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George A. Bonanno, Ruth Pat-Horenczyk, and Jennie Noll

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Coping Flexibility and Trauma: The Perceived Ability to Cope With Trauma (PACT) Scale

George A. Bonanno
Columbia University

Ruth Pat-Horenczyk
Hebrew University of Jerusalem

Jennie Noll
Cincinnati Children's Hospital Medical Center, University of Cincinnati

Theories about coping with potential trauma have emphasized the importance of concerted focus on processing the traumatic event. However, empirical evidence also suggests that it may be salubrious to distract oneself, remain optimistic, and focus on moving past the event. These seemingly contradictory perspectives are integrated in the concept of coping flexibility. This investigation reports the development and validation of a brief questionnaire, the Perceived Ability to Cope With Trauma (PACT) scale, with 2 scales that measure the perceived ability to focus on processing the trauma (trauma focus) and to focus on moving beyond the trauma (forward focus). In addition, we created a single flexibility score that represented the ability to use both types of coping. Participants included an Israeli sample with potential high trauma exposure and a sample of American college students. The factor structure of the PACT was confirmed in both samples. Preliminary evidence was obtained for the PACT's convergent, discriminant, and incremental validity. Both the Forward Focus and Trauma Focus scales were independently associated with better adjustment, and each scale independently moderated the impact of heightened trauma exposure. Similarly, the combination of these scales into a single parsimonious flexibility score also moderated trauma exposure. Limitations of and future research with the measure are considered.

Keywords: flexibility, coping, trauma, grief, resilience

During the normal course of their lives, most adults are confronted with at least one and sometimes several highly aversive or potentially traumatic events (PTEs; e.g., a violent or life-threatening accident, assault, or natural disaster; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). The psychological reactions that often accompany such extreme events can present a formidable coping challenge. Historically, trauma theorists have emphasized the importance of coping with PTEs by effortful trauma focus of the thoughts, images, and memories associated with the event (e.g., Horowitz, 1986). Yet, a growing body of research has also highlighted the salutary importance of behaviors that appear to minimize trauma focus, such as optimism (Scheier, Carver, & Bridges, 1994) or emotional avoidance (Bonanno, Keltner, Holen, & Horowitz, 1995). These seemingly disparate literatures are potentially integrated by a third perspective, adapted from the general stress and coping literature (e.g., Lazarus & Folkman, 1984), that takes into account the variability in coping and adjustment demands across different stressor events. According to this

perspective, resilience to trauma is fostered not by one particular type of coping response but rather by the ability to flexibly engage in different types of coping responses as needed across different types of PTEs (Bonanno, 2004, 2005; Bonanno & Mancini, 2008). Despite its potentially integrative usefulness, however, there has been surprisingly little research on this broader conception of coping flexibility in the context of PTEs. In this article, we report on the development of a questionnaire measure designed to capture competing coping abilities in the specific context of potential trauma. Specifically, we report data from a sample of students from Hebrew University in Jerusalem that had been recruited for their likely high exposure to terrorist violence and a sample of American college students. In both samples, we tested the scale's factor structure and its convergent and discriminant validity. In addition, we used the high-exposure Israeli sample to test the incremental validity of the individual scales and the single flexibility score, as well as their ability to moderate the corrosive effects of high trauma exposure.

Coping With Potential Trauma

One of the striking characteristics of PTEs is that they tend to defy meaning (McFarlane & De Girolamo, 1996) and, in extreme cases, can "shatter" normal assumptions about the self, the world, and other people (Janoff-Bulman, 1992). Such emotionally jarring events are not easily assimilated and integrated with other more normative experiences (Janet, 1889; van der Kolk, 1996). It is not surprising that a common thread running through theories of psychological trauma is that recovery of normal functioning after

George A. Bonanno, Department of Pediatrics, Columbia University; Ruth Pat-Horenczyk, Department of Pediatrics, Hebrew University of Jerusalem; Jennie Noll, Cincinnati Children's Hospital Medical Center, University of Cincinnati.

Correspondence concerning this article should be addressed to George A. Bonanno, Department of Counseling and Clinical Psychology, Teachers College, Columbia University, 525 West 120th Street, Box 218, New York, NY 10027. E-mail: gab38@columbia.edu

such events typically necessitates a deliberate and effortful kind of trauma focus or *working through* (E. A. Bolger, 1999; Ehlers & Clark, 2003; Foa & Rothbaum, 1998; Horowitz, 1986; Rachman, 1990).

Implicit in this view is the assumption that normal goals and obligations may be suspended at least temporarily while the survivor devotes time and energy to processing and working through the traumatic experience. Trauma focus of traumatic material can be exceedingly demanding and time consuming (Brewin, 2003; Foa & Kozak, 1986). In more extreme cases, when trauma overwhelms normal coping mechanisms, review and reconstruction of the antecedent traumatic event often require the safety of a formal therapeutic relationship (Herman, 1992). Exposure treatments for traumatic stress reactions, for example, not only emphasize the full emotional activation and re-experiencing of the antecedent traumatic event, but also the importance of revising the trauma memory structure through repeated retelling, both in the therapist's office and between therapy sessions (e.g., Foa & Rothbaum, 1998).

Despite the widespread agreement for the necessity of a deliberate and effortful working through of traumatic memories, there are other means by which exposed individuals might cope with PTEs (Bonanno, 2004, 2005; Janoff-Bulman, 1992; Rachman, 1990). Indeed, consistent with the presumed adaptive value of coping flexibility, there is a burgeoning body of evidence to suggest that adjustment to extreme adversity is often facilitated by processes that minimize trauma focus, such as distraction, avoidance, or optimistic focus on the future (for reviews, see Bonanno, 2004; Bonanno & Kaltman, 1999, 2001; Scheier & Carver, 1992, 1993; Taylor & Brown, 1988; Westphal, Bonanno, & Bartone, 2008). For example, people who hold positive expectancies about the future or *dispositional optimism* (Scheier et al., 1994) are more likely to employ effective coping strategies and typically report fewer physical symptoms than their pessimistic counterparts (e.g., Scheier et al., 1999). Similarly, people who tend to use self-serving attributions or *self-enhancers* typically favor cognitive mechanisms such as reframing that minimize the impact of an event over more concerted trauma focus (Taylor & Brown, 1988). Yet, such individuals have been shown to cope exceptionally well with PTEs (e.g., Bonanno, Field, Kovacevic, & Kaltman, 2002; Bonanno, Rennie, & Dekel, 2005).

A growing body of research has also associated favorable long-term adjustment following extremely aversive events with the minimization of negative or distressing emotions (Bonanno et al., 1995; Coifman, Bonanno, Ray, & Gross, 2007) and with the experience and expression of positive emotions (Bonanno & Keltner, 1997; Bonanno et al., 2005; Fredrickson, Tugade, Waugh, & Larkin, 2003; Keltner & Bonanno, 1997; Moskowitz, Folkman, Collette, & Vittinghoff, 1996; Tugade & Fredrickson, 2004). Likewise, several lines of research have converged to suggest the potential usefulness of distraction, suppression, and other mechanisms that might help limit the accessibility of distressing thoughts, images, and memories (Depue, Banich, & Curran, 2006; Driediger, Hall, & Callow, 2006; Goodman, 2004).

