

TRAUMA ASSESSMENT AND TREATMENT

Development of the Trauma Appraisal Questionnaire

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This study describes the development and psychometric properties of the Trauma Appraisal Questionnaire (TAQ). Items were generated based on interviews with 72 ethnically diverse community participants exposed to a range of trauma types. From the interviews, more than 600 items that tapped beliefs, emotions, and behaviors were generated for 9 appraisal categories (e.g., fear, betrayal, shame). Based on expert feedback, 108 items were retained for initial testing in a sample of 714 undergraduate volunteers. Using a factor analytic strategy, we arrived at a 6-scale, 54-item solution. The reliability and validity of the new measure were evaluated in community (N = 119) and undergraduate (Ns = 139 and 79) samples. The measure demonstrated excellent reliability (test–retest and internal consistency) and validity (convergent, discriminant, and concurrent).

Submitted 28 July 2008; revised 24 January 2009; accepted 20 April 2009.

This research was supported by a grant to Anne P. DePrince (1 R03 MH068624–01A1, National Institute of Mental Health). The authors wish to thank Lisa Badanes, Melody Combs, Rheena Pineda, Aimee Reichmann-Decker, Michelle Shanahan, and Pallavi Visvanathan for assistance with interviews; Elisabeth Thompson for assistance with data collection; Amelia E. Chianese and Drs. Jennifer Freyd and Lisa DeMarni Cromer for project assistance; and community agencies for assistance with recruiting.

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KEYWORDS *appraisal, cognitions, posttraumatic distress, PTSD, trauma*

Trauma exposure has been associated with a range of psychological symptoms, including posttraumatic stress disorder (PTSD; Breslau et al., 1998; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995), depression (e.g., Kaysen, Scher, Mastnak, & Resick, 2005; Paolucci, Genuis, & Violato, 2001), and dissociation (Putnam, 1997). Although we do not yet know why some individuals exposed to trauma experience PTSD and others experience depression or dissociation, perceptions of one's own thoughts, feelings, and behaviors following the event likely play an important role in the development and trajectory of various forms of posttraumatic symptoms. We use the term *appraisal* to refer to people's assessments of their thoughts, feelings, and behaviors. For example, if a person is asked about feelings of fear, she or he must appraise (or evaluate) those feelings to answer the question (e.g., decide if those feelings are present and to what degree). Appraisals of fear (i.e., assessments that fear-related thoughts, feelings, and behaviors are present to a high degree) might lead to greater anxiety and PTSD (e.g., Ehlers & Clark, 2000), whereas appraisals of shame might lead to greater depressive symptoms (e.g., Kaysen et al., 2005). Similarly, there might be other relationships between specific appraisals and various PTSD symptoms; however, these relationships are difficult to assess in the absence of valid methods for measuring the full complement of appraisals that can arise after a traumatic experience.

The importance of appraisals is implicit in the PTSD diagnostic criteria, where Criterion A.2 requires that individuals recognize and report that they experienced "intense fear, helplessness or horror" (American Psychiatric Association, 1994, p. 428). Despite the diagnostic importance of this criterion, several investigators have raised important questions about the criterion's inherent assumptions. For example, the criterion assumes that individuals reliably experience intense emotions (see Brewin, Andrews, & Rose, 2000; Kilpatrick, Resnick, Saunders, & Best, 1998) and accurately report these emotions retrospectively. Further, the criterion does not distinguish between appraisals made at the time of the trauma and subsequently that could influence the course of PTSD (see Brewin, Dalgleish, & Joseph, 1996). Although the notion that appraisals predict risk for PTSD makes good theoretical sense, empirical evidence justifying the inclusion of some appraisals and not others in the PTSD diagnostic criteria is lacking (Roemer, Orsillo, Borkovec, & Litz, 1998).

Research offers mixed support for the relationship among fear, helplessness, horror, and PTSD. Some research has found predictive power across these emotions (e.g., Brewin et al., 2000), whereas other research has found that helplessness (but not fear or horror) predicts PTSD severity (e.g.,

Roemer et al., 1998). Still other research has found that a range of appraisals (e.g., fear, anger, shame, self-blame) relate to different types of traumas and symptoms (Andrews, Brewin, Rose, & Kirk, 2000; Breitenbecher, 2006; Brewin et al., 2000; Feeny, Zoellner, & Foa, 2000; Filipas & Ullman, 2006; Harper & Arias, 2004; Kaysen et al., 2005). For example, participants who met PTSD criteria (but did not endorse fear, helplessness, or horror) endorsed maximum shame and anger ratings (Brewin et al., 2000). Shame predicted PTSD symptoms after controlling for fear, helplessness, or horror in violent crime victims (Andrews et al., 2000).

Several studies also suggest a relationship between anger and PTSD (e.g., Andrews et al., 2000; Brewin et al., 2000; Chemtob, Hamada, Roitblat, & Muraoka, 1994; Feeny et al., 2000). For example, Andrews et al. (2000) found that anger was a strong predictor of PTSD symptoms one month postcrime in a sample of violent crime victims. Among women who were sexually assaulted, anger onemonth postassault was predictive of PTSD severity at one year (Feeny et al., 2000). Feeny et al. (2000) argued that anger might represent a form of emotional disengagement and thereby contribute to the maintenance of distress. Thus, some appraisals could be important to the maintenance of distress and others to the onset.

When we consider other forms of distress, such as depression and dissociation, looking beyond fear, helplessness, and horror might be particularly important. For example, several theorists have found that alterations in appraisals such as self-blame, guilt, and trustworthiness of others are related to posttraumatic distress generally (Lifton, 1996; Newman, Riggs, & Roth, 1997; Roth, Lebowitz, & DeRosa, 1997; Roth & Newman, 1991, 1993). Still others have found that self-related appraisals (e.g., self-blame and shame) were related to depressive symptoms (Harper & Arias, 2004; Kaysen et al., 2005). Additionally, Brewin et al. (2000) suggested that shame and anger appraisals could occur after the trauma. This raises the question of how current (or secondary) appraisals (vs. appraisals at the time of the trauma) are related to symptom course and severity. Posttrauma appraisals might be important to assess in terms of their contribution to the maintenance of distress. For example, current self-reported feelings of betrayal predicted PTSD symptoms after controlling for fear in a community sample of traumatized individuals (DePrince, 2001).

Without adequate measurement tools for assessing posttraumatic appraisals, the relationship between appraisal and distress remains to be fully explored. To date, studies or measures asking about posttraumatic appraisals have tended to rely on yes–no questions (e.g., the Posttraumatic Diagnostic Scale; Foa, Cashman, Jaycox, & Perry, 1997), checklists of emotions (e.g., DePrince, 2001), or ratings of individual emotions by Likert scale (e.g., Andrews et al., 2000; Brewin et al., 2000). These formats are confounded by potential discrepancies between the definitions ascribed to the emotions by the researcher and the respondent (e.g., do both the researcher

and the participant share the same understanding of “horror”?). Further, methods using yes–no formats fail to provide information about the intensity of the emotion for the respondent. Checklists constrain participants to the response set established by the researcher, thus limiting the potential to discover appraisals not initially identified by the researcher. Finally, integrating findings across studies is difficult when (a) different studies assess only one or two appraisals; and (b) different measures for different emotions are used within a single study. For example, Brewin et al. (2000) assessed shame and anger with Likert-type scales. Feeny et al. (2000) assessed anger (and not shame) using a 24-item measure that assessed several dimensions of anger. These limitations could be addressed with a single measure that taps multiple dimensions (e.g., beliefs, emotions, and behaviors) of multiple appraisals.

