

Are Hallucinations Related to Betrayal Trauma Exposure? A Three-Study Exploration

Jennifer M. Gómez, Laura A. Kaehler, and Jennifer J. Freyd
University of Oregon

Betrayal trauma theory proposes that one response to betrayal may be to keep knowledge of the trauma out of conscious awareness. Although this *betrayal blindness* may be beneficial for survival while the abuse is ongoing because it helps maintain crucial relationships, this distortion of reality can lead to subsequent psychological and behavioral problems. The current article presents three exploratory studies that examine the associations among exposure to betrayal trauma, dissociation, and hallucinations. The first study ($N = 397$) examined the associations between exposure to medium and high betrayal trauma and dissociation. The second study ($N = 199$) examined the associations between exposure to low, medium, and high betrayal trauma and hallucinations. The third study ($N = 566$) examined the associations between medium and high betrayal child and adolescent/adult sexual abuse and hallucinations. Our results suggest that exposure to betrayal trauma increases the likelihood of both dissociation and hallucinations. These findings provide further evidence that the toxic nature of betrayal in traumas has lasting effects on both cognitive and perceptual processes—dissociation and hallucinations—having implications for therapeutic treatment for individuals who have experienced betrayal traumas and related outcomes.

Keywords: betrayal trauma, abuse, hallucinations, dissociation

Betrayal trauma theory (e.g., Freyd, 1996, 1997) differentiates traumatic events based on the level of betrayal involved in the event. The theory posits that a trauma, such as child sexual abuse, perpetrated by someone close to the victim carries a level of betrayal, as trust is an implicit component of close relationships. When a victim is dependent upon a perpetrator for food, shelter, and warm and emotional attention, protecting the relationship is a survival strategy. Thus, betrayal trauma may engender a kind of *betrayal blindness*, or unawareness, of the abuse to protect the relationship with the perpetrator. Perhaps stemming in part from the consequences of betrayal blindness, exposure to high betrayal trauma—trauma perpetrated by someone close to the victim—has been linked to increased negative psychological effects typically associated with traumas (e.g., DePrince et al., 2012; Freyd, DePrince, & Gleaves, 2007; Ullman, 2007). Specifically, high betrayal trauma exposure has been linked to numerous negative outcomes (DePrince et al., 2012): alexithymia (Goldsmith, Freyd, & DePrince, 2012), anxiety, depression, panic attacks, suicidality, anger, and physical health complaints (e.g., Edwards, Freyd, Dube, Anda, & Felitti, 2012), posttraumatic stress disorder (PTSD; e.g., Kelley, Weathers, Mason, & Pruneau, 2012), self-blame (Ullman, 2007), and dissociation (e.g., Freyd & DePrince, 2001; Gómez & Freyd, 2014).

Dissociation is a broad term that includes sensory, somatic, and limbic system features. In the current article, we focus on cognitive aspects of dissociation, as these have been linked with memory and attention (e.g., DePrince & Freyd, 1999; DePrince & Freyd, 2004), and utilize DePrince and Freyd's (1999) definition of dissociation: "the lack of integration of thoughts, feelings, and experiences into the stream of consciousness" (p. 449).

Hallucinatory experiences can include cognitive (e.g., intrusive thoughts) and perceptual processes (e.g., auditory hallucinations) (Larøi, Marczewski, & van der Linden, 2004). The importance of including trauma in the examination and treatment of psychotic symptoms, such as hallucinations, has been proposed (e.g., Moskowitz, 2011; Read, Perry, Moskowitz, & Connolly, 2001; Read, van Os, Morrison, & Ross, 2005), with some hallucinations being related to memory of prior abuse, such as hearing the voice of the perpetrator (Read & Argyle, 1999). Including trauma exposure in empirical and clinical work can provide comprehensive conceptualizations of etiology that can affect primary prevention by linking social pathology (e.g., prevalence of trauma) with individual distress (e.g., experiencing hallucinations) (Read & Bentall, 2012).