One way that these various mechanisms might foster adjustment to extremely aversive events is that they can help people maintain a focus on ongoing activities, goals, and plans (Carver & Scheier, 2001). The ability to remain committed to distinctive values, goals, and plans is viewed, for example, as an inherent quality of personality characteristics associated with successful coping with

adversity, such as hardiness (Bartone, 1999; Kobasa, 1979) or self-enhancement (Bonanno et al., 2005). These mechanisms may also foster more frequent and positive interactions with other people (e.g., N. Bolger & Eckenrode, 1991; Cohen & Wills, 1985; Herman, 1992). In addition to the passive receipt of support from others, however, there is growing appreciation for a potentially salutary benefit among those exposed to aversive events of putting aside their own needs to care for others. The provision of either instrumental or emotional support to others has been found to predict reduced mortality in older adults (Brown, Nesse, Vinokur, & Smith, 2003) and has been associated with active, meaningful coping in the face of potential trauma (Hobfoll et al., 2007; Janoff-Bulman, 1992).

Coping Flexibility

As suggested earlier, one possible avenue through which these seemingly disparate perspectives on coping with trauma might be integrated is the construct of coping flexibility (Bonanno, Papa, Lalande, Westphal, & Coifman, 2004; Cheng, 2001). Researchers and theorists from within the personality and coping literatures have for years emphasized the advantages of being able to flexibly deploy diverse types of coping behaviors in accord with the varying demands of different situations (Block & Block, 1980; Haan, 1977; Lazarus & Folkman, 1984; Mischel, 1973; White, 1974). Key to this approach is the idea that the effectiveness of individual coping behaviors is likely to vary across stressor situations. For example, the benefits of optimistic expectancies may depend on the perceived controllability of the stressor (Fournier, de Ridder, & Bensing, 2002) as well as the degree of preparedness required (Sweeny, Carroll, & Shepperd, 2006). Similarly, the efficacy of disclosing strong emotional reactions to other people depends to some extent on the receptivity of "would-be listeners" (Harber & Pennebaker, 1992; Kelly & McKillop, 1996). Moreover, in further support for the utility of the flexibility construct, considerable cross-situational variability has been observed in people's perceptions of how well they cope (Folkman, Lazarus, Gruen, & DeLongis, 1986) and in the coping behaviors they report (Schwartz, Neale, Marco, Shiffman, & Stone, 1999) or exhibit in laboratory settings (Bonanno et al., 2004; Westphal, Seivert, & Bonanno, 2010). When considered in the context of these findings, the flexibility hypothesis suggests that the ability to engage in different types of coping behaviors would most likely predict optimal adjustment in the face of highly aversive or potentially traumatic life events (Bonanno, 2004, 2005).

Despite the obvious theoretical and practical importance of the flexibility construct, however, it has received surprisingly little empirical attention. The few studies that have addressed the flexibility construct have for the most part been restricted to laboratory paradigms. Douglas, Barr, Desilets, and Sherman (1995), for example, developed an experimental paradigm to measure cognitive flexibility among individuals with attention-deficit/hyperactivity disorder. More recently, Cheng (2001) developed set of diary and laboratory paradigms to assess how different dimensions of coping might contribute to flexible or inflexible styles. In related laboratory studies, Bonanno and colleagues (Bonanno et al., 2004; Westphal et al., 2010) measured flexibility in the behavioral expression or suppression of emotion, and Coifman, Bonanno, and Rafaeli

(2007) measured flexibility in the relationship of positive and negative affect across a series of interview tasks.

The Perceived Ability to Cope With Trauma (PACT) Scale

Although the results of these preliminary studies attest to the usefulness of the flexibility construct, the laboratory and diary paradigms they employed would be difficult to implement using the larger sample sizes and limited timeframes typically required for field studies of PTEs. Accordingly, we report the development and validation of a brief questionnaire instrument, the PACT, explicitly designed to measure the broad categories of coping behavior suggested in the literature as most relevant to the challenge of surviving a PTE. Specifically, we used two divergent samples, a high-trauma-exposed Israeli sample and a sample of American college students, to develop a self-report questionnaire measure of seemingly opposite sets of coping behaviors: one set associated with the temporary cessation of normal activities in favor of concerted trauma focus on the PTE and another set associated with optimistic maintenance of normal goals and plans, distraction, and enhanced social activity. Based on factor analyses of participants' responses to these items, we created scales to represent these divergent forms of coping (Studies 1 and 3) and examined their convergent and discriminant validity (Studies 2 and 3). Finally, we tested whether the PACT scales and their combination into a single flexibility score evidenced incremental prediction of posttraumatic stress (PTS) severity in our high-trauma exposure sample (Study 4).

An important issue we considered in developing the PACT was the possibility that people may not be able to reliably report on their coping habits using a retrospective self-report instrument. In a recent series of studies, for example, Stone, Schwartz, and their colleagues compared retrospective self-report coping scales, daily diary reports of coping, and spontaneous momentary assessments of coping (Schwartz et al., 1999; Stone et al., 1998). The retrospective coping measures showed surprisingly little consistency with the proximal coping measures, prompting the authors to conclude that coping self-report instruments most likely measure beliefs about coping associated with personality or "after-the-fact appraisals" (Stone et al., 1998, p. 1678) of coping. These and other investigators (e.g., Cheng, 2001; Epstein, 1979) have suggested that a truly reliable index of actual coping behavior requires multiple, real-time assessments obtained across a variety of time points, a conclusion with which we concur. Unfortunately, as stated above in regard to laboratory paradigms, it is difficult to obtain repeated coping assessments with time-limited field studies of PTEs.

To create a valid self-report instrument that might be practical for field use, then, we adopted the following strategy. First, we did not attempt to measure participants' actual coping behaviors. Rather, we explicitly sought to measure participants' beliefs about their ability to use different types of coping when confronted with a PTE. Second, because beliefs about coping may be influenced by personality or retrospective after-the-fact appraisals (Schwartz et al., 1999; Stone et al., 1998), we sought evidence that our coping ability scales would be unrelated to measures of negative affectivity (e.g., neuroticism) and self-presentation (e.g., social desirability). In addition, we tested whether the PACT scales would

predict adjustment over and above the level of trauma exposure. In other words, we assumed that if our measure was truly a valid measure of perceived coping flexibility in the face of potential trauma, then responses to the measure should be unrelated to potential trauma exposure and should evidence incremental prediction over exposure when tested in hierarchical analyses.

A final issue we considered was the assumption that divergent coping abilities will be more advantageous at higher levels of trauma exposure. In other words, as coping demands increase, so should the value of having a flexible repertoire of coping abilities. Statistically, this assumption translated to the expectation that the PACT scales should interact with trauma exposure in predicting adjustment.

Study 1: Scale Development

Method

A set of candidate items was presented along with several other questionnaire measures (described in Study 2) to 315 students of Hebrew University in Jerusalem. The sample had been recruited for likely high exposure to terrorist violence. The majority (65%) were women and ranged in age from 19 to 35 years ($M = 26.1$ years, $SD = 3.3$).

