

# Peritraumatic fear, helplessness and horror and peritraumatic dissociation: Do physical and cognitive symptoms of panic mediate the relationship between the two?

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## Abstract

The goal of this study was to examine whether panic mediates the relationship between fear, helplessness, and horror (PTSD criterion A2) and dissociation at the time of trauma. The study sample included 709 police officers and 317 peer-nominated civilians who had been exposed to a variety of critical incidents. Participants filled out measures of critical incident exposure, PTSD criterion A2, panic, and dissociation. Results indicate that together, physical and cognitive symptoms of panic completely mediate the relationship between criterion A2 and dissociation in civilians, and partially mediate that relationship in police. These results provide support for the idea that panic mediates the relationship between fear, helplessness, and horror (criterion A2) and dissociation at the time of trauma. The results also raise the possibility, however, that the mediational role of panic may be further moderated by additional variables.

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## Introduction

Posttraumatic Stress Disorder (PTSD; [American Psychiatric Association, 1994](#)) is an anxiety disorder that develops after exposure to a traumatic event and is characterized by re-experiencing, avoidance, and arousal

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symptoms. According to a recent meta-analytic study of risk factors for PTSD, dissociation experienced at the time of a traumatic event and shortly thereafter (i.e., peritraumatic dissociation) is the strongest predictor of PTSD (Ozer, Best, Lipsey, & Weiss, 2003). Dissociative reactions include an altered sense of time, out-of-body experiences, feeling as if the traumatic event is unreal (i.e., derealization), not feeling like oneself (i.e., depersonalization), feeling disconnected from one's body, and feeling confused and disoriented. For most individuals, dissociation at the time of trauma occurs in the context of (Bernat, Ronfeldt, Calhoun, & Arias, 1998) or as a result of (Friedman, 2000) high levels of fear, helplessness, and horror, a group of reactions also referred to as PTSD criterion A2.

Despite a growing body of literature linking fear, helplessness, and horror and dissociation at the time of trauma, the exact nature of the relationship between these two variables, and the potential mechanism(s) by which they might be linked are not well understood. Recently, some researchers have speculated that in the context of the intense fear, helplessness, and horror experienced at the time of a trauma, some *vulnerable* individuals may experience heightened symptoms of panic, and that such panic symptoms may in turn disrupt normal cognitive functioning and trigger dissociation (e.g. Gershuny & Thayer, 1999; Marmar, Weiss, Metzler, & Delucchi, 1996; Moleman, Van der Hardt, & van der Kolk, 1992). If these speculations about the mediational role of panic are correct, panic should be associated with both fear and dissociation at the time of trauma (see Fig. 1).

Panic is indeed associated with both fear (Bryant & Panasetis, 2001; Falsetti & Resnick, 1997) and dissociation at the time of trauma (Bernat et al., 1998). There are a number of theoretical explanations for how panic may be triggered and how panic may in turn lead to dissociation at the time of trauma. For instance, according to anxiety sensitivity theory (McNally, 2002; Reiss & McNally, 1985), fears of anxiety/arousal-related sensations—because of exaggerated beliefs about their “harmful” consequences—lead to an intensification of initial traumatic fear reactions in a subset of vulnerable (anxiety-sensitive) individuals, making it more likely for them to progress from early fear/anxiety reactions to full-blown panic at the time of trauma (Bernstein et al., 2005). According to information-processing models of PTSD, panic may lead to dissociation at the time of trauma due to its disorganizing effects on information processing (Marmar et al., 1996).

As the brief review above suggests, several lines of research and theory thus provide indirect support for the mediational role of panic as depicted in Fig. 1; however, there is a paucity of research that directly tests this mediational model. Findings from the only study to date to directly (but partially) test this mediational model in trauma-exposed university students (Bernat et al., 1998) suggest that *physical* panic reactions at the time of trauma do indeed mediate the relationship between peritraumatic fear and dissociation. Unfortunately, no study to date has replicated these findings in other (non-student) traumatized populations nor explored the potential mediating role of *cognitive* symptoms of panic. The purpose of our study was to examine the potential mediating role of cognitive as well as physical symptoms of panic in two trauma-exposed non-student samples (police and matched civilians). Civilian and non-civilian (police) populations differ on a number of variables (e.g., trauma severity and type, gender, personality traits, emergency training) (Brunet et al., 2001; Neylan et al., 2002) that have been found to moderate peritraumatic responses (Koopman, Classen, & Spiegel, 1996; Marshall & Schell, 2002). More to the point, civilian and non-civilian populations may also be expected to differ on a number of psychological traits and processes associated with panic (e.g., anxiety sensitivity), and such differences may determine the extent to which panic mediates the relation between fear, helplessness, and horror and dissociation. It is therefore important to test mediational models of panic in both types of populations.

