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Links Between Specific Posttrauma Appraisals and Three Forms of Trauma-Related Distress

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Several categories of posttrauma appraisals (e.g., fear, shame, self-blame) have been associated with different forms of trauma-related distress (e.g., posttraumatic stress disorder [PTSD], depression symptoms). In this paper, we extend previous research to consider two appraisal categories that have received little attention to date: alienation and betrayal. Alienation may be important following interpersonal traumas that disrupt one's connection to self and others. Betrayal trauma theory points to the importance of betrayal in motivating responses to interpersonal traumas, though little research has directly examined appraisals of betrayal. With three separate samples of adults (one undergraduate; two community-based), we examined the relative contributions of six distinct appraisal categories (alienation, anger, betrayal, fear, shame, and self-blame) to three forms of trauma-related distress (PTSD, dissociation, and depression symptoms). Participants' posttrauma appraisals accounted for variance in trauma-related distress above and beyond characteristics of the trauma itself. Further, specific appraisal categories accounted for unique variance in different forms of trauma-related distress. Across samples, alienation was significantly related to all three distress types, suggesting that appraisals of disconnection from the self and others are common across trauma-related distress responses. Several distress-appraisal patterns were replicated across samples, including links between self-blame and depression; shame and PTSD; and betrayal and dissociation. Betrayal-dissociation links have important implications for betrayal trauma theory. The results point to the importance of understanding specific appraisal processes associated with different forms of trauma-related distress.

Keywords: appraisal, depression, dissociation, posttraumatic stress disorder, trauma

Posttrauma appraisals have been linked to multiple forms of psychological distress, including depression and posttraumatic stress disorder (PTSD) symptoms (e.g., Foa, Ehlers, Clark, Tolin, & Orsillo, 1999; Ehlers & Clark, 2000). The term *appraisal* refers to people's assessments of their thoughts, feelings (including affective states), and behaviors. Cognitive appraisals and emotions (i.e., physiologically based responses) are commonly considered components of the same affective state (Ellsworth & Scherer, 2003) that arise from and are consciously differentiated by the individual through a series of appraisals of internal and/or external stimuli (e.g., Frijda, 1986; Scherer, 1987). For example, if a woman is asked about feelings of *fear*, she must appraise her feelings, thoughts, and behaviors to decide if she feels fear (and if so, to what degree) or whether her feelings reflect something else, such as *rage*. Thus, she appraises her experience of her feelings. This paper examines individuals' appraisals of their experiences of six different states (fear, anger, shame, betrayal, self-blame, and alienation) using a multifactorial appraisal measure (see DePrince, Zurbriggen, Chu, & Smart, 2010 for discussion of the importance of using a single, multifactorial measure).

The importance of examining appraisals is made explicit in the PTSD diagnostic criterion A2, which requires trauma survivors to report "intense fear, helplessness or horror" (American Psychiatric Association, 1994, p. 428). While much research has focused on links between PTSD symptoms and fear, researchers have recently expanded work to examine links with anger, shame, and self-blame (Andrews, Brewin, Rose, & Kirk, 2000; Breitenbecher, 2006; Brewin, Andrews, & Rose, 2000; Feeny, Zoellner, & Foa, 2000). Considering a broader range of appraisal categories beyond fear may be particularly important for understanding diverse forms of distress associated with trauma exposure, such as depression and dissociation. In fact, researchers have documented links between depressive symptoms and self-blame and shame appraisal categories (Harper & Arias, 2004; Kaysen, Scher, Mastnak, & Resick, 2005), suggesting that the types of appraisals survivors

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make posttrauma may play a role in the development and/or trajectory of different forms of trauma-related distress.

Brown and Freyd (2008) recently argued for further expanding appraisal categories to include betrayal because several studies document links between traumas high in betrayal (such as abuse by a caregiver) and trauma-related distress (e.g., DePrince, 2005; Edwards et al., 2006; Freyd, Klest, & Allard, 2005). Betrayal trauma theory (BTT) implies that awareness of betrayal in the context of interpersonal violence affects information processing and coping following the event (for a review, see Freyd, DePrince, & Gleaves, 2007). In particular, BTT suggests that when a victim is dependent on the person causing harm in interpersonal violence (such as a caregiver or intimate partner), remaining unaware of (i.e., not processing) the betrayal may help the victim cope in the short term. Dissociation is implicated as one possible mechanism by which individuals may maintain unawareness of the betrayal (Freyd, 1996; Freyd et al., 2007). Thus, dissociation may be related to the individual's appraisals of betrayal.

Past qualitative research points to the importance of still another appraisal category: *alienation*. Alienation was one of several themes that, together, predicted posttraumatic stress (Lifton, 1996; Newman, Riggs, & Roth, 1997; Roth & Newman, 1993; Roth, Lebowitz & DeRosa, 1997; Roth & Newman, 1991). To date, however, self-report measures of appraisal categories have not typically included alienation. For the current study, alienation is defined as the belief(s) that one is disconnected from oneself and/or others. While little is known about how alienation relates to specific forms of distress, theoretical and empirical work suggest that interpersonal violence is linked to broad-based disruptions in one's connection to the self and relatedness to others (Herman, 1992) as well as complex (Herman, 1992) and co-occurring forms of symptoms (e.g., PTSD and depression; Kilpatrick et al., 2003).

The current study addresses two primary questions. First, do participants' posttrauma appraisals account for variance in trauma-related distress above and beyond characteristics of the trauma itself? Second, which specific appraisal categories account for unique variance in different forms of trauma-related distress (including depression, dissociation, and PTSD symptoms)? Because of the exploratory nature of our approach (e.g., asking which categories of appraisals are uniquely associated with different forms of distress), we tested for patterns across one undergraduate and two community samples and focused our interpretation on patterns that were replicated in at least two of the three samples. With each successive sample, we incorporated additional measures to address questions that emerged from the previous sample.