Recent research suggests that interpersonal trauma is related to presence of psychotic symptoms (Arseneault, Cannon, Fisher, Polaczyk, Moffitt, & Caspi, 2011; Daalman, Dierdren, Derks, van Lutterveld, Kahn, & Sommer, 2012; Famularo, Kinscherff, & Fenton, 1992; Faust & Stewart, 2008; Goldstone, Farhall, & Ong, 2012; Read, 1997; Ross, Anderson, & Clark, 1994; Sansonnet-Hayden, Haley, Marriage, & Fine, 1987) and severity of psychotic symptoms (Lysaker, Beattie, Strasburger, & Davis, 2005; Schenkel, Spaulding, DiLillo, & Silverstein, 2005), with a review of the literature suggesting that a form of interpersonal trauma, child abuse, is causally related to hallucinations (Read, van Os, Morrison, & Ross, 2005).

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Jennifer M. Gómez, Laura A. Kaehler, and Jennifer J. Freyd, Department of Psychology, University of Oregon.

Correspondence concerning this article should be addressed to Jennifer M. Gómez, Department of Psychology, University of Oregon. E-mail: jgomez@uoregon.edu

In a review of the literature, Bendall and colleagues (2008) found that up to 73% of people with psychotic symptoms, including hallucinations, experienced childhood trauma. Additionally, in a meta-analysis that included prospective cohort studies, large scale cross-sectional studies, and case control studies, Varese and colleagues (2012) found that childhood adversity (interpersonal trauma, bullying, and parental death) was related to increased risk for psychosis.

Purpose of the Study

Previous studies have documented the links between exposure to trauma and dissociation (e.g., Plattner et al., 2003) and hallucinations (e.g., Bendall, Jackson, Hulbert, & McGorry, 2008). Additionally, exposure to betrayal trauma has been linked to dissociation (e.g., DePrince et al., 2012). However, prior research has not examined betrayal's role in various traumas' association with hallucinations. Given that betrayal blindness involves a kind of reality distortion, as can dissociation and hallucinations, and that dissociation has been shown to mediate the association between childhood trauma, particularly child sexual abuse, and hallucinations (Varese, Barkus, & Bentall, 2012), we expect to replicate findings from prior studies that have linked high betrayal trauma exposure with dissociation (e.g., DePrince et al., 2012) and predict that this link will extend to hallucinations as well. Thus, the current article presents three exploratory studies that independently examined the associations among traumas with low, medium, and high betrayal, dissociation, and hallucinations.

Study 1

Study 1 examined the associations between dissociation and medium and high betrayal traumas in the form of physical, sexual, and emotional abuse across the life span—childhood, adolescence, and adulthood.

Participants

The sample for Study 1 is the same as that described in a study by Gómez, Becker-Blease, and Freyd (under review), therefore, not all of the data collected will be presented here. Participants were 397 undergraduates from introductory psychology classes at a Northwestern university (70% female; 77.1% White; 10.6% Asian; 6.50% Other; 2.0% Native Hawaiian or Other Pacific Islander; 1.80% Black; 0.30% American Indian or Alaska Native; 1.50% decline to answer; $M_{age} = 19.68$ years, $SD_{age} = 2.17$ years).

Measures

The Brief Betrayal Trauma Survey (BBTS; Goldberg & Freyd, 2006), a 12-item, self-report measure of traumatic life events that occur before and after the age of 18, was modified to include 18 items assessing medium and high betrayal physical, sexual, and emotional abuse at three time points—before age 12, ages 13–17, and after age 17. Interpersonal traumas (e.g., sexual abuse) are medium or high betrayal traumas. Closeness of perpetrator differentiates medium from high betrayals, with traumas perpetrated by a “very close other” classified as high betrayals, whereas traumas by “not very close” perpetrators are considered medium betrayals.

A sample item that assesses a high betrayal trauma reads: “Before age 13, 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).” A sample item that assesses a medium betrayal trauma is: “Before age 13, you were made to have such sexual contact by someone with whom you were not close.” Responses were labeled “Yes,” “No,” and “Decline to Answer.” High betrayal trauma scores ranged from 0 (no reported abuse) to 9 (experience of high betrayal physical, sexual, and emotional abuse at each time point); similarly, medium betrayal trauma scores ranged from 0 (no reported abuse) to 9 (experience of medium betrayal physical, sexual, and emotional abuse at each time point).

