


Betrayed? That's Me: Implicit and Explicit Betrayed Self-Concept in Young Adults Abused as Children

Brianna C. Delker ^{a,b} and Jennifer J. Freyd^b

^aDepartment of Psychiatry and Behavioral Sciences, University of Washington, Seattle, Washington, USA;

^bDepartment of Psychology, University of Oregon, Eugene, Oregon, USA

ABSTRACT

Attenuated awareness of betrayal, or “betrayal blindness,” is a proposed survival mechanism in relationships where awareness of betrayal will mobilize confront-or-withdraw responses that jeopardize a needed relationship. Empirical tests of betrayal blindness and its effects are hampered by the methodological conundrum of how to measure an absence of awareness. The purpose of this study was to evaluate the validity of a novel empirical method to measure implicit betrayed self-concept, the first step in a long-term research aim to operationalize “betrayal blindness.” Informed by betrayal trauma theory, we hypothesized that a history of betrayal within close childhood relationships (but not recent close relationships or “not-close” relationships) would predict implicit betrayed-self associations in young adulthood. An adaptation of the Implicit Association Test (IAT) and measured implicit and explicit betrayed-self associations and self-reported history of physical, sexual, and psychological abuse in 529 university undergraduates was designed. Internal consistency reliability of the betrayed self IAT was low but adequate. Hierarchical regression modeling revealed that history of abuse within close childhood relationships (but not recent close relationships or “not-close” relationships) predicted betrayed-self IAT scores. The effect size was small, $\beta = .12$, $p < .05$, 95% CI [.01, .07], $R^2 = .12$. In addition, history of betrayal by someone close (but not someone “not close”) at any age predicted increased explicit evaluations of the self as betrayed versus respected, a small effect size, $R^2 = .16$. Findings indicate that implicit betrayed self-concept can be measured empirically.

ARTICLE HISTORY

Received 21 February 2017

Revised 14 March 2017

Accepted 15 March 2017

KEYWORDS

Adult survivor; child abuse; Implicit Association Test (IAT); implicit cognition; measurement; self-concept; trauma

A teenager continues to publically support and compete for a coach who sexually abuses him after practice. A child begs to be returned from a devoted foster home to the care of her birth parents, who are responsible for chronic physical abuse. Years after the abuse, a young adult explains that the caregiver who sexually abused her in childhood was just joking around and playing games.

CONTACT Brianna C. Delker  bcdelker@uw.edu  Department of Psychiatry and Behavioral Sciences, University of Washington, 1959 NE Pacific Street, Box 356560, Seattle, WA 98195-6560.

© 2017 Taylor & Francis

These cases illustrate how some individuals betrayed within close relationships can think and behave as if they have not been betrayed at all. Diminished awareness of betrayal within close relationships is a form of “betrayal blindness” (Freyd, 1997). In the paradigmatic cases described above, each individual may possess accessible and accurate memories of their abuse (Becker-Blease & Freyd, 2017). But awareness that these events represent a betrayal is diminished. At the extremes, the continuum of betrayal blindness can include discontinuous memory for abuse and partial to complete forgetting of abuse that has occurred (Becker-Blease, DePrince, & Freyd, 2012; Freyd, 1999). Betrayal blindness can serve an important—if pernicious—function, helping victims of physical, sexual, and psychological abuse to maintain important relationships that they want or need (Freyd, DePrince, & Gleaves, 2007). The need for a relationship can extend even to basic needs for survival and belonging, as a child depends on a parent. According to betrayal trauma theory, diminished awareness of betrayal inhibits confront-or-withdraw responses to threat that could jeopardize a wanted or needed relationship. Potentially adaptive in the short term, betrayal blindness is proposed to have enormous costs for the individual in the short and long term (Freyd & Birrell, 2013).

Despite abundant clinical evidence that awareness of betrayal can be attenuated, empirical tests of betrayal blindness and its effects are hampered by the methodological conundrum of how to measure an absence of awareness. As the first step in a long-term research aim to operationalize “betrayal blindness,” we developed and pilot-tested a method to measure an historical trace that betrayal leaves in the mind: its lasting effect on the person’s self-concept. The self-concept is a set of beliefs about the self and its attributes (Baumeister, 2005). Self-concept develops as a result of ongoing interactions with others and new information about the self acquired across the lifespan, from infancy and childhood into adulthood (Demo, 1992). In experimental research with adults, self-concept has been assessed by measuring the strength of associations between the concept of self and various attributes (Greenwald et al., 2002)—in this case, the attribute “betrayed.” Importantly, self-concept derives from autobiographical information processed in two distinct modes: an *explicit*, or deliberate and verbalizable mode, and an *implicit*, or automatic and unconscious mode (Wilson, 2009). Information relevant to the self-concept is particularly likely to be processed in the implicit mode if this information contains an “unfavorable or threatening evaluation of oneself” that was acquired “a long time ago, particularly in early childhood” (Asendorpf, Banse, & Mücke, 2002, p. 381). Knowledge that one’s trust has been betrayed is threatening. It undermines shared assumptions about self and others within close relationships, and can undermine the relationship itself. For young adults abused as children, this unfavorable knowledge of the self as betrayed was acquired early in life, possibly over

repeated interactions within close relationships. As a result, we anticipated that the implicit betrayed self-concept would persist and would be measurable even in young adulthood.

