

## Shame and Dissociation in Survivors of High and Low Betrayal Trauma

Melissa G. Platt<sup>a</sup>, Jason B. Luoma<sup>a</sup>, and Jennifer J. Freyd<sup>b</sup>

<sup>a</sup>Portland Psychotherapy Clinic, Research, and Training Center, Portland, Oregon, USA; <sup>b</sup>Department of Psychology, University of Oregon, Eugene, Oregon, USA

### ABSTRACT

Shame and dissociation cooccur in trauma survivors. Bypassed shame theory posits that dissociation reduces pain by interrupting shame. We tested this theory by inducing dissociation. The hypothesis that higher baseline shame would predict larger increases in dissociation following the induction was marginally supported. However, in contrast to bypassed shame theory, shame scores increased rather than decreased following the induction. An alternative theory, betrayal trauma theory (BTT), proposes that dissociation reduces awareness of betrayal to protect a needed relationship. Shame might also serve this function. We aimed to replicate prior research indicating traumas higher in betrayal (HBT) are uniquely related to both shame and dissociation compared to traumas lower in betrayal (LBT). The hypothesis that HBT would relate to higher shame was supported. The results suggest that other explanations than bypassed shame theory, such as BTT, might better account for the relationship between shame and dissociation in trauma survivors.

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Dissociation, a disintegration of thoughts, emotions, physiological sensations, and behaviors that are normally integrated (Moskowitz, Schäfer, & Dorahy, 2009), is a common response to psychological trauma (Carlson, Dalenberg, & McDade-Montez, 2012; Dalenberg & Carlson, 2012). Chronic dissociation in response to traumatic events has been shown to have negative psychological and physical health consequences (Kendall-Tackett & Klest, 2009). There is little doubt that dissociation often negatively affects survivors in the long run, but what about in the short run? Are there any immediate adaptive consequences of dissociation?

Perhaps the oldest and most widely accepted theory suggesting an adaptive value of dissociation is one that assumes dissociation serves as a method of defense against potentially disruptive overwhelming affect associated with trauma (Freud, 1926/1959). In particular, dissociation has been hypothesized to protect against the shame that often cooccurs with trauma (Kaufman, 1989; H. B. Lewis, 1971; Nathanson, 1992).

Empirically, shame and dissociation have been shown to be associated with each other. In a study of female psychiatric patients, Talbot, Talbot, and Tu (2004) found that greater shame-proneness was associated with higher levels of dissociation. Irwin (1998) also found a positive correlation between shame and dissociation in a sample of college students. Thompson and Jaque (2013) found an association between self-reports of dissociation and shame in a nonclinical sample of dancers and athletes. Although these studies have demonstrated that shame and dissociation tend to cooccur, they have contributed little to understanding the function of dissociation in relation to shame, but have merely demonstrated that they are related.

The most broadly accepted theory addressing the function of dissociation in relation to shame holds that dissociation is a defensive means of bypassing the painful shame state (Kaufman, 1989; H. B. Lewis, 1971; Nathanson, 1992). H. B. Lewis (1971) first articulated the idea of bypassed shame. She proposed that shame is such a threat to one's sense of identity that ashamed individuals will develop an arsenal of tools to escape feeling it. Among these tools are denial of feeling ashamed, repression or holding back of shame, and dissociation of shame from awareness. Nathanson (1992) identified four methods of avoiding or bypassing shame: avoidance, attack self, attack other, and withdraw. In a study of compassion training for people with high shame and self-criticism, Gilbert and Proctor (2006) stated, "Control of internally aversive experiences can be via dissociation, substance misuse, cutting oneself, reminding oneself of one's faults and weaknesses or trying to rid oneself of 'bad things inside me'" (p. 360). Although theories of bypassed shame are commonly accepted, there are no direct data relating to whether dissociation allows a person to bypass or avoid painful feelings of shame.