The Curious Experiences Survey (Goldberg, 1999) is a revised measure of dissociation based on the Dissociative Experiences Scale (Bernstein & Putnam, 1986; Carlson & Putnam, 1993) and was modified to assess dissociation with the following two items: “Felt like I was disconnected from my body”; “Had the experience of feeling that my body did not belong to me.” Responses were reported on a 5-point Likert scale: “This never happens to me” to “This is almost always happening to me.” Participants could score from 0 (no reported dissociation) to 10 (both items reported “This is almost always happening to me”).

Additionally, the current study included the 6-item Dissociation subscale from the Trauma Symptom Checklist-40 (TSC-40; Elliott & Briere, 1992). Items were rated on a 4-point Likert scale from *Never* to *Very Often*: “Flashbacks”; “Spacing out”; dizziness; feeling that things are unreal; memory problems; out of body feelings. To assess a range dissociative experiences (intrusion, memory problems, and disconnection from self), we combined this TSC dissociation subscale (Elliott & Briere, 1992) with items from the modified Curious Experiences Survey (Goldberg, 1999) to form one Dissociation variable. The amalgamation of these items yielded good internal consistency, Cronbach's $\alpha = .83$.

Procedures

Procedures were identical for all studies: Following approval by the university Institutional Review Board, students were recruited using a masked (e.g., not aware of study content when signing up for participation) online registration system. After completing the informed consent, participants were administered a battery of questionnaires submitted by many researchers. The order of the questionnaires was randomly determined for each participant. Participants could decline to answer any item without penalty and received course credit for participation. Responses were anonymous.

Results and Discussion

This sample is the same as that described in a study by Gómez, Becker-Blease, and Freyd (under review). However, the variables and analyses included here are unique to the current study, which specifically examined the role of betrayal in the associations between trauma—child, adolescent, and adult physical, sexual, and emotional abuse— and dissociation. Thirty-three percent of the sample reported experiencing at least one trauma, with 27% reporting at least one high betrayal trauma. A multiple regression analysis including age, gender, high betrayal trauma, and medium

betrayal trauma explained a significant proportion of the variance in dissociation, $F(4, 363) = 2.98, p < .05, r^2 = .03$. In this model, only high betrayal trauma was a significant predictor of dissociation, $\beta = .20, p < .01$, whereas medium betrayal trauma ($\beta = -.05, ns$), gender ($\beta = .09, ns$), and age ($\beta = -.07, ns$) were not (Table 1).

These results suggested that high betrayal trauma, but not medium betrayal trauma, is related to dissociation, indicating that among interpersonal traumas, betrayal exposure plays an important role in trauma's predictive power on dissociation.

Study 2

Study 1 focused on the role of medium and high betrayal trauma across the life span on experience of current dissociation. Study 2 builds upon Study 1 by examining the effects of a broader range of traumas on hallucinations. Study 2 distinguishes traumas based on level of betrayal—low betrayal traumas: noninterpersonal, such as natural disasters; medium betrayal traumas: interpersonal, perpetrated by someone with whom the victim is not close; high betrayal traumas: interpersonal, perpetrated by someone close—and examines their relative associations with hallucinations.

Method

Participants. The sample for Study 2 is the same as that described in the [Kaehler and Freyd \(2009\)](#) study. A sample of undergraduates ($N = 199, M_{age} = 20.1, SD_{age} = 3.40$) at a Northwestern university who were enrolled in an introductory psychology course participated in the study. The sample was predominately female (73% women) and White (76.5%); the remainder of the sample identified as being of Asian descent (8.0%), Other (6.0%), Hispanic (3.5%), and Black (1.0%).

Measures. To assess trauma history, participants completed the BBTS ([Goldberg & Freyd, 2006](#)). The BBTS is a 12-item, self-report measure of traumatic life events during three age periods: before age 12, between ages 12 to 17, and after age 18. Each item is classified as a low (noninterpersonal trauma, such as a hurricane), medium (interpersonal trauma perpetrated by a not close other), or high betrayal (interpersonal trauma perpetrated by a close other) event. A sample item for a low betrayal trauma is: "Been 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." A sample item for high betrayal is: "You were deliberately attacked that severely by someone with whom you were very close." Finally, a sample item for a medium

betrayal trauma reads: "You were deliberately attacked that severely by someone with whom you were not close." Participants could answer "Yes," "No," or "Decline to Answer." The BBTS, unmodified, has good test-retest reliability for childhood items (83%) and adulthood items (75%) ([Goldberg & Freyd, 2006](#)). The authors of the current study were only interested in personally experienced traumas, rather than witnessed events; therefore, only 7 of the 12 traumatic events were included in the analyses. Three events were classified as high betrayal, two as medium betrayal, and two as low betrayal; thus, scores could range from 0–9 for high betrayal and 0–6 for both medium and low betrayal.