Method

Participants

Sample 1. Undergraduate participants ($N = 98$) who reported exposure to at least one potentially traumatic event (age $M = 20.32$, $SD = 2.88$; 76% female) were recruited for participation in a larger study at a private university in the Rocky Mountain region. Five participants did not provide ethnic identity information; the remaining participants reported the following ethnic background: 88% Caucasian, 11% Latino, 5% Asian American, 4% Native American, and 3% African American (participants could choose more than one ethnicity; thus, percentages total more than 100%).

Sample 2. Women ($N = 94$), ages 18 to 40, were recruited in Denver, Colorado, through flyers placed at community agencies (e.g., public housing/shelters, mental health clinics, social services agencies, police department, colleges) and web-based list-serves or bulletins as part of a larger study examining the impact of childhood abuse. Of the 93 women who recalled where they heard about the study, 54% responded to flyers at community agencies, 37% responded to web-based postings, and 10% heard about the study from friends/family. Participants were included based on self-reports of experiencing childhood physical and/or sexual abuse (occurring before age of 14) or a recent interpersonal crime. Participants were excluded if they made a suicide attempt and/or were hospitalized for psychiatric reasons in the previous six months. Inclusion and exclusion criteria were assessed during initial phone contact with potential participants.

Three women did not complete the questionnaires, resulting in a total of 91 women (age $M = 30.53$, $SD = 6.20$) included in the current analyses. Six participants did not provide racial information; the remaining women reported the following ethnic backgrounds: 67% Caucasian, 16% African American, 4% Asian American, 1% Native American, and 12% other race or bi/multiracial. Of the 75 women who provided ethnicity information, 25% identified as Latina. Women described their current relationship status as: 16% married, 12% living with someone, 10% divorced, 10% separated, 10% with steady partner but not living together, and 41% single. In terms of education, 18% of women completed some grade school up to part of high school, 18% obtained a high school diploma, 42% completed partial college or specialized training, 13% obtained a college degree, and 10% had some graduate or professional training. Eighty women provided the following family income information: 40% earned less than $10,000; 13% earned $10,000 to $20,000; 15% earned $20,000 to $30,000; 10% earned $30,000 to $40,000; 6% earned $40,000 to $50,000; 16% earned more than $50,000.

Sample 3. Women ($N = 236$) were recruited from cases of nonsexual intimate partner abuse (IPA) reported to law enforcement in Denver, Colorado, if the case involved a heterosexual couple, male defendant, and no cross-arrest. Women's ages ranged from 18 to 63, with an average age of 33.4 ($SD = 11.0$). Women reported their ethnic backgrounds to be 47% Caucasian, 30% African American, 2% Asian/Asian American, 1% Pacific Islander, 11% American Indian or Alaskan Native, 6% other, and 39% Hispanic or Latina. Women described their current relationship status to be: 9% married, 8% living with someone, 18% divorced, 12% separated, 2% widowed, 40% single and never married, and 7% other. Women reported the following in terms of highest level of education: 3% grades 1 to 8; 27% some high school; 26% high school; 25% some college; 8% Associate's degrees; 7% 4-year college degree; 2% postgraduate education; and 1% other (e.g., trade school). Women's median income (including salary and nonsalary sources) was $7,644 (range: $0–$108,000) and average occupational prestige (coded based on Hollingshead, 1975) was 31.91 ($SD = 21.59$). To capture socioeconomic status (SES) in a single global score (rather than including correlated variables separately in analyses), a principal component analysis (PCA) using orthogonal rotation was applied to education, occupation, and income variables. The income variable was affected by 4 outlying data points, which were replaced with the value of 3 *SD* above the mean prior to the PCA. A single

component solution emerged (all component loadings above .75); we saved the factor score for each individual for use in analyses.

Measures

Trauma history. In Sample 1, exposure to potentially traumatic events was assessed with the Trauma History Questionnaire (THQ; Green, 1996), a 24-item self-report instrument that has been used with clinical and nonclinical samples and has good psychometric properties. Participants' exposure was categorized as noninterpersonal (e.g., car accident, fire) or interpersonal violence (e.g., sexual assault, domestic violence). Participants were asked to think about the most distressing event from those that they reported on the THQ when answering questions about PTSD symptoms and appraisal categories.

Sample 2 used an interview strategy derived from the National Crime Victims Survey to assess victimization history (see Fisher & Cullen, 2000). Women were asked a series of behaviorally specific questions about verbal, sexual, and physical victimization. *Sexual victimization* was defined as attempted or completed sexual contact (e.g., exposure, fondling, unwanted attempted or completed sexual contact by use of drugs, coercion, threat, or actual force). *Physical victimization* was defined as physical abuse/assault in childhood by a caregiver or adult figure or physical abuse/assault in adulthood by a romantic partner, caregiver, or family member. *Verbal abuse* was defined as verbal or emotional abuse in childhood by a caregiver or adult figure or verbal or emotional abuse in adulthood by a romantic partner, caregiver, or family member. Additional events included witnessing abuse between family members, verbal or physical threats, peer victimization, sexual harassment, and kidnapping as a child. A total of 21 screening questions were asked; participants were able to report multiple events for each screening question. Women were asked to think about the most distressing event discussed during the interview while answering questions about PTSD symptoms and appraisal categories. Guided by Goldberg and Freyd (2006), victimization events were grouped by betrayal level: high (an immediate family member or intimate partner, such as parental figures, siblings, dating partners), low (an extended family member or relationship that was not intimate, such as a known nonrelative adult figure or acquaintance), and no (someone with whom there was no evidence of a previous close relationship, such as a stranger). Authors APD and ATC coded these data with 98% agreement; the 2 cases of disagreement were resolved through discussion.

In Sample 3, severity of the target domestic violence incident that resulted in a report to law enforcement was assessed using the Conflict Tactics Scale (CTS: Straus, Hamby, Boney-McCoy, & Sugarman, 1996). The CTS is a widely used and well-validated instrument for assessing conflict in intimate relationships. We used CTS items to tally the total number of psychologically- (possible range: 0–15) and physically- (possible range: 0–13) aggressive tactics used by the male partner against the female partner during the target incident, as well as the number of injuries sustained by the female partner (possible range: 0–17).