To address these important theoretical and measurement issues, we developed the Trauma Appraisal Questionnaire (TAQ) with several goals in mind. We included multiple items to assess each appraisal (vs. formats that use a single item to assess a particular emotion) with items that tapped emotions, beliefs, and behaviors (rather than just one of the three). Additionally, we developed items to assess appraisals of interpersonal events that have been underrepresented or missing from existing measures, such as alienation and betrayal (e.g., DePrince & Freyd, 2002). Finally, we extended traditional approaches to developing rationally derived scales, which depend primarily on experts’ clinical observation, the empirical literature, or both to generate items (see Weathers, Keane, King, & King, 1997) by including trauma (as defined by PTSD Criterion A.1) survivors’ voices in the research process. Specifically, we generated the initial pool of items from interviews with survivors. By incorporating survivors’ voices, we hoped to maximize the likelihood that new appraisals or ways of characterizing appraisals would emerge.

To assess convergent, discriminant, and concurrent validity of the new measure, we compared appraisals reported on the TAQ to a semistructured interview assessing appraisals; both sets of appraisals were based on the same trauma event. We also tested several predictions that TAQ scale scores would distinguish between participants who (a) reported noninterpersonal versus interpersonal traumas; (b) did and did not meet symptom criteria for PTSD; and (c) scored high and low on a measure of dissociation.

PROJECT OVERVIEW

Scale construction was carried out across three phases: (a) item generation, (b) item analysis, and (c) initial evaluation of reliability and validity. Table 1 outlines the design of the three phases. In Phase 1 (Sample 1), trauma experiences were assessed via a self-report questionnaire; in addition, a semistructured

TABLE 1 Content of Testing Sessions by Phase and Sample

	Phase 1	Phase 2	Phase 3		
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 2b
Self-report measures					
Trauma Exposure (Brief Betrayal Trauma Survey)	X	X	X	X	X
Dissociation (Dissociative Experiences Scale)			X	X	X
Posttraumatic stress disorder (Revised Civilian Mississippi Scale)			X	X	X
Face-to-face interview					
Appraisal generation (TAMS qualitative)	X				
Resolution of appraisal themes (TAMS quantitative)			X		
Newly developed Trauma Appraisal Questionnaire					
Retrospective and current version			X	X	X
Current version only		X			

Note: TAMS = Thematic Assessment Measurement System.

interview (a modified version of the Thematic Assessment Measurement System [TAMS; Lifton, 1996; see also Newman et al., 1997; Roth et al., 1997; Roth & Newman, 1991, 1993]) was used to elicit qualitative data regarding appraisals (e.g., shame, fear, rage). Based on feedback from experts, we retained a subset of the appraisals generated in Phase 1 for use in Phases 2 and 3. In Phase 2 (Sample 2), trauma experiences were assessed and an initial version of the TAQ was administered. Factor analytic techniques were applied to these data to refine and edit the TAQ. The final version of the TAQ was administered to three separate samples in Phase 3 (Samples 2b, 3, and 4), along with a variety of questionnaire measures (e.g., trauma experiences, dissociation, PTSD, depression) and a semistructured interview protocol (TAMS) to allow for assessment of the convergent, discriminant, and concurrent validity of the TAQ. In addition, we administered the TAQ to one sample at two time periods (Samples 2 and 2b), allowing us to assess test-retest reliability.

PHASE 1: ITEM GENERATION

Method

PARTICIPANTS

Sample 1 was recruited in a large city in the western United States through flyers placed at community and social service agencies, as well as advertisements

in local media. Inclusion–exclusion criteria were assessed during a phone screen. Inclusion criteria included being age 18 or older and reporting exposure to a Criterion A.1 event (American Psychiatric Association, 1994). Participants who reported a suicide attempt or hospitalization for psychiatric reasons in the previous 6 months were excluded. Of the 72 participants interviewed (23 men, 48 women, 1 missing data), 7 did not report their age; the remaining participants reported an average age of 35.28 ($SD = 12.12$). The 70 participants who reported on racial background identified as 50% White, 29% Black, 1% Asian, 3% Native American, and 17% other race, biracial, or multiracial. Of the 49 participants who reported on ethnicity, 14% identified as Hispanic. Participants received \$25 each for participation in the study.

MEASURES

The Brief Betrayal Trauma Survey (BBTS; Goldberg & Freyd, 2006) includes 12 behaviorally defined traumatic events, ranging from noninterpersonal traumas (e.g., natural disasters) to interpersonal traumas. Psychometric data demonstrate good construct validity and test–retest reliability (Goldberg & Freyd, 2006). The TAMS is a semistructured interview that was initially developed with sexual assault survivors to code cognitive-affective representations of the self and others, such as fear, self-blame, and alienation. These cognitive-affective representations are referred to as themes. DePrince (2001) adapted the interview for use with survivors of multiple types of traumatic events and added items to assess themes of betrayal. The TAMS is designed to assess both the presence and resolution of themes. Resolution refers to the degree to which a theme “incorporates the trauma and permits flexible emotional engagement with the world” (Newman et al., 1997, p. 198). A theme is unresolved when it “is influenced by the trauma and provides an overly biased or confined way of relating to the world” (p. 198). For example, a sexual assault survivor might show unresolved fear by reporting fear of all men since the assault and severe limiting of her social interactions to avoid men. Another survivor might show resolved fear by reporting that her initial fear of all men changed over time such that she now evaluates each man individually, believes trust is built over time, and no longer limits her social interactions to avoid men (see Newman et al., 1997). The TAMS interview begins with opportunities for participants to report spontaneously on posttraumatic themes. Increasingly structured probe questions then assess common themes not mentioned spontaneously by the participant. For example, if a participant did not mention self-blame, the interviewer would probe with questions such as, “Why do you think the event happened?” This study used the modified TAMS semistructured interview in two different ways: in Phase 1 to gather qualitative data regarding appraisals (e.g., shame, fear, rage), and in Phase 3 to code resolution of

appraisal themes quantitatively (additional details about coding are provided later). In Phase 1, the semistructured questions were used to elicit participants' statements about thoughts, behaviors, and emotions experienced posttrauma.

PROCEDURE

Following informed consent procedures, participants completed the BBTS and gave it to the interviewer, who used this information to initiate the interview. Doctoral students or the first author conducted the interviews. Participants were told:

For this interview . . . the goal is to give you a chance to talk about reactions—feelings, emotions, bodily sensations, behaviors—you have had to very stressful/traumatic life events. We're really interested in how you would describe what you have felt in response to the trauma—either at the time or now. We're especially interested in learning more about what emotions feel like to you. For example, two people might say they felt scared about a stressful event . . . but they might mean really different things by scared.