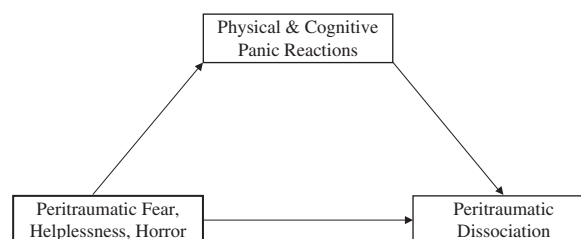


Fig. 1. Mediational model.

## Method

### *Participants and procedure*

As part of a larger study on risk and resilience factors for PTSD, 747 police officers were recruited from the police departments of New York, NY, and Oakland and San Jose, CA. Potential participants were identified through computerized personnel records. Women and ethnic minorities were over-recruited to provide sufficient power to examine gender and ethnicity effects. In all other respects selection was random and no systematic strata were specified. Participants received confidential letters of invitation from their police commissioner, their police union, and our project team along with a Federal Certificate of Confidentiality and a reply form. Those agreeing to participate received an informed consent form and a self-report questionnaire booklet with a self-addressed return envelope. Police officers were asked to nominate age- and gender-matched civilian peers. The men and women thus nominated were then invited to participate and the 338 civilians who agreed comprised the civilian group. All participants received a reimbursement of \$100 for their participation in the study. The police and civilian participants in this study can be best described as convenience samples.

Participants filled out measures of critical incident exposure (see below). Close examination of this data revealed that of the 1085 police officers and peer-nominated civilians, only 709 police officers and only 317 civilians had experienced a critical incident. Thus, the final sample for this study comprised of 1026 individuals. Our sample size was slightly different than that reported in a previous paper (Brunet et al., 2001) due to inclusion of a slightly different set of variables for statistical analyses in each paper. In all other respects, the samples reported in this and the previous paper (Brunet et al., 2001) were identical.

### *Measures*

#### *Severity and nature of index critical incidents*

The Critical Incident History Questionnaire (Weiss et al., 1999) and the Trauma History Questionnaire (Green, 1996) were used to assess exposure to critical incidents in police and civilians, respectively. Critical incidents are potentially traumatic events that are considered traumatic if the individual exposed to them reacts with fear, helplessness, or horror. The CIHQ assesses cumulative critical incident exposure to stressors in police work and has 34 items. Examples of CIHQ critical incidents include discovering a severely mutilated body or being caught in a shooting accident. The THQ assesses lifetime exposure to a variety of potentially traumatic events and has 24 items. For this study, the last item “any other extraordinarily stressful situation or event” was not included in the THQ. Examples of THQ critical incidents include being robbed or having one’s home broken-in to. After filling out critical incident exposure measures, both police officers and civilians chose the one critical incident that had been “the most troublesome, disturbing, or distressing” to date and completed all incident-specific questionnaires (see below) based on this single event.

To obtain the severity of exposure, a research assistant classified index incidents into one of four categories: experiencing a critical incident, witnessing a critical incident, hearing about a significant other having experienced a critical incident, and absence of a critical incident involving a threat to the physical integrity of self or other. The same research assistant classified critical incident type into one of eight categories: accident, natural disaster, physical assault, sexual assault, illness/injury or death, combat, harassment/threats, or other potentially traumatic event. A psychologist with expertise in PTSD independently rated approximately one-fifth of index critical incidents. There was substantial interrater agreement between the research assistant and the psychologist ( $\kappa = .71$  and  $\kappa = .79$  for event type and severity, respectively).