An alternative explanation for the shame–dissociation relationship comes from betrayal trauma theory (BTT; Freyd, 1996). According to this theory, shame and dissociation could both function to protect a needed relationship in the short run. Traumatic events high in betrayal (HBT) are those characterized by violation of trust by someone who is trusted, or depended on for survival, whereas low betrayal traumas (LBTs) are no less severe, but do not involve violation of trust. BTT posits that HBT should lead to dissociation of some elements of the abuse from awareness, such that the victim's unawareness protects the needed relationship with the perpetrator. Empirical findings demonstrate that greater lifetime experience of HBT is related to increased levels of dissociation (Freyd, Klest, & Allard, 2005; Goldsmith, Freyd, & DePrince, 2012; Hulette et al., 2008). Empirical findings also demonstrate a relationship between dissociation and the ability to disconnect from awareness of trauma-relevant stimuli, such that in a divided attention task, high dissociators have impaired memory for words associated with trauma, but not for neutral words (DePrince & Freyd, 2004).

According to BTT, in the case of dissociation, the victim attends to the love and positive connection in the relationship while keeping the abuse out

of awareness. In the case of shame, the victim might attribute her negative emotions to her own perceived flaws and inadequacies rather than recognizing the harm caused by a trusted person (Platt & Freyd, 2012). In support of a BTT conceptualization of the function of shame, in a previous study, we found that HBT survivors, but not LBT survivors, experienced an increase in both dissociation and shame in response to interpersonal threat, whereas LBT, but not HBT survivors experienced an increase in fear, but not shame or dissociation, in response to noninterpersonal threat (Platt & Freyd, 2015). These findings support the proposition that shame and dissociation both have a special relationship with HBT. We wonder whether, rather than dissociation serving as a defense against shame, shame and dissociation might tend to cooccur because they both serve as mechanisms of betrayal blindness (Freyd, 1996), protecting the relationship while the abuse is ongoing, but lingering after the abuse ends and leading to psychological, physical, and relational health problems in the long run (Covert, Tangney, Maddux, & Heleno, 2003; Dickerson, Gruenewald, & Kemeny, 2009; Leskala, Dieperink, & Thuras, 2002). As the theory of bypassed shame is often adopted by therapists, and has not been tested, our primary aim was to examine the theory of bypassed shame in the laboratory. If the theory of bypassed shame were true, we would expect that people with high shame at baseline would be more prone to dissociation in response to a dissociation induction, and we would also expect that the dissociation would lead to a reduction in shame. That is, dissociation would function to cut off or bypass shame. To the extent that bypassed shame theory is not supported, alternative models of the interplay between shame and dissociation will warrant consideration, including a betrayal blindness model of shame. In contrast to bypassed shame theory, BTT would suggest that both shame and dissociation should increase concurrently as they mutually facilitate betrayal blindness. We also predicted that HBT experience would relate to higher shame at baseline. We based this prediction on previous research revealing higher shame in survivors of interpersonal compared to noninterpersonal trauma (Amstadter & Vernon, 2008; Platt & Freyd, 2015). Finally, also based on the results of previous research (Platt & Freyd, 2015), we expected that dissociation would be related to shame, not fear, and therefore predicted that feelings of fear would not lead to an increase in dissociation following a dissociation induction.

Women report a higher rate of HBT, whereas men report a higher rate of LBT (Goldberg & Freyd, 2006). Likewise, psychological outcome of exposure to HBT differs by gender (Kaehler & Freyd, 2012; Tang & Freyd, 2012). In addition, women might be more shame-prone compared to men due to their relatively lower social status (H. B. Lewis, 1987). This research focuses on women to simplify interpretation of the data pertaining to betrayal trauma, dissociation, and shame. In this study, a sample of women who had

experienced trauma were induced to dissociate in the laboratory to study the relationship between trauma type, shame, and dissociation.

## Method

### *Participants*

One hundred twenty-seven participants were recruited via SONA Systems, the University of Oregon's system for online participant recruitment and data management. Participants were prescreened for a history of at least one experience of psychological trauma using the Brief Betrayal Trauma Survey (BBTS; Goldberg & Freyd, 2006), and were also prescreened for female gender. Participant demographics reflect the demographics of the Human Subjects Pool at the University of Oregon. The mean participant age was 19.9 ( $SD = 3.45$ ; range = 17–52). Seventy-five percent of the sample identified as White, 11% Asian, 4% African American, 2% Native Hawaiian or other Pacific Islander, 1% American Indian or Alaskan Native, and 7% other.

