



## Understanding the relationship between posttraumatic stress disorder and trauma cognitions: The impact of thought control strategies

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### ABSTRACT

Several models of PTSD suggest that dysfunctional beliefs play an important role in the maintenance of PTSD. This study examined whether thought control strategies intermediated in the relationship between PTSD and dysfunctional cognitions. It was hypothesized that PTSD would be positively associated with dysfunctional cognitions and that negative thought control strategies (worry and self-punishment) would partially account for this relationship. These maladaptive strategies were predicted to be associated with increased levels of PTSD and more trauma-related beliefs. Additionally, it was predicted that positive thought control strategies (social control and reappraisal) would be associated with decreased levels of PTSD and fewer trauma-related beliefs. Finally, because the literature supports distraction as both an adaptive and a maladaptive thought control strategy, no a priori hypothesis was made. Results support worry and self-punishment as maladaptive intervening variables in the association between PTSD and dysfunctional cognitions, resulting in greater levels of PTSD and trauma cognitions. Social control and distraction emerged as adaptive strategies, resulting in lower levels of PTSD and trauma cognitions, while reappraisal showed no relationship with PTSD severity. Although the results are cross-sectional, continued focus on the effects of thought control strategies as mediational maintenance variables over time appears warranted.

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A central focus in the literature on posttraumatic stress disorder (PTSD) has been identifying factors that contribute to the development and maintenance of posttrauma symptoms (Ozer, Best, Lipsey, & Weiss, 2003). Although much attention has been paid to factors that increase risk for the development of PTSD, research is beginning to examine factors that help to maintain symptomatology. Resick and Schnicke (1992) highlighted the importance of identifying negative cognitions that may contribute to the persistent nature of PTSD. Related research has examined individual efforts to manage these dysfunctional cognitions (Reynolds & Wells, 1999) with emphasis on the role that thought control strategies play in maintaining posttrauma problems. The aim of the present study is to examine whether specific thought control strategies intervene in the relationship between PTSD symptoms and negative posttrauma cognitions.

A number of theoretical models have emphasized the importance of cognitions in the psychopathology of PTSD. Resick and Schnicke (1993) highlight the significance of dysfunctional cognitions associated with the traumatic event. These authors suggest

that the failure to cognitively process the trauma leads to both PTSD symptoms and to distorted beliefs regarding the event; these beliefs in turn foster PTSD in a positive feed-forward system (Resick & Schnicke, 1993). Likewise, according to Foa and Rothbaum (1998), negative schemas about the self (e.g., “I am incompetent and cannot handle stress”) and the world (e.g., “The world is a dangerous place”) interfere with the integration of traumatic material and further perpetuate PTSD (Foa & Rothbaum, 1998). Similarly, Ehlers and Clark (2000) discuss the role of maladaptive cognitions leading to a sense of current threat. They emphasize negative appraisals and dysfunctional beliefs about the trauma as prominent maintaining factors for PTSD. Although each of these models highlights somewhat different cognitive factors that contribute to posttrauma symptoms, each model emphasizes the salient role of maladaptive cognitions as a maintenance factor in PTSD.

Numerous studies have examined the relationship between PTSD and negative cognitions, with particular attention to whether dysfunctional cognitions play a role in the persistence of PTSD symptoms. Ali and Dunmore (2002) assessed the role of negative beliefs in physical and sexual assault victims. The sample was divided into a no assault group ( $n = 72$ ), a persistent PTSD group ( $n = 57$ ), and a no PTSD group ( $n = 43$ ), and administered a questionnaire to assess post-assault cognitions. Results indicated that

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the persistent PTSD group reported more negative cognitions, relative to the no assault group and the no PTSD group.

Research also has examined the long term effects of negative cognitions on PTSD severity. One study sampled 253 traumatic injury survivors and assessed them for both trauma-related thoughts and PTSD at three separate time points (O'Donnell, Elliott, Wolfgang, & Creamer, 2007). To measure negative cognitions, participants were administered the Posttraumatic Cognitions Inventory (PTCI; Foa, Ehlers, Clark, Tolin, & Orsillo, 1999). Results suggest that negative cognitions about the self, the world, and one's responsibility for the trauma intensify over time and are associated with higher levels of PTSD. Similarly, a study conducted by Dunmore, Clark, and Ehlers (2001) investigated the longitudinal effects of negative cognitions associated with the maintenance of PTSD. This study compared a group of physical and sexual assault victims who had recovered from PTSD with a similar group of assault victims who had persistent PTSD. Individuals were assessed 4 months after the traumatic event and followed up 6 and 9 months later. Results suggest that the persistent PTSD group reported more negative cognitions regarding the traumatic event at both follow-up time points, relative to the recovered PTSD group. As evidenced by these longitudinal studies, dysfunctional cognitions seem to play an essential role in the maintenance and severity of PTSD.