#### *Incident-specific questionnaires*

Peritraumatic fear, helplessness, and horror and peritraumatic panic were assessed by 11 items taken from a pool of items that served to develop the 13-item Peritraumatic Distress Inventory (PDI) (see Brunet et al., 2001). Each item was rated on a Likert scale that ranged from 0 (not at all) to 4 (extremely true). For peritraumatic fear, helplessness, and horror, participants indicated the extent to which they felt “helpless to do more”, “afraid for my own safety”, “worried about the safety of others”, and “horrificed by what I saw”. For physical panic reactions, participants rated the extent to which they had “difficulty controlling my bowel and

bladder”, “physical reactions like sweating, shaking, and my heart pounding”, and felt “I might pass out”. Finally, for cognitive panic reactions, participants rated the extent to which they felt “in control of my emotions”, had the feeling “I was about to lose control of my emotions”, and thought “I might die”. The total score on fear, helplessness, and horror was obtained by summing across the four items; for physical and cognitive panic reactions each, by summing across the three respective items. The PDI has shown high internal consistency (alpha of .75 and .76 for police and civilians), high test–retest reliability (.74 over 391 days for a subset of police officers), and good convergent and divergent validity (Brunet et al., 2001). Peritraumatic dissociation was assessed by the Peritraumatic Dissociative Experiences Questionnaire (PDEQ)—Self-report version (Marmar, Weiss, & Metzler, 1997) which measures the extent to which the respondent had dissociative experiences at the time of a critical incident. The PDEQ has 10 items, each rated on a Likert scale that ranges from 1 (not at all) to 5 (extremely true). The total score for the PDEQ was obtained by summing across the 10 items. The PDEQ has shown high internal consistency reliability (alpha = .80) and good convergent and divergent validity in its initial validation study (Marmar et al., 1997). The internal consistency estimate in the current study was .79 for police and civilians.

### *Statistical analyses*

All analyses were two-tailed, with an alpha of .05. We included in our analyses only the participants who had complete data on all of the variables of the study. All statistical analyses were conducted in SPSS 11.5. We computed the Pearson product-moment correlation coefficients among the variables of interest. Using the Bonferroni approach to control for type I error across the 10 correlations, an alpha of less than .005 (.05/10) was required for significance. We examined group differences on critical incident severity and type by conducting chi-square analyses.

### *Mediational analyses*

In order to be considered as a mediator, a variable must carry, in part or completely, the influence of a predictor variable on a given criterion variable. To test our mediational model (see Fig. 1), we followed standard criteria (Baron & Kenny, 1986) for establishing mediation. According to Baron and Kenny (1986), four criteria must be met to establish mediation. *Criterion 1*: the predictor variable (e.g., peritraumatic fear, helplessness, horror) must be significantly correlated with the criterion variable (e.g., peritraumatic dissociation). This criterion is tested with a simple linear regression in which the criterion variable is regressed on the predictor variable. *Criterion 2*: the predictor variable must be significantly correlated with the potential mediating variable (e.g., peritraumatic physical and panic reactions). This is tested with a simple linear regression in which the mediator is regressed on the predictor variable. *Criterion 3*: the mediating variable must be significantly correlated with the criterion variable after controlling for the effects of the predictor variable. *Criterion 4*: to establish “partial” or “full” mediation, respectively, the effect of the predictor variable on the criterion variable, after controlling for the effects of the mediator, should be significantly reduced or become zero. Criteria 3 and 4 are tested with a single linear regression in which the criterion variable is regressed simultaneously on the predictor and mediator variable(s). If the regression coefficient for the predictor variable in the last regression equation is significantly smaller than the regression coefficient for the predictor variable from the first regression analysis, or becomes zero, partial or full mediation is established. This is tested with a *z* test. Different versions of the test are available (Goodman, 1960; Sobel, 1982); here, we use Goodman’s (1960).

## **Results**

### *Socio-demographic characteristics of the sample*

The average ages of police officers and civilian controls in our final study sample were 36.93 and 36.78 (SD = 6.72, range = 21–62 and SD = 8.07, range = 20–69, respectively). The majority of police officers and civilian controls were male (77% and 60.6%, respectively). Among the police officers 43.6% were Caucasian, 21.6% were African American, 25.4% were Hispanic, and 7.1% were of multiple/other ethnic background.

Among the civilians, 66.6% were Caucasian, 12.0% were African American, 11.4% were Hispanic, and 7.6% were of other/multiple ethnic background. As reported in a previous paper (Brunet et al., 2001), the two groups differed on the demographic variables of gender, education, household income, marital status, and ethnicity but not age.

### *Trauma severity and type*

Among police officers, 326 (46%) personally experienced a critical incident, 311 (43.9%) witnessed a critical incident, and 72 (10.2%) heard of a close friend or relative being exposed to a critical incident. The index critical incident types (from the most to the least commonly reported) for police officers included: witnessing significant injury/illness or death ( $n = 455$ , 64.2%), physical assault ( $n = 163$ , 23%), harassment/threats ( $n = 45$ , 6.3%), sexual assault ( $n = 17$ , 2.4%), other potentially traumatic event ( $n = 16$ , 2.3%), accidents ( $n = 9$ , 1.3%), and natural disasters ( $n = 4$ , 0.6%).