Based on the theoretical considerations reviewed above and pilot testing with American college students (Bonanno & Pat-Horenczyk, 2006), we began with an initial pool of 28 items intended to capture two contrasting sets of coping abilities. One set of items was intended to capture the concerted focus on the PTE (e.g., reflecting on the meaning of the event, withdrawing from normal social obligations). A second set of items was intended to capture the optimistic focus on moving forward after a PTE (e.g., looking for a silver lining, distraction, attending to the needs of others). These items were translated into Hebrew and then back-translated into English to assure reliable translation. The following instructions, also back-translated, preceded the items:

Sometimes we must contend with difficult and upsetting events. Unfortunately, sometimes we are confronted with events that might be traumatic and disruptive to the course of our lives. Examples of such events include the death or injury of someone close to us, a natural disaster, a serious accident or illness, sexual and physical assault, and terrorist attack. Below you will find a list of different kinds of behaviors and strategies that people sometimes use in the weeks following potentially traumatic events. This questionnaire asks which of these behaviors and strategies you might be able to use. Please rate the extent that you would be able to use each of these behaviors and strategies following a potentially traumatic event if you needed to.

Each item was rated using a 1 (*not at all able*) to 7 (*extremely able*) scale.

Results

Factor structure. Initial exploratory analyses and frequency examination of the 28 candidate items resulted in the removal of eight items because of either marked skewness or excessively high correlation with other items. Using SAS (Version 9.13) PROC FACTOR, we conducted an exploratory factor analysis (EFA) on one random half ($n = 158$) of the sample. Two additional items

were dropped because of low communality estimates and dual factor loadings, resulting in a final set of 20 items. A scree plot of eigenvalues suggested that two factors would describe the data well. The two initial eigenvalues, 6.32 and 2.11, accounted for 81% of the variance of the solution. To aid in interpretation, we used a principal axis extraction method and rotation via Promax (correlated factors allowed) to an Equimax (equal variance distribution across factors allowed) with communality priors (start values) set equal to item squared multiple correlations. There was substantial evidence for the independence of the two resulting factors: The intercorrelation among the two factors was relatively low (.37), and the hyperplane count (nontarget factor loadings) was also very low, with only one hyperplane loading exceeding $\pm .20$ (see Table 1).

Conformatory factor analysis. This 20-item, two-factor solution was confirmed via confirmatory factor analysis (CFA) on the second random half of the sample ($n = 157$) via LISREL (Version 8.54). Results of the CFA indicated that the two-factor solution fit data from the second half of the sample well, $\chi^2(169) = 383$, $p = .81$; goodness-of-fit index (GFI) = .96; comparative fit index (CFI) = .93; and root mean square residual (RMSR) = .07. The two salient factors bore obvious resemblance to the global dimensions reviewed earlier (see Table 1).

We named the first factor Forward Focus. This factor consisted of 12 items ($\alpha = .91$) and represented coping abilities associated with maintaining goals and plans (“Keep my schedule and activities as constant as possible”; “Stay focused on my current goals and plans”), attending to others (“Comfort other people”; “Focus my attention on or care for the needs of other people”), thinking optimistically (“Look for a silver lining”; “Remind myself that things will get better”), using distraction (“Find activities to help me keep the event off my mind”; “Distract myself to keep from thinking about event”), being able to laugh or enjoy amusement (“I

would be able to laugh”; “Enjoy something that I would normally find funny or amusing”), reduce painful emotion (“Try to lessen the experience of painful emotions”), and remain serious and calm (“Keep myself serious and calm”).

We named the second factor Trauma Focus. It consisted of eight items ($\alpha = .79$) representing the ability to fully experience the cognitive and emotional significance of the PTE (“Let myself fully experience some of the painful emotions linked with the event”; “Pay attention to the distressing feelings that result from the event”), withdraw from social interactions (“Spend time alone”; “Reduce my normal social obligations”), remain focused on the event (“Reflect on the meaning of the event”; “Remember the details of the event”), revise goals and plans (“Alter my daily routine”), and think realistically (“Face the grim reality head on”).

Study 2: Creation and Validation of the Flexibility Score

Using the same sample as in Study 1, we next sought to combine the scales from the PACT to create a single flexibility score and to establish its preliminary validity. These analyses tested the core tenet of the flexibility hypothesis that coping with PTEs is most successful among persons with the flexibility to use different or even competing coping strategies and behaviors. One way to measure flexibility from the PACT would be to sum the Forward Focus and Trauma Focus scales. However, it would be possible to obtain a moderately high total score simply by scoring in the extreme on only one ability scale. For example, a participant who had moderate scores of 4 on both PACT scales would have a total score of 8. However, a participant with an extremely high score of 7 on one measure and an extremely low score of 1 on the other ability scale would also have a total score of 8. Another way to measure flexibility would be to calculate the discrepancy between

Table 1
Factor Structure of the Perceived Flexibility in Coping With Trauma Scale for a Random Half of the Sample (Study 1: Jerusalem, Israel)

Item	Forward focus	Trauma focus
Keep myself serious and calm	.78	-.03
Stay focused on my current goals and plans	.72	.08
Remind myself that things will get better	.70	.15
Look for a silver lining	.69	.13
Try to lessen the experience of painful emotions	.69	.02
Keep my schedule and activities as constant as possible	.65	-.15
Distract myself to keep from thinking about the event	.64	-.23
Find activities to help me keep the event off my mind	.64	.01
Enjoy something that I would normally find funny or amusing	.63	.09
Comfort other people	.62	-.07
I would be able to laugh	.56	.12
Focus my attention on or care for the needs of other people	.52	.11
Pay attention to the distressing feelings that result from the event	-.01	.77
Reflect on the meaning of the event	-.07	.76
Let myself fully experience some of the painful emotions linked with the event	-.01	.76
Spend time alone	.03	.48
Remember the details of the event	-.06	.46
Face the grim reality head on	.16	.44
Reduce my normal social obligations	-.06	.43
Alter my daily routine	.08	.41

Note. Bold text indicates items assigned to each factor.

PACT scales, with flexibility represented by less discrepancy. Unfortunately, this approach does not distinguish between participants with equally high scores on both measures (e.g., 6 and 6) and equally low scores on both measures (e.g., 2 and 2), in both cases the discrepancy being 0.

A more efficacious approach is to combine the sum and discrepancy scores into a single variable. This type of score has previously been used to measure the balance of contrasting attitudes (Thompson & Zanna, 1995), representations of other people (Bonanno, Notarius, Gunzerath, Keltner, & Horowitz, 1998), and emotion regulation behaviors (Bonanno et al., 2004). The calculation involves three simple steps: First, a *sum* coping ability score is created by standardizing scores for the Forward Focus and Trauma Focus scales and then adding the scales; next, a coping *polarity* score is calculated as the absolute value of the discrepancy between the standardized scores for each scale; finally, a *flexibility* score is calculated as total coping ability minus coping polarity. As applied to PACT, these three steps are as follows:

1. *Sum*: (Forward Focus + Trauma Focus).
2. *Polarity*: |Forward Focus – Trauma Focus|.
3. *Flexibility*: Sum – Polarity.

Using this algorithm, the perceived ability to engage in both a focus forward and trauma focus produces a high total score and relatively little discrepancy and, thus, a high flexibility score. For practical purposes, however, the exact same flexibility score is derived by simply doubling the lowest scale score (Forward Focus or Trauma Focus).