Dissociation symptoms. In all three samples, dissociative symptoms were assessed using the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986), a widely used, 28-item self-report measure. The DES has been shown to have good validity and reliability and is scored by taking an average across items. Coefficient alpha for this measure was .88 in Sample 1; .93 in Sample 2; and .94 in Sample 3.

PTSD symptoms. In Sample 1, PTSD symptoms were assessed with the Revised Civilian Mississippi Scale for PTSD (Norris & Perilla, 1996), a 30-item self-report measure with excellent psychometric properties. Coefficient alpha was .84. In Samples 2 and 3, PTSD symptoms were assessed with the Posttraumatic Stress Diagnostic Scale (PDS; Foa, Cashman, Jaycox, & Perry, 1997), a 49-item measure-based on the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*DSM–IV)* PTSD criteria. Coefficient alpha was .93 in Sample 2 and .93 in Sample 3.

Depression symptoms. Depression symptoms were assessed with the Beck Depression Inventory–II (BDI–II; Beck, Steer, Ball, Ranieri, 1996) in Samples 2 and 3. The BDI–II is among the most widely used self-report measures of depression with demonstrated validity and reliability. This 21-item measure assesses depression symptoms based on *DSM–IV* criteria. Coefficient alpha for this measure was .90 in Sample 2 and .90 in Sample 3.

Trauma Appraisal Questionnaire. In all 3 samples, trauma appraisal categories were assessed using the Trauma Appraisal Questionnaire (TAQ; DePrince, Zurbriggen, Chu, & Smart, 2010), a 54-item self-report measure of posttraumatic appraisal categories that demonstrated excellent reliability and validity. The measure provides subscale scores for six distinct appraisal categories: anger, alienation, fear, betrayal, shame, and self-blame. Coefficient alpha for the six scales ranged from .76 to .88 in Sample 1; .73 to .93 in Sample 2, and .83 to .93 in Sample 3.

Social support. In Sample 3, participants completed a 16-item version of the Interpersonal Support Evaluation List (ISEL; Cohen & Hoberman, 1983; Cohen, Mermelstein, Kamarck, & Hoberman, 1985), which includes items that tap belonging, tangible support, and perceived support. Relevant items were reverse-scored and an average was computed across items such that higher scores indicate greater levels of social support. Coefficient alpha was .88.

Procedure

Sample 1. Undergraduate participants signed up for the study through an electronic system. On arrival for the testing session, consent information was carefully explained to participants; the experimenter administered a consent quiz to ensure understanding of consent information. Following informed consent procedures, a trained research assistant administered several laboratory tasks that were part of a larger study. Participants completed self-report questionnaires in writing. While answering the TAQ, participants were asked to think about the most stressful event from those reported on the THQ. On completion, participants were debriefed and compensated for their time with class credit.

Sample 2. Interested participants were invited to schedule an interview. On arrival, consent information was carefully explained to participants in both written and verbal forms. The experimenter administered a consent quiz to ensure understanding of consent information. After consenting, women were asked to complete interview and questionnaire items that were part of a larger study. The experimenter conducted the trauma history interview. While answering the TAQ and PDS, participants were asked to think

about the most stressful event discussed during the interview. Participants were debriefed and compensated $25 for their time.

Sample 3. Using public records of nonsexual IPA reports, women were recruited to participate in a Women's Health Study (for additional recruitment details, see DePrince, Belknap, Labus, Buckingham, & Gover, in press). Women who were interested in participating in the study were scheduled for an in-person, 3-hr interview at the research offices. During the informed consent process, women were informed that the research was on IPA and that their names were accessed from public records. Consent information was carefully explained to participants in both written and verbal forms. The experimenter administered a consent quiz to ensure understanding of consent information; only those women who passed the quiz were enrolled in the study (two women did not pass). Women were asked to complete interview and questionnaire items that were part of a larger study. While completing the TAQ and PDS, women were asked to think about the target IPA incident for which they were recruited into the study. Participants were debriefed and compensated $50 for their time.

Results

Descriptive Statistics

Descriptive statistics for distress and appraisal category variables are reported in Table 1. In Sample 1, THQ data were used to characterize type of victimization (exposure to at least one interpersonal trauma vs. exposure to noninterpersonal trauma only). Of the 98 participants, 43 endorsed at least one interpersonal trauma. Participants reported an average of 4.02 (SD = 2.54; range: 1–15) victimization events. In Sample 2, interview data were used to characterize the target victimization event and betrayal trauma categories. Women reported an average of 5.81 (SD = 3.51; range: 1–15) victimization events. Of the 84 women who specified a most stressful event on the self-report questionnaires, 53 (63.1%) women reported a high betrayal event, 24 (28.6%) reported a low betrayal event, and 7 (8.3%) reported a no betrayal event. In Sample 3, CTS data were used to characterize the target IPA incident. Women reported an average of 4.54 (SD = 2.68) psychologically aggressive tactics, 3.01 (SD = 2.66) physically aggressive tactics, and 2.68 (SD = 2.52) injuries. Women reported that the median number of days since the incident was 26. In order to control for the number of days since the incident in parametric analyses, a log transformation of the number of days since the event was calculated to correct the skew; the mean of the log-transformed variable was 1.47 (SD = 0.34). Zero-order correlations for predictors in each sample are reported in Tables 2, 3, and 4.

Inferential Statistics

Across samples, we entered trauma and participant characteristics on the first step. On the second step, we entered the appraisal categories to examine the change in R^2 with the addition of the six appraisal categories (as well as additional variables in Sample 3, described below). In the interests of space, only results from Step 2 are reported in the regression tables (Tables 5, 6, and 7). Regression analyses were screened for multicollinearity problems (Tabachnik & Fidell, 1996).