Among civilians, 198 (62.5%) personally experienced a critical incident, 49 (15.5%) witnessed a critical incident, and 70 (22.1%) heard of a close friend or relative being exposed to a critical incident. The index critical incident types (from the most to the least commonly reported) for civilian controls included: significant injury/illness or death ( $n = 156$ , 49.2%), physical assault ( $n = 52$ , 16.4%), harassment/threats ( $n = 38$ , 12%), other potentially traumatic event ( $n = 33$ , 10.4%), sexual assault ( $n = 15$ , 4.7%), accidents ( $n = 11$ , 3.5%), natural disasters ( $n = 8$ , 2.5%), and combat ( $n = 4$ , 1.3%).

Chi-square analyses indicated that police and civilians differed on both critical incident severity ( $\chi^2[2, 1026] = 84.54$ ,  $p < .001$ ) and type ( $\chi^2[2, 1026] = 77.28$ ,  $p < .001$ ). In general, police were more likely to have witnessed whereas civilians were more likely to have directly experienced or heard about a critical incident. Police officers were more likely to have experienced physical assault and significant injury/illness or death, whereas civilians were more likely to have experienced harassment, sexual assault, and other types of potentially traumatic events. There were no gender differences on critical incident severity or type in police but significant gender differences were found for both severity ( $\chi^2[2, 314] = 10.77$ ,  $p < .01$ ) and type ( $\chi^2[7, 314] = 23.14$ ,  $p < .01$ ) in civilians. Civilian males were more likely than females to report directly experiencing or witnessing a critical incident, whereas civilian females were more likely to report hearing about an incident. Civilian males were more likely to experience all but two types of critical incidents—sexual assault and other potentially traumatic event.<sup>2</sup> The average time elapsed since the time of the traumatic event was 6.48 years ( $SD = 5.40$ ) for police officers and 8.82 years ( $SD = 7.49$ ) for civilians.

### *Correlations among the study variables*

As can be seen from Table 1, the correlations among the predictor, the potential mediator, and outcome variables were strikingly similar in magnitude, direction, and significance in police and civilians and ranged from .45 to .56 for police and from .29 to .52 for civilians. The only correlation that was different in the two groups was that between the predictor variable of fear, helplessness, and horror and the criterion variable of dissociation: although equally significant in both groups, this relationship was somewhat larger in magnitude in police. Given the substantial correlation between physical and cognitive panic reactions— $r(694) = .53$  and  $r(312) = .52$  for police and civilians, respectively—we computed a composite score of physical and cognitive panic reactions and used this composite score in all mediational analyses.

### *Mediational analyses*

As shown in Table 2a and b, we conducted three linear regression analyses for police and civilians separately to determine whether the effects of fear, helplessness, and horror on dissociation would be reduced or eliminated after controlling for physical and cognitive panic reactions. For both police and civilians, the results of the first linear regression showed that the predictor—fear, helplessness, and horror—was

<sup>2</sup>Data on PTSD diagnosis were not available to examine gender differences on PTSD diagnoses. However, analyses indicated that there were no gender differences on IES-R total or subscale scores in police or civilians (analyses available upon request).

Table 1

Correlations among the predictor, mediator, and criterion variables in 709 police officers (top line) and 317 civilians (bottom line)

	1	2	3	4	5
<i>Predictor variable</i>					
1. Peritraumatic fear, helplessness, horror (PTSD criterion A2)	—	.49 .44	.45 .42	.54 .50	.48 .29
<i>Mediator variables</i>					
2. Peritraumatic physical panic reactions		—	.53 .52	.85 .85	.56 .44
3. Peritraumatic cognitive panic reactions			—	.90 .89	.45 .48
4. Peritraumatic panic (Physical and cognitive)				—	.57 .53
<i>Outcome variable</i>					
5. Peritraumatic dissociation					—

Note: All correlations in this table are significant at .001 level.

