable to control for any potential confounding variables, such as environmental noise or participant engagement in the study. Nevertheless, the online platform we used has been found to deliver high data-quality, as it offers a diverse population in terms of geographical location and ethnicity, and participants have been found to be naïve to common research tasks (Palan & Schitter, 2018). However, the sample exhibited a high level of education; insofar as previous research suggests that childhood trauma is associated with lower educational achievement (Boden et al., 2007), the results might not generalize to other samples and a potential low level of reported trauma in our sample may have reduced the observed effects. A further limitation of the study is, except for the BSS, the use of self-report measures, which depend on participants' biases and memories. Although all of the measures are robust and well-validated, self-report measures of trauma are inferior to the corroboration of participants' reports with family or medical records (Lynn et al., 2014) and self-report measures are inferior to standardized interviews (George et al., 1985). Finally, there continues to be controversy regarding the factor structure of the DES-II (Schimmenti, 2016). Although our primary results concern DES-II total scores, the exploratory analyses that specifically implicated the DES-II amnesia subscale should be interpreted cautiously.

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Conflicts of Interest

The authors report no conflicts of interest.

References

Alganami, F., Varese, F., Wagstaff, G. F., & Bentall, R. P. (2017). Suggestibility and signal detection performance in hallucination-prone students. *Cogn Neuropsychiatry, 22*(2), 159-174. doi: 10.1080/13546805.2017.1294056

Barber, T. X. (1999). A comprehensive three-dimensional theory of hypnosis. In I. Kirsch, A. Capafons, E. Cardeña-Buelna & S. Amigo (Eds.), *Clinical hypnosis and self-regulation: Cognitive-behavioral perspectives* (pp. 21-48). Washington, DC: American Psychological Association.

Bell, V., Oakley, D. A., Halligan, P. W., & Deeley, Q. (2011). Dissociation in hysteria and hypnosis: Evidence from cognitive neuroscience. *Journal of Neurology, Neurosurgery, and Psychiatry, 82*(3), 332-339. doi: 10.1136/jnnp.2009.199158

Bluhm, R. L., Williamson, P. C., Osuch, E. A., Frewen, P. A., Stevens, T. K., Boksman, K., . . . Lanius, R. A. (2009). Alterations in default network connectivity in posttraumatic stress disorder related to early-life trauma. *J Psychiatry Neurosci, 34*(3), 187-194.

Boden, J. M., Horwood, L. J., & Fergusson, D. M. (2007). Exposure to childhood sexual and physical abuse and subsequent educational achievement outcomes. *Child Abuse Negl, 31*(10), 1101-1114. doi: 10.1016/j.chiabu.2007.03.022

Bowers, K. S. (1981). Do the Stanford Scales tap the "classic suggestion effect"? *International Journal of Clinical and Experimental Hypnosis, 29*(1), 42-53. doi: 10.1080/00207148108409142

Bowers, K. S. (1998). Waterloo-Stanford Group Scale of Hypnotic Susceptibility, Form C: manual and response booklet. *Int J Clin Exp Hypn, 46*(3), 250-268.

Bowers, P., Laurence, J. R., & Hart, D. (1988). The experience of hypnotic suggestions. *International Journal of Clinical and Experimental Hypnosis, 36*(4), 336-349. doi: 10.1080/00207148808410523

Bremner, J. D. (2006). Traumatic stress: effects on the brain. *Dialogues in Clinical Neuroscience, 8*(4), 445-461.

Brown, R. J., & Oakley, D. A. (2004). An integrative cognitive theory of hypnosis and high hypnotizability. In M. Heap, R. J. Brown & D. A. Oakley (Eds.), *The highly hypnotizable person: Theoretical, experimental and clinical issues* (pp. 152-186). New York, NY: Brunner-Routledge.

Bryant, R. A., Guthrie, R. M., & Moulds, M. L. (2001). Hypnotizability in acute stress disorder. *American Journal of Psychiatry, 158*(4), 600-604.