In the analyses below, we compared the sum, polarity, and flexibility scores, as well as a raw discrepancy score. In addition, we compared the PACT variables with a number of other questionnaire measures. These included scales for positive and negative cognitive–emotional regulation, anxious and avoidant attachment style, trauma exposure, and PTS severity. In terms of convergent and discriminant validity, we anticipated that both PACT scales would evidence mild to moderate association with positive regulation and inverse associations with negative regulation. Because the Forward Focus scale includes items pertaining to the ability to comfort and care for others, we anticipated that this scale would be mild to moderate inversely correlated with both anxious and avoidant attachment. We were somewhat less certain how the Trauma Focus scale might relate to attachment style. On the one hand, because this scale includes items pertaining to the ability to reduce social obligations and spend time alone, it may correlate positively with avoidant attachment. On the other hand, however, because the scale taps a type of social withdrawal that is by definition transient and enacted only in response to extreme adversity, it seems equally or perhaps more plausible to assume that it would be most likely to occur in those who are secure in their attachment orientation. Thus, by this reasoning, the scale would correlate inversely with both attachment anxiety and avoidance.

As a more general assessment of the validity of the factors and their combination into a single flexibility score, we anticipated that the Forward Focus and Trauma Focus factors would be positively and independently associated with reduced PTS severity. Similarly, we anticipated that the balance of these factors in a single

flexibility score would also predict reduced PTS. By contrast, as previous research has suggested (Bonanno et al., 2004), we anticipated that the discrepancy between the factors, captured by the polarity score, would be unrelated to the PTS score.

Method

Personality and coping. The PACT data from Study 1 were used in Study 2. In addition, the Hebrew version of the 36-item Cognitive–Emotional Regulation Questionnaire (CERQ; Garnefski, Kraaij, & Spinhoven, 2002) was used to assess cognitive–emotional self-regulation strategies. Participants rated each item for frequency when experiencing unpleasant or negative events using a 1 (*almost never*) to 5 (*almost always*) scale. *Positive regulation* was assessed by 20 items pertaining to acceptance, positive refocusing, refocusing on planning, positive reappraisal, and putting stress into perspective ($\alpha = .86$). *Negative regulation* was assessed by 16 items pertaining to rumination, catastrophizing, blaming others, and self-blame ($\alpha = .87$). The discriminant validity of the positive and negative scales has been demonstrated in studies of psychiatric populations (e.g., Garnefski et al., 2002). Attachment style was assessed using the 36-item Experience in Close Relationship scale (Brennan, Clark, & Shaver, 1998). Participants are asked to rate the extent that each item accurately described their feelings in close relationships, without reference to a specific partner, using a 1 (*not at all*) to 7 (*very much*) scale. Eighteen items measured *attachment anxiety* (e.g., “I worry about being abandoned”; “I worry a lot about my relationships”; $\alpha = .91$), and 18 items measured *attachment avoidance* (e.g., “I prefer not to show a partner how I feel deep down”; “I feel very uncomfortable when a romantic partner wants to be very close”; $\alpha = .90$). The reliability and construct validity of the Experience in Close Relationship scale has been demonstrated in a wide variety of samples (Mikulincer & Florian, 2000).

PTS severity was measured using the Posttraumatic Diagnostic Scale (Foa, Cashman, Jaycox, & Perry, 1997), which asks respondents to rate the frequency that they experienced each of 17 posttraumatic stress disorder (PTSD) symptoms occurring during the past month on a scale from 0 (*not at all or only once a week*) to 3 (*five or more times a week or daily*). Functional impairment was measured by asking respondents to rate their level of impairment in nine domains, including work, relationships with friends or family, or general satisfaction with life, using a scale from 0 (*no impairment*) to 5 (*severe impairment*). To calculate PTS severity, we standardized and then multiplied together the PTSD and functional impairment scores such that the resulting severity score ranged from 0 to 1. PTSD symptoms were highly correlated with the functional impairment score, $r = .62, p < .001$, and both measures were positively associated with the binary trauma exposure variable (PTSD symptoms, $r = .22, p < .001$; functional impairment, $r = .16, p < .01$). The PTS severity score was also positively associated with trauma exposure, $r = .19, p < .001$.

Trauma exposure. The Trauma History Scale (Pat-Horenczyk, 2004; Pat-Horenczyk et al., 2007) is a Hebrew-language scale consisting of 13 yes–no questions that ask participants whether they had been personally exposed to 13 different PTEs, including serious illness, sexual abuse, serious car accident, death of a close family member or friend, and several events specifically relevant to the Israeli security situation, including

exposure to war or terrorist attack. To assess the objective and subjective trauma exposure (the A1 and A2 criteria from the PTSD diagnosis), respondents answered two yes–no questions: (A1) whether they thought their life or the life of someone else was in danger; and (A2) if they felt fear, helplessness, or horror during the event. Attesting to the high level of PTE exposure in this sample, all participants reported at least one PTE ($M = 2.6$, $SD = 1.44$) and the vast majority (91%) endorsed both subjective trauma exposure questions. Preliminary analyses indicated that participants who reported three or more PTEs and endorsed both the A1 and A2 exposure criteria had significantly higher levels of PTSD and functional impairment compared with other participants. Accordingly, in subsequent analyses, participants who reported three or more PTEs and endorsed both subject trauma items ($n = 105$, 33.3%) were categorized as high trauma exposure.

Results

Discriminant and convergent validity. Zero-order correlations of the PACT scales and their various combinations with each other and with other measures in the study are presented in Table 2. The Forward Focus and Trauma Focus scales were moderately positively correlated, $r = .35$. Their associations with the other measures provide preliminary support for their convergent and discriminant validity. We anticipated that both ability scales would evidence mild to moderate positive association with CERQ positive regulation and inverse associations with CERQ negative regulation. This was true for the Forward Focus scale and to a lesser extent for the Trauma Focus scale. We also anticipated that the Forward Focus scale would evidence mild to moderate inverse correlation with both anxious and avoidant attachment. Again, this assumption was born out in the data. We were less certain about the possible relation between the Trauma Focus factor and attachment. The findings indicated a mild inverse correlation between these measures.

The validity of the flexibility score, representing the balance of the PACT scales, was evidenced by its clear association with positive regulation and inverse association with negative regulation and with anxious and avoidant attachment. By contrast, as anticipated, the polarity score, reflecting the absolute difference in two PACT scales, was unrelated to the other measures with the exception that greater polarity showed a mild positive association with negative regulation. We also examined a raw discrepancy score, calculated as the Trauma Focus score subtracted from the Forward Focus score. Not surprisingly, given that the discrepancy score was keyed in the direction of forward focus, the raw discrepancy score evidenced a significant association with positive regulation and significant inverse association with negative regulation.

One concern we examined was whether participants with greater levels of trauma exposure might respond differently to the Forward Focus and Trauma Focus scales, which would indicate that use of the measure after a potentially traumatic event would be to some extent confounded with reactions to that event. However, neither ability scale nor their combination into a single flexibility score was associated with trauma exposure. This finding suggests that people's perceptions of the strategies they are able to employ in coping with trauma are relatively independent of prior trauma exposure. Another issue worthy of exploration was possible gender

differences in the use of the two scales. Not surprisingly, there was a mild positive association between gender and the ability to forward focus. We explore possible gender effects in Study 4.