If participants reported exposure to multiple potentially traumatic events, interviewers encouraged participants to focus on appraisals in relation to the event that had the greatest impact on them over the course of their lives. Once a participant spontaneously mentioned an appraisal (e.g., shame), the interviewer elicited detailed descriptions of relevant beliefs, emotions, behaviors, and physical sensations. If the participant did not spontaneously mention betrayal, fear, anger, shame, self-blame or guilt, helplessness, horror, loss, and alienation, interviewers probed for these appraisals. After completion of the testing session, participants were debriefed and compensated for their time.

Results

Participants reported exposure to the following types of potentially traumatic events on the BBTS (percentages do not sum to 100% because participants could report exposure to multiple types of events): 42.2% sexual abuse or assault, 55.6% physical assault, 50.0% witnessed violence (including domestic violence), 65.3% emotional abuse, 66.7% noninterpersonal trauma (e.g., motor vehicle accident, natural disaster), 12.5% death of a child, and 34.7% other events not covered on the BBTS.

The third and fourth authors conducted content analysis on 71 audiotaped interviews (one was missing due to equipment malfunction). Following a bottom-up approach (Auerbach & Silverstein, 2003), the same

two authors listened to the interviews closely to identify segments of the text relevant to appraisals. Because we were interested in developing a measure that tapped multiple dimensions of appraisals, we defined relevant text as behavior, emotion, belief, or physiological arousal statements that described appraisal processes. We then grouped relevant statements into repeating ideas and themes. At the end of the initial qualitative analysis process, 600 statements were grouped into nine themes. The first, third, and fourth authors then edited statements to remove redundant and ambiguous items.

Expert reviewers next provided detailed feedback regarding the items generated in the qualitative analysis. First, members of the first author's research group as well as department faculty and graduate students with expertise in trauma review items for redundancy, clarity, ambiguity, and fit with theme. Following this review, items were further edited or deleted, with 172 items retained. Next, seven international trauma experts provided feedback for these items. In addition to open-ended comments about individual items, experts made four quantitative ratings of how well items fit with themes and whether they were ambiguous, easily understandable, or redundant. In combination with the open-ended feedback, these ratings were used to select and edit items, resulting in the 108-item measure used in Phase 2. The 108 items were presumed to belong to the following appraisal categories (parentheses indicate the number of belief, behavior, and emotion statements respectively): alienation (6, 3, 2), anger (6, 3, 2), betrayal (8, 3, 2), fear (6, 3, 2), helplessness (5, 3, 2), horror (3, 2, 2), loss (6, 3, 3), self-blame (7, 2, 2), and shame (7, 3, 3). In addition, there were nine physiological arousal items (e.g., "I couldn't catch my breath").

Discussion

The interviews generated a rich array of appraisals that comprised several higher order repeating ideas and themes. In general, experts were in agreement about the centrality and quality of items, allowing us to retain only the best items for use in Phase 2. However, the interviews were less successful in generating items for helplessness and horror relative to other appraisals. Anecdotally, interviewers reported great difficulty eliciting comments from participants about horror in particular, which might reflect issues concerning the appraisals themselves, the interview process, or this particular group of participants (and the types of traumas they had experienced). Horror responses might be less frequently experienced following interpersonal traumas relative to other traumas (e.g., serious accidents, medical trauma). Further, belief statements appeared easier to elicit from participants than behavior or emotion statements. Belief statements might be more salient or important to people in understanding (or constructing a narrative about) their traumatic experience than their emotions or behaviors.

PHASE 2: ITEM ANALYSIS

Method

PARTICIPANTS

The Phase 2 undergraduate sample (Sample 2) was recruited through psychology classes at a large, public university on the West Coast. Of the 1,052 students surveyed, 714 reported exposure to at least one traumatic event on the BBTS and responded to the TAQ in a way that appeared valid (see description in Results section concerning validity criteria). Of the 707 participants who reported their sex, 70% were female. Eight participants did not report their age; the remaining participants reported an average age of 19.96 ($SD = 2.18$). The 669 participants who reported on racial background identified as 70% White, 1% Black, 11% Asian, <1% Native American, 2% Native Hawaiian/Pacific Islander, and 15% other race, biracial, or multiracial. Of 673 participants who reported on ethnicity, 13% identified as Hispanic.

MEASURES

The 108-item TAQ was presented to students with the following instructions:

Please think about one of the events you said you experienced on the previous questionnaire. We are interested in how you felt at the time of the event. For each of the following items, please circle the number that indicates how much you agree or disagree with the description of your thoughts, feelings, or experiences at the time of the event.

Participants were presented with a response scale as follows: 1 (*strongly disagree*), 2 (*somewhat agree*), 3 (*neutral*), 4 (*somewhat disagree*), and 5 (*strongly agree*).

PROCEDURE

Participants were tested in large groups on one of four separate days. The administrations took place during one of the first meetings of participants' psychology courses, as part of a prescreening process for possible later participation in psychology studies for course credit. Following consent procedures, participants received the BBTS and 108-item TAQ. Participants were instructed to complete the TAQ only if any items on the BBTS applied to them. If more than one event on the BBTS was reported, they were asked to think about the event that was the most traumatic or had the most impact on them over the course of their life. They were asked to indicate the event about which they were thinking when completing the TAQ. Participants also completed other measures not analyzed here and were then debriefed.

Results

A total of 398 participants were excluded from analyses because they either (a) did not report any trauma exposure, (b) responded to fewer than 20% of TAQ items, or (c) made the same response to 80% or more of the 108 items (e.g., a participant who responded 1 to 86 or more items). We chose these response criteria because of the negative impact of probable invalid responses on factor analysis results. Participants who made the same responses to 80% of the 108 items might not have paid adequate attention to the task or might have perceived their trauma exposure to be particularly unremarkable, thus resulting in a lack of variability in appraisals. Of the 714 participants that remained, 621 reported on the type of event (e.g., sexual assault, motor vehicle accident) they thought about while answering the TAQ (93 did not provide this information). Participants ($n = 285$) reported they were thinking about an interpersonal event, such as an assault or abuse; the remaining participants reported thinking about a noninterpersonal event such as an automobile accident or an earthquake.

Prior to factor analysis, we excluded physiological arousal items because sample size constraints limited our ability to explore this factor that was not central to the development of an appraisal measure. The suitability of the data for factor analysis was assessed by conducting an initial principal axis factor analysis with the remaining 99 items ($N = 425$). Bartlett's test of sphericity was significant ($p < .001$) and the Kaiser–Meyer–Olkin measure of sampling adequacy was .95, indicating that the variables were correlated and factor analysis was appropriate.

Because of the relatively small participant-to-items ratio (7.2:1), we reduced the number of items before proceeding with the full factor analysis. To do this, we conducted individual factor analyses for each of the nine hypothesized appraisal themes to select the best items for each. Because cases were excluded listwise, the sample sizes varied by individual factor analyses (n s ranged from 425–557). We used the principal axis factoring extraction method. If suggested by the scree plot and the eigenvalues, multiple solutions were estimated. In cases where a solution had more than one factor, factors were allowed to correlate. For all themes, a one-factor solution was deemed the best and most interpretable solution. Using the one-factor solution for each theme, the items with the highest loadings were retained. We dropped all items with loadings less than .50, except in cases when this would have resulted in fewer than nine items for a given appraisal theme. For two such appraisals (horror and loss), we retained three additional items (one for horror, two for loss), all with loadings above .40. We retained a maximum of 11 items per appraisal theme, dropping items with loadings above .50, if necessary. Two shame items were dropped for this reason. In all, six belief items and nine behavior items were trimmed from the full set of 99 items in this initial phase.