Although research has supported the association between severity of PTSD symptoms and posttrauma cognitions, current studies also suggest that reactions to dysfunctional cognitions play an essential role in the maintenance of PTSD (Halligan, Michael, Clark, & Ehlers, 2003). In particular, maladaptive coping strategies such as the avoidance of trauma-related cognitions seem to contribute to the maintenance of PTSD (Horowitz, 1976; Litz & Keane, 1989). According to the metacognitive model of PTSD (Wells, 2000), cognitive strategies used to control unwanted thoughts can interfere with the successful processing of a traumatic event. Specifically, strategies such as persistently thinking about the event, avoiding reminders of the event, and experiencing heightened awareness towards threat stimuli use up valuable resources needed to emotionally process a traumatic event, which in turn, can lead to the development of posttrauma symptoms. Support for the metacognitive model has been evidenced by several studies. Wells and Davies (1994) have identified five thought control strategies in a nonclinical sample (distraction, worry, punishment, social control, and reappraisal) that are used to manage intrusive thoughts. Results from this study showed that self-punishment and worry held a positive relationship with emotional problems such as trait anxiety, self-consciousness, and impaired mental control (Wells & Davies, 1994). Likewise, Roussis and Wells (2008) examined thought control strategies in a sample of college students who experienced a stressful life event. Participants were assessed for predictors of stress symptoms twice over a 3 month period. Results found worry to be a significant predictor of stress reactions after a difficult life event. Additionally, Roussis and Wells (2006) examined the role of worry in the relationship between metacognitive beliefs and stress symptoms in a nonclinical sample. Results supported the meditational relationship of worry between beliefs about worry and stress symptoms. Further analyses showed that the thought control strategies of worry and punishment held a positive association with stress symptoms, while social control and reappraisal held a negative relationship.

The use of thought control strategies also has been investigated in clinical populations. Warda and Bryant (1998) examined the use of thought control strategies by individuals with Acute Stress Disorder (ASD). Results indicated that individuals with ASD used negative thought control strategies such as punishment and worry more frequently than individuals without ASD. This study provides additional support for the association

between negative thought control strategies and posttrauma symptomatology.

Research additionally has supported the use of various thought control strategies as predictors of ASD and PTSD over time following motor vehicle accidents. In one study, participants were assessed at Time 1 (2–4 weeks post-accident) and again at Time 2 (4–6 months post-accident; Holeva, Tarrier, & Wells, 2001). Results showed that negative thought control strategies such as self-punishment and worry helped to predict ASD at time 1 and PTSD at Time 2. Additionally, distraction and social control were negatively associated with the development of ASD and PTSD, suggesting that they are more adaptive thought control strategies. Additionally, Ehlers, Mayou, and Bryant (1998) examined thought suppression and rumination as potential maintaining factors for PTSD among 967 individuals who had experienced a serious motor vehicle accident. Participants were assessed post-accident, and again at 3 months, and at 1 year. Results showed that increases in rumination about the traumatic event, and increases in the suppression of these recollections were both strongly associated with PTSD at 3 months and at 1 year. Results from these studies provide support for the casual role played by thought control strategies in the development of acute stress symptoms and PTSD.

Although dysfunctional cognitions and negative thought control strategies have been shown to be individually associated with PTSD, researchers have yet to examine the effects of thought control strategies in the relationship between PTSD severity and posttrauma dysfunctional beliefs. For example, individuals who worry in response to intrusive thoughts may reinforce their negative beliefs regarding their symptoms of PTSD, which in turn, may be associated with greater levels of dysfunctional cognitions. In contrast, individuals who reappraise and deal with symptoms in a more functional manner may experience a decrease in dysfunctional cognitions. Although significant correlations between maladaptive cognitions and thought control strategies have been reported (Beck et al., 2004), no study to date has examined if thought control strategies serve as intermediate variables in the relationship between PTSD and posttrauma cognitions. In particular, do both positive and negative thought control strategies intermediate the relationship between PTSD and dysfunctional cognitions?

The present study will examine this issue using a sample of motor vehicle accident (MVA) survivors who were assessed for mental health problems following their accident. In conceptualizing this study, a variety of thought control strategies were examined. In particular, negative thought control strategies such as ruminating over negative consequences of the event (worry), and giving up pleasurable activities (self-punishment) were assessed. Additionally, positive thought control strategies such as social validation or seeking social support (social control), and reevaluation of the event in a more positive manner (reappraisal) were evaluated. Finally, the avoidance of distressing stimuli (distraction) was examined. Distraction has been regarded in the literature as a technique used to avoid experiencing distressing stimuli, which may in turn, prevent the habituation of distress and further perpetuate PTSD symptomatology (Horowitz, 1976). However, research also has conceptualized distraction as a beneficial thought control technique because it forces individuals to engage in more positive avoidant behaviors such as recalling pleasurable thoughts (Holeva et al., 2001). Because the literature supports distraction as both an adaptive and a maladaptive thought control strategy, this study did not make an a priori hypothesis regarding distraction.

It was hypothesized that PTSD would be positively associated with dysfunctional cognitions, and the negative thought control strategies of worry and self-punishment would partially account for this relationship. Specifically, it was predicted that these maladaptive strategies would contribute to the maintenance of PTSD,

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