### *Measures*

#### *State Shame and Guilt Scale*

The State Shame and Guilt Scale (SSGS; Marschall, Sanftner, & Tangney, 1994) is a self-rating scale of current feelings of shame, guilt, and pride. Of the original 15 items, only the 5 shame items were included in the study. Examples of shame items include, “I want to sink into the floor and disappear” and “I feel like I am a bad person.” In Marschall et al.'s (1994) study, participants reported higher levels of shame following a shame induction, as compared to those not receiving an induction. Additional convergent validity has been demonstrated with a different measure of state shame (Platt & Freyd, 2012). Reliability of the SSGS Shame subscale with the sample for this study was  $\alpha = .90$ .

#### *Brief Betrayal Trauma Survey*

The BBTS (Goldberg & Freyd, 2006) is a 14-item self-report measure. Items distinguish between noninterpersonal events (e.g., a major car accident) and interpersonal events perpetrated by someone close or not close (e.g., assault). Each item is assessed before age 12, at ages 12 to 17, and at age 18 or older. For each event, the participant is asked to respond yes or no according to whether or not the event ever happened to him or her. Construct validity has been demonstrated based on agreement between traumatic events endorsed on the BBTS and an existing trauma inventory (DePrince, 2001). Reliability of the BBTS with the sample for this study was  $\alpha = .83$ .

### ***State Scale of Dissociation***

The State Scale of Dissociation (SSD; Krüger & Mace, 2002) is a 56-item scale factor analyzed to include identity confusion, conversion, amnesia, identity alteration, and hypermnesia subscales. The authors of the scale provided evidence of good discriminant and convergent validities as well as good content and predictive validities. They also found good internal consistency and split-half reliability. Prior to inclusion in this study, the SSD was pilot tested using a dissociation induction (Zoellner, Sacks, & Foa, 2007) and only items with suitable variability (Items 1–24) were retained and used in this study. Reliability of the retained SSD items with this sample was  $\alpha = .93$ .

### ***Positive and Negative Affect Schedule–Expanded Form, Fear subscale***

The Fear subscale of the Positive and Negative Affect Schedule–Expanded Form (PANAS–X; Watson & Clark, 1994) consists of six mood states that participants are asked to endorse on a 5-point Likert scale. Mood states assessed include afraid, scared, frightened, nervous, jittery, and shaky. Construct validity of the PANAS–X Fear subscale has been demonstrated in that fear items loaded onto a single factor in a principal factor analysis and no items from other scales loaded onto the fear factor (Watson & Clark, 1994). Reliability of the PANAS Fear subscale with the sample in this study, measured at Time 1, was  $\alpha = .82$ .

### ***Procedure***

Following the prescreening for trauma experience using the BBTS and the prescreening for female gender, participants were invited to the Dynamics Lab at the University of Oregon Psychology Department to complete the study. During the informed consent procedure, participants were notified that participation was voluntary and that they could choose to leave at any time. The informed consent process took place with a trained research assistant in the lab. Participants were given the opportunity to ask questions prior to beginning the study. Study questionnaires were administered on a lab computer via Qualtrics software. Prior to the dissociation induction, participants completed a demographics questionnaire and the BBTS, SSGS Shame scale, SSD, and PANAS–X Fear subscale. After the induction, participants completed the SSGS, SSD, and PANAS–X once more.

### ***Dissociation induction***

The dissociation induction asked participants to recount up to four experiences in which they knew they should feel an emotion and yet felt detached from the emotion and to write about those situations. The example given to participants involves feeling happy at a graduation without fully experiencing

happiness (Zoellner et al., 2007). Next, a series of phrases such as, “There are days when I really lose track of time,” and, “What’s happening to me feels unreal,” appeared on the screen in front of them. Next there was a period of guided reflection on the disconnected feeling (“Now that you’re feeling very detached, concentrate on that feeling . . .”). This induction was chosen for this study, because unlike other dissociation inductions (see Leonard, Telch, & Harrington, 1999, for a review), this method does not mention traumatic experiences. The induction was created by Zoellner and colleagues (2007), who provided initial evidence of its effectiveness in a study of women with and without posttraumatic stress disorder (PTSD). The authors found that, compared to a serenity induction, the dissociation induction increased dissociation according to two separate measures. Supporting convergent validity, the authors also found that people who reported more dissociation in their everyday lives experienced a larger increase in dissociation in response to the dissociation induction, but not the serenity induction.