Butler, L. D., Duran, R. E., Jasiukaitis, P., Koopman, C., & Spiegel, D. (1996). Hypnotizability and traumatic experience: A diathesis-stress model of dissociative symptomatology. *American Journal of Psychiatry, 153*(7 Suppl), 42-63.

Butler, P. V., & Bryant, R. A. (1997). Assessing hypnotizability and dissociation in different contexts. *Contemporary Hypnosis, 14*(3), 167-172.

Byun, S., Brumariu, L. E., & Lyons-Ruth, K. (2016). Disorganized attachment in young adulthood as a partial mediator of relations between severity of childhood abuse and dissociation. *J Trauma Dissociation, 17*(4), 460-479. doi: 10.1080/15299732.2016.1141149

Cardeña, E., & Terhune, D. B. . (2014). Hypnotizability, personality traits and the propensity to experience alterations of consciousness. *Psychology of Consciousness: Theory, Research, and Practice, 1*, 292-307.

Carlson, E. B., & Putnam, F. W. (1989). Integrating research on dissociation and hypnotizability: Are there two pathways to hypnotizability? *Dissociation, 2*, 32-38.

Carlson, E. B., & Putnam, F. W. (1993). An update on the Dissociative Experience Scale. *Dissociation, 6*(1), 16-27.

Dalenberg, C. J., Brand, B. L., Gleaves, D. H., Dorahy, M. J., Loewenstein, R. J., Cardeña, E., . . . Spiegel, D. (2012). Evaluation of the evidence for the trauma and fantasy models of dissociation. *Psychol Bull, 138*(3), 550-588. doi: 10.1037/a0027447

Davidson, R., & MacKinnon, J. G. (1993). *Estimation and inference in econometrics*. Oxford, UK: Oxford University Press.

Dell, P. F. (2017). Is high hypnotizability a necessary diathesis for pathological dissociation? *J Trauma Dissociation, 18*(1), 58-87. doi: 10.1080/15299732.2016.1191579

Dienes, Z., Brown, E., Hutton, S., Kirsch, I., Mazzoni, G., & Wright, D. B. (2009). Hypnotic suggestibility, cognitive inhibition, and dissociation. *Consciousness and Cognition*.

Eisen, M. L., & Carlson, E. B. (1988). Individual differences in suggestibility: Examining the influence of dissociation, absorption, and a history of childhood abuse. *Applied Cognitive Psychology, 12*(7), S47-61.

Ellenberger, H. F. (1970). *The discovery of the unconscious: The history and evolution of dynamic psychiatry*. New York, NY: Basic Books.

Elzinga, B. M., Ardon, A. M., Heijnis, M. K., De Ruiter, M. B., Van Dyck, R., & Veltman, D. J. (2007). Neural correlates of enhanced working-memory performance in dissociative disorder: a functional MRI study. *Psychol Med, 37*(2), 235-245. doi: 10.1017/S0033291706008932

Farvolden, P., & Woody, E. Z. (2004). Hypnosis, memory, and frontal executive functioning. *International Journal of Clinical and Experimental Hypnosis, 52*, 3-26.

Feeney, J. A., Noller, P., & Hanrahan, M. (1994). Assessing adult attachment. In M. B. Sperling & W. H. Berman (Eds.), *Attachment in adults: Clinical and developmental perspectives* (pp. 128-152). New York, NY: Guilford.

Fossati, A., Feeney, J. A., Donati, D., Donini, M., Novella, L., Bagnato, M., . . . Maffei, C. (2003). Personality disorders and adult attachment dimensions in a mixed psychiatric sample: a multivariate study. *J Nerv Ment Dis, 191*(1), 30-37. doi: 10.1097/01.NMD.0000044443.94975.3A

Frischholz, E. J., Braun, B. G., Lipman, L. S., & Sachs, R. (1992). Suggested posthypnotic amnesia in psychiatric patients and normals. *American Journal of Clinical Hypnosis, 35*(1), 29-39.

George, C., Kaplan, N., & Main, M. (1985). *Adult Attachment Interview. Unpublished manuscript*. Berkeley, CA: University of California Berkeley.