Using all of the remaining 84 items, an iterative series of principal axis factoring analyses with oblimin rotation were conducted. At each step, the goal was to determine the preferred solution for that number of items, and then to assess whether any items should be dropped. After dropping items, the process was repeated. To determine the preferred solution, we conducted several analyses forcing different numbers of factors and considered the eigenvalues and the interpretability of the factor structure for each solution. Using that preferred solution, we then dropped all items with loadings less than .30 and items with strong cross-loadings (i.e., the difference between the top two loadings was less than .05). Midway through the iterative process we also dropped the loss scale, because it included only three items. After five iterations, no further items could be dropped using these selection criteria. For our final iteration, we dropped all items ($n = 2$) with loadings $< .40$. We also dropped one additional item (from the fear theme) so that each theme would have no more than 11 items. The final preferred solution included 6 factors (see Table 2). The number of items per scale ranged from 7 (betrayal, shame) to 11 (fear), resulting in 54 total items. In most cases, each appraisal was made up of items of all three types (beliefs, emotions, and behaviors); however, for betrayal and shame, no behavior items were retained. Of the original nine appraisal themes, three (horror, helplessness, loss) were not represented in the final solution.

Discussion

The factor analytic process resulted in a solution with a clearly interpretable structure. Each item loaded strongly on one factor, with only minimal cross-loadings. Internal consistency of all subscales was high (see Table 2 for Cronbach's alphas). Six of the nine hypothesized appraisals are represented in the final solution. We attempted to retain belief, emotion, and behavior items for each appraisal scale but were unable to do so. This difficulty might represent a lack of suitable items in our original item pool; however, this is unlikely given that the item generation process was sophisticated and involved multiple stages. Alternatively, appraisals might vary in the extent to which they involve beliefs versus emotions, and in the extent to which they are enacted behaviorally. Consider shame, for example. The final solution for shame did not include behavior items; 57% of the items reflected emotions (e.g., I felt ashamed, I felt embarrassed). Shame can be experienced mostly internally, thereby having a strong affective component. In contrast, alienation and anger had the largest percentage of behavior items (30% and 22%, respectively), suggesting that these themes might be more outwardly directed and more overtly visible through behaviors.

TABLE 2 Summary of Items and Standardized Factor Loadings for the Trauma Appraisal Questionnaire in Sample 2

Scale (Cronbach's alpha)	Item	Factor loading					Item		
		1	2	3	4	5	M	SD	
Betrayal (.92)	The people that I was supposed to trust the most hurt me. (BEL)	0.78	-0.03	0.05	0.08	0.05	-0.01	2.58	1.7
	The person who was supposed to be closest to me hurt me the most. (BEL)	0.76	0.02	-0.02	0.12	0.02	0.02	2.59	1.7
	Important people (such as parents, partner, friend) let this happen to me. (BEL)	0.70	0.03	0.01	-0.02	0.05	0.12	2.22	1.5
	If the person really cared about me that person would not have done what they did. (BEL)	0.67	0.04	-0.04	-0.01	0.04	-0.15	2.83	1.6
	Someone important (such as a parent, lover, friend) should have kept me safe. (BEL)	0.67	0.02	0.16	0.01	-0.02	-0.05	2.52	1.6
	I felt betrayed. (E)	0.59	0.02	-0.05	0.24	0.05	-0.21	3.09	1.6
	I felt double-crossed. (E)	0.47	-0.01	-0.02	0.06	0.17	-0.30	2.35	1.4
	I was responsible for what happened. (BEL)	0.00	0.78	0.01	-0.12	-0.06	-0.08	2.33	1.4
	I felt responsible. (E)	0.03	0.68	-0.06	0.07	0.06	0.04	2.79	1.5
	If I were good enough, then this wouldn't have happened to me. (BEL)	0.15	0.61	0.03	0.12	-0.05	0.00	2.15	1.4
Self-blame (.91)	The event happened because I wasn't careful enough. (BEL)	0.01	0.60	0.03	-0.18	-0.02	-0.27	2.30	1.5
	I deserved what happened to me. (BEL)	0.01	0.60	0.07	-0.13	-0.04	0.02	1.67	1.1
	I let myself down. (BEL)	-0.01	0.58	0.02	0.12	0.11	-0.15	2.57	1.4
	I was a bad person. (BEL)	-0.05	0.57	0.05	0.13	0.14	-0.06	1.97	1.3
	I felt guilty. (E)	-0.10	0.57	-0.03	0.22	0.10	-0.09	2.96	1.5
	I must have done something really awful to make this happen. (BEL)	0.11	0.56	0.14	0.04	-0.01	0.01	1.90	1.3
	I was hard on myself about what happened. (BEH)	0.04	0.52	-0.11	0.36	0.07	0.06	3.29	1.4
	Danger was always present. (BEL)	0.03	0.03	0.72	-0.13	0.13	-0.01	2.44	1.4
	I was not safe. (BEL)	0.21	-0.01	0.63	-0.10	0.04	-0.07	2.92	1.5
	I felt afraid. (E)	-0.06	-0.08	0.63	0.06	0.01	-0.15	3.33	1.4
Fear (.90)	I didn't know whether I would live or die. (BEL)	-0.02	0.17	0.62	0.06	-0.04	0.19	2.03	1.4
	It's as if I was in a horror movie and couldn't get out. (BEL)	0.05	0.03	0.59	0.10	-0.04	-0.04	2.54	1.5
	I didn't feel safe even when others said I was safe. (BEL)	0.14	0.00	0.59	0.05	0.07	-0.11	2.40	1.4
	I was always on alert for danger. (BEH)	0.06	-0.08	0.58	-0.07	0.17	-0.02	2.94	1.5
	I didn't think I'd survive. (BEL)	-0.03	0.17	0.58	0.17	0.02	0.14	2.14	1.4
	I felt horrified. (E)	0.03	0.00	0.55	0.07	0.01	-0.12	2.91	1.5