Our main hypothesis in this study with young adults was that betrayal within close childhood relationships would predict an implicit betrayed self-concept in young adulthood. We assessed the implicit betrayed self-concept with an adaptation of the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998). The betrayed self IAT that we designed for this study measures the relative strength of implicit associations between the self and betrayed, versus the self and respected. Consistent with procedures developed in seminal IAT research (Greenwald, Nosek, & Banaji, 2003), we created a companion measure of the explicit betrayed self-concept, or the extent to which individuals explicitly associate the attribute “betrayed” (vs. the attribute “respected”) with the self. This measure of the explicit betrayed self-concept served an important function, as a measure of convergent validity for the self-report inventory of betrayal trauma that we used to assess the abuse history of young adults in this sample (Goldberg & Freyd, 2006). This was crucial, as the concepts of “betrayal” and “abuse” were not mentioned in this self-report inventory of behaviorally specific traumatic events, nor presented to participants as properties of the victimization experiences that they reported (Goldsmith, Freyd, & DePrince, 2009). Rather, betrayal was inferred based on the level of closeness between victim and perpetrator (with greater closeness hypothesized to indicate a greater degree of betrayal), and the level of dependence of victim on perpetrator (with greater dependence hypothesized for victims of childhood abuse, relative to abuse in young adulthood). In addition, to rule out the possibility that an explicit betrayed self-concept can be attributed to the global negative self-concept that accompanies depression, we controlled for depression history in our model predicting the explicit betrayed self-concept.

Method

Participants

Participants were college students at a large university in the northwestern United States. A total of 529 participants provided responses to the study measures that passed our quality assurance checks. Following careless response detection methods developed by Meade and Craig (2012), we administered three single-item quality assurance measures by the authors after both the implicit and explicit components of the study. The first two items assessed how much effort and attention participants devoted to study tasks, on a 5-point Likert-type scale ranging from *almost no* to *a lot of*. The third item asked: “In your honest opinion, should we use your data in our

analyses in this study?” with response options *yes* or *no*. Participants who responded *no* to the last item or who indicated that they expended *very little* of or *almost no* attention or effort to the IAT or the self-report measures were excluded from the study analyses. In addition, we excluded data from participants whose IAT response latencies were too rapid, per recommendations from Greenwald and colleagues (2003). We discarded data from 96 cases in total for the above reasons. This careless response rate of about 15% is consistent with rates of careless responding in survey-based research (Meade & Craig, 2012).

Study participants were mostly female (65%) and college-aged ($M = 19.54$, $SD = 2.10$), reflecting the demographics of the human subjects pool at the university. The ethnic identity distribution of this sample was 75% White or European American; 8.10% Asian; 1.50% Native Hawaiian or Other Pacific Islander; 2.10% Black or African American; 0.60% American Indian or Alaska Native; and 12.50% Multiethnic. One participant did not provide a response to the question on ethnicity. Approximately 10% of the sample self-identified as Hispanic or Latino.

Procedure

The university's Research Compliance Services organization approved the study protocol. Participants were recruited via the university's online research management system and received course credit for participating. Due to the sensitivity of the IAT measure to response-speed differences, English language fluency and “normal” or corrected-to-normal vision were selected as study inclusion criteria. Participants who met the study eligibility criteria signed up for this study based on schedule availability, without knowledge of study content. The electronic informed consent procedure included several questions to confirm that participants understood their rights; participants provided informed consent electronically by agreeing to participate. All participants completed the betrayed self IAT and then the self-report questionnaires. Research has found that completing the IAT before self-report measures does not affect the outcome of either measure (Nosek, Greenwald, & Banaji, 2005). The betrayed self IAT was administered online with Inquisit 4 Web. The self-report questionnaires were administered at Qualtrics.com.

Sample size determination

The intended sample size for this study, $N = 528$, was determined by an analysis conducted with G*Power 3.1. Required sample size was computed given alpha of .05, power of .9, three predictors, one tested predictor (high-betrayal trauma < age 12), and an anticipated effect size of .02. As the current study is the first to

examine betrayed-self implicit associations, we had to use a proxy estimate of anticipated effect size based on a self-concept IAT study conceptually similar to ours, which we determined to be a study that evaluated a traumatized self IAT (Lindgren, Kaysen, Werntz, Gasser, & Teachman, 2013). In the latter study, ΔR^2 upon inclusion of IAT scores to predict posttraumatic stress symptoms was .02. Thus, we anticipated an effect size of .02 for our model predicting IAT scores from betrayal trauma history. Required sample size using these parameters was $N = 528$. Anticipating that we would need to discard cases due to careless responding, we oversampled and, after data cleaning and removal of careless responders, reached a sample size of 529.