Guralnik, O., Giesbrecht, T., Knutelska, M., Sirroff, B., & Simeon, D. (2007). Cognitive functioning in depersonalization disorder. *J Nerv Ment Dis, 195*(12), 983-988. doi: 10.1097/NMD.0b013e31815c19cd

Gušić, S., Cardeña, E., Bengtsson, H., & Sondergaard, H. P. (2016). Types of trauma in adolescence and their relation to dissociation: A mixed-methods study. *Psychol Trauma, 8*(5), 568-576. doi: 10.1037/tra0000099

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (2nd Ed.)*. New York, NY: Guilford Press.

Hayes, A. F., & Cai, L. (2007). Using heteroskedasticity-consistent standard error estimators in OLS regression: An introduction and software implementation. *Behav Res Methods, 39*(4), 709-722.

Hilgard, E. R. (1986). *Divided consciousness: Multiple controls in human thought and action (Rev. ed.)*. New York, NY: Wiley.

Hilgard, J. R. (1979). *Personality and hypnosis: A study of imaginative involvement (2nd ed.)*. Chicago, IL: University of Chicago Press.

Honma, M., Yoshiike, T., Ikeda, H., & Kuriyama, K. (2018). COMT genotype is associated with plasticity in sense of body ownership: a pilot study. *Psychol Res, 82*(3), 634-644. doi: 10.1007/s00426-017-0849-7

Jamieson, G. A., & Burgess, A. P. (2014). Hypnotic induction is followed by state-like changes in the organization of EEG functional connectivity in the theta and beta frequency bands in high-hypnotically susceptible individuals. *Frontiers in Human Neuroscience, 8*, 528. doi: 10.3389/fnhum.2014.00528

Jiang, H., White, M. P., Greicius, M. D., Waelde, L. C., & Spiegel, D. (2017). Brain activity and functional connectivity associated with hypnosis. *Cereb Cortex, 27*(8), 4083-4093. doi: 10.1093/cercor/bhw220

Johnson, P. O., & Neyman, J. (1936). Tests of certain linear hypotheses and their applications to some educational problems. *Statistical Research Memoirs, 1*, 57-63.

Khodaverdi-Khani, M., & Laurence, J.-R. (2016). Working memory and hypnotizability. *Psychology of Consciousness: Theory, Research, and Practice, 3*, 80-92.

King, B. J., & Council, J. R. (1998). Intentionality during hypnosis: An ironic process analysis. *International Journal of Clinical and Experimental Hypnosis, 46*(3), 295-313.

Kirsch, I. (1990). *Changing expectations: A key to effective psychotherapy*. Pacific Grove, CA: Brooks.

Little, R. J. A. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association, 83*, 1198-1202.

Lush, P., Naish, P., & Dienes, Z. (2016). Metacognition of intentions in mindfulness and hypnosis. *Neuroscience of Consciousness*, 1-10.

Lynn, S. J., Lilienfeld, S. O., Merckelbach, H., Giesbrecht, T., McNally, R. J., Loftus, E. F., . . . Malaktaris, A. (2014). The trauma model of dissociation: inconvenient truths and stubborn fictions. Comment on Dalenberg et al. (2012). *Psychol Bull, 140*(3), 896-910. doi: 10.1037/a0035570

McGeown, W. J., Mazzoni, G., Venneri, A., & Kirsch, I. (2009). Hypnotic induction decreases anterior default mode activity. *Consciousness and Cognition, 18*(4), 848-855. doi: 10.1016/j.concog.2009.09.001

Menon, V. (2011). Large-scale brain networks and psychopathology: A unifying triple network model. *Trends Cogn Sci, 15*(10), 483-506. doi: 10.1016/j.tics.2011.08.003

Moene, F. C., Spinhoven, P., Hoogduin, K., Sandyck, P., & Roelofs, K. (2001). Hypnotizability, dissociation and trauma in patients with a conversion disorder: An exploratory study. *Clinical Psychology & Psychotherapy, 8*(6), 400-410. doi: DOI 10.1002/cpp.293

Morgan, A. H. (1973). The heritability of hypnotic susceptibility in twins. *J Abnorm Psychol, 82*(1), 55-61.