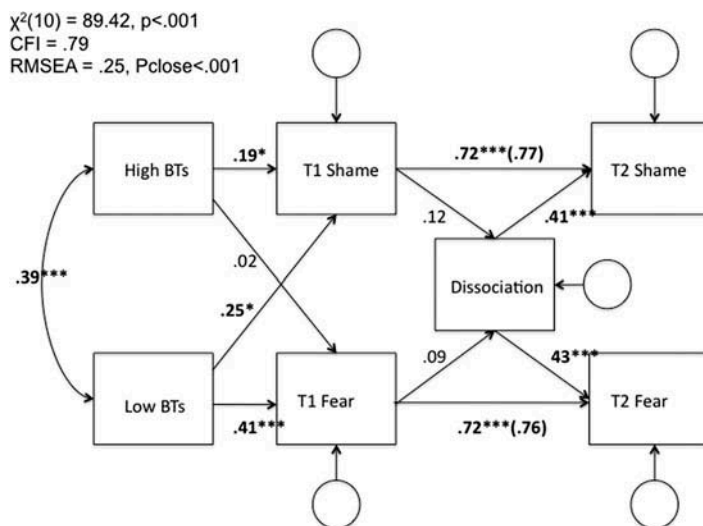
Following the induction and self-report questionnaires, participants were thoroughly debriefed regarding the hypotheses and purpose of the study and offered a list of community resources in the event that they found any element of the study to be distressing. No adverse reactions were reported during the debriefing.

### **Statistical analyses**

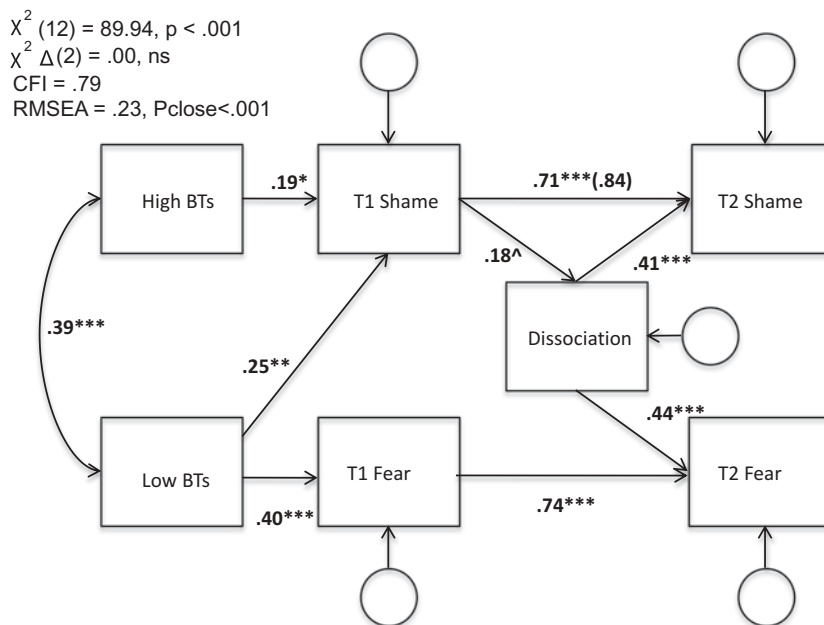
Structural equation modeling (SEM) with Amos (Arbuckle & Wothke, 1999) software was used to test a model of bypassed shame. A baseline model was created including LBT and HBT as exogenous variables and pre- and post-induction log-transformed shame and fear scores and dissociation change scores as endogenous variables (see Figure 1).

Log transformations were performed to address skew in the variables. The path model was estimated using maximum likelihood estimation of means and intercepts to deal with missing data. An additional model was run excluding nonsignificant paths (see Figure 2) and a third model was run with correlated residuals between Time 1 fear and shame and between Time 2 fear and shame to account for the possibility of a latent Time 1 negative affect and Time 2 negative affect factor (see Figure 3).