Measures

Betrayal trauma history

Betrayal trauma history was measured with the Brief Betrayal Trauma Survey (BBTS; Goldberg & Freyd, 2006), a 13-item self-report survey of potentially traumatic experiences that are low, medium, and high in betrayal, an index of the victim's relational closeness with the perpetrator. Participants indicate if each of the 13 events happened to them in each of three age ranges (before age 12, ages 12–17, age 18 and older), and if so, how often: *never* (0), *one or two times* (1), *more than that* (2). Sample items include “You were made to have some form of sexual contact, such as touching or penetration, by someone with whom you were very close (such as a parent or lover)” (high betrayal); “You were made to have such sexual contact by someone with whom you were not close” (medium betrayal); and “You were in a major earthquake, fire, flood, hurricane, or tornado that resulted in significant loss of personal property, serious injury to yourself or a significant other, the death of a significant other, or the fear of your own death” (low betrayal). Importantly, BBTS instructions and individual items do not prompt participants with the word “betrayal,” nor broad, subjective terms like “abuse,” but instead list specific events in concrete, behavioral terms. The BBTS has demonstrated good construct validity and test-retest reliability. Internal consistency of the BBTS items in this sample was very good ($\alpha = .87$). In the present study, betrayals that met a threshold for high-betrayal trauma before age 12 were summed into a single index representing the quantity/frequency of childhood high-betrayal trauma prior to age 12, with a total possible score from 0 to 6. “High betrayal age 12+” represents the experience of any high-betrayal trauma at ages 12 or older: *yes* (1) or *no* (0). “Medium betrayal at any age” represents the experience of medium-betrayal trauma at any age: *yes* (1) or *no* (0).

Betrayed self implicit association test

The IAT is a computerized sorting task that requires participants to use a keyboard to rapidly sort attribute words (e.g., words connoting the attribute

“betrayed” and words connoting “respected”) with target concepts (e.g., ME and NOT ME). In a critical block of the sorting task, ME and “betrayed” share a response key and NOT ME and “respected” share a response key; in the other critical block, ME and “respected” share a response key and NOT ME and “betrayed” share a response key. Participants who have a strong implicit betrayed-self association should be faster to sort the attribute words (betrayed, respected) with the corresponding target concept (ME, NOT ME) when ME/betrayed share a response key, than when ME/respected share a response key. The difference in reaction time for sorting words in these two critical blocks represents the IAT effect.

Categories and word stimuli for the betrayed self IAT were “me” (*me, self, my, mine*) and “not me” (*not me, other, they, them*), and “betrayed” (*betrayed, abused, shamed, violated*) and “respected” (*respected, nurtured, supported, protected*). Stimuli were derived from other self-concept IATs (e.g., Greenwald & Farnham, 2000; Lindgren et al., 2013) and conceptual and empirical work on betrayal, with consideration of standard IAT stimuli development guidelines (Nosek et al., 2005).

The betrayed self IAT was administered with standard IAT procedures (Greenwald et al., 2003). In the IAT, participants are first presented with stimuli words in the center of the screen, one at a time, and asked to sort the stimuli into the appropriate category (me/not me or betrayed/respected) using two keys. In separate blocks, participants learn to classify stimuli representing the concepts (me/not me) and the attributes (betrayed/respected). In the two critical blocks that follow, participants must sort stimuli words that flash one at a time in the center of the screen. In one of these critical blocks, participants sort stimuli words that represent either “me” or “betrayed” with one key, and words that represent either “not me” or “respected” with the other key. In the other critical block, “me” and “respected” words are sorted with one key, and “betrayed” and “not me” words are sorted with the other key.

IAT response latencies were scored with the standard IAT scoring algorithm (Greenwald et al., 2003). The IAT scoring algorithm generates a *D* score, the mean difference between the two critical blocks, divided by the pooled standard deviation of the blocks (Greenwald et al., 2003). In the betrayed self IAT, higher *D* scores indicate a stronger implicit association between the attribute “betrayed” and the self, than between the attribute “respected” and the self. In other words, participants with higher *D* scores sorted stimuli words faster when betrayed/me and respected/not me shared a response key, than when respected/me and betrayed/not me shared a response key.

Explicit measure of the betrayed self

We measured the explicit betrayed self-concept with three face-valid self-report questions assessing the extent to which the respondent explicitly

associates the attribute “betrayed” (vs. the attribute “respected”) with the self. Following instructions from Greenwald et al. (2003), the first item was a 5-point Likert-type item that assessed appraisal of the self as *betrayed rather than respected* (1), *betrayed and respected equally* (3), or *respected rather than betrayed* (5). The other two self-report items were in a “thermometer format” adapted from work by Greenwald and colleagues (2003). On two 5-point “thermometer” scales, participants indicated whether the attributes “betrayed” and “respected” are *strongly self* (1), *somewhat self* (2), *neither self nor other* (3), *somewhat other* (4), or *strongly other* (5). Following Greenwald and colleagues (2003), the two thermometer scales were combined by subtraction into a difference score; the difference score and the Likert-type item ($r = 0.59, p < .001$) were standardized; and the two standardized measures were combined by addition into an overall explicit measure of the self as betrayed (vs. respected).

Depression history

Depression history was assessed with a single item adapted from the Addiction Severity Index (McLellan et al., 1992), a measure with extensive psychometric evidence of its validity and test-retest reliability (McLellan, Cacciola, Alterman, Rikoon, & Carise, 2006). Participants were asked if they “have had a significant period of time in which you have experienced serious depression (sadness, hopelessness, loss of interest, difficulty with daily functioning)?” The three response options were: *yes, the past year*; *yes, in my lifetime (but not in the past year)*; and *no, not in my lifetime*. For the purposes of this analysis, we recoded this item into a binary categorical variable, coded 1 if the participant endorsed *yes* response and 0 if *no*.

Analysis plan

In addition to cases excluded for careless responding, as described above, eight cases were excluded automatically from the regression analyses described below because these cases were missing values on the BBTS or the depression history variable.