Nash, M. R., & Lynn, S. J. (1985). Child abuse and hypnotic ability. *Imagination, Cognition, and Personality, 5*(3), 211-218.

Nijenhuis, E. R. S., Van der Hart, O., & Kruger, K. (2002). The psychometric characteristics of the Traumatic Experiences Questionnaire (TEC): First findings among psychiatric outpatients. *Clinical Psychology and Psychotherapy, 9*(3), 200-210.

Ogawa, J. R., Sroufe, L. A., Weinfield, N. S., Carlson, E. A., & Egeland, B. (1997). Development and the fragmented self: Longitudinal study of dissociative symptomatology in a nonclinical sample. *Development and Psychopathology, 9*(4), 855-879.

Palan, S. , & Schitter, C. (2018). Prolific.ac: A subject pool for online experiments. *Journal of Behavioral and Experimental Finance, 17*, 22-27.

Perona-Garcelán, S., García-Montes, J. M., Ductor-Recuerda, M. J., Vallina-Fernández, O., Cuevas-Yust, C., Pérez-Álvarez, M., . . . Gómez-Gómez, M. T. (2012). Relationship of metacognition, absorption, and depersonalization in patients with auditory hallucinations. *Br J Clin Psychol, 51*(1), 100-118. doi: 10.1111/j.2044-8260.2011.02015.x

Peter, B., Hagl, M., Bazijan, A., & Piesbergen, C. (2011). Hypnotic suggestibility and adult attachment. *Contemporary Hypnosis and Integrative Therapy, 28*(3), 171-186.

Peter, B., Vogel, S. E., Prade, T., Geiger, E., Mohl, J. C., & Piesbergen, C. (2014). Hypnotizability, personality style, and attachment: an exploratory study, part 1-general results. *Am J Clin Hypn, 57*(1), 13-40. doi: 10.1080/00029157.2014.906152

Posner, M. I., & Rothbart, M. K. (2011). Brain states and hypnosis research. *Conscious Cogn, 20*(2), 325-327. doi: 10.1016/j.concog.2009.11.008

Putnam, F. W., Helmers, K., Horowitz, L. A., & Trickett, P. K. (1995). Hypnotizability and dissociativity in sexually abused girls. *Child Abuse Negl, 19*(5), 645-655.

Rhue, J. W., Lynn, S. J., Henry, S., Buhk, K. , & Boyd, P. (1990). Child abuse, imagination, and hypnotizability. *Imagination, Cognition, and Personality, 10*(1), 53-63.

Roca, V., Hart, J., Kimbrell, T., & Freeman, T. (2006). Cognitive function and dissociative disorder status among veteran subjects with chronic posttraumatic stress disorder: a preliminary study. *J Neuropsychiatry Clin Neurosci, 18*(2), 226-230. doi: 10.1176/jnp.2006.18.2.226

Roelofs, K., Keijsers, G. P., Hoogduin, K. A., Naring, G. W., & Moene, F. C. (2002). Childhood abuse in patients with conversion disorder. *Am J Psychiatry, 159*(11), 1908-1913.

Rominger, C., Weiss, E. M., Nagl, S., Niederstatter, H., Parson, W., & Papousek, I. (2014). Carriers of the COMT Met/Met allele have higher degrees of hypnotizability, provided that they have good attentional control: A case of gene-trait interaction. *Int J Clin Exp Hypn, 62*(4), 455-482. doi: 10.1080/00207144.2014.931177

Şar, V., Taycan, O., Bolat, N., Özmen, M., Duran, A., Öztürk, E., & Ertem-Vehid, H. (2010). Childhood trauma and dissociation in schizophrenia. *Psychopathology, 43*(1), 33-40. doi: 10.1159/000255961

Savitz, J. B., van der Merwe, L., Newman, T. K., Solms, M., Stein, D. J., & Ramesar, R. S. (2008). The relationship between childhood abuse and dissociation. Is it influenced by catechol-O-methyltransferase (COMT) activity? *Int J Neuropsychopharmacol, 11*(2), 149-161. doi: 10.1017/S1461145707007900