Table 2

Regression analyses to test the mediational role of panic

	<i>B</i>	<i>t</i>	Adj. <i>R</i> <sup>2</sup>	<i>F</i> ( <i>df</i> )
<i>(a) Police</i>				
Criterion 1: Peritraumatic dissociation regressed on PTSD criterion A2				
PTSD criterion A2	1.10	14.40***	.23	207.24 (1686)***
Criterion 2: Peritraumatic panic regressed on PTSD criterion A2				
PTSD criterion A2	.59	16.57	.29	274.67 (1685)***
Criteria 3: Peritraumatic dissociation regressed simultaneously on PTSD criterion A2 and peritraumatic panic				
PTSD criterion A2	.57	6.98***		
Panic	.89	11.87***		
			.36	194.79 (2684)***
Criterion 4a: Goodman test for mediation by panic symptoms: $z = 9.62, p < .001$				
<i>(b) Civilians</i>				
Criterion 1: Peritraumatic dissociation regressed on PTSD criterion A2				
PTSD criterion A2	.44	5.32***	.08	28.32 (1305)***
Criterion 2: Peritraumatic panic regressed on PTSD criterion A2				
PTSD criterion A2	.60	9.95***	.24	99.04 (1305)***
Criteria 3: Peritraumatic dissociation regressed simultaneously on PTSD criterion A2 and peritraumatic panic				
PTSD criterion A2	.06	.75		
Panic	.62	9.98***		
			.27	58.13 (2304)***
Criterion 4a: Goodman test for mediation by panic symptoms: $z = 6.66, p < .001$				

\*\*\*  $p < .001$ .

significantly correlated with the criterion variable—dissociation (Criterion 1). The results of the second linear regression showed that the predictor was significantly correlated with the mediator—physical and cognitive panic (Criterion 2). Finally, the results of the third linear regression showed that once panic was controlled for, the effect of fear, helplessness, and horror on dissociation was reduced in police and became non-significant in



civilians (Criterion 3). Thus, all criteria were met in police for partial mediation and in civilians for full mediation. To establish that the reduction in the effect of the predictor variable on the criterion variable from the first to the last regression was significant, we conducted *z* tests (Goodman, 1960) in each sample. As can be seen from Table 2a and b, in both cases, results indicated a significant mediation (Criterion 4).

To examine the size of the mediation, we calculated the amount of direct and indirect effects for the mediator in each sample. In police, the size of the direct and indirect effects were .252 and .230, respectively. This suggests that about 47.72% of the effect of the predictor variable (fear, helplessness, and horror) on the criterion variable (dissociation) goes through the mediator (panic) in police. In civilians, the size of the direct and indirect effects were .042 and .249, respectively, suggesting that about 85.58% of the effect of the predictor variable on the criterion variable goes through the mediator.

## Discussion

Ours is the first study to date to test whether physical and cognitive symptoms of panic mediate the relationship between fear, helplessness, and horror and dissociation at the time of trauma in both civilian and non-civilian samples. The results of our study indicate that together, physical and cognitive panic symptoms partially mediate the relationship between fear, helplessness, and horror and dissociation in police, and completely mediate that relationship in civilians. To arrive at this conclusion, we examined the strength and direction of several associations among the variables of interest.

First, we found that there is a statistically significant, small-to-moderate-sized relationship between peritraumatic fear, helplessness, and horror and dissociation. This finding is similar to that reported by Bernat et al. (1998), and is consistent with the notion that peritraumatic dissociation occurs in the context of significant traumatic distress (i.e., fear, helplessness, horror) (Friedman, 2000). Second, we found that there is a statistically significant, moderate-sized relationship between fear, helplessness, and horror and physical and cognitive symptoms of panic. This result replicates existing findings in the literature (Bernat et al., 1998), and is consistent with the idea that extreme levels of fear, helplessness, and horror may give rise to panic in vulnerable individuals (Gershuny & Thayer, 1999). Third, we found that there is a statistically significant moderate-sized relationship between physical and cognitive symptoms of panic and dissociation. This result replicates and extends earlier findings of a significant relationship between cognitive symptoms of panic and dissociation at the time of trauma (Gershuny, Cloitre, & Otto, 2003).