Prior research has found that IAT scores are weaker for participants experienced with one or more IATs (Greenwald et al., 2003). Before conducting the analyses in this study, we examined the relation between betrayed self IAT scores and prior IAT experience. We found that there was no correlation between betrayed self IAT scores and prior IAT experience. Nor was there a correlation between previous IAT experience and any other variable in the analysis, except for depression history ($r = 0.09, p = .038$), a control variable in the second model. As we could determine no reason why IAT experience would correlate with depression, and as IAT experience did not correlate with the main study variables, we assumed this

small correlation was a fluke and did not include previous IAT experience as a covariate in the study. Additionally, we examined the relation between gender and all study variables, and found no gender differences in any variables except for depression history, $\chi^2(1) = 5.13, p = .024$, with more females than expected reporting a history of depression. We included female gender as a covariate in the second model, described below, but removed it from the final model when it did not predict significant variance in the outcome variable.

Data were analyzed in SPSS Statistics Version 22. We tested a hierarchical linear regression model predicting betrayed self IAT scores from childhood high-betrayal trauma (before age 12), controlling for history of high-betrayal trauma at age 12 or older and history of medium-betrayal trauma at any age. We entered childhood high-betrayal trauma in the second step to test whether it explained additional variance in IAT scores above and beyond the possible effects of medium-betrayal trauma at any age and high-betrayal trauma at age 12 or older. Second, we tested a hierarchical linear regression model predicting explicit reports of the self as betrayed from childhood high-betrayal trauma (before age 12), controlling for history of medium-betrayal trauma at any age and high-betrayal trauma at age 12 or older. We entered participant history of depression in the second step of the analysis as a proxy for negative self evaluation. In both models, medium-betrayal trauma at any age and high-betrayal trauma at age 12 or older were entered into the model as binary categorical variables (see Measures section). This allowed for model tests of childhood high-betrayal trauma on betrayed self-concept controlling for the self-reported presence (vs. absence) of the other types of betrayal experiences, rather than their extent or degree, as we did not have a priori hypotheses about the latter.

Results

Table 1 presents descriptive statistics and intercorrelations among the primary study variables.

About one-quarter of the sample (24.76%) reported experiencing one or more experiences of betrayal by someone very close before age 12. The three forms of high-betrayal trauma assessed in this study were physical, sexual, and psychological abuse by someone very close. Co-occurrence of the different forms of high-betrayal trauma was common, with 37 individuals reporting exposure to two or more types of high-betrayal trauma ($n = 95$ reported one type of high-betrayal trauma only). The most common type of high-betrayal trauma prior to age 12 was being psychologically mistreated over a significant period by someone very close (80.91% of those who disclosed high betrayal before age 12), followed by physical assault by someone very close (35.11%). In addition, 16.03% of individuals who disclosed high-betrayal

Table 1. Means, standard deviations, and intercorrelations among the major study variables.

Measure	1	2	3	4	5	<i>M</i>	<i>SD</i>
1. Betrayed self implicit measure (IAT <i>D</i> score)						-.55	.31
2. Betrayed self explicit measure	.08					.00	1.74
3. High betrayal < age 12	.06	.32**				.50	1.05
4. High betrayal age 12+	-.05	.28**	.50**			.37	.48
5. Medium betrayal at any age	-.06	.17**	.29**	.40**		.48	.50
6. Depression history	.02	.31**	.26**	.29**	.19**	.57	.50

Note: High betrayal < age 12 is a continuous measure of the quantity/frequency of high-betrayal events before age 12, range 0–6. High betrayal age 12+ is a binary categorical variable coded 1 if the participant experienced any high-betrayal trauma at age 12 or older. Medium betrayal trauma at any age is a binary variable coded in the same way. Depression history is a binary variable coded 1 if the participant has had a significant period of time in which she has experienced depression, either in the past year or in her lifetime. The betrayed self explicit measure is a standardized composite measure with a mean of 0.

** $p < .01$.

trauma before age 12 were made to have sexual contact (touching or penetration) by someone very close.

At age 12 or older, more than one third of the sample (36.90%) was betrayed by someone very close. Individuals betrayed by someone very close in childhood experienced a significantly higher rate of betrayal by someone very close at age 12 or older (82.44%) compared to those without a history of childhood high-betrayal trauma (21.72%), $\chi^2(1) = 156.05$, $p < .001$. Similarly, individuals exposed to childhood high-betrayal trauma experienced a significantly higher rate (77.86%) of lifetime medium-betrayal trauma (betrayal by someone not close) compared to those without a history of childhood high-betrayal trauma (38.64%), $\chi^2(1) = 60.65$, $p < .001$.

We computed the internal consistency of the betrayed self IAT using a method from Greenwald et al. (2003) that correlates IAT scores for alternating couplets of trials. Internal consistency for the betrayed self IAT was .40 ($p < .001$). The sample-level correlation between the implicit (IAT) and explicit (self-report) betrayed-self measures was nearing but not statistically significant, $r = 0.08$, $p = .063$.

Table 2 presents statistical results for both regression models. The first hierarchical linear regression model predicted betrayed self IAT scores from betrayal history. Childhood high-betrayal trauma was a significant predictor of betrayed self IAT scores, $t(523) = 2.44$, $p = .015$ while controlling for other betrayal history (see Figure 1). History of high-betrayal trauma at older ages and history of medium-betrayal trauma at any age, the two covariates in the analysis, did not predict betrayed self IAT scores. The entry of high-betrayal trauma before age 12 into the second step of the model significantly increased the variance in betrayed self IAT scores explained by the model, $F_{\text{change}}(1, 523) = 5.95$, $p = .015$, $\Delta R^2 = .011$. The overall model explained a significant amount of variance in implicit betrayed-self associations, $F(3, 523) = 2.71$, $p = .044$, $R^2 = .015$.