Schimmenti, A. (2016). Dissociative experiences and dissociative minds: Exploring a nomological network of dissociative functioning. *J Trauma Dissociation, 17*(3), 338-361. doi: 10.1080/15299732.2015.1108948

Schimmenti, A. (2018). The trauma factor: Examining the relationships among different types of trauma, dissociation, and psychopathology. *J Trauma Dissociation, 19*(5), 552-571. doi: 10.1080/15299732.2017.1402400

Schwartz, G. (1978). Estimating the dimension of a model. *Annals of Statistics, 6*, 461-464.

Shor, R. E., & Orne, E. C. (1962). *Harvard Group Scale of Hypnotic Susceptibility, Form A*. Palo Alto, CA: Consulting Psychologists Press.

Soffer-Dudek, N., Todder, D., Shelef, L., Deutsch, I., & Gordon, S. (2018). A neural correlate for common trait dissociation: Decreased EEG connectivity is related to dissociative absorption. *J Pers*. doi: 10.1111/jopy.12391

Spiegel, D., Lewis-Fernandez, R., Lanius, R., Vermetten, E., Simeon, D., & Friedman, M. (2013). Dissociative disorders in DSM-5. *Annual Review of Clinical Psychology, 9*, 299-326. doi: 10.1146/annurev-clinpsy-050212-185531

Szekely, A., Kovacs-Nagy, R., Banyai, E. I., Gosi-Greguss, A. C., Varga, K., Halmai, Z., . . . Sasvari-Szekely, M. (2010). Association between hypnotizability and the catechol-O-methyltransferase (COMT) polymorphism. *Int J Clin Exp Hypn, 58*(3), 301-315. doi: 10.1080/00207141003760827

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics (5th ed)*. Boston, MA: Pearson Education, Inc.

Terhune, D. B., & Brugger, P. (2011). Doing better by getting worse: Posthypnotic amnesia improves random number generation. *PLoS One, 6*(12), e29206. doi: 10.1371/journal.pone.0029206

Terhune, D. B., & Cardeña, E. (2015). Dissociative subtypes in posttraumatic stress disorders and hypnosis: Neurocognitive parallels and clinical implications. *Current Directions in Psychological Science, 24*, 452-457. doi: 10.1177/0963721415604611

Terhune, D. B., Cardeña, E., & Lindgren, M. (2011a). Differential frontal-parietal phase synchrony during hypnosis as a function of hypnotic suggestibility. *Psychophysiology, 48*(10), 1444-1447. doi: 10.1111/j.1469-8986.2011.01211.x

Terhune, D. B., Cardeña, E., & Lindgren, M. (2011b). Dissociative tendencies and individual differences in high hypnotic suggestibility. *Cognitive Neuropsychiatry, 16*(2), 113-135. doi: 10.1080/13546805.2010.503048

Terhune, D. B., Cleeremans, A., Raz, A., & Lynn, S. J. (2017). Hypnosis and top-down regulation of consciousness. *Neurosci Biobehav Rev, 81*(Pt A), 59-74. doi: 10.1016/j.neubiorev.2017.02.002

Terhune, D. B., & Hedman, L. R. A. (2017). Metacognition of agency is reduced in high hypnotic suggestibility. *Cognition, 168*, 176-181. doi: 10.1016/j.cognition.2017.06.026

Vonderlin, R., Kleindienst, N., Alpers, G. W., Bohus, M., Lyssenko, L., & Schmahl, C. (2018). Dissociation in victims of childhood abuse or neglect: A meta-analytic review. *Psychol Med, 48*(15), 2467-2476. doi: 10.1017/S0033291718000740

Weitzenhoffer, A. M., & Hilgard, E. R. (1962). *Stanford Hypnotic Susceptibility Scale: Form C*. Palo Alto, CA: Consulting Psychologists Press.