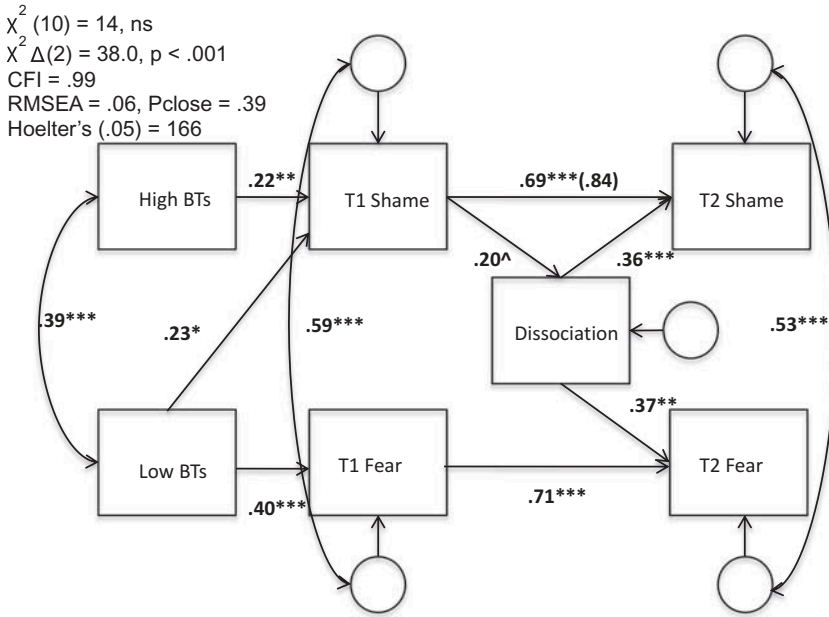
The sample size in this study ( $n = 127$ ) is adequate according to criteria proposed by Schreiber, Nora, Stage, Barlow, and King (2006). Acceptable fit statistics included a nonsignificant  $\chi^2$ , comparative fit index (CFI)  $\geq .95$ , root mean square error of approximation (RMSEA)  $\leq .06$ , and a nonsignificant *p*-close (Hooper, Caughlin, & Mullin, 2008).



**Figure 1.** Test of bypassed shame Model 1. *Note.* BT = betrayal trauma; T = time; Dissociation = change in dissociation from T1 to T2; CFI = comparative fit index; RMSEA = root mean square error of approximation; Pclose = probability of a close fit. \* $p < .05$ . \*\*\* $p < .001$ .



**Figure 2.** Test of bypassed shame Model 2. *Note.* BT = betrayal trauma; T = time; Dissociation = change in dissociation from T1 to T2; CFI = comparative fit index; RMSEA = root mean square error of approximation; Pclose = probability of a close fit. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .



**Figure 3.** Test of bypassed shame Model 3. *Note.* BT = betrayal trauma; T = time; Dissociation = change in dissociation from T1 to T2; CFI = comparative fit index; RMSEA = root mean square error of approximation; Pclose = probability of a close fit. ^  $p = .05$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

## Results

### Descriptive statistics and manipulation check

Sixty-one percent of participants ( $n = 77$  participants) reported at least one HBT event. Seventy percent ( $n = 89$  participants) reported at least one LBT event. Thirty-two percent of the sample ( $n = 41$  participants) reported at least one HBT and at least one LBT event (participants could have been in more than one category). See Table 1 for means, standard deviations, and correlations. The dissociation induction functioned as intended: Self-reported scores on the SSD significantly increased from a mean of 20.56 ( $SD = 25.97$ ) to a mean of 29.36 ( $SD = 36.76$ ),  $t(57) = 4.03, p < .001$ .