	I felt terrified. (E)	-0.06	-0.04	0.54	0.20	-0.06	0.02	3.44	1.4
	Something bad could have happened at any time. (BEL)	-0.03	0.06	0.54	-0.16	0.17	-0.11	2.95	1.5
Alienation (.94)	I felt lonely. (E)	0.09	-0.01	-0.02	0.82	0.02	-0.04	3.37	1.5
	There was a huge void inside me. (BEL)	0.00	0.07	0.02	0.72	0.05	-0.03	3.18	1.4
	Even though I had friends, I was still lonely. (BEL)	0.12	-0.02	0.00	0.71	0.05	-0.03	3.31	1.5
	I mostly stayed to myself. (BEH)	-0.06	-0.02	0.04	0.67	0.03	-0.02	3.02	1.4
	I was disconnected from people. (BEL)	0.11	0.03	0.09	0.67	0.03	-0.08	3.09	1.5
	I cut myself off from other people. (BEH)	0.13	0.07	0.14	0.52	0.09	0.01	2.42	1.5
	I couldn't get close to people. (BEH)	0.23	0.06	0.12	0.49	0.04	-0.12	2.64	1.5
	I lost a piece of myself. (BEL)	-0.01	0.04	0.14	0.47	0.11	-0.15	2.97	1.6
	My friends didn't understand my reactions. (BEL)	0.18	0.10	0.11	0.45	0.00	-0.07	2.78	1.4
Anger (.90)	I didn't want to have to trust anyone. (BEL)	0.23	0.01	0.07	0.43	0.18	-0.06	2.71	1.5
	I felt rage. (E)	-0.01	-0.08	0.04	0.08	0.77	-0.04	2.92	1.5
	I felt violent. (BEL)	-0.06	0.08	0.06	-0.04	0.74	0.02	2.35	1.5
	I felt angry. (E)	-0.04	-0.09	-0.05	0.11	0.68	-0.05	3.36	1.5
	I wanted to physically hurt the people or thing that made the event happen. (BEL)	0.04	-0.01	0.15	-0.07	0.63	-0.10	2.47	1.6
	I was always ready to attack. (BEH)	0.06	-0.03	0.14	0.02	0.62	0.02	2.10	1.3
	Anger gave me power. (BEL)	0.04	0.13	-0.09	-0.01	0.59	0.03	2.05	1.3
	I wanted revenge. (BEL)	0.12	-0.03	0.07	-0.03	0.56	-0.18	2.59	1.6
	If someone said the wrong thing to me, I might have flown off the handle. (BEL)	0.18	0.06	0.12	0.12	0.43	0.12	2.32	1.5
Shame (.90)	I often found myself yelling and screaming at other people. (BEH)	0.28	0.05	0.02	0.11	0.42	0.24	2.40	1.5
	No shower could wash away how dirty I felt. (BEL)	-0.01	0.19	0.09	0.10	-0.01	-0.59	1.92	1.3
	It's as if my insides were dirty. (BEL)	-0.02	0.16	0.09	0.20	0.03	-0.58	2.10	1.3
	I felt embarrassed. (E)	0.24	0.14	0.03	0.04	-0.01	-0.56	2.80	1.6
	I felt disgust. (E)	0.03	-0.02	0.10	0.11	0.17	-0.53	2.65	1.5
	I felt ashamed. (E)	0.18	0.31	0.03	0.09	0.04	-0.51	2.57	1.6
	I felt humiliated. (E)	0.30	0.23	-0.02	0.00	0.10	-0.46	2.82	1.6
	I lost my sense of manhood or womanhood. (BEL)	0.08	0.11	0.08	0.13	0.14	-0.44	1.83	1.2

Note: N = 473. Response scale for items ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). BEL = Belief item; BEH = Behavior item; E = Emotion item.

PHASE 3: RELIABILITY AND VALIDITY

In Phase 3, we evaluated the reliability and validity of the 54-item measure developed in Phase 2. Using a community sample (Sample 3), we evaluated convergent and discriminant validity by comparing participants' TAQ scores to interviewer-coded appraisals in the TAMS, an established semistructured interview. We further assessed concurrent validity in one community (Sample 3) and two undergraduate (Samples 4 and 2b) samples.

Method

PARTICIPANTS

Sample 3 included 118 community participants (81 female). Recruitment procedures were identical to Phase 1. Of the 114 participants who reported their age, the average was 40.81 ($SD = 12.20$). The 111 participants who reported on racial background identified as 65% White, 20% Black, 4% Native American, and 12% other race, biracial, or multiracial. Of the 59 participants who reported on ethnicity, 22% identified as Hispanic. Participants received \$25 each for participation in the study.

Two groups of undergraduates were also tested. Sample 4 included 139 participants with a mean age of 20.29 ($SD = 3.04$; 79% female) recruited through psychology classes at a private university in the western United States. The 136 participants who reported on racial background identified as 80% White, 1% Black, 4% Native American, 1% Native Hawaiian/Pacific Islander, and 7% other race, biracial, or multiracial. Of the 76 participants who reported on ethnicity, 8% identified as Hispanic. Participants received extra credit toward a psychology class.

Sample 2b included 79 participants recruited from those who had taken part in Phase 2 (as part of Sample 2). Participants were contacted via e-mail for a Phase 3 follow-up if at Phase 2 they (a) answered at least 100 of 108 questions on the TAQ, (b) responded to the TAQ in a way that appeared valid (i.e., more than 80% of the 108 items were not answered with the same number), and (c) provided valid contact information. Data were collected from 79 participants (M age = 20.03, $SD = 2.04$; 79.7% female) in the 3- to 8-week period following initial testing. The 73 participants who reported racial background identified as 68% White, 2% Black, 14% Asian, and 16% other race, biracial, or multiracial. Of the 76 participants reporting on ethnicity, 11% identified as Hispanic. Participants received credit toward course requirements.

MEASURES

The Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986), a 28-item measure of dissociation, has been shown to have good validity and reliability.

Participants indicated the percentage of time they experienced each item and an average was taken. Coefficient alphas for this measure ranged from .89 to .97 across the three samples.

The Revised Civilian Mississippi Scale for PTSD (Norris & Perilla, 1996), a self-report measure of posttraumatic symptoms, contains 30 items and has been shown to be a reliable and valid measure of PTSD across a variety of traumas. Participants rate items on a scale of 1 (*not at all true*) to 5 (*extremely true*). To calculate overall severity scores, responses to all items were summed; coefficient alphas ranged from .83 to .91 across the three samples. To determine whether PTSD symptom criteria were met, individual symptoms were counted as present if the participant rated the item at 3 or higher.

Semistructured TAMS interviews were conducted and coded by two graduate-level interviewers who determined the presence or absence of themes and degree of resolution on a scale of 1 to 4. Adapted from Lifton (1996), a code of 1 indicated that participants were unaware or partially aware of maladaptive thematic material with evidence from the interview that the material existed. Code 2 indicated that participants were aware of thematic material, but did not fully associate it with the original trauma, or made the connection with the original trauma, but showed little evidence of change in the maladaptive framework. Code 3 indicated participants were aware of and making efforts to cope with maladaptive thematic material. Code 4 indicated the participant's attempts to cope with maladaptive thematic material resulted in significant positive changes in coping. Code 5 indicated there was no evidence of the thematic material ever being disrupted. Interviewers completed coding separately and then compared codes and resolved any discrepancies. Interrater reliabilities were excellent for each of the seven themes coded (percentage agreements for the coding of each theme were $\geq .80$).

PROCEDURE

For Sample 3, consent procedures were identical to those described in Phase 1. Following informed consent, participants completed the BBTS, which was shared with the interviewers. Two interviewers (doctoral students or the first author) conducted each interview. Following the interview, participants completed self-report questionnaires. They were asked to think about the event on which they focused during the interview while answering TAQ and PTSD questionnaires. Participants completed the TAQ twice, once with responses anchored to "how you felt at the time of the event" (retrospective) and again with responses anchored to "how you feel now when thinking about the event" (current). Items were presented in past and present tense for the retrospective and current versions, respectively; item order varied across the two versions. Because Phase 2 used a retrospective

version of the questionnaire, we used that version in analyses unless we made particular predictions regarding current appraisals. On completion, participants were debriefed and compensated for their time.