Sample 1. Two multiple regressions were conducted using TAQ appraisal scale scores to predict trauma-related distress (total PTSD symptoms, dissociation). For the model predicting PTSD symptoms, the first step, which included information about the trauma, was significant, $F(1, 91) = 15.69$, $p < .001$, $R^2 = .15$. When the six TAQ appraisal category scales were entered on the second step, the full model was significant, $F(7, 85) = 17.05$, $p < .001$, $R^2 = .58$, as was the change in R^2, $F(6\ 85) = 14.89$, $p < .001$. For the model predicting dissociation, the first step approached significance, $F(1, 91) = 3.22$, $p = .08$, $R^2 = .03$. At Step 2, the full model was significant, $F(7, 85) = 2.93$, $p = .008$, $R^2 = .20$ as was the change in R^2, $F(6\ 85) = .16$, $p = .015$. Alienation explained unique variance in PTSD symptom scores (see Table 5).

Sample 2. Three regressions were conducted using TAQ appraisal scale scores to predict trauma-related distress (total PTSD symptoms, dissociation, and depression symptom scores). We improved on previous analyses by controlling for participant characteristics (ethnic minority status and age) and level of betrayal based on perpetrator relationship to the victim for the target

Table 1
Descriptive Statistics for All Samples

		Sample 1			Sample 2			Sample 3		
	Variable	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*
TAQ scales[a]	Betrayal	94	1.80	.99	86	3.69	0.94	223	2.97	1.07
	Self-blame	95	1.79	.95	87	2.44	1.15	219	2.04	1.02
	Fear	95	1.50	.66	87	2.63	0.97	220	2.29	1.15
	Alienation	94	1.73	.92	87	3.20	1.05	220	2.51	1.11
	Anger	94	1.45	.67	87	2.67	1.06	220	1.95	.95
	Shame	95	1.54	.78	87	2.95	1.15	222	2.26	1.07
Symptoms[b]	PTSD	94	50.45	16.29	88	19.78	11.96	230	16.59	12.12
	Depression	—	—	—	88	14.71	9.76	223	13.88	9.59
	Dissociation	98	11.16	7.15	87	18.43	13.48	227	12.49	13.32
Social support		—	—	—	—	—	—	224	2.06	.60

[a] TAQ subscale sample sizes differ because averages were calculated based on 80% response rate for each subscale. [b] In Sample 1, PTSD symptom severity measured with the Revised Civilian Mississippi Scale for PTSD. In Samples 2 and 3, PTSD symptom severity measured with the PDS. Dissociation measured with the Dissociative Experiences Scale. Depression measured with the BDI–II.

Table 2
Zero-Order Correlations Predictor Variables in Sample 1 (Undergraduate Volunteers)

Variable	Betrayal	Self-blame	Fear	Alienation	Anger	Shame
Interpersonal vs. noninterpersonal trauma	.43**	.42**	.26*	.41**	.35**	.45**
Betrayal		.41**	.56**	.70**	.64**	.61**
Self-blame			.50**	.61**	.46**	.72**
Fear				.68**	.72**	.67**
Alienation					.72**	.83**
Anger						.72**

Note. 1 = Interpersonal trauma; –1 = no interpersonal trauma.
* $p < .05$. ** $p < .01$.

traumatic event. For each of the three models, ethnic minority status (yes = 1; no = −1), age, and level of betrayal (high, low, no) were entered at Step 1. At Step 2, the six TAQ appraisal category scales were entered. For the model predicting PTSD symptoms, the first step was not significant, $F(3, 75) = .03$, $p = .99$, $R^2 = .00$. At Step 2, the full model was significant, $F(9, 69) = 6.57$, $p < .001$, $R^2 = .46$, as was the change in R^2, $F(6, 69) = 9.83$, $p < .001$. For the model predicting dissociation symptoms, the first step was not significant ($F(3, 73) = 2.16$, $p = .10$; $R^2 = .08$). At Step 2, the full model was significant, $F(9, 67) = 3.96$, $p < .001$, $R^2 = .35$, as was the change in R^2, $F(6, 67) = 4.55$, $p < .01$. For the model predicting depression symptoms, the first step was not significant, $F(3, 75) = .30$, $p = .83$, $R^2 = .01$. At Step 2, the full model was significant, $F(9, 69) = 8.60$, $p < .001$, $R^2 = .53$, as was the change in R^2, $F(6, 69) = 12.61$, $p < .001$. See Table 6 for parameter estimates explaining unique variance in PTSD scores.

Sample 3. In Sample 3, we improved on the previous analyses by including the following: more detailed information about the target incident (severity of psychological and physical aggression, and injuries); days since the event; and social support. In terms of social support, we were interested in whether we would replicate the alienation findings while controlling for social support. This test would help us address whether alienation explained unique variance that differed from social support. For each of three models (predicting PTSD, dissociative, and depressive symptoms, respectively), characteristics of the IPA incident (as measured by three CTS scales: psychological aggression, physical aggression, and injury), ethnic minority status (yes = 1; no = −1), and age were entered at Step 1. At Step 2, the six TAQ appraisal category scales were entered as well as social support (as measured by the ISEL).

For the model predicting PTSD symptoms, the first step was significant, $F(7, 198) = 3.18$, $p < .01$, $R^2 = .10$. At Step 2, the full model was significant, $F(14, 191) = 30.14$, $p < .001$, $R^2 = .69$, as was the change in R^2, $F(7, 191) = 51.43$, $p < .001$. For the model predicting dissociation symptoms, the first step was not significant, $F(7, 194) = 1.06$, $p = .39$; $R^2 = .04$. At Step 2, the full model was significant, $F(14, 187) = 6.85$, $p < .001$, $R^2 = .34$, as was the change in R^2, $F(7, 187) = 12.22$, $p < .001$. For the model predicting depression symptoms, the first step was significant, $F(7, 194) = 2.55$, $p < .05$, $R^2 = .08$. The full model was significant at Step 2, $F(14, 187) = 16.26$, $p < .001$, $R^2 = .55$, as was the change in R^2, $F(7, 187) = 27.54$, $p < .001$. See Table 7 for parameter estimates explaining unique variance in PTSD scores.