Table 2. Multiple regression analyses predicting implicit and explicit betrayed-self evaluations from betrayal history.

Variable	Betrayed self IAT scores		Explicit betrayed-self evaluations	
	β	95% CI	β	95% CI
High betrayal age 12+	-.08	[-.12, .01]	.11*	[.03, .72]
Medium betrayal at any age	-.06	[-.10, .02]	.03	[-.21, .38]
High betrayal < age 12	.12*	[.01, .07]	.19**	[.16, .47]
Depression history			.23**	[.49, 1.07]
R^2	.12*		.16**	
F	2.71*		24.63**	
n	527		519	

Note: CI = confidence interval. β refers to the standardized regression model coefficients. Depression history was a covariate only for the analysis with explicit betrayed-self evaluations as the outcome variable.

* $p < .05$. ** $p < .001$.

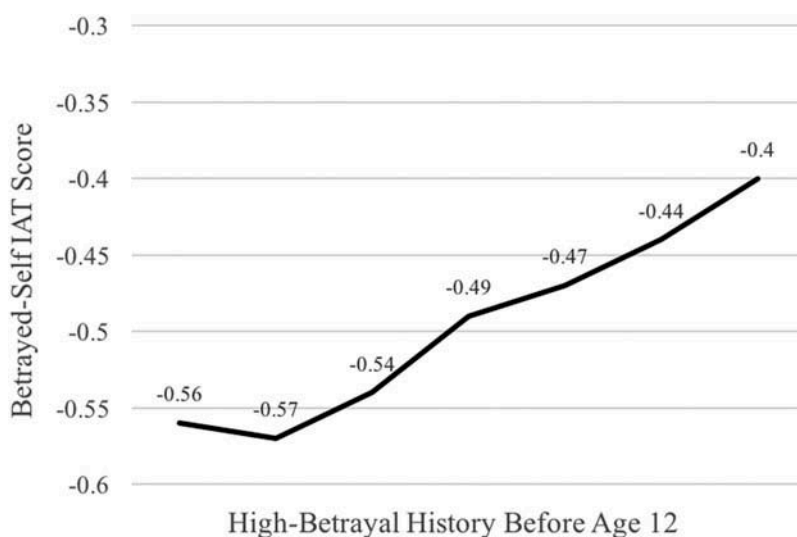


Figure 1. Results of regression analysis predicting betrayed-self IAT scores from quantity/frequency of high-betrayal history before age 12 (range 0–6). Betrayed self IAT scores in this figure are the unstandardized predicted residuals. At each level of betrayal history (0–6) before age 12, the model estimates betrayed-self IAT score while controlling for the effect of high-betrayal trauma at age 12 and older and medium-betrayal trauma at any age.

The second hierarchical linear regression model predicted explicit reports of the self as betrayed (vs. respected) from betrayal history and the binary covariate of lifetime depression history. In this model, high-betrayal trauma (betrayal by someone very close) both before and after age 12 predicted explicit reports of the self as betrayed. Lifetime history of medium-betrayal trauma (betrayal by someone not close) did not predict explicit betrayed-self evaluations. Depression history, a proxy for global negative self-evaluations, was entered in the second step of the model and predicted stronger explicit

endorsement of the self as betrayed, $t(514) = 5.25, p < .001$. The inclusion of depression history significantly increased the variance in the explicit measure explained by the model, $F_{\text{change}}(1, 514) = 27.58, p < .001, \Delta R^2 = .045$. The overall model explained a significant amount of variance in the betrayed-self explicit measure, $F(4, 514) = 24.63, p < .001, R^2 = .161$. We also tested a model without the depression covariate, and a model with female gender as a covariate, and the findings regarding the betrayal history predictors remained the same.

Discussion

Study findings indicate that an implicit concept of the self as betrayed (vs. respected) can be measured empirically, with an adaptation of the IAT. This finding is consistent with a larger body of research that has used implicit measures to assess attitudes that respondents are either unable or unwilling to report (Briñol, Petty, & Wheeler, 2006; Lee, Rogge, & Reis, 2010; Nock et al., 2010). Intriguingly, our findings suggest that implicit betrayed self-concept in young adults has developmental origins in abuse perpetrated within close childhood relationships, not within recent relationships. As predicted by betrayal trauma theory, strength of the implicit betrayed self-concept increased in relation to the degree of the victim's closeness to and dependence on the perpetrator. Although our data do not enable us to identify the perpetrator, 91.4% of child maltreatment perpetrators are parents and 7.5% are a parent's partner or another relative (U.S. Department of Health and Human Services, 2015), suggesting that these perpetrators who were "very close" were likely parents or other relatives. In this study, lifetime abuse perpetrated by someone who was "not close" to the victim did not predict implicit betrayed self-concept. Traumatic events involve less betrayal (and therefore comprise a relatively less threatening evaluation of oneself) when victims do not trust or depend on the perpetrator. These findings converge to support our prediction that information relevant to the betrayed self-concept is likely to be processed in the implicit mode when the betrayal was perpetrated early in development, within the context of a close relationship where the victim depends on and trusts the perpetrator.