Associations with PTS severity. The flexibility hypothesis predicts that each PACT scale will independently predict adjustment, and that the participants with flexibility scores (high scores on both scales) will experience the least PTS. The zero-order correlations (see Table 2) support this hypothesis. PTS severity was inversely correlated with forward focus, $r = -.29$, $p < .001$, and trauma focus, $r = -.21$, $p < .001$, and also inversely correlated with the combined flexibility score, $r = -.32$, $p < .001$.¹ The raw discrepancy between the ability measures (forward focus minus trauma focus) was unrelated to PTS severity. However, the polarity score, representing the absolute value of the discrepancy or extremes of either ability measure relative to the other, was actually positively correlated with PTS severity, $r = .17$, $p < .01$, indicating that the general tendency to favor one ability over the other was associated with *greater* PTS. We consider the independent and incremental prediction of the scales again in Study 4.

Study 3: Cross-Cultural Replication and Extension

In the next study, we sought to replicate the factor structure of the PACT and to provide further evidence for the convergent and discriminant validity of the PACT scales and the flexibility score using a sample of college students in the United States. Psychometricians are often concerned with intersample stability of measurement constructs or consistency in the ways that manifest responses (items) are related to latent variables (factors). Structural stability, or factorial invariance, is a property of measurement instruments that indicates the degree to which measurement model parameters (factor loadings, manifest intercepts, etc.) behave consistently across samples (i.e., the factor structure is the same in differing contexts). The failure to establish this kind of consistency means that the potential usefulness of substantive comparisons involving mean differences or systematic covariances across samples is dramatically reduced. This issue takes on particular importance in the context of PTEs, which tend to occur in a highly variable set of situational contexts. Establishing measurement stability is also of special importance when comparing factor scores across cultures or when instruments have undergone language translation, as was the case in this study. Accordingly, in Study 3 we sought to establish the measurement stability of the PACT by administering an English-language version of the scales to American college students as part of an ongoing cohort study (Bonanno et al., 2004). Participants completed the PACT in their final year of college.

Because participants in this study were part of a larger cohort study, additional data were available to further examine the convergent and discriminant validity of the flexibility score. There were two sources of convergent validity. First, the data set in-

¹ We thank an anonymous reviewer for pointing out a linguistic similarity between several items of the PACT ("spend time alone," "reduce my normal social obligations," and "alter my daily routine") and the C4 symptom of the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.) PTSD diagnosis ("marked diminished interest or participation in significant activities"). However, correlations between these items and the C4 item of the PTSD diagnosis were small, ranging from .01 to -.10.

Table 2

Zero-Order Correlations for the Perceived Flexibility in Coping With Trauma (PACT) Scale and Other Measures (Study 2: Jerusalem, Israel)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender	—											
2. Age	.05	—										
3. PACT: Forward focus	.14*	.07	—									
4. PACT: Trauma focus	.02	.05	.35***	—								
5. PACT: Polarity	-.01	.07	-.38***	.08	—							
6. PACT: Discrepancy	.11	.02	.65***	-.49***	-.42***	—						
7. PACT: Flexibility	.09	.04	.86***	.64***	-.56***	.29***	—					
8. CERQ: Negative regulation	-.07	.09	-.27***	-.05	.13*	-.21***	-.22***	—				
9. CERQ: Positive regulation	.04	.18**	.32***	.16**	-.05	.17**	.27***	.12*	—			
10. Anxious attachment	-.14*	-.05	-.31***	-.18**	.07	-.14*	-.28***	.38***	-.18**	—		
11. Avoidant attachment	.15**	-.09	-.18**	-.22***	.02	.01	-.21***	.04	-.30***	.26***	—	
12. Trauma exposure	.07	.03	-.01	.08	.01	-.07	.04	.11*	.02	.05	-.10	—
13. PTS	-.09	.15**	-.30*	-.21***	.13*	-.09	-.32***	.29***	-.14*	.30***	.20***	.19***

Note. CERQ = Cognitive—Emotion Regulation Questionnaire; PTS = posttraumatic stress.

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

cluded a measure of optimism (Life Orientation Test—Revised [LOT-R]; Scheier et al., 1994), which should show some association with the Forward Focus scale, and a measure of openness to experience, which we expected would show some association with the Trauma Focus scale. Second, the data set included two conceptually similar personality measures, hardiness (Kobasa, Maddi, & Kahn, 1982) and ego-resiliency (Block & Block, 1980), that have been associated with the idea of flexibility in the face of adversity (Bonanno, 2004, 2005) and therefore should evidence mild to moderate correlation with the PACT flexibility score. In addition, we examined the discriminant validity of the ability scales and their combination into the flexibility score by comparing them with a measure of social desirability and neuroticism. A lack of association between the flexibility score and these measures would indicate that responses to the PACT did not reflect deliberate self-presentation concerns or negative affectivity or emotional instability.

Method

Participants and procedure. Participants were undergraduates who had been followed during their college career as part of a longitudinal cohort study (see Bonanno et al., 2004; Papa & Bonanno, 2008). From this cohort, complete data for the measures examined in the current study were available from 106 participants. The ethnicity of the sample was primarily Caucasian (61%) as well as Asian (16%) and African American (9%), female (65%), and 21 years of age (81%, $M = 21.02$ years, $SD = 0.47$) at the time of the primary data collection. The questionnaires were administered in moderate-size group settings during the spring semesters in participants' third year and final year of college. Friend ratings of participants' adjustment and participants' weekly reports of potentially stressful life events were obtained in the final year of college.

Measures.

Personality and coping. The Forward Focus and Trauma Focus scales were measured using the English-language version of the PACT. Internal consistencies were adequate and similar to those observed in Study 1 (Forward Focus $\alpha = .85$; Trauma Focus,

$\alpha = .79$). The combination of these scales into a single flexibility score was achieved using the same procedures as in Study 2. *Hardiness* was measured using the 45-item Personal Views Survey (Bartone, Ursano, Wright, & Ingram, 1989). Reliability for the Personal Views Survey total hardiness score was adequate ($\alpha = .75$) and comparable to previous studies (e.g., Maddi & Hightower, 1999). *Ego-resiliency* was measured using the 14-item ER89 scale (Block & Kremen, 1996). Reliability for the ER89 was adequate ($\alpha = .75$) and similar to previous studies (Block & Kremen, 1996). *Dispositional optimism* was measured using the LOT-R (Scheier et al., 1994). The LOT-R is a brief 10-item version that is highly correlated ($r = .95$) with the original LOT (Scheier & Carver, 1985). Internal consistency for the LOT-R was adequate ($\alpha = .71$) and similar to that observed previously (Scheier et al., 1994). *Social desirability* was measured as the total score from the Marlowe–Crowne Social Desirability Scale (MCSDS; Crowne & Marlowe, 1960), a widely used 33-item, true–false scale, which measures social desirability unrelated to pathology. The MCSDS has shown good reliability ($\alpha = .88$) and high 1-month test–retest reliability ($\alpha = .89$); Crowne & Marlowe, 1960). *Neuroticism* and *openness* were measured using the NEO, an abbreviated version of the NEO Five-Factor Inventory (Costa & McCrae, 1992). Both scales consisted of 12 items and produced adequate reliability in the current study (neuroticism, $\alpha = .87$; openness, $\alpha = .78$).