Discussion

Across three samples, we examined the relative contributions of six specific appraisal categories to three types of trauma-related distress. Across analyses, participants' posttrauma appraisals accounted for variance in trauma-related distress above and beyond characteristics of the trauma itself. In turn, we found unique associations between specific categories of appraisals and specific forms of distress, reviewed in detail below. We addressed new questions as they arose across samples (see discussion below about alienation and social support) and replicated links between specific appraisal categories and forms of distress across different samples, lending to the validity of these findings.

Table 3
Intercorrelations Among Predictor Variables in Sample 2

Variable	Ethnic minority status	Age	Betrayal	Self-blame	Fear	Alienation	Anger	Shame
Betrayal trauma	–.14	.03	–.19	–.11	.10	–.03	–.08	.05
Ethnic minority status		–.01	.02	.11	–.07	–.05	.10	.10
Age			–.06	–.14	–.03	–.07	–.01	–.18
Betrayal				.36**	.47**	.60**	.53**	.45**
Self-blame					.51**	.59**	.35**	.67**
Fear						.68**	.55**	.64**
Alienation							.50**	.69**
Anger								.46**

Note. For minority status, 1 = ethnic/racial minority group members; –1 = no minority group membership.
* $p < .05$. ** $p < .01$.

Table 4
Intercorrelations Among Predictor Variables in Sample 3

Variable	Physical aggression	Injury	Days since event (natural log)	Age	Ethnic minority status	SES	Betrayal	Self-blame	Fear	Alienation	Anger	Shame	Social support
Psychological aggression	.39***	.28***	−.10	−.19**	.00	−.14*	.18**	.10	.18**	.07	.11	.18**	−.11
Physical aggression		.68***	−.06	−.19**	.08	−.17*	.10	.11	.08	.06	.07	.19**	.01
Injury			−.08	−.07	.06	−.19**	.20**	.16*	.21**	.16*	.13†	.32***	−.03
Days since event (log)				−.14*	.00	.07	−.23**	−.19**	−.17*	−.18**	−.14*	−.18**	.13†
Age					−.08	.10	.06	.06	.12†	.08	.01	.09	−.05
Ethnic minority status						−.24***	−.03	.01	.05	−.03	.01	.04	−.14*
Socioeconomic status							.00	.02	−.01	.01	−.02	.03	.16*
Betrayal								.53***	.66***	.73***	.57***	.66***	−.30***
Self-blame									.56***	.70***	.57***	.74***	−.40***
Fear										.65***	.60***	.72***	−.23**
Alienation											.67***	.74***	−.51***
Anger												.63***	−.38***
Shame													−.33***

Note. For minority status, 1 = ethnic/racial minority group members; –1 = no minority group membership.
† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Alienation

Across undergraduate and community samples using two different measures of PTSD symptoms, alienation was significantly associated with PTSD symptom severity. Alienation was significantly associated with dissociation and depression symptom scores in both community samples (the alienation-dissociation link was not replicated in the undergraduate sample, where the full model predicting dissociative symptoms did not reach significance). Importantly, in the two community samples, alienation was the only appraisal (out of the six categories of appraisals assessed) that related to all three forms of distress assessed.

To better understand this finding, we turned to a closer examination of the TAQ alienation scale, which included: (a) I feel lonely; (b) There is a huge void inside me; (c) Even though I have friends, I am still lonely; (d) I mostly stay to myself; (e) I am disconnected from people; (f) I've cut myself off from other people; (g) I can't get close to people; (h) I've lost a piece of myself; (i) My friends don't understand my reactions; and (j) I don't want to have to trust anyone. After analyzing data from Samples 1 and 2, we wondered whether the alienation scale might simply tap something about social support (e.g., I can't get close to people). An extensive literature documents links between social support and symptoms, including among women exposed to IPA (e.g., Brewin, Andrews, & Valentine, 2000; El-Bassel, 2001; Guay, Billette, & Marchand, 2006; Ozer, Best, Lipsey, & Weiss, 2003). To examine whether social support accounted for links between alienation and symptoms, we examined women's perceptions of social support in Sample 3. Higher levels of social support were associated with lower scores on the alienation scale at the bivariate level. However, the significant relationship between alienation and all three types of symptoms held when controlling for social support, suggesting that the alienation scale tapped more than social support alone.

Instead of thinking of alienation as a proxy for social support, we propose that the alienation subscale tapped disconnection from oneself (e.g., I lost a piece of myself) and others (e.g., I am disconnected from people). Disconnection from oneself and others is a common denominator for multiple forms of distress: PTSD, depression, and dissociation symptoms. The co-occurrence of multiple forms of distress has been an important topic of discussion and research, with attention paid to several potential sources of comorbidity, such as trauma exposure type (Kilpatrick et al., 2003) and overlapping symptoms (e.g., Brunello et al., 2001). The current data suggest a novel route to understanding such co-occurrence of distress. In particular, disconnection from oneself and others may contribute to diverse forms of distress. For example, disconnection from oneself might result in problems of memory in PTSD and identity in dissociation. Disconnection from others might result in problems of avoidance in PTSD and social isolation in depression. Importantly though, these data cannot speak to causal links or directionality. Therefore, it is also possible that the particular aspects of distress that these symptom types have in common all contribute to a sense of isolation from oneself and others.

Still other research on the co-occurrence of different forms of distress has taken the approach that current diagnostic categories miss the mark when characterizing consequences of relational traumas, such as those experienced by women in Samples 2 and 3.