Using a modified, self-report version of the Composite International Diagnostic Interview (CIDI; WHO, 1990) developed by [Shevlin, Murphy, Dorahy, and Adamson \(2007\)](#), participants reported on three hallucinatory experiences: tactile, visual, and auditory. Responses were "Yes," "No," and "Decline to Answer," with a sample item being "Have you ever had unusual feelings inside or on your body, like being touched when nothing was there or feeling something moving inside your body?" As with the BBTS, the items assessed these experiences during three age periods: before age 12, between ages 12 to 17, and after age 18. Hallucination scores were summed and thus could range from 0–9; this approach showed adequate internal consistency, Cronbach's $\alpha = .79$.

Procedure. The procedures are identical to those described in Study 1.

Results and discussion. Although the information regarding hallucinations was collected simultaneously with the data reported in the [Kaehler and Freyd \(2009\)](#) study, this article presents findings previously unpublished regarding the association between betrayal trauma and hallucinations. As previously reported in [Kaehler and Freyd \(2009\)](#), 48% of the sample experienced at least one direct trauma, with 28% experiencing a high betrayal trauma. Because of significant positive skew for trauma events, low cell frequencies at the tail were combined to create four score categories: 0, 1, 2, and 3 or more.

A multiple regression model including gender, age, and betrayal trauma history explained a significant amount of the variance in hallucinations, $F(5, 186) = 3.52, p < .01, r^2 = .06$. Both high betrayal ($\beta = .15, p < .05$) and medium betrayal ($\beta = .18, p < .05$) traumas significantly predicted hallucinations; however, traumas low in betrayal ($\beta = .09, ns$) did not ([Figure 1](#)). The results from Study 2 suggested that interpersonal traumas—high and medium betrayal—predicted hallucinations, while noninterpersonal traumas—low betrayal—did not.

Study 3

Study 2 examined the associations between low, medium, and high betrayal traumas and hallucinations, with only medium and high betrayal traumas predicting hallucinations. Study 3 expanded these results by examining the association of medium and high betrayal in a specific form of abuse—sexual abuse in childhood and adolescence/adulthood—and tactile, visual, and auditory hallucinations individually.

Participants

Five hundred sixty-six undergraduates from introductory psychology classes (62% female), who were between the ages of 18

Table 1
Betrayal Trauma (Physical, Sexual, and Emotional Abuse in Childhood, Adolescence, and Adulthood) and Dissociation

Trauma	Dissociation
High betrayal trauma	.20 [□]
Medium betrayal trauma	-.05
Gender	.09
Age	-.07

Note. Reported values are β .

[□] Significant at the .01 level.

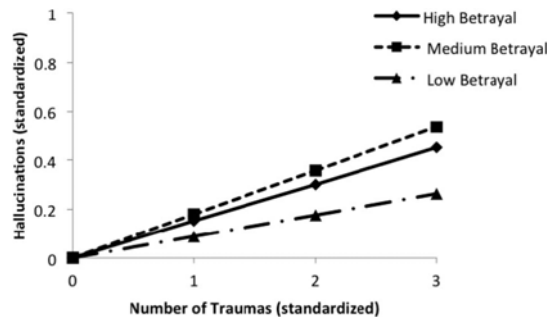


Figure 1. The predictive power of trauma on hallucinations depends on level of betrayal, with high and medium betrayal traumas better predicting hallucinations.

and 35 ($M_{age} = 19.96$, $SD_{age} = 8.87$), were recruited from a Northwestern university. The majority of participants were White (76.68%), followed by Asian (9.90%), Other (8.00%), Black (3.00%), American Indian or Alaska Native (1.10%), and Native Hawaiian or Other Pacific Islander (.40%), with decline to answer (1.10%).