Friend-rated adjustment. Each participant distributed rating materials to three close friends who they felt knew them well and with whom they had relatively consistent contact. These materials were returned anonymously to the experimenters by mail using preaddressed envelopes (for a similar procedure, see Bonanno, Moskowitz, et al., 2005). The materials asked the person to rate the participant's current level of adjustment compared with their usual level of adjustment using a 7-point scale (1 = *much worse than most usual*; 4 = *about the same as usual*; 7 = *much better than usual*) for five dimensions (mental health, physical health, quality of social interactions, ability to accomplish goals, and coping ability). The five dimensions were averaged to create an overall score ($\alpha = .89$). A participant's friend data were used only if data from at least two friends were available.

There were no significant demographic differences between participants with usable friend data ($n = 89$) and the remainder of the sample ($n = 17$).

Trauma exposure. A subset of the sample ($n = 74$, 70%) completed a stressful life events checklist at the end of their fourth year of college. The checklist was adapted from Holmes and Rahe (1967) and consisted of 53 positive and negative life events, including the nine PTEs (e.g., serious physical injury or illness, assault, robbery, or mugging, abortion or miscarriage). Participants indicated whether they had experienced any of these events during college, and then rated the degree of distress experienced at the time of the event using a 0 (*not at all distressing*) to 4 (*extremely distressing*) scale. Participants were categorized as having prior trauma exposure if they endorsed at least one PTE at the highest level of subjective distress. Thirty participants (40%) were categorized as having prior trauma exposure.

Results

Tests of measurement stability across the Israel and U.S. samples. Precise estimates of measurement stability across samples are best obtained by advancing through a hierarchy of increasingly stringent levels of factorial invariance (Hofer, Horn, & Eber, 1997; Horn & McArdle, 1992; Meredith, 1993). Advancement through such hierarchies without significant degradation of model fit suggests a commensurate increase in the confidence of measurement stability.

Accordingly, to evaluate model fit for the Level 1 invariance test, we adhered to common model fit convention where the GFI and CFI should be greater than or equal to .90, with an RMSR of less than or equal to .10 (Kline, 2010). These model fit criteria suggest that the observed data fit the underlying, imposed model well, with relatively small estimated residuals. A nested model comparison test was used to evaluate the model fit for the Level 2 invariance test. The chi-square change from the configural model to the metric model as well as the associated degrees-of-freedom change was evaluated. For a nested test to be successful, the p value associated with the chi-square-change to degrees-of-

freedom-change ratio should be nonsignificant (or greater than .05), suggesting that the two nested models are similar and that the second does not represent a significant degradation in model fit as compared to the first (Hofer et al., 1997).

We used LISREL (Version 8.54) to test a two-level hierarchy of factorial invariance. At Level 1, measurement stability is indicated by *configural invariance*. To test configural invariance, we allowed the factor loading parameters to be freely estimated and we set the hyperplane loadings (loadings on nontarget factors) equal to zero. Configural invariance is indicated when the simple structure of the factor loadings (i.e., the factor configuration) is equal across samples. At Level 2, a more stringent indicator of measurement stability is *metric invariance*; in this case, the factor configuration and the factor loadings are required to be equal across samples.

Using the two-factor solution derived from the EFA and CFA performed on the Israel sample (see Study 1), our test of configural invariance across the Israel and U.S. samples yielded evidence for structural stability, $\chi^2(338) = 833$, $p = .24$; GFI = .90; CFI = .91; and RMSR = .09. The more stringent metric invariance test was also successful, with no significant degradation in model fit when factor loading equality constraints were imposed across samples, $\chi^2(20) = 31$, $p = .36$. Hence, our invariance tests suggest substantial measurement model stability across the Israel and U.S. samples for the two-factor solution.

Convergent and discriminant validity. An additional goal of Study 3 was to further examine the convergent and discriminant validity of the PACT scales and the flexibility score (see Table 3). As in Study 2, the Forward Focus and Trauma Focus scales were moderately correlated. As anticipated, ego-resiliency, a variable conceptually associated with behavioral flexibility, was moderately positively correlated with the Forward Focus and Trauma Focus scales and with their combination in the flexibility score. Also consistent with this pattern, the ego-resiliency scale was unrelated to the discrepancy and polarity scores. The Forward Focus and Trauma Focus scales showed only a mild and nonsignificantly positive correlation with hardiness, another conceptually similar measure, but as expected the flexibility score was signifi-

Table 3

Zero-Order Correlations for the Perceived Flexibility in Coping With Trauma (PACT) Scale and Other Measures (Study 3: American College Students)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Gender	—													
2. Age	.04	—												
3. PACT: Forward focus	.17 ⁺	.10	—											
4. PACT: Trauma focus	.16 ⁺	.05	.31 ^{***}	—										
5. PACT: Polarity	.18 ⁺	-.04	.21	-.12	—									
6. PACT: Discrepancy	.01	.04	.59 ^{***}	-.59 ^{***}	.28 ^{**}	—								
7. PACT: flexibility	.11	.10	.64 ^{***}	.82 ^{***}	-.39 ^{***}	-.15	—							
8. Ego-resiliency	.16 ⁺	.01	.36 ^{***}	.30 ^{***}	-.15	.05	.44 ^{***}	—						
9. Hardiness	.18 ^{**}	.09	.13	.15	-.11	-.02	.22 [*]	-.04	—					
10. Optimism	.12	.09	.32 ^{***}	.05	.01	.23 [*]	.20	.31 ^{***}	.02	—				
11. Openness	.04	-.04	.08	.22 ^{***}	.11	-.14	.14	.29	.02	-.14	—			
12. Neuroticism	-.08	.05	-.03	-.01	.16	.03	-.08	.06	-.03	-.11	-.54 ^{***}	—		
13. Social desirability	-.22 [*]	.02	.04	.01	.17	.03	.10	.02	.04	-.07	.03	-.15	—	
14. Trauma exposure	-.01	-.01	.10	.09	.24 [*]	-.07	.03	-.02	.02	-.04	-.13	.20	.03	—
15. Friend rated adjustment	.19 ⁺	-.01	.27 ^{**}	.18 ⁺	.06	.08	.24 [*]	.12	.13	.18 ⁺	.03	-.15	.13	-.21

⁺ $p < .10$. ^{*} $p < .05$. ^{**} $p < .01$. ^{***} $p < .001$.

cantly positively correlated with hardiness. Also as predicted, the Forward Focus scale was moderately positively correlated with optimism, which has obvious conceptual overlap with that scale, but not openness to experience. By contrast, the Trauma Focus scale was positively correlated with openness, which has conceptual overlap, but not optimism.

We also examined the extent to which the PACT scales might be associated with social desirability or neuroticism. Neither PACT scale nor their combination as a flexibility score was meaningfully correlated with these variables. These findings indicate that responses to the PACT are not meaningfully influenced by general negative affectivity or concerns about positive self-presentation. Finally, as in Study 2, the Forward Focus and Trauma Focus scales and their combination as a flexibility score were unrelated to trauma exposure. This finding further affirms that how people think about the behaviors or strategies they might be able to employ in coping with trauma is relatively independent of recent traumatic experiences.