Table 5
Regression Models Predicting Symptoms in Sample 1

Model tested		Predictor variable	B	*SE* (B)	Beta	*t*
PTSD symptom severity	Trauma characteristic	Interpersonal vs. noninterpersonal	1.29	1.33	.08	.97
	TAQ	Betrayal	−1.78	1.67	−.11	−1.06
		Self-blame	−.005	1.80	−.003	−.03
		Fear	1.08	2.67	.04	.40
		Alienation	8.85	2.44	.50	3.62*
		Anger	.49	2.93	.02	.17
		Shame	5.84	3.21	.28	1.82*
Dissociation	Trauma characteristic	Interpersonal vs. noninterpersonal	.10	.74	.02	.14
	TAQ	Betrayal	−.004	.94	−.01	−.04
		Self-blame	−1.23	1.01	−.18	−1.22
		Fear	−.97	1.49	−.10	−.65
		Alienation	.90	1.37	.13	.66
		Anger	1.63	1.64	.17	.99
		Shame	3.02	1.79	.36	1.67†

Note. Trauma characteristic was coded as 1 = interpersonal trauma; −1 = noninterpersonal trauma. PTSD symptom severity measured with the Revised Civilian Mississippi Scale for PTSD. Dissociation measured with the DES.
† $p < .10$. * $p < .05$.

In particular, both theory and empirical findings point to complex forms of posttraumatic distress (see Herman's 1992 discussion of Disorders of Extreme Stress Not Otherwise Specified [DESNOS]) that involve disruptions in identity and interpersonal relatedness following interpersonal traumas. In particular, complex PTSD has been proposed to include problems in: affect and impulse regulation; attention and consciousness; self-perception; relations with others; somatic functioning; and systems of meaning (see Dorahy et al., 2009; Ford, 1999; Herman, 1992; Taylor, Asmundson, Carleton, 2006). While we did not measure complex PTSD symptoms per se, the three trauma-related distress measures we did use tap several core features of complex PTSD, such as regulation of

Table 6
Regression Models Predicting Symptoms in Sample 2

Model tested		Predictor variable	B	*SE* (B)	Beta	*t*
PTSD symptom severity	Participant characteristic	Ethnic minority status	−.56	1.13	−.05	−.49
		Age	.11	.17	.06	.64
	Betrayal trauma		−1.15	1.79	−.06	−.64
	TAQ	Betrayal	−.69	1.56	−.05	−.45
		Self-blame	−.62	1.29	−.06	−.48
		Fear	1.61	1.67	.13	.96
		Alienation	4.56	1.69	.39	2.71**
		Anger	−.05	1.33	−.00	−.04
		Shame	3.45	1.50	.33	2.31*
Dissociation	Participant characteristic	Ethnic minority status	3.45	1.46	.24	2.36*
		Age	−.19	.23	−.09	−.85
	Betrayal trauma		−2.61	2.30	−.12	−1.14
	TAQ	Betrayal	−2.54	1.99	−.17	−1.27
		Self-blame	.90	1.65	.08	.55
		Fear	1.16	2.16	.08	.54
		Alienation	5.99	2.18	.44	2.75**
		Anger	−.10	1.71	−.01	−.06
		Shame	.84	1.98	.07	.42
Depression	Participant characteristic	Ethnic minority status	.44	.86	.05	.52
		Age	.11	.13	.07	.82
	Betrayal trauma		−.16	1.37	−.01	−.12
	TAQ	Betrayal	−1.95	1.19	−.18	−1.64
		Self-blame	2.50	.98	.30	2.54*
		Fear	.83	1.28	.08	.65
		Alienation	4.24	1.29	.44	3.29**
		Anger	.37	1.02	.04	.37
		Shame	.79	1.15	.09	.69

Note. Ethnic minority status was coded as 1 = minority; −1 = nonminority. PTSD symptom severity measured with the PDS. Dissociation measured with the DES. Depression measured with the BDI–II.
* $p < .05$. ** $p < .01$.

Table 7
Regression Models Predicting Symptoms from TAQ Appraisal Scales in Sample 3

Model tested		Predictor variable	B	*SE* (B)	Beta	*t*
PTSD Symptom Severity	Participant characteristic	Age	.05	.05	.05	1.05
		Ethnic minority status	−.63	.58	−.05	−1.09
		Socioeconomic status	.32	.52	.03	0.61
	Incident characteristics	Days since event (natural log)	1.32	.66	.09	2.01*
		Psychological aggression	−.17	.21	−.04	−0.81
		Physical aggression	.68	.28	.14	2.44*
		Injury	.06	.21	.02	0.29
	TAQ	Betrayal	.41	.74	.04	0.56
		Self-blame	.66	.77	.05	0.85
		Fear	3.52	.67	.34	5.25***
		Alienation	4.33	.88	.40	4.95***
		Anger	−.36	.74	−.03	−0.49
		Shame	.72	.88	.06	0.82
	Social support	Social support	−1.59	1.03	−.08	−1.55
Dissociation	Participant characteristic	Age	.04	.08	.03	.53
		Ethnic minority status	−.06	.93	.00	−.06
		Socioeconomic status	−2.09	.83	−.16	−2.52*
	Incident characteristics	Days since event (natural log)	.91	1.05	.06	.87
		Psychological aggression	.20	.34	.04	.59
		Physical aggression	.70	.46	.13	1.53
		Injury	−.78	.33	−.20	−2.34*
	TAQ	Betrayal	−2.33	1.20	−.19	−1.95*
		Self-blame	2.29	1.23	.18	1.87†
		Fear	.78	1.08	.07	.72
		Alienation	4.01	1.41	.34	2.84**
		Anger	2.09	1.18	.16	1.77†
		Shame	.48	1.40	.04	.34
	Social support	Social support	−.38	1.63	−.02	−.23
Depression	Participant characteristic	Age	.09	.04	.11	2.07*
		Ethnic minority status	−.90	.54	−.09	−1.66†
		Socioeconomic status	−1.29	.49	−.14	−2.66**
	Incident characteristics	Days since event (natural log)	.08	.62	.01	.13
		Psychological aggression	.11	.20	.03	.56
		Physical aggression	.08	.27	.02	.29
		Injury	.05	.20	.02	.25
	TAQ	Betrayal	−.66	.70	−.08	−.95
		Self-blame	1.76	.72	.19	2.44*
		Fear	−.32	.63	−.04	−.51
		Alienation	2.64	.83	.32	3.17**
		Anger	2.42	.70	.25	3.48**
		Shame	−.20	.82	−.02	−.24
	Social support	Social support	−3.09	.96	−.20	−3.23**