Samples 4 and 2b were tested in small groups with ample room to ensure privacy. Participants in Sample 2b were told that they were contacted based on their responses to the “stressful life events” questionnaire administered previously. Following consent procedures, participants in both samples completed paper-and-pencil versions of all measures. On completion, participants were debriefed and given lists of area agencies and other resources concerning trauma and mental health.

Results

Across analyses, differences in degrees of freedom or sample sizes reported from the full samples are due to missing data. Table 3 provides descriptive statistics for Phase 3 measures.

INTERNAL CONSISTENCY

TAQ scales demonstrated excellent internal consistency. Alphas for retrospective reports ranged from .89 to .91 (Sample 3), .86 to .91 (Sample 4), and .88 to .94 (Sample 2b); for current reports from .89 to .93 (Sample 3), .88 to .92 (Sample 4), and .84 to .93 (Sample 2b).

TABLE 3 Mean and Standard Deviation for Trauma Appraisal Questionnaire (TAQ) Retrospective (R) and Current (C) Scales and Symptom Measures in Phase 3

	Sample 3			Sample 4			Sample 2b		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
TAQ scales									
Betrayal-R	117	3.50	1.24	124	2.40	1.13	79	2.84	1.41
Self-blame-R	117	3.05	1.15	124	2.42	1.00	79	2.47	1.14
Fear-R	117	3.77	1.05	124	2.66	0.96	79	3.12	1.00
Alienation-R	117	3.88	0.96	124	2.85	1.09	79	3.00	1.17
Anger-R	117	3.22	1.13	124	2.43	1.00	79	2.51	1.17
Shame-R	117	3.45	1.25	124	2.37	1.14	79	2.60	1.24
Betrayal-C	116	2.92	1.35	123	1.90	1.00	79	2.47	1.38
Self-blame-C	117	2.16	1.14	123	1.85	0.96	79	1.93	0.87
Fear-C	117	2.41	1.09	123	1.75	0.87	79	1.92	0.78
Alienation-C	116	2.75	1.19	122	1.93	0.94	79	2.17	1.00
Anger-C	116	2.23	1.12	122	1.79	0.93	79	1.95	0.89
Shame-C	117	2.41	1.21	123	1.77	0.91	79	2.01	0.98
Symptoms									
Dissociation	107	18.84	17.43	96	11.10	7.85	79	16.91	11.15
PTSD	111	71.28	22.74	87	53.90	14.82	79	61.57	18.14

Note: PTSD = posttraumatic stress disorder. Possible scale ranges are as follows: TAQ subscale 1–5; Dissociation 0–100; Depression 0–63; PTSD 0–150.

TEST-RETEST RELIABILITY

Test-retest reliabilities for Sample 2b were computed by correlating their Phase 2 scores (large group administration) to their Phase 3 scores (small group administration conducted 3–8 weeks later). The correlations indicated excellent test-retest reliability: betrayal = .88, self-blame = .82, fear = .73, alienation = .85, anger = .82, and shame = .87.

CONVERGENT AND DISCRIMINANT VALIDITY

To assess criterion-related validity, five simultaneous regression analyses were conducted using TAQ retrospective scale scores to predict interview codes in Sample 3. Zero-order correlations among TAQ retrospective scale scores are presented in Table 4. Data were screened for multicollinearity problems (Tabachnik & Fidell, 2006), but none were noted. We then tested whether the relevant TAQ scale score predicted unique variance in the corresponding interview code (e.g., Does the TAQ shame score explain unique variance in the interview shame score?) when controlling for other TAQ scale scores. The full models predicting interview codes for which we did not have corresponding TAQ scales were not significant: helplessness, $F(6, 110) = 1.35$, $p = .24$, $R^2 = .07$; and horror, $F(6, 110) = 1.76$, $p = .11$, $R^2 = .09$, interview scores were not significant. Full models for all other interview codes (for which we had corresponding TAQ scales) were significant: rage, $F(6, 110) = 3.51$, $p = .003$, $R^2 = .16$; fear, $F(6, 110) = 3.97$, $p = .001$, $R^2 = .18$; shame, $F(6, 110) = 4.83$, $p < .001$, $R^2 = .21$; self-blame, $F(6, 110) = 4.86$, $p < .001$, $R^2 = .21$; and betrayal, $F(6, 110) = 7.68$, $p < .001$, $R^2 = .30$. As noted in Table 5, the corresponding TAQ scale score (and no other scale score) explained unique variance in fear, shame, self-blame, and betrayal interview codes.

CONCURRENT VALIDITY

To evaluate concurrent validity, logistic regression analyses tested whether TAQ retrospective scale scores distinguished between (a) types of trauma exposure (noninterpersonal vs. interpersonal), (b) PTSD symptom status

TABLE 4 Intercorrelations Among TAQ Retrospective Scales for Sample 3

	Betrayal	Self-blame	Fear	Alienation	Anger	Shame
Betrayal	—	0.54	0.54	0.65	0.56	0.70
Self-blame		—	0.56	0.58	0.46	0.64
Fear			—	0.59	0.56	0.60
Alienation				—	0.51	0.56
Anger					—	0.57
Shame						—

Note: All correlations were significant at $p < .001$.

TABLE 5 Simultaneous Multiple Regression Models Predicting Resolution of Appraisal Theme (TAMS Interview Scores) From TAQ Retrospective Scales for Sample 3

	Rage interview code				Self-blame (SB) interview code				
	<i>B</i>	<i>SE(B)</i>	<i>Beta</i>	<i>t</i>	<i>B</i>	<i>SE(B)</i>	<i>Beta</i>	<i>t</i>	
Betrayal	-0.21	0.11	-0.26	-1.87 [†]	Betrayal	-0.02	0.12	-0.02	-0.18
SB	.001	0.11	0.001	0.01	SB	-0.47	0.12	-0.49	-4.13**
Fear	0.05	0.12	0.05	0.42	Fear	0.16	0.13	0.15	1.28
Alienation	-0.19	0.13	-0.19	-1.45	Alienation	0.07	0.14	0.06	0.47
Anger	-0.10	0.10	-0.11	-0.95	Anger	0.13	0.11	0.13	1.15
Shame	0.05	0.11	0.06	0.45	Shame	-0.12	0.12	-0.14	-0.99
	Fear interview code				Betrayal interview code				
	<i>B</i>	<i>SE(B)</i>	<i>Beta</i>	<i>t</i>	<i>B</i>	<i>SE(B)</i>	<i>Beta</i>	<i>t</i>	
Betrayal	0.08	0.11	0.10	0.76	Betrayal	-0.57	0.13	-0.54	-4.25**
SB	0.002	0.10	0.003	0.02	SB	-0.10	0.13	-0.08	-0.75
Fear	-0.38	0.11	-0.42	-3.39*	Fear	0.03	0.14	0.03	0.23
Alienation	0.14	0.13	0.14	1.09	Alienation	0.09	0.16	0.07	0.58
Anger	0.03	0.10	0.04	0.31	Anger	0.12	0.13	0.11	0.99
Shame	-0.16	0.11	-0.21	-1.49	Shame	-0.10	0.14	-0.09	-0.71
	Shame interview code								
	<i>B</i>	<i>SE(B)</i>	<i>Beta</i>	<i>t</i>					
Betrayal	-0.06	0.12	-0.07	-0.49					
SB	0.03	0.11	0.03	0.25					
Fear	0.08	0.13	0.08	0.66					
Alienation	-0.06	0.14	-0.05	-0.40					
Anger	0.15	0.11	0.15	1.32					
Shame	-0.45	0.12	-0.51	-3.70**					