Woody, E. Z., & Barnier, A. J. (2008). Hypnosis scales for the twenty-first century: What do we know and how should we use them? In M. Nash & A. J. Barnier (Eds.), *The Oxford handbook of hypnosis: Theory, research and practice* (pp. 255-281). Oxford, UK: Oxford University Press.

Woody, E. Z., & Sadler, P. (2008). Dissociation theories of hypnosis. In M. Nash & A. J. Barnier (Eds.), *The Oxford handbook of hypnosis: Theory, research and practice* (pp. 81-110). Oxford, UK: Oxford University Press.

Yard, S. S., DuHamel, K. N., & Galynker, II. (2008). Hypnotizability as a potential risk factor for posttraumatic stress: a review of quantitative studies. *Int J Clin Exp Hypn, 56*(3), 334-356.

Table 1. Descriptive statistics and correlations among variables (*N*=205)

Variable	*M(SDs)*	1	2	3	4	5	6	7	8	9	10
1. BSS-C	-0.034 (1.85)	-									
2. TEC	3.82 (2.89)	.12	-								
3. DES-II	17.10 (12.73)	.30***	.24***	-							
4. DES-II-AMN	4.17 (4.34)	.30***	.23***	.91***	-						
5. DES-II-ABS	10.08 (6.17)	.29***	.19**	.93***	.76***	-					
6. DES-II-DD	2.86 (3.56)	.22**	.26***	.85***	.72***	.67***	-				
7. ASQ-CS	29.83 (7.08)	.15*	-.18**	-.06	-.06	-.08	-.01	-			
8. ASQ-DC	40.06 (8.21)	-.07	.21**	.07	.09	.06	.06	-.71***	-		
9. ASQ-RS	19.13 (5.76)	.07	.02	.15*	.18**	.08	.16*	-.18**	.30***	-	
10. ASQ-NA	25.44 (6.68)	-.00	.16*	.16*	.20**	.14*	.09	-.52***	.40***	.10	-
11. ASQ-PR	29.55 (6.66)	.10	.17*	.18**	.21**	.18**	.08	-.46***	.39***	.19**	.68***

BSS-C: Brief Suggestibility Scale-Composite, DES-II: Dissociative Experiences Scale, DES-II-AMN: Amnesia, DES-II-ABS: Absorption, DES-II-DD: Depersonalisation/Derealisation, ASQ: Attachment Style Questionnaire, ASQ-CS: Confidence in self and others, ASQ-DC: Discomfort with closeness, ASQ-RS: Relationships as secondary, ASQ:NA: Need for approval, ASQ:PR Preoccupation with relationships.

**p*<.05, ***p*<.01, ****p*<.001

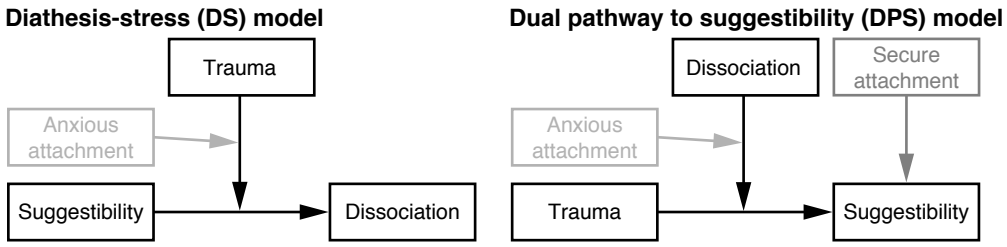

Fig. 1. Moderation and moderated moderation variants of the diathesis-stress (DS) and dual pathway to suggestibility (DPS) models. Black elements denote the original moderation models, light grey elements denote the extensions of the moderated-moderation models incorporating anxious attachment, and dark grey elements denote the second pathway in the DPS model.