### Hypothesis testing

In the baseline model (Figure 1), model fit was poor according to several fit indexes,  $\chi^2(10) = 89.42, p < .001, CFI = .79, RMSEA = .25, pclose < .001$ . In Model 2 (Figure 2), with nonsignificant paths removed, fit remained poor,  $\chi^2(12) = 89.94, p < .001, \Delta\chi^2(2) = .00, ns, CFI = .79, RMSEA = .23, pclose < .001$ . In Model 3 (Figure 3), the residuals between Time 1 shame and fear and Time 2 shame and fear were correlated to account for the possibility of a latent negative affect factor. The addition of paths between the residuals resulted in significant improvement in



**Table 1.** Means, Standard Deviations, and Correlations.

Measure	HBT	LBT	SSGS <sup>a</sup>	PANAS-X <sup>a</sup>	SSD <sup>a</sup>	SSGS <sup>b</sup>	PANAS-X <sup>b</sup>	SSD <sup>b</sup>	<i>M</i>	<i>SD</i>
HBT	—								3.79	5.49
LBT	.43***	—							1.22	1.80
SSGS <sup>a</sup>	.27**	.34***	—						1.95	3.45
PANAS-X <sup>a</sup>	.15	.41***	.71***	—					3.06	4.12
SSD <sup>a</sup>	.23*	.27*	.86***	.74***	—				20.56	25.97
SSGS <sup>b</sup>	.28**	.20*	.85***	.71***	.71***	—			2.90	4.69
PANAS-X <sup>b</sup>	.24*	.31**	.60***	.77***	.64***	.74***	—		3.84	5.02
SSD <sup>b</sup>	.30*	.23	.89***	.79***	.93***	.91***	.78***	—	29.36	36.76

Note. HBT = high betrayal traumas; LBT = low betrayal traumas; SSGS = State Shame and Guilt Scale; PANAS-X = Positive and Negative Affect Schedule-Expanded form; SSD = State Scale of Dissociation; T1 = Time 1; T2 = Time 2.

<sup>a</sup>Baseline measures. <sup>b</sup>Time 2 measures.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

model fit,  $\Delta\chi^2(2) = 38.0$ ,  $p < .001$ , and adequate to good fit for this final model,  $\chi^2(10) = 14$ , *ns*, CFI = .99, RMSEA = .06, *pclose* = .39).

HBT was not related to baseline fear ( $p = .72$ ), nor was baseline fear related to dissociation change scores ( $p = .34$ ); thus these paths were omitted from the final model. In the final model, the hypothesis that HBT would be related to higher baseline shame was supported ( $\beta = .22$ ,  $p < .01$ ). LBT was found to relate to both baseline fear ( $\beta = .40$ ,  $p < .001$ ) and baseline shame ( $\beta = .23$ ,  $p < .05$ ). The hypothesis that higher baseline shame would predict larger increases in dissociation following the induction was not supported at the  $p < .05$  level, but was supported with marginal significance ( $\beta = .20$ ,  $p = .07$ ). As expected, baseline fear did not relate to change in dissociation.

Remaining hypotheses regarding the bypassed shame model were not supported. Shame did not decrease following an increase in dissociation. On average, shame scores increased by 0.97 ( $SD = 2.5$ ) following the dissociation induction,  $t(118) = 4.19$ ,  $p < .001$ , and fear scores increased by 1.06 ( $SD = 3.19$ ),  $t(109) = 3.26$ ,  $p < .01$ . Increases in dissociation following the induction were positively related to increases in shame ( $\beta = .69$ ,  $p < .001$ ) and increases in fear ( $\beta = .71$ ,  $p < .001$ ).

## Discussion

This study was the first to experimentally examine the relationship between shame and dissociation using a sample of trauma survivors. Although it has often been proposed that dissociation is a means of defending against overwhelming affect in general (Freud, 1926/1959) and against shame in particular (Kaufman, 1989; M. Lewis, 1995), this theory has never been directly tested. The primary aim of this study was to test this model of bypassed shame. If this model of bypassed shame were accurate, we would expect the following:

- (1) Higher baseline shame would be related to increased dissociation in response to a dissociation induction.
- (2) Increased dissociation in response to the dissociation induction would lead to decreased shame. This would suggest that dissociation effectively functioned to interrupt or bypass feelings of shame.

We included fear as a comparison emotion to shame to test the more general theory that dissociation functions to defend against the pain of overwhelming emotion in general. If this theory were correct, we would expect the same pattern of results in relation to fear as we predicted with shame.