Note: $N = 117$. Results from five separate simultaneous regression analyses are reported in this table. Negative betas indicate good criterion validity because smaller values for interview codes indicate less resolution and more disruption in the themes assessed, and higher scores on TAQ scales indicate stronger endorsement of the appraisals. TAMS = Thematic Assessment Measurement System; TAQ = Trauma Appraisal Questionnaire; SB = Self-blame.

[†] $p < .10$. * $p < .01$. ** $p < .001$.

(PTSD symptom criteria met or not met), and (c) dissociation level (DES scores < 10 or ≥ 20 ; see DePrince & Freyd, 2004). Regression coefficients for significant models appear in Table 6.

The events that participants thought about while responding to the TAQ were coded as either interpersonal (e.g., domestic violence, abuse, assault) or noninterpersonal (e.g., accidents, medical trauma, natural disaster). Participants reported interpersonal and noninterpersonal events, respectively, as follows: 75 and 37 (Sample 3), 55 and 62 (Sample 4), 47 and 31 (Sample 2b). Using logistic regression, the six TAQ retrospective scale scores were entered into the model predicting exposure type (interpersonal or noninterpersonal) for each sample. The full models were significant in all

TABLE 6 Logistic Regression Analysis of Group Membership as a Function of Trauma Appraisal Questionnaire Retrospective Scales

	Sample 3 (<i>n</i> = 111)				Sample 4 (<i>n</i> = 117)				Sample 2b (<i>n</i> = 78)			
	<i>B</i>	<i>SE</i>	<i>e^B</i>	<i>Wald</i>	<i>B</i>	<i>SE</i>	<i>e^B</i>	<i>Wald</i>	<i>B</i>	<i>SE</i>	<i>e^B</i>	<i>Wald</i>
Interpersonal (1) versus noninterpersonal (2) trauma exposure												
Betrayal	-0.62	0.34	0.54	3.36 [†]	-1.25	0.39	0.29	10.35**	-0.78	0.35	0.46	5.01*
Self-blame	0.92	0.36	2.50	6.35*	1.77	0.64	5.85	7.59**	-0.35	0.34	0.71	1.09
Fear	-0.49	0.34	0.62	2.01	1.13	0.41	3.08	7.58**	0.27	0.36	1.32	0.60
Alienation	0.33	0.40	1.39	1.69	0.39	0.37	1.48	1.17	1.16	0.44	3.20	7.16**
Anger	0.45	0.34	1.57	1.80	-0.98	0.34	0.37	8.30**	-0.50	0.39	0.61	1.66
Shame	-1.62	0.41	0.20	15.52***	-1.90	0.55	0.15	11.98**	-.84	0.42	0.43	4.11*
PTSD symptom criteria met (1) or not met (-1)												
Betrayal	-0.18	0.28	0.83	0.44	-0.04	0.33	0.97	0.01	-0.14	0.28	0.87	0.23
Self-blame	0.05	0.27	1.05	0.03	0.66	0.46	1.94	2.08	0.01	0.30	1.01	0.002
Fear	0.14	0.28	1.15	0.27	0.06	0.41	1.06	0.02	0.43	0.32	1.54	1.83
Alienation	-0.12	0.32	0.99	0.001	0.61	0.36	1.84	2.83 [†]	0.75	0.34	2.13	4.99*
Anger	0.31	0.25	1.37	1.52	0.14	0.35	1.15	0.16	0.15	0.29	1.16	0.26
Shame	0.66	0.29	1.93	5.13*	-0.04	0.41	0.96	0.01	-0.04	0.32	0.96	0.02
Low (-1) or high (1) dissociation scores												
Betrayal	0.72	0.39	2.05	3.32 [†]	-0.11	0.43	0.89	0.07	0.63	0.37	1.88	2.96 [†]
Self-blame	0.19	0.35	1.21	0.28	0.96	0.55	2.62	3.09 [†]	0.25	0.38	1.28	0.44
Fear	-0.85	0.45	0.43	3.64 [†]	0.54	0.47	1.72	1.35	0.01	0.43	1.01	0.001
Alienation	-0.31	0.49	0.74	0.40	0.17	0.39	1.18	0.19	0.12	0.44	1.12	0.07
Anger	0.11	0.29	1.11	0.14	0.49	0.38	1.63	1.63	-0.23	0.39	0.80	0.35
Shame	0.70	0.36	2.01	3.76 [†]	-0.45	0.52	0.64	0.72	-0.53	0.44	.59	1.46

Note: Results from nine separate logistic regression analyses are reported in this table.
[†]*p* < .10. **p* < .05. ***p* < .01. ****p* < .001.

samples—Sample 3, $\chi^2(6) = 54.52, p < .001$; Sample 4, $\chi^2(6) = 78.89, p < .001$; and Sample 2b, $\chi^2(6) = 32.12, p < .001$ —with TAQ retrospective scores correctly classifying 83.8% of 111, 82.1% of 117, and 78.2% of 78 participants, respectively.

Using the algorithm provided by Norris and Perilla (1996), 73 (of 118), 18 (of 87), and 35 (of 79) participants met PTSD symptom criteria in Samples 3, 4, and 2b, respectively. In logistic regression models, the full models with the six TAQ retrospective scales distinguished between participants who did and did not meet PTSD symptom criteria in Sample 3, $\chi^2(6) = 22.22, p < .001$; Sample 4, $\chi^2(6) = 14.16, p = .03$; and Sample 2b,

$\chi^2(6) = 18.38, p = .005$, correctly classifying 71.8% of 110, 82.1% of 84, and 67.1% of 79 participants, respectively.

Participants were categorized as low or high dissociators if their DES scores were < 10 or ≥ 20 , respectively (DePrince & Freyd, 1999). Based on these criteria, the following numbers of participants met the criteria for low and high dissociation scores in Samples 3, 4, and 2b, respectively: 40 and 35, 53 and 13, and 26 and 22. In logistical regression models, the full model (which included the six TAQ retrospective scales) distinguished between participants with high and low dissociation scores in Sample 3, $\chi^2(6) = 21.17, p = .001$, and Sample 4, $\chi^2(6) = 12.86, p = .045$, correctly classifying 75.7% of 74 and 85.7% of 63 participants, respectively. The model was not significant in Sample 2b, $\chi^2(6) = 5.45, p = .49$.