A history of abuse within close relationships, but not "not-close" relationships, predicted explicit evaluations of the self as betrayed (vs. respected) in our sample. This finding is consistent with prior research demonstrating that lifetime interpersonal victimization involves a greater degree of perceived betrayal of trust than lifetime non-interpersonal victimization (DePrince, Zurbriggen, Chu, & Smart, 2010; Kelley, Weathers, Mason, & Pruneau, 2012). Extending prior research, we found that childhood abuse within close relationships was approximately twice as strong a predictor of the explicit betrayed self-concept as was recent abuse within close relationships.

On the one hand, this finding is consistent with literature on both self-concept (that it begins to develop in childhood) and on betrayal (that child victims typically depend on and trust perpetrators to a greater extent than do adult victims, making childhood trauma a higher-betrayal event than adult trauma). On the other hand, according to betrayal trauma theory, betrayal within close relationships can be accompanied by attenuated explicit awareness of betrayal. Our findings suggest that, among young adults possessing accessible memories of childhood abuse that they are willing to self-report, explicit evaluation of the self as betrayed is *not* attenuated, on average. One possible explanation for our finding is that the young adults in this sample who reported that they were abused as children may no longer depend on the perpetrators to the extent they once did and therefore may be more willing and able to explicitly acknowledge betrayal. Another possibility is that, even if explicit betrayed-self evaluations were assessed when these young adults were more dependent on the perpetrators, there would still not be, on average, attenuated awareness of the self as betrayed. Most likely, attenuated awareness of betrayal may be limited to a subgroup of individuals who are abused within close relationships.

In addition to the betrayal-history predictors of the explicit betrayed self-concept, past-year or lifetime history of depression predicted stronger explicit associations between the self and betrayed (vs. respected). Consistent with prior research (Goldsmith, Chesney, Heath, & Barlow, 2013; Springer, Sheridan, Kuo, & Carnes, 2003), interpersonal abuse at any age was associated with depression history in these young adults. A substantial body of research has demonstrated the presence of negative cognitive bias among those who are actively depressed and those cognitively vulnerable to depression due to adverse early experiences (Beck, 2008). Although interpersonal abuse was indeed associated with a history of depression in our sample, high-betrayal trauma predicted explicit betrayed-self associations above and beyond any possible negative evaluations of the self driven by depression.

Freyd's betrayal trauma theory predicts that "betrayal blindness" can involve unawareness that events are betrayals, and at the extremes, unawareness of the events themselves, as in the case of impaired memory for traumatic events (Anderson & Hanslmayr, 2014; DePrince et al., 2012; Freyd, Klest, & Allard, 2005; Sivers, Schooler, & Freyd, 2002). This point has an important implication for the interpretation of study findings. We relied on participants to self-disclose their history of physical, sexual, and psychological abuse, meaning that participants who have no memory of the events are misidentified in this sample as having no betrayal history. For these and other reasons (e.g., unwillingness to disclose), retrospective self-reports of childhood abuse contain unavoidable ambiguity (Widom, Czaja, & DuMont, 2015; Widom & Morris, 1997). A study of two decades of research on this subject found that as many as one third of individuals known to have

experienced abuse in childhood deny such abuse when interviewed in adulthood (Hardt & Rutter, 2004). Although limiting the sample to those with court-documented cases of child abuse would eliminate false negatives, the sample would no longer be representative of the natural ecology of betrayal and betrayal blindness. When abuse is perpetrated behind closed doors, secrecy and plausible deniability by family members prevail. A criminal investigation and court proceedings are likely to impact child and family betrayal awareness in ways that are atypical for abused children. As a result, in the present study, findings may not generalize to child welfare-investigated cases of child abuse and to cases of amnesia for childhood abuse.

In addition to the probable under-reporting of childhood abuse in this sample (and resultant underestimate of the association between childhood betrayal and the implicit betrayed self-concept), several other study limitations should be noted. First, while it is reasonable to assume that depression and negative self-evaluation are highly overlapping constructs, our self-report measure of depression was only a proxy for negative self-appraisal. Use of a categorical yes/no variable to assess depression history also resulted in reduced variability. Negative self-appraisal can be assessed with more specificity in future research. Second, the internal consistency of the betrayed-self IAT was adequate and statistically significant, but below the range of about .51–.77 reported by Greenwald and colleagues in a large internet dataset of IATs (2003). The average sample size of these internet datasets was approximately 20 times the size of our sample, raising the possibility that increased sample size would decrease random error in our analysis. Alternatively, there may be measurement errors in the betrayed-self IAT that can be rectified with revisions to the IAT stimuli.

An important direction for future research on the implicit betrayed self-concept is to evaluate the utility of the betrayed self IAT as a predictor of behavior (Greenwald, Poehlman, Uhlmann, & Banaji, 2009), such as revictimization within intimate relationships in adulthood. An implicit betrayed self-concept may be protective in childhood, when it may help guide predictions about the behavior of self and others and shape behavior that is preservative of a needed relationship. But the persistence of a betrayed self-concept may put the survivor at risk for orienting toward and entering into untrustworthy relationships. In addition, certain experiences—such as psychotherapy, a reparative relationship, or continued dependence on the perpetrator—may either attenuate or exacerbate the implicit betrayed self-concept across time. Longitudinal research with this study's betrayed self-concept measures will provide insight into the developmental timing of when implicit betrayed self-concept emerges, along with how and why it shifts over time. Developmental research on social and cognitive adaptations to childhood abuse within close relationships could assess both implicit and explicit betrayed self-concept over time, with the aim to understand the conditions

under which they are discrepant, one possible operational definition of “betrayal blindness.”