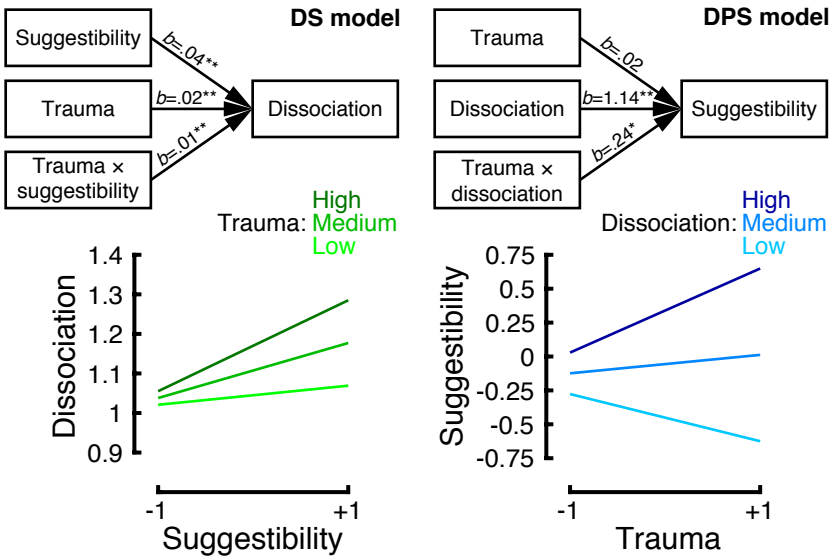

Fig. 2. Moderation results with unstandardized regression coefficients. Simple slopes show the linear relationships in the diathesis-stress (DS) and dual pathway to suggestibility (DPS) models.

* $p<.05$
** $p<.01$

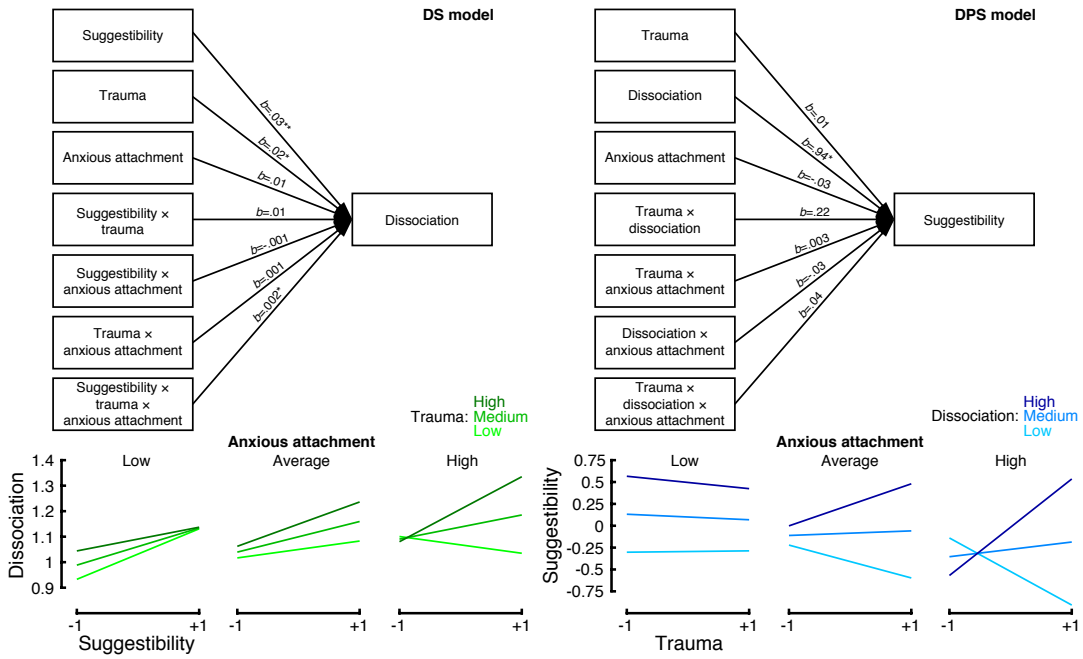

Fig. 3. Moderated-moderation results with unstandardized regression coefficients. Simple slopes show the linear relationships in in the extensions of the diathesis-stress (DS) and dual pathway to suggestibility (DPS) models.

* $p<.05$
** $p<.01$