Note. Ethnic minority status was coded as 1 = minority; −1 = nonminority. PTSD symptom severity measured with the PDS. Dissociation measured with the DES. Depression measured with the BDI–II. Social support with the ISEL.
† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

affect (as measured by the BDI–II); attention and consciousness (as measured by the PDS and DES); and self-perception (as measured by the DES). The alienation scale taps self-perception and relations with others. Thus, the significant associations between alienation and the three types of trauma-related distress (dissociation, PTSD, and depression) in Samples 2 and 3 may reflect larger issues of complex PTSD in those samples. Alternatively, as suggested above, disconnection from oneself and others may have a broad-based and profound impact on the human system; and thus lead to multiple, complex forms of distress. We hope that future longitudinal studies will examine complex PTSD in relation to multiple appraisal processes to help distinguish whether alienation is a symptom of complex PTSD or an underlying antecedent of complex forms of distress.

Betrayal

The contribution of betrayal appraisals to dissociative symptoms was significant and negative in Sample 3. That is, greater reports of betrayal were associated with less dissociation. Though not significant, the same negative pattern emerged in Sample 2; thus, we saw this unique pattern in two data sets. This finding is consistent with previous theoretical and empirical work linking traumas by close others (that involve social betrayal) with dissociation (e.g., DePrince, 2005; Freyd et al., 2007). Importantly, the direction of these findings provides new support for BTT (Freyd, 1996; Freyd et al., 2007). As initially proposed, BTT provided a motivation for why some trauma survivors would report disruptions in memories for the trauma. Highlighting social dimensions

of interpersonal trauma, BTT argues that violence perpetrated by a close other is a social betrayal. Further, a victim who is dependent on an abusive other (e.g., parent, intimate partner) may be at an advantage if she/he can remain unaware of the betrayal in order to maintain the necessary (albeit abusive) attachment.

BTT initially implicated dissociation in unawareness. While definitions of dissociation vary, they generally converge on the fragmentation of typically connected aspects of information processing, particularly as they relate to identity. For example, van der Hart et al. (2004) argue that dissociative experiences involve disconnection of observing and experiencing ego. Thus, the BTT initial hypothesis that dissociation and unawareness would be related makes good sense insofar as dissociative symptoms involve disintegration of aspects of personality (e.g., van der Hart et al., 2004) and cognition (Holmes et al., 2005) that would be relevant to awareness of abuse by a close other. Several empirical approaches have been used to examine the links between betrayal and dissociation. First, research has examined links between traumatic event characteristics and dissociation. Chu and Dill (1990) documented that childhood sexual and/or physical abuse by family members (and not abuse by nonfamily members) was significantly related to increases in dissociation scores in psychiatric inpatients. Similarly, DePrince (2005) found that the presence of betrayal trauma before the age of 18 was associated with pathological dissociation and with revictimization after age 18. Second, researchers have examined links between dissociation and performance on cognitive tasks that suggest disruptions in awareness of interpersonal relationship or safety rules. DePrince (2005) found that those individuals who reported being revictimized in young adulthood following an interpersonal assault in childhood perform worse on reasoning problems that involved detecting violations of interpersonal relationship and safety rules (compared to individuals who have not been revictimized), suggesting some unawareness of danger cues. Pathological dissociation was significantly related to worse reasoning performance. DePrince, Chu, and Combs (2008) extended these findings in children, documenting that higher levels of dissociative symptoms were significantly related to errors detecting violations of interpersonal relationship and safety information. Still other research has documented links between dissociation and knowledge isolation as measured by memory or attention tasks (e.g., Becker-Blease, Freyd, & Pears, 2004; DePrince & Freyd, 2001, 2004; Moulds & Bryant, 2005).

To date, these two approaches (linking event characteristic and cognitive task performance to dissociation) have been important in the absence of methods to assess self-reports of betrayal appraisals. The current study provides a novel approach to testing predictions from BTT by using the TAQ betrayal scale as a measure of awareness of betrayal in the context of traumatic events that were interpersonal in nature (Sample 2) or perpetrated by intimate partners (Sample 3). In particular, women were asked to rate how well descriptions of betrayal matched their beliefs with regard to the target event. Sample items that comprised the betrayal scale were: The people that I was supposed to trust the most hurt me; Important people (such as parents, partner, friend) let this happen to me; If the person really cared about me that person would not have done what they did; I feel betrayed; and I feel double-crossed.

Strikingly, the less likely women in Sample 3 were to appraise the interpersonal violence as a betrayal, the higher the reported dissociative symptoms. All participants were exposed to high betrayal traumas by the nature of recruiting: only women exposed to violence in intimate relationships were recruited. Dissociation was linked to unawareness of betrayal (in the context of perpetrator-victim relationships that included betrayal), even when controlling for multiple related factors (e.g., event characteristics, other appraisals). In Sample 2, this negative relationship pattern was present (though not statistically significant) when controlling for the degree of betrayal in the target event. Sample 3 involved women with very recent exposures to IPA, whereas recruitment did not pull for recent events in Sample 2. The current data raise the question of whether this finding is more likely among women with more recent trauma.