Child abuse perpetrated within close relationships presents a fundamental dissonance between the expectation that the perpetrator will love, support, and protect the child, and the reality that this person is also harming the child, a betrayal of trust. Those who depend on the perpetrator or otherwise cannot leave the relationship are required to adapt to this toxic contradiction. In this study, we found that a history of abuse within close childhood relationships was associated with both implicit and explicit evaluations of the self as betrayed into young adulthood, a lasting mark on the self-concept.

Acknowledgment

The authors gratefully acknowledge Kristen Lindgren, PhD, for her consultation during the development of the betrayed self IAT.

ORCID

Brianna C. Delker  <http://orcid.org/0000-0003-3323-4041>

References

- Anderson, M. C., & Hanslmayr, S. (2014). Neural mechanisms of motivated forgetting. *Trends in Cognitive Sciences*, *18*, 279–292. doi:10.1016/j.tics.2014.03.002
- Asendorpf, J. B., Banse, R., & Mücke, D. (2002). Double dissociation between implicit and explicit personality self-concept: The case of shy behavior. *Journal of Personality and Social Psychology*, *83*, 380–393. doi:10.1037/0022-3514.83.2.380
- Baumeister, R. F. (2005). Self-concept, self-esteem, and identity. In V. Derlega, B. Winstead, & W. Jones (Eds.), *Personality: Contemporary theory and research* (3rd ed., pp. 246–280). San Francisco, CA: Wadsworth.
- Beck, A. T. (2008). The evolution of the cognitive model of depression and its neurobiological correlates. *The American Journal of Psychiatry*, *165*, 969–977. doi:10.1176/appi.ajp.2008.08050721
- Becker-Blease, K., & Freyd, J. J. (2017). Additional questions about the applicability of “false memory” research. *Applied Cognitive Psychology*, *31*, 34–36. doi:10.1002/acp.3266
- Becker-Blease, K. A., DePrince, A. P., & Freyd, J. J. (2012). Why and how people forget sexual abuse: The role of traumatic memories. In V. Ardino (Ed.), *Post-traumatic syndromes in childhood and adolescence: A handbook of research and practice* (pp. 135–155). Chichester, UK: John Wiley & Sons.
- Briñol, P., Petty, R. E., & Wheeler, S. C. (2006). Discrepancies between explicit and implicit self-concepts: Consequences for information processing. *Journal of Personality and Social Psychology*, *91*, 154–170. doi:10.1037/0022-3514.91.1.154
- Demo, D. H. (1992). The self-concept over time: Research issues and directions. *Annual Review of Sociology*, *18*, 303–326. doi:10.1146/annurev.so.18.080192.001511
- DePrince, A. P., Brown, L. S., Cheit, R. E., Freyd, J. J., Gold, S. N., Pezdek, K., & Quina, K. (2012). Motivated forgetting and misremembering: Perspectives from betrayal trauma

- theory. In R. F. Belli (Ed.), *True and false recovered memories: Toward a reconciliation of the debate* (pp. 193–242). Nebraska Symposium on Motivation 58. New York, NY: Springer. doi:10.1007/978-1-4614-1195-6_7
- DePrince, A. P., Zurbriggen, E. L., Chu, A. T., & Smart, L. (2010). Development of the trauma appraisal questionnaire. *Journal of Aggression, Maltreatment & Trauma, 19*, 275–299. doi:10.1080/10926771003705072
- Freyd, J. J. (1997). Violations of power, adaptive blindness and betrayal trauma theory. *Feminism and Psychology, 7*, 22–32. doi:10.1177/0959353597071004
- Freyd, J. J. (1999). Blind to betrayal: New perspectives on memory for trauma. *The Harvard Mental Health Letter, 15*, 4–6.
- Freyd, J. J., & Birrell, P. (2013). *Blind to betrayal: Why we fool ourselves, we aren't being fooled*. Hoboken, NJ: John Wiley & Sons, Inc.
- Freyd, J. J., DePrince, A. P., & Gleaves, D. H. (2007). The state of betrayal trauma theory: Reply to McNally—Conceptual issues and future directions. *Memory, 15*, 295–311. doi:10.1080/09658210701256514
- Freyd, J. J., Klest, B., & Allard, C. B. (2005). Betrayal trauma: Relationship to physical health, psychological distress, and a written disclosure intervention. *Journal of Trauma & Dissociation: The Official Journal of the International Society for the Study of Dissociation (ISSD), 6*, 83–104. doi:10.1300/J229v06n03_04
- Goldberg, L. R., & Freyd, J. J. (2006). Self-reports of potentially traumatic experiences in an adult community sample: Gender differences and test-retest stabilities of the items in a brief betrayal-trauma survey. *Journal of Trauma & Dissociation: The Official Journal of the International Society for the Study of Dissociation (ISSD), 7*, 39–63. doi:10.1300/J229v07n03_04
- Goldsmith, R. E., Chesney, S. A., Heath, N. M., & Barlow, M. R. (2013). Emotion regulation difficulties mediate associations between betrayal trauma and symptoms of posttraumatic stress, depression, and anxiety. *Journal of Traumatic Stress, 26*, 376–384. doi:10.1002/jts.21819
- Goldsmith, R. E., Freyd, J. J., & DePrince, A. P. (2009). To add insight to injury: Childhood abuse, abuse perceptions, and the emotional and physical health of young adults. *Journal of Aggression, Maltreatment & Trauma, 18*, 350–366. doi:10.1080/10926770902901527
- Greenwald, A. G., Banaji, M. R., Rudman, L. A., Farnham, S. D., Nosek, B. A., & Mellott, D. S. (2002). A unified theory of implicit attitudes, stereotypes, self-esteem, and self-concept. *Psychological Review, 109*, 3–25. doi:10.1037//0033-295X.109.1.3
- Greenwald, A. G., & Farnham, S. D. (2000). Using the implicit association test to measure self-esteem and self-concept. *Journal of Personality and Social Psychology, 79*, 1022–1038. doi:10.1037/0022-3514.79.6.1022
- Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology, 74*, 1464–1480. doi:10.1037/0022-3514.74.6.1464
- Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the implicit association test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology, 85*, 197–216. doi:10.1037/0022-3514.85.2.197
- Greenwald, A. G., Poehlman, T. A., Uhlmann, E. L., & Banaji, M. R. (2009). Understanding and using the implicit association test: III. Meta-analysis of predictive validity. *Journal of Personality and Social Psychology, 97*, 17–41. doi:10.1037/a0015575
- Hardt, J., & Rutter, M. (2004). Validity of adult retrospective reports of adverse childhood experiences: Review of the evidence. *Journal of Child Psychology and Psychiatry, 45*, 260–273. doi:10.1111/j.1469-7610.2004.00218.x