Finally, we found that panic reactions partially mediate the relationship between fear, helplessness, and horror and peritraumatic dissociation in police and completely mediate that relationship in civilians. These results replicate and extend existing findings in the literature (Bernat et al., 1998) by establishing that (1) cognitive as well as physical panic reactions may act as mediators, and (2) the mediational role of panic reactions may be further moderated by additional variables that distinguish between civilian and non-civilian traumatized populations. This latter finding is consistent with theoretical speculations which posit that the disorganizing effects of panic on cognitive functioning may be moderated by personality traits, such as the ability to remain calm or self-soothe in stressful situations (Marmar et al., 1996). This finding is also consistent with the notion that police and civilians may differ on psychological traits which drive panic and dissociative reactions at the time of trauma, such as anxiety sensitivity or avoidant coping with anxiety cues. Such differences in anxiety sensitivity or avoidant coping may be due to either selection or training of police. Unfortunately, our study did not assess these constructs, preventing us from testing the potential moderating role of these and other variables that may differentiate between civilian and non-civilian samples.

Our study had a number of strengths and limitations which are important to note. To our knowledge, our study was the first to empirically test the mediational role of both physical and cognitive panic reactions at the time of the trauma. In addition, our study employed reliable and valid measures of peritraumatic fear, helplessness, and horror and dissociation. Finally, our study included two samples, civilian and non-civilian participants, differing in demographics and trauma characteristics, increasing confidence in our results and allowing greater generalizability to other trauma-exposed populations. Our study had a number of limitations: first, in order to reduce response burden and due to budgetary constraints, a certain number of potentially relevant variables (e.g., substance use, abuse, and dependence histories) were not assessed in this study. For

similar reasons, the last item for the THQ (i.e., any other traumatic event) was not included in assessing trauma exposure in civilians; this may have resulted in underestimation of trauma exposure in this sample. Second, our civilian and non-civilian samples were differentially recruited: whereas the police were recruited through departmental rosters, civilians were recruited through peer-nomination. This resulted in different samples sizes for police and matched civilians, and for civilians limited the generalizability of findings to the larger civilian population. Third, the design of our study was cross-sectional and participants were asked to recall peritraumatic reactions retrospectively—the accuracy of retrospective reports of peritraumatic experiences can be affected by forgetting, attributional biases, and malingering (Candel & Merckelbach, 2004), and cross-sectional designs preclude drawing firm conclusions about the directionality of significant relationships. Cross-sectional designs are also vulnerable to the inflation of observed relationships/correlations without a multi-method assessment protocol (Lindell & Whitney, 2001). Fourth, our mediational analyses were conducted using cross-sectional data. Testing mediational models in cross-sectional designs can produce biased estimates (Cole & Maxwell, 2003): assumptions of stability and stationarity (of variables) and non-spuriousness (of relationships) are more difficult to meet in cross-sectional than in longitudinal designs. As such, tests of mediational models in cross-sectional designs should be followed by longitudinal replication studies which can more appropriately take into account psychological processes that unfold over time (Gollob & Reichardt, 1987). Fifth, in our study, physical and cognitive panic symptoms were assessed using a selection of items from the PDI; this approach is limited in that it does not assess all symptoms of panic and cannot detect the presence or absence of a panic attack at the time of trauma. Perhaps more importantly, in our study, symptoms of panic rather than psychological processes or traits that may underlie or moderate the mediational role of panic (e.g., anxiety sensitivity, absorption, avoidant coping with internal anxiety cues) were assessed. Finally, we did not measure overall severity of response to trauma, which prevented us from directly testing an alternative explanation of some of our findings (i.e., overall severity of response to trauma predicts peritraumatic fear, panic, and dissociation). Although indirect tests to rule out this alternative explanation showed that correlations among our study variables remained highly significant and did not diminish in size after controlling for trauma severity and current psychological distress,<sup>3</sup> it should be noted that trauma severity and current psychological distress (together) can at best be considered proxy indices of overall severity of response to trauma.

Future studies that examine the mediational role of panic should assess and control for overall severity of response to trauma; such studies should also assess the full range of panic attack symptoms using reliable, valid measures. Future studies should attempt to identify the psychological processes that may underlie panic by including reliable, valid measures of constructs such as absorption, anxiety sensitivity, and avoidant coping. The inclusion of psychological traits or processes (rather than symptoms of panic) in prospective, longitudinal studies can offer a chance to better link this mediational model to current theories of panic and better assess the clinical relevance of our findings. If future studies replicate the differences we found between civilian and non-civilians (police), it will be important to examine what types of personality traits, job selection, training, and on-the-job-experiences moderate the mediational role of panic observed in this study.

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<sup>3</sup>Analyses not reported here but available upon request from first author. We used the Global Severity Index (GSI) from Symptom Checklist-90-Revised (SCL-90-R) as a measure of overall psychological distress at the time of trauma in these analyses.



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