Results did not support the theory of bypassed shame, nor the broader theory that dissociation defends against the pain of overwhelming emotion. The prediction of the bypassed shame theory that feelings of shame would be associated with dissociation was supported in that feelings of shame at baseline were marginally related to increases in dissociation following the dissociation induction. However, dissociation did not function to interrupt shame. On the contrary, rather than dissociation serving to interrupt and thereby decrease shame, we found that increases in dissociation were related to subsequent higher levels of shame, rather than the other way around. In addition, shame actually increased following the dissociation induction, rather than being reduced. This effect was nonspecific in that feelings of fear also increased following the dissociation induction.

In addition to providing evidence against the bypassed shame theory, our findings do provide additional support that dissociation might be uniquely related to shame, as baseline shame was marginally related to dissociation following the induction, whereas fear was not. This finding replicates previous evidence linking shame to dissociation (Irwin, 1998; Talbot et al., 2004; Thompson & Jaque, 2013).

One possible explanation for why shame and fear increased following the dissociation induction is that the induction might have cued trauma reexperiencing in some participants. This would at least partially account for the increases in shame and fear after the induction and also the positive correlation between increased dissociation and increased shame and fear at post-assessment. Although the dissociation induction did not mention traumatic events, post-hoc qualitative review of the events a subset of participants chose to write about revealed that roughly one third of the events were clearly traumatic (e.g., “When my mom passed away after killing herself”), another third of the events were ambiguous (e.g., “When I think about my family situation), and another third were less likely to be traumatic (e.g., “Graduation”). Another possible explanation for why shame and fear increased following the induction is that dissociation itself could be shame and fear inducing; that is, dissociation might bypass the initial shame but the

person might then be ashamed and afraid of the dissociation. More research on the interplay among shame, dissociation, and fear in response to trauma-related cues is warranted given that maladaptive shame regulation has been proposed to lead to personality pathology (Schoenleber & Berenbaum, 2012), shame and dissociation have both been found to compromise treatment (Simeon, Greenberg, Nelson, Schmeidler, & Hollander, 2005), and shame and dissociation have been found to affect intimate relationships (Dorahy et al., 2013; Seager et al., 2015).

We included history of traumatic events low in betrayal and high in betrayal as predictor variables for baseline shame and fear to determine replicability of our previous finding that HBT but not LBT related to shame, and LBT but not HBT related to fear. In alignment with Platt and Freyd (2015), we found that HBT predicted baseline shame, but not fear. In contrast to the prior study, which did not find any relationship between LBT and shame, we found that more incidents of LBT predicted higher levels of baseline shame. This discrepancy between the two studies might be a result of differing study designs. In the Platt and Freyd (2015) study, participants did not complete a trauma questionnaire prior to completing baseline measures of shame and fear. In contrast, in this study, participants reported on their trauma history, as measured by the BBTS, before completing measures of shame and fear. It is possible that LBT might predict shame more narrowly, in relation to trauma-related cues, whereas HBT might be related to shame-proneness more generally even without trauma-related cues. However, the SSGS was intended to measure state shame rather than shame-proneness, so additional work is needed to address this question.

Although this study was constructed to directly test bypassed shame theory, and not to directly test alternative theories, the results do have some implications for BTT. As noted earlier, BTT posits that dissociation is more likely to be related to HBT than LBT given the adaptive nature of dissociation in surviving HBTs. If the victim is able to distance herself from awareness of the abuse via dissociation, she is less likely to act in ways that could jeopardize the relationship with the perpetrator, such as fighting or fleeing. In addition, BTT posits that feelings of shame decrease the victim's attention to abuse by causing the person to focus on herself, rather than on the harm that is being caused to her. In this study, shame facilitated dissociation, whereas fear did not. One possible explanation is that shame and dissociation function together to decrease awareness of abuse to maintain needed relationships. However, it is worth noting here again that in this study, not just HBT, but also LBT predicted baseline shame. More work is needed to parse out the interrelations among shame, fear, and dissociation, and how these variables relate to type of trauma history.