Discussion

The 53-item TAQ demonstrated excellent reliability as illustrated by test-retest correlations above .80 for the six scales in Sample 2b and Cronbach's alphas above .80 for the six scales across the three samples. Further, the validity data were very promising. To evaluate convergent and discriminant validity, we tested whether specific TAQ scale scores predicted the corresponding interview code while controlling for all other TAQ scale scores. Both methods relied on self-report and therefore shared some method variance; however, the correspondence from the questionnaire to a semistructured interview, where participants were able to expand on their beliefs and experiences in complex ways, is promising. In particular, we found excellent convergent validity for fear, betrayal, shame, and self-blame appraisal scales. Demonstrating discriminant validity, TAQ scales (which did not measure helplessness and horror) did not predict unique variance in helplessness or horror codes.

Notably, TAQ anger scores did not explain unique variance in rage interview scores, although TAQ betrayal scores approached conventional significance levels. We revisited the rage code to better understand this unexpected finding. The TAMS coding for rage draws heavily on rage at the perpetrator. For example, "depictions of rage often include violent revenge fantasies toward the perpetrator . . . if the perpetrator is a man, rage will often be directed at men in general" (Lifton, 1996, p. 77). The TAQ anger items, however, were not specifically linked to the perpetrator (e.g., "I was always ready to attack," "I felt anger"). Given the TAMS emphasis on the perpetrator, it is not surprising in retrospect that TAQ betrayal scores (which focused on the victim-perpetrator relationship) approached conventional significance levels in terms of the unique variance in TAMS rage explained. In addition to problems comparing interview codes and TAQ anger scores, we did not have interview codes for alienation and could not test convergent validity for that scale. However, TAQ anger and alienation scales show

good discriminant validity insofar as neither contributed to the prediction of other interview codes.

The TAQ distinguished between groups very well, including those who reported interpersonal (vs. noninterpersonal) trauma, those who met PTSD criteria (vs. those who did not), and those who scored high on a measure of dissociation (vs. those who scored low). Encouragingly, the TAQ distinguished between these groups in both the community and undergraduate samples (with the exception of the dissociation model in Sample 2b). The individual predictors that explained unique variance in the logistic regressions varied across analyses, suggesting that future research into how particular appraisals function in relation to type of trauma exposure, symptom severity, and type of sample is warranted.

GENERAL DISCUSSION

Although the importance of appraisals is implicit in the PTSD diagnostic criteria, systematic measurement of appraisals has lagged behind other methodological advancements in the traumatic stress studies field. This study yielded a 54-item measure of posttraumatic appraisals. Items were generated based on adult community participants' descriptions of feelings, beliefs, and behaviors. Thus, this measure stands out in that its development was grounded in the words of participants affected by trauma. Items were selected using a large sample of undergraduate volunteers, whereas reliability (test-retest and internal consistency) and validity were assessed across three samples, including one community and two undergraduate samples. Across analyses, reliability and validity indices were generally excellent.

Several limitations should be taken into account. We relied on an undergraduate sample for the factor analysis. We made this decision given resource and project feasibility concerns; however, undergraduate samples are typically less distressed than their community-based counterparts. Indeed, in Phase 2, the mean responses for scales were generally at or below the midpoint on the response scale. Thus, the factor analytic results might have differed if the data set included a larger number of people who reported intensely experienced traumas. In spite of the limits of using undergraduate samples, the scales identified in Phase 2 demonstrated excellent internal consistency when tested with an ethnically diverse community sample in Phase 3.

We asked participants to rate only one trauma event when completing the TAQ and relevant symptom measures. This was done to link relevant appraisals to a discrete event (consistent with the diagnosis of PTSD); therefore, TAQ scores did not take into account influences of additional traumas on appraisals. We did not examine time since, chronicity of, or severity of the event. Whereas some participants reported on discrete events (e.g., car

accident or one-time assault), other participants described ongoing experiences (e.g., repeated abuse perpetrated by a family member, violence by a romantic partner). Further, we did not test gender in our models. Because men and women differ in the types of potentially traumatic events to which they are exposed (Goldberg & Freyd, 2006), they might differ in their appraisals of events. Future research using this scale should examine the relationship between these event characteristics and appraisals as well as gender.

Several strengths of this project should be noted. First, we recruited ethnically diverse community samples in Phases 1 and 3 for item generation and evaluation of the psychometrics of the new measure. Given our goal of incorporating survivors' voices to develop a measure of appraisals, a community sample brought heterogeneity in trauma exposure and distress compared to clinic-referred or undergraduate samples. Capitalizing on heterogeneity in trauma exposure was a goal for initial measure development, but future research will need to evaluate items in clinical samples, which are likely to report more severe symptoms than the community samples tested here and in samples exposed to specific types of trauma. The TAQ items might best fit the experiences of some traumas and not others. For example, the noticeable absence of a horror scale raises the question of whether this measure might be ill suited to combat veterans or first responders who have been exposed to grotesque scenes.

Second, the steps taken to generate items in Phase 1 combined both the expertise of trauma researchers who rated items and the words and phrasings of participants exposed to traumas. The latter is important, in that the procedures used here allowed the participants' appraisals to drive the scale development, rather than the expectations of our research team. Whereas rationally derived scales (that depend primarily on experts' clinical observation, the empirical literature, or both to generate items; see Weathers et al., 1997) are more common, the systematic collection and use of survivors' voices in measure development is relatively infrequent (but see Joseph, Williams, & Yule, 1993, for an example). Overall, this method of item development resulted in a measure that has performed extremely well on initial tests of reliability and validity. We are hopeful that our use of community-recruited survivors' own words to generate items will facilitate the ease with which this measure can be used in research and practice with survivors who are diverse in terms of demographics and trauma exposure.

As the field grapples with an increasingly long list of appraisals that explain variance in posttraumatic distress; for example, from shame, fear, and anger (e.g., Andrews et al., 2000; Breitenbecher, 2006; Brewin et al., 2000; Feeny et al., 2000; Filipas & Ullman, 2006; Harper & Arias, 2004; Kaysen et al., 2005), important methodological hurdles must be dealt with to advance understanding of these processes. In particular, studies have

generally relied on different measures of appraisals, making comparisons across studies (and appraisals) difficult. For example, if anger and fear are measured on different scales and one explains more variance in symptoms than the other, we do not know whether this is due to difference in the appraisals or in the measures. The multifactorial nature of the TAQ offers the important opportunity to examine several appraisals together without the problem of methodological variation across measures.

Although cognitive theories point to the importance of appraisals in understanding distress, many focus on fear associated with the event as well as a few additional appraisals (e.g., Ehlers & Clark, 2000). As research reveals the importance of other appraisals such as shame (Andrews et al., 2000), important avenues for both research and intervention open. For example, Brown and Freyd (2008) recently proposed that PTSD Criterion A be expanded to include betrayal because several studies now document links between traumas high in betrayal (e.g., abuse by a caregiver) and posttraumatic symptoms (e.g., DePrince, 2005; Freyd, Klest, & Allard, 2005). As we come to better understand the role that appraisals such as betrayal play in the development and maintenance of distress, our interventions can be improved to address these important themes. The TAQ offers an important multifactor tool for increasing our understanding of appraisal processes that is relevant to both research and practice.

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