Measures

The BBTS (Goldberg & Freyd, 2006) was modified to include four items assessing child sexual abuse with high betrayal (e.g., “Before age 13 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]”), child sexual abuse with medium betrayal (e.g., “Before age 13 you were made to have such sexual contact by someone with whom you were not close”), adolescent/adult sexual abuse with high betrayal, and adolescent/adult sexual abuse with medium betrayal. Child sexual abuse refers to events experienced before the age of 13, whereas adolescent/adult sexual abuse refers to events experienced at age 13 or older. Responses were labeled “Yes,” “No,” “Not Applicable,” and “Decline to Answer.”

The Composite International Diagnostic Interview (CIDI) “Beliefs and Experiences Module” (World Health Organization, 1990) assessed the following: tactile, visual, and auditory hallucinations. Labeled responses to these items were “Yes,” “No,” and “Decline to Answer.” A sample item is: “Have you ever had the experience of hearing things other people could not hear, such as noises or a voice?”

Procedures. The procedures are identical to those described in Study 1.

Results and discussion. The current study examined the role of betrayal on the associations between: child sexual abuse and tactile hallucinations; adolescent/adult sexual abuse and tactile hallucinations; child sexual abuse and visual hallucinations; adolescent/adult sexual abuse and visual hallucinations; child sexual abuse and auditory hallucinations; and adolescent/adult sexual abuse and auditory hallucinations. Thirteen percent of the sample reported at least one instance of sexual abuse, with 9% reporting at least one instance of high betrayal sexual abuse.

Three multiple logistic regression analyses were run to assess the impact of betrayal trauma history (sexual abuse) on tactile, visual, and auditory hallucinations individually (Table 2). The first

multiple logistic regression model including betrayal trauma history (sexual abuse across the life span), age, and gender explained a significant amount of the variance in tactile hallucinations, $\chi^2(6) = 23.04$, $p < .01$. When controlling for age, gender, and other abuse types, only high betrayal child sexual abuse was significant, Wald (1) = 8.43, $p < .01$, with people who experienced high betrayal child sexual abuse 4.03 times more likely to experience tactile hallucinations; surprisingly, adolescent/adult high betrayal sexual abuse did not predict hallucinations, Wald (1), .95, *ns*. Both child (Wald (1) = .01, *ns*) and adolescent/adult (Wald (1) = 2.48, *ns*) medium betrayal sexual abuse were not significantly associated with tactile hallucinations. Additionally, neither was age (Wald (1) = .22, *ns*) or gender (Wald (1) = 1.29, *ns*).

The second multiple logistic regression model including betrayal trauma history (sexual abuse across the life span), age, and gender explained a significant amount of the variance in visual hallucinations, $\chi^2(6) = 18.14$, $p < .01$. When controlling for age, gender, and other abuse types, both high betrayal child sexual abuse, Wald (1) = 6.27, $p < .01$, and medium betrayal child sexual abuse, Wald (1) = 6.06, $p < .05$ significantly predicted visual hallucinations. High betrayal child sexual abuse made it 3.69 times more likely to experience visual hallucinations, and medium betrayal child sexual abuse made visual hallucinations 3.27 times more likely. The other variables in the model did not predict visual hallucinations: high betrayal adolescent/adult sexual abuse (Wald (1) = .14, *ns*), medium betrayal adolescent/adult sexual abuse (Wald (1) = .30, *ns*), age (Wald (1) = .19, *ns*), and gender (Wald (1) = .42, *ns*).

The third multiple logistic regression model including betrayal trauma history (sexual abuse across the life span), age, and gender explained a significant amount of the variance in auditory hallucinations, $\chi^2(6) = 15.19$, $p < .05$. When controlling for age, gender, and other abuse types, medium betrayal child sexual abuse, Wald (1) = 5.51, $p < .05$ predicted auditory hallucinations, with high betrayal child sexual abuse as a predictor approaching significance, Wald (1) = 2.98, $p = .08$. High betrayal adolescent/adult sexual abuse (Wald (1) = .02, *ns*), medium betrayal adolescent/adult sexual abuse (Wald (1) = .18, *ns*), age (Wald (1) = .20, *ns*), and gender (Wald (1) = 2.82, *ns*) did not predict auditory hallucinations.