Study 4: Incremental Validity and Moderation of Potential Trauma Exposure

Method

In a final study, we tested the incremental validity of the individual PACT scales and the flexibility score as predictors of adjustment. The conceptual rationale for coping flexibility emphasizes the independent contribution of the trauma focus and forward focus dimensions. To examine this issue, we reanalyzed the data from the high potential trauma exposure sample used in Studies 1 and 2. Specifically, we conducted a series of hierarchical regressions for the prediction of PTS. In the first step of each analysis, we entered age, gender, and trauma exposure as control variables. In subsequent models, we entered the Trauma Focus scale and Forward Focus scale. If the Forward Focus and Trauma Focus scales each independently contribute to adjustment, as hypothesized by the flexibility construct, then each scale should independently predict PTS scores when the control variable and the other scale are included in the model.

The conceptual rationale for coping flexibility as an adaptive response to extremely aversive or potentially traumatic circumstances also clearly predicts that flexibility in coping abilities should moderate potential trauma exposure. In other words, the hypothesized inverse relation between flexibility and PTS should be more pronounced for participants with higher levels of trauma exposure. Following previous flexibility studies (e.g., Westphal et al., 2010), we tested this aspect of the PACT by creating additional regression models that included interaction effects between exposure and the Forward Focus scale and between exposure and the Trauma Focus scale. Finally, we created models that used the more parsimonious flexibility score instead of the individual PACT scales.

Results

A set of hierarchical regressions representing six different models is summarized in Table 4. The first model involved a single step in which PTS was regressed on age, gender, and trauma exposure. The model was significant, $F(3, 300) = 6.68, p < .001$, and explained 6%

Table 4
Summary of Standardized Regression Coefficients Testing Incremental Prediction of Posttraumatic Stress

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Gender	-.07 ⁺	-.05	-.05	-.04	-.05	-.05
Age	.11 ^{**}	.13 ^{****}	.12 ^{****}	.13 ^{****}	.12 ^{**}	.12 ^{**}
Exposure	.12 ^{**}	.13 ^{****}	.13 ^{****}	.13 ^{****}	.13 ^{****}	.13 ^{****}
Forward focus		-.17 ^{****}	-.17 ^{****}	-.17 ^{****}	—	—
Trauma focus		-.12 ^{**}	-.11 ^{**}	-.11 ^{**}	—	—
Forward Focus × Exposure			-.08 [*]	—	—	—
Trauma Focus × Exposure				-.08 [*]	—	—
Flexibility					-.23 ^{****}	-.22 ^{****}
Flexibility × Exposure						-.11 ^{**}
R ²	.06	.17	.18	.18	.17	.19
F	(3, 301) 6.68 ^{****}	(5, 299) 12.11 ^{****}	(6, 298) 10.98 ^{****}	(6, 298) 10.94 ^{****}	(4, 300) 14.86 ^{****}	(5, 299) 13.90 ^{****}
F change		Model 2 vs. 1 (2, 299) 19.05 ^{****}	Model 3 vs. 2 (1, 298) 4.65 [*]	Model 4 vs. 2 (1, 298) 4.38 [*]	Model 5 vs. 1 (1, 300) 36.99 ^{****}	Model 6 vs. 5 (1, 299) 8.56 ^{****}

+ p < .10. * p < .05. ** p < .01. *** p < .001.

of the PTS variance. The second model included a second step in which the Forward Focus and Trauma Focus scales were forced into the equation. This model significantly increased the R^2 , F change (2, 299) = 19.05, $p < .001$, and explained an additional 11% of the PTS variance. Both the Forward Focus and Trauma Focus scales were significant in this step. In other words, as predicted by the flexibility hypothesis, forward focus and trauma focus ability independently predicted reduced PTS severity.

Model 3 extended the previous model by including the interaction of forward focus and exposure. This step again significantly increased the R^2 , F change (1, 298) = 4.65, $p < .05$. To understand the interaction, we graphed the PTS severity scores for participants either low or high in trauma exposure who were either 1 standard deviation above or 1 standard deviation below the mean on forward focus. As can be seen in Figure 1, participants high in forward focus had lower overall levels of PTS. More important, however, participants high in forward focus showed almost no increase in PTS severity at higher levels of exposure. By contrast, participants low in forward focus had markedly greater PTS severity (i.e., a steeper slope) at higher levels of exposure.

Model 4 repeated the previous analysis (Model 3) but substituted the interaction of trauma focus and exposure in the final step. This step also significantly increased the R^2 relative to Model 2, F change (1, 298) = 4.38, $p < .05$. A graph of this interaction also revealed an almost identical pattern as in the previous model. Specifically, as can be seen in Figure 2, participants high in trauma focus had lower overall levels of PTS and showed almost no increase in PTS severity at higher levels of exposure. By contrast, participants low in trauma focus had markedly greater PTS severity (i.e., a steeper slope) at higher levels of exposure.

Models 5 and 6 replaced the forward focus and trauma focus variables with the combined flexibility score (Model 5) and the interaction of exposure and flexibility (Model 6). Inclusion of the flexibility score in Model 5 significantly increased the R^2 relative to Model 1, F change (1, 300) = 36.99, $p < .011$. Inclusion of the interaction in Model 6 again significantly increased the R^2 , F change (1, 299) = 8.56, $p < .01$. A graph of this interaction showed a similar but slightly more dramatic pattern as was observed for the individual Forward Focus and Trauma Focus scales. As can be seen in Figure 3, participants high in flexibility had markedly lower overall levels of PTS and showed almost no increase in PTS severity at higher levels of exposure. By contrast, participants low in flexibility focus had markedly greater PTS severity (i.e., a steeper slope) at higher levels of exposure.

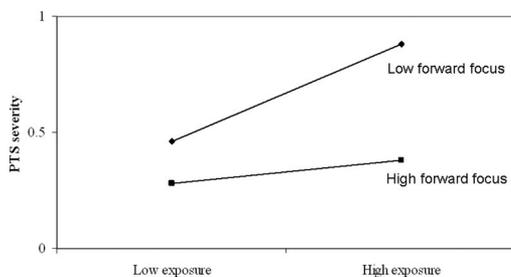


Figure 1. Interaction predicting posttraumatic stress (PTS) severity from high and low trauma exposure and high and low forward focus (Jerusalem sample, Study 2).

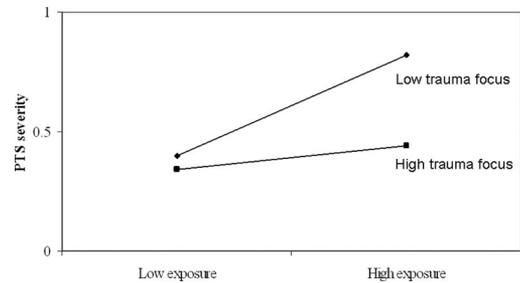


Figure 2. Interaction predicting posttraumatic stress (PTS) severity from high and low trauma exposure and high and low trauma focus (Jerusalem sample, Study 2).