- Kelley, L. P., Weathers, F. W., Mason, E. A., & Pruneau, G. M. (2012). Association of life threat and betrayal with posttraumatic stress disorder symptom severity. *Journal of Traumatic Stress, 25*, 408–415. doi:10.1002/jts.21727
- Lee, S., Rogge, R. D., & Reis, H. T. (2010). Assessing the seeds of relationship decay. Using implicit evaluations to detect the early stages of disillusionment. *Psychological Science, 21*, 857–864. doi:10.1177/0956797610371342
- Lindgren, K. P., Kaysen, D., Werntz, A. J., Gasser, M. L., & Teachman, B. A. (2013). Wounds that can't be seen: Implicit trauma associations predict posttraumatic stress disorder symptoms. *Journal of Behavior Therapy and Experimental Psychiatry, 44*, 368–375. doi:10.1016/j.jbtep.2013.03.003
- McLellan, A. T., Cacciola, J. C., Alterman, A. I., Rikoon, S. H., & Carise, D. (2006). The addiction severity index at 25: Origins, contributions and transitions. *The American Journal on Addictions/American Academy of Psychiatrists in Alcoholism and Addictions, 15*, 113–124. doi:10.1080/10550490500528316
- McLellan, A. T., Kushner, H., Metzger, D., Peters, R., Smith, I., Grissom, G., ... Argeriou, M. (1992). The fifth edition of the Addiction Severity Index. *Journal of Substance Abuse Treatment, 9*, 199–213. doi:10.1016/0740-5472(92)90062-S
- Meade, A. W., & Craig, S. B. (2012). Identifying careless responses in survey data. *Psychological Methods, 17*, 437–455. doi:10.1037/a0028085
- Nock, M. K., Park, J. M., Finn, C. T., Deliberto, T. L., Dour, H. J., & Banaji, M. R. (2010). Measuring the suicidal mind: Implicit cognition predicts suicidal behavior. *Psychological Science, 21*, 511–517. doi:10.1177/0956797610364762
- Nosek, B. A., Greenwald, A. G., & Banaji, M. R. (2005). Understanding and using the implicit association test: II. Method variables and construct validity. *Personality & Social Psychology Bulletin, 31*, 166–180. doi:10.1177/0146167204271418
- Sivers, H., Schooler, J., & Freyd, J. J. (2002). Recovered memories. In V. S. Ramachandran (Ed.), *Encyclopedia of the human brain* (Vol. 4, pp. 169–184). San Diego, CA and London, UK: Academic Press.
- Springer, K. W., Sheridan, J., Kuo, D., & Carnes, M. (2003). The long-term health outcomes of childhood abuse: An overview and a call to action. *Journal of General Internal Medicine, 18*, 864–870. doi:10.1046/j.1525-1497.2003.20918.x
- U.S. Department of Health and Human Services (USDHHS). (2015). *Child maltreatment 2013*. USDHHS, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. Retrieved from <http://www.acf.hhs.gov/programs/cb/research-data-technology/statistics-research/child-maltreatment>
- Widom, C. S., Czaja, S. J., & DuMont, K. A. (2015). Intergenerational transmission of child abuse and neglect: Real or detection bias? *Science, 347*, 1480–1485. doi:10.1126/science.1259917
- Widom, C. S., & Morris, S. (1997). Accuracy of adult recollections of childhood victimization: Part 2. Childhood sexual abuse. *Psychological Assessment, 9*, 34–46. doi:10.1037/1040-3590.9.1.34
- Wilson, T. D. (2009). Know thyself. *Perspectives on Psychological Science, 4*, 384–389. doi:10.1111/j.1745-6924.2009.01143.x