These results provided preliminary support for betrayal in sexual abuse as an important predictor of hallucinations; specifically, high and medium betrayal child sexual abuse predicted visual and

Table 2
High and Medium Betrayal Sexual Abuse and Hallucinations

	Tactile	Visual	Auditory
High betrayal child sexual abuse	8.43 ^{□□}	6.27 ^{□□}	2.98
Medium betrayal child sexual abuse	.01	6.06 [□]	5.51 [□]
High betrayal adolescent/adult sexual abuse	.95	.14	.02
Medium betrayal adolescent/adult sexual abuse	2.48	.30	.18
Age	.22	.19	.20
Gender	1.29	.42	2.82

Note. Reported values are Wald.

□ Significant at .05 level. □□ Significant at .01 level. *Italics*: approaching significance, $p = .08$ level.

auditory hallucinations, whereas high and medium betrayal adolescent/adult sexual abuse did not. Perhaps of greatest interest, only high betrayal child sexual abuse predicted tactile hallucinations. Therefore, there appears to be something unique about tactile hallucinations in relation to high betrayal child sexual abuse. Given that high betrayal traumas are predictive of PTSD, above and beyond the type and severity of traumas (Kelley, Weathers, Mason, & Pruneau, 2012), it is possible that tactile hallucinations resemble revivifications in PTSD following high betrayal child sexual abuse, stemming from the social betrayal experienced in this form of child sexual abuse.

Discussion

Under the framework of betrayal trauma theory (e.g., Freyd, 1996), the current article presented three independent exploratory studies that examined betrayal's predictive effect on various traumas' associations with dissociation and hallucinations. Given that past studies have documented the association between high betrayal trauma and dissociation (e.g., DePrince et al., 2012) and that both dissociation and hallucinations include cognitive processes, our expectations were twofold: we expected to replicate the finding that high betrayal trauma predicts dissociation; we expected to document originally that high betrayal traumas of various forms would predict hallucinations as well.

In Study 1, high betrayal trauma—but not medium betrayal trauma—was related to dissociation, replicating findings from multiple previous studies (e.g., DePrince et al., 2012). Medium and high betrayal traumas were related to hallucinations in Study 2. The results from Study 3 demonstrated that high betrayal child sexual abuse was related to tactile hallucinations, and both medium and high betrayal child sexual abuse predicted visual and auditory hallucinations. Of interest to the authors, none of the sexual abuse experiences occurring during adolescence or adulthood were associated with any of the types of hallucinations. It is possible that dependency in adolescence and adulthood is relatively and subjectively less in such a way that reduces its predictability of hallucinations. Of note as well is that this nonfinding preliminarily suggests that the experience of abuse is not a result of hallucinations; if hallucinations were causing the perception of abuse, then we would expect that link to be stronger for later abuse. Though this nonfinding is not definitive, but instead suggestive, it is a potentially meaningful nonfinding.

Collectively, these studies have several implications. Beyond the nature of the trauma (i.e., interpersonal vs. noninterpersonal), levels of betrayal may help explain the differential rates in cognitive and perceptual outcomes, such as dissociation and hallucinations, of the various forms of trauma. Theoretically, our results lend further support that environmental factors, such as medium and high betrayal traumas in the form of physical, sexual, and emotional abuse, are predictive of hallucinations. Thus, as proposed by Moskowitz (2011) and Read and colleagues (2005), these results suggest that adapting a biopsychosocial model may be beneficial in understanding hallucinations.

Moreover, the current article's findings have implications for treatment of hallucinations as well, particularly for victims of high betrayal trauma. Currently, primary recommended treatment for hallucinations include medication (Patel, Attard, Jacobsen, & Shergill, 2010; Pinto, Ashworth, Seed, Rowlands, Schofield, &

Jones, 2010; Shergill, Murray, & McGuire, 1998) and/or transcranial magnetic stimulation (Aleman & Larøi, 2011; Montagne-Larmurier, Etard, Razafimandimby, Morelio, & Dollfus, 2009; Rosenberg, Roth, Kotler, Zangen, & Dannon, 2011; Vercammen et al., 2009).