Another alternative literature that might explain why shame would lead to dissociation, which in turn would lead to more shame, is the research on

shame as central to some traumatic memories (Matos & Pinto-Gouveia, 2010). It is possible that among some trauma survivors, trauma memories might be more associated with the emotion of shame than the emotion of fear. Using a shame memory priming paradigm, Matos and Pinto-Gouveia (2010) demonstrated that memories of early experiences of shame could have similar properties to traumatic memories such as intrusions, hyperarousal, and dissociation. An additional study provides empirical support for this theory of traumatic shame-based memories (Robinaugh & McNally, 2010). In this study, centrality of a shame-based memory to the person's autobiographical narrative predicted severity of PTSD symptoms. The theory that shame could function as a traumatic memory offers an additional explanation for why shame would lead to dissociation in this study, which would in turn lead to increased shame and fear if the person then experiences traumatic reexperiencing symptoms. That is, even if participants did not choose to write about events that were clearly traumatic, the presence of shame during the recall of events might have triggered reexperiencing symptoms for some people.

This study also provides further evidence for the validity of the dissociation induction created by Zoellner and colleagues (2007). In this nonclinical sample of female trauma survivors, the induction appeared to work as expected, resulting in increases in self-reported dissociation and interpretable patterns of relationships with other variables.

A particular strength of this study was the use of experimentally induced dissociation to study the effects of dissociation on shame and trauma-related responding. This represents an important step beyond previous studies that relied solely on self-reports. Future studies of shame and betrayal trauma could further expand this paradigm by varying aspects of whether or when trauma cues are provided, the timing of assessments, and when dissociation is induced.

### **Limitations**

SEM techniques were used in this study to model the predicted relationships between several proposed variables at once in a cohesive model. The sample size in this study ( $n = 127$ ) might limit the statistical power of the data analysis using SEM. There is little consensus on the necessary sample size for SEM. Some authors (Hoelter, 1983) have argued for a minimum sample size of 200, whereas others argue that the number of participants needed depends on the number of free parameters estimated. In particular, Schreiber et al. (2006) recommended 10 participants for each free parameter estimated. Using this criteria, sample size for this study is adequate.

Another limitation related to the SEM analyses is that the initial proposed model lacked adequate fit according to several fit indexes. For this reason, the

most theoretically sensible modification was made, correlating the Time 1 fear and shame residuals as well as the Time 2 fear and shame residuals. These added paths were based on the supposition that shame and fear both load on a latent factor representing negative affect and that their residuals might be partially composed of this latent factor. Replication of the results using the model with correlated residuals will bolster support for the model.

Although the sample used in this study was composed entirely of participants who endorsed events considered traumatic on the BBTS, participants were drawn from a population of undergraduates rather than a clinical population. Future studies should assess the shame–dissociation link with a clinical population. Replications with more diverse samples are also warranted. Although evidence suggests that shame expression is universal (Tracy & Matsumoto, 2008), the cultural significance of shame differs across cultures (Mesquita & Karasawa, 2004), which could possibly affect its relationship with both traumatic experiences and dissociation.

Additionally, shame was only assessed using self-report instruments. As shame is an emotion that is hard to identify and leads to concealment, more accurate assessment of shame responses might have occurred if postural or other nonverbal means of assessing shame were included. Another weakness of the study was the possibility that dissociation and prior administration of trauma questionnaires might have elicited trauma-related memories during the induction. Although some attempt was made to assess this possibility, these assessments were underpowered. Future studies that either avoid priming trauma prior to dissociation or that prime trauma deliberately might both be helpful in studying how dissociation functions in the context of shame and trauma.

Finally, we did not include a trait measure of dissociation and therefore were not able to control for trait dissociation. This is potentially problematic because trait dissociation is related to shame, trauma, and fear, as well as heightened state dissociation. Replications of this work should consider including a trait dissociation measure.

## **Conclusion**

Feelings of shame and dissociation tend to cooccur (Irwin, 1998; Talbot et al., 2004). However, the effect of dissociation on shame has never been tested using an experimental design. Our study provides evidence against the bypassed shame theory of dissociation, which is often endorsed by clinicians. These results are clinically meaningful in that clinicians who are aware that dissociation is not actually helping their client and that the dissociating client is likely experiencing very high distress might experience more compassion for the client. Given that the theory of bypassed shame was not supported, alternative explanations for the

relationship between shame and dissociation need to be explored. Two possibilities are BTT and the theory of shame as a traumatic memory.

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