While these findings demonstrate links that are supportive of BTT, the cross-sectional nature of the data does not allow us to make inferences about mechanisms. For example, BTT implies that dissociation leads to unawareness, though we measured betrayal appraisals and dissociation at the same time point and are unable to comment on causality. For some women, low scores on the betrayal scale may not represent unawareness as much as never having learned that they are entitled to relationships with trusted others in which they are not harmed. DePrince, Combs, and Shanahan (2009) recently reported that women with histories of multiple victimizations by close others (relative to their peers with no or only one victimization) showed automatic links between concepts of relationships and harm in a lexical decision-making task. These findings suggest that multiply victimized women have schemas of relationships that include expectations of harm (see also Cloitre, Cohen, & Scarvalone, 2002). Extending these findings to the current study, the tendency to not label intimate violence as a betrayal could reflect either unawareness of betrayal to preserve important attachments, a lack of expectation of trust and safety in relationships, or a combination of the two. However, if scores on the betrayal scale were driven only by previously learned expectations about harm in relationships, we would not necessarily expect to see negative associations with dissociation. That is, if the betrayal scores arise primarily from previously learned beliefs that relationships involve harm and therefore do not require any fragmentation of awareness or memory, we should not see links to dissociation. Indeed, expectancies that relationships involved harm in the DePrince et al. (2009) study were unrelated to symptoms.

Shame

In Samples 1 and 2, we replicated previous research documenting links between shame and PTSD symptoms (e.g., Andrews et al., 2000; Brewin, Andrews, & Rose, 2000), pointing to the importance of better evaluating and considering shame in research and interventions. Interestingly, while shame involves views of oneself (e.g., TAQ items such as "It's as if my insides are dirty"), shame was not a significant predictor of depression in either Sample 2 or 3. In at least one previous study looking broadly at self-related cognitions, Kaysen et al. (2005) found links to depression. In the current study, self-cognitions were more narrowly defined into different appraisal categories, such as shame and self-blame. As discussed below, when self-cognitions are more narrowly defined and tested in combination with other appraisal

categories, we found that self-blame and not shame predicted depression scores.

Self-Blame

Self-blame was significantly associated with depression symptom severity in Samples 2 and 3, as well as dissociation in Sample 3 only. These findings build on the literature linking self-blame and sexual assault (Breitenbecher, 2006; Filipas & Ullman, 2006) by looking more broadly at violence against women (Sample 2) and at nonsexual intimate partner abuse (Sample 3). In terms of depression, self-blame has been shown to mediate links between childhood psychological maltreatment and later, depression in adult women (Harper & Arias, 2004). In the current study, we demonstrated links between self-blame and depression in two community samples after controlling for characteristics of the incident and social support (Sample 3) and shame. Use of the multifactorial TAQ allowed us to evaluate multiple appraisal categories simultaneously, which may give a different picture of appraisals and trauma-related distress than when appraisal categories are examined one at a time.

Fear. Given the large amount of attention that fear garners in the PTSD literature (see DePrince & Freyd, 2001), the most striking findings related to fear in this study are the lack of findings, underscoring the importance that alternate appraisals may play in understanding distress. Fear was a significant, positive predictor of PTSD symptoms in Sample 3 only. Of note, participants in Sample 3 were likely recruited closer to the time of occurrence of the target event (median 26 days) than those in Samples 1 and 2 because Sample 3 involved using recent crime reports. While we do not have data available on time since the event in Samples 1 and 2, the recruitment methods in those studies likely pulled for greater diversity in and length of time since the event. Thus, fear may explain greater variance in PTSD-related distress closer to the incident. Given concerns about timing, we were able to at least control for the number of days since the event in Sample 3. In addition, women in Sample 3 may be more likely than participants in Samples 1 and 2 to be in ongoing relationships and/or contact with the perpetrators. Thus, fear-PTSD links in Sample 3 may reflect ongoing responses to danger.

Anger. Anger was significantly related to depression in Sample 3 only. Like fear, anger may play a more important role with recent trauma. For example, an anonymous reviewer noted that anger may reflect a woman's perceived helplessness and inability to protect herself and her children relatively soon after an incident of domestic violence. However, the link between anger and depression should be interpreted cautiously until replication in other samples where time since the event can be more tightly controlled across samples.

Limitations

In all samples, participant self-selection into the study may affect generalizability of findings; however, women in Sample 3 did not know the research was about IPA until they came to the first interview. Samples 2 and 3 were limited to female participants, thus we do not know how well these findings extend to male survivors. In Sample 3, the incident of IPA occurred more recently for most women than the duration criterion allows for the diagnosis of PTSD. Because of this limitation, we analyzed distress symptom severity and make no claims about diagnosis. Further, we relied on self-report of appraisal categories and trauma-related distress, which may be prone to both under- and overreporting errors. In spite of this important limitation, we are encouraged that the replication of findings across samples helps address concerns about reporting biases. Participants completed the TAQ based on current appraisal categories (not appraisal categories at the time of the event). Appraisals made at the time of the event versus subsequent appraisals may differentially influence the course of posttrauma symptoms (see Brewin, Dalgleish, & Joseph, 1996). The current study cannot address questions about the role that appraisals now versus at the time of the event relate to the course and severity of posttraumatic distress.

Conclusions

The current study documents links between alienation—that is, beliefs about disconnection from oneself and others—and multiple forms of distress. Further, the findings demonstrated unique patterns of associations between specific appraisal categories and symptoms of distress (e.g., self-blame and depression, shame and PTSD, and betrayal and dissociation) when using a multifactorial measure of appraisals. With the exception of three associations (anger-depression, betrayal-depression, and fear-PTSD), all patterns were replicated in at least 2 of the 3 samples, lending to the validity of these results. These data point to the importance of examining multiple appraisal categories simultaneously. To the extent that we can better understand appraisal processes associated with the onset and/or maintenance of different forms of distress, we will be able to fine tune our models of how distress develops and improve corresponding interventions. For example, the importance of alienation across all three symptom types points to the need to consider the relational context of interventions with survivors of interpersonal violence. These findings are consistent with calls to expand the types of appraisals studied and considered posttrauma (e.g., Brown & Freyd, 2008).

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