However, abuse history has been posited as causally related to hallucinations (Read, van Os, Morrison, & Ross, 2005), potentially resulting from either the disruption of attachment that occurs in interpersonal trauma (Read & Bentall, 2012)—that is most relevant to betrayal trauma theory (e.g., Freyd, 1996)—or trauma's interaction with dopamine and stress sensitivity, entitled the sociodevelopmental pathway (Morgan, Charalambides, Hutchinson, & Murray, 2010). Either way, our findings—that betrayal trauma predicts dissociation and hallucinations—support the supposition that clinicians should routinely inquire about trauma history (Read, Hammersly, & Rudegear, 2007; Read, Perry, Moskowitz, & Connolly, 2001; Read & Ross, 2003; Read, van Os, Morrison, & Ross, 2005) and incorporate this history within the psychotherapeutic context (Hirakata, 2009; Read & Ross, 2003; Skehan, Larkin, & Read, 2012), as treatments of trauma and/or PTSD in individuals with psychotic disorders have been shown to be effective (e.g., Christopher Frueh et al., 2009; Schäfer & Fisher, 2011; van den Berg & van der Gaag, 2012).

Our results add to this literature by providing further evidence for the importance of the relational aspects of trauma. Given that our studies found that traumas higher in betrayal are associated with more dissociation and some types of hallucinations, clinical interventions for these experiences would benefit from incorporating relational models of healing (Birrell & Freyd, 2006; Hirakata, 2009). That is, because part of the traumatic nature of abuse is the betrayal of the relationship, then healing from the trauma would require experiential repair of relationships generally with persons who are relatively safer than perpetrators of the abuse.

Therefore, empirical work should not only attempt to replicate our findings, but also examine the specific ways in which betrayal disrupts functioning. For instance, future studies could examine etiology: does dissociation arise during betrayal trauma as a potential coping mechanism that is then related to hallucinations in subsequent, nonabusive contexts? Along these lines, future studies should examine further the nature of relationships in which trauma occurs, beyond "perpetrator closeness." Specifically, dependency may occur to varying levels within romantic relationships in adolescence and adulthood, therefore, probing for these and other indicators of attachment may help operationalize betrayal further.

Finally, our results point to a simple conclusion that is often overlooked. Interpersonal trauma generally, and betrayal trauma specifically, is preventable. Therefore, our research aligns with calls to change the sociocultural context that facilitates such trauma from occurring (Brown, 2004), potentially through primary prevention programs (Albee, 1996; Read & Bentall, 2012; Varese et al., 2012). Such efforts would necessarily reduce the likelihood of both dissociation and hallucinations, as trauma has been consistently linked to these experiences (e.g., DePrince et al., 2012; Read, van Os, Morrison, & Ross, 2005; Varese et al., 2012).

Limitations

The results of our studies should be interpreted within the context of their limitations. All three studies were exploratory in

nature and included modifications of paper and pencil scales, thus making establishing reliability and validity more difficult. Additionally, the limitations of our college sample include restricted demographic range (e.g., ethnicity, age), as well as their apparent high level of functioning as manifested by their ability to be enrolled in college. This reduces these studies' generalizability to the population of adults perhaps who have experienced trauma, hallucinations, or dissociation. However, the benefits of this sample are profound in that they provide further generalizability in comparison with much of the comparable research in the area because we did not use recruitment measures that allow for participants to self-select into studies based on their own interests; this self-selection substantially threatens external validity (Freyd, 2012). Thus, our findings are applicable to this relatively highly traumatized population generally, not simply to those who would likely sign up for these types of studies based on the topic.

Future research should address the limitations of our studies by attempting to replicate our findings using expanded measures of betrayal trauma, hallucinations, and dissociation that include temporal precedence, frequency, and severity of experiences. It may be particularly helpful to explore these constructs in a range of populations, including ethnically diverse populations—as dissociative experiences have varied among ethnic groups (Douglas, 2009), and clinical populations that exhibit more dissociative and hallucinatory experiences.

Conclusion

The current article highlights the importance of examining betrayal across interpersonal and noninterpersonal traumas as a mechanism that not only distinguishes among trauma types (e.g., high betrayal vs. low betrayal), and also may serve as a differential predictor of potential trauma outcomes, such as dissociation and hallucinations. The implications of this are theoretical insofar that they provide further evidence for betrayal trauma theory. Our studies also provide evidence for expanding our view of hallucinations specifically alongside dissociation. Finally, these studies have implications for treatment, and ultimately healing of traumas: by paying specific attention to the implicit levels of betrayal in interpersonal traumas, we are able to, by extension, identify the opportunity for relational healing as well.

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