Discussion

We created the PACT scale with the aim of integrating divergent literatures on coping with psychological trauma. Our selection of items for the scale was informed by the construct of flexibility and the hypothesis that different or even opposing strategies may be adaptive at different times or in the face of different types of potentially traumatic life events (Bonanno, 2004, 2005; Bonanno & Mancini, 2008). As a first step in developing a scale to assess coping flexibility, we sought to measure the general ability to use different types of coping. Item reduction and factor analysis (Study 1) resulted in two robust factors that neatly mapped onto the two primary types of coping typically championed in the trauma literature. Consistent with the traditional emphasis on concerted trauma focus on traumatic events, a factor we labeled the Trauma Focus scale included items measuring the ability to temporarily suspend one's normal routine and social obligations and to focus fully on the details, memories, and emotional reactions associated with the PTE. Consistent with more recent empirical literature emphasizing the importance of active and forward looking coping processes such as distraction and optimism, a factor we labeled the Forward Focus scale included items measuring the ability to remain calm and optimistic, focus on current goals and plans, laugh, use distraction, and attend to the care of others. In addition to its conceptual appeal, the two-factor solution proved psychometrically robust in split-half CFAs with a high-trauma exposure Israeli sample (Study 1) and in a sample of American college students (Study 3).

In addition to establishing the psychometric stability of the PACT scales, we also examined the scales' convergent and discriminant validity. Both scales evidenced patterns of correlations with related

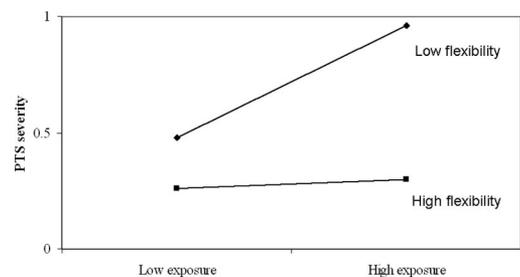


Figure 3. Interaction predicting posttraumatic stress (PTS) severity from high and low trauma exposure and high and low flexibility (Jerusalem sample, Study 2).

personality measures that were consonant with their presumed adaptive influence. For example, both scales were inversely correlated with attachment anxiety and attachment avoidance. Both scales were also positively correlated with positive cognitive–emotional regulation and ego-resiliency. Although neither scale evidenced the predictive positive correlation with the personality dimension of hardiness, the combined flexibility score was positively correlated with hardiness. Also as predicted, the Forward Focus scale but not the Trauma Focus scale correlated positively with optimism. Similarly, the Trauma Focus scale but not the Forward Focus scale correlated positively with openness to experience.

In addition to these forms of validity, we also examined several potentially confounding factors inherent in the questionnaire assessment of coping. As discussed earlier, a potentially serious problem with self-report coping scales is that they may not actually measure coping behavior but rather personality-related beliefs about coping or after-the-fact appraisals of recent coping experiences (Stone et al., 1998). We attempted to partially obviate this concern in the PACT instructions by asking respondents not to rate their typical coping behavior but rather to rate their *perceived ability* to use different coping behaviors if they had to. The assessment of perceived ability rather than actual coping use also more appropriately captures the idea of flexibility in the potential utility of different coping strategies. Nonetheless, irrespective of such semantic distinctions, it is still possible that the PACT did not actually measure coping abilities but only participants' personality-related beliefs or after-the-fact appraisals about their coping.

To more fully examine this issue in the current investigation, we included measures of negative affectivity (neuroticism) and self-presentation bias (social desirability) and examined the PACT scales' zero-order correlations with potential trauma exposure. If the PACT scales are merely byproducts of personality-based beliefs about coping or after-the-fact appraisals based on recent trauma exposure, then they should be highly correlated with these measures. By contrast, if the PACT scales do in fact tap a meaningful dimension of coping, then they should be uncorrelated with these measures. The correlational findings clearly indicate the latter. Participants' scores on both PACT scales and on their combination into a single flexibility score were not meaningfully associated with social desirability, neuroticism, or level of trauma exposure.

Consistent with literature supporting the adaptive value of coping flexibility, however, both the Forward Focus and Trauma Focus scales were associated with better adjustment (PTS severity in Study 2 and higher peer ratings of adjustment in Study 3). Moreover, when we examined the scales in a series of hierarchical regression models (Study 4) in the high-exposure Israeli sample, both the Forward Focus and Trauma Focus scales independently predicted reduced PTS severity. Each scale also independently moderated the potentially corrosive impact of high trauma exposure. Participants with high scores on these scales evidenced relatively little increase in PTS severity at higher levels of exposure, whereas participants with low scores on the scales evidenced markedly greater PTS severity at high levels of trauma exposure. Finally, this same pattern of results was observed when we combined the Forward Focus and Trauma Focus scales into a single measure of coping flexibility.

Limitations

Several important limitations of the measure should be considered. Foremost is that despite the PACT's incremental prediction of adjustment, it is still limited by the same concerns that apply to other self-report scales. One such concern is possible response bias. We had some measure of control for this issue in Study 3 and showed that the PACT scales were unrelated to both social desirability and neuroticism. However, these findings do not completely rule out the possibility of response bias. Future studies that might use the PACT should continue to examine this issue. In addition, it is important to note that the concern raised regarding the limits of measuring coping behavior by summary self-report questionnaires is still worthy of further exploration in subsequent research. Ideally, this issue should be addressed in future studies by comparing participants' responses to the PACT with more proximal measures of coping behaviors obtained from daily diaries or momentary assessments. In a related vein, as pertains to the idea of flexibility, it will be illuminating to further compare the performance of both PACT scales in relation each other and to performance-based measures of coping flexibility, such as developed by Cheng (2001).

Another important concern is that all of the studies in this investigation were cross-sectional. Although the data from these studies provided strong preliminary evidence for the PACT's psychometric stability and validity, more compelling evidence for its predictive validity would be provided by a longitudinal design. Such a design is needed to demonstrate that the PACT scales measured relatively soon after a PTE would show the predicted salubrious influence on adjustment over time. Even more compelling, although considerably more difficult to achieve, would be a prospective design showing that either or both scales (i.e., flexibility) measured prior to a PTE predicts healthy adjustment after the PTE.

Conclusion

Within the context of these limitations, the findings from the current investigation provide preliminary support for the psychometric stability and validity of the PACT as a brief self-report measure of perceived coping ability in the specific context of potential trauma. The data support the idea that each PACT scale contributes to trauma coping flexibility, and to that end, we demonstrated the usefulness of combining these scales into a single, parsimonious measure of coping flexibility. It is our hope that this scale will facilitate research on how the dimensions of trauma focus and forward focus might differ from other related constructs. For example, the flexibility hypothesis suggests a somewhat similar approach to coping proscribed by dual-process coping models (e.g., Stroebe & Schut, 1999). Further research is needed, however, to help determine when these divergent forms of coping are best used, and whether there may be optimal periods for either or both forms of coping. For example, although there is a common-sense appeal to the emphasis on concerted trauma focus and the emphasis on optimistically moving on from a PTE, the flexibility construct suggests the additional possibility that both types of coping may not always be necessary; rather, the relative contribution of each of these responses will likely depend heavily on the constraints demanded by the situation (Bonanno, 2004, 2005). It is our hope that the PACT will provide a user-friendly means of assessing people's ability to use these two types of coping and how flexibility in that ability might inform adjustment across a range of PTEs.

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