



Contents lists available at SciVerse ScienceDirect

# Journal of Behavior Therapy and Experimental Psychiatry

journal homepage: [www.elsevier.com/locate/jbtep](http://www.elsevier.com/locate/jbtep)



## Wounds that can't be seen: Implicit Trauma Associations predict posttraumatic stress disorder symptoms



Kristen P. Lindgren<sup>a,\*</sup>, Debra Kaysen<sup>a</sup>, Alexandra J. Wertz<sup>b</sup>, Melissa L. Gasser<sup>a</sup>,  
Bethany A. Teachman<sup>b</sup>

<sup>a</sup>University of Washington, Department of Psychiatry & Behavioral Sciences, 1100 NE 45th St, Suite 300, Seattle, WA 98105, USA

<sup>b</sup>University of Virginia, Department of Psychology, PO BOX 400400, Charlottesville, VA 22904, USA

### ARTICLE INFO

#### Article history:

Received 7 December 2012

Received in revised form

11 March 2013

Accepted 15 March 2013

#### Keywords:

Trauma

Posttraumatic stress disorder

Implicit cognition

Implicit Association Test

### ABSTRACT

**Background and objectives:** Prominent theories suggest that explicit and implicit cognitive biases are critical in the development and maintenance of posttraumatic stress disorder (PTSD). However, studies evaluating implicit PTSD-related cognitive biases are rare, and findings are mixed. We developed two adaptations of the Implicit Association Test (IAT), the “traumatized self” IAT (evaluations of the self as traumatized vs. healthy) and the “dangerous memory” IAT (evaluations of remembering as dangerous vs. safe), and investigated their psychometric properties and relations to PTSD symptoms and trauma exposure.

**Methods:** Participants were visitors to the Project Implicit research website (Study 1:  $N = 347$ , Study 2:  $N = 501$ ). They completed the IATs (Study 1: both IATs; Study 2: traumatized self IAT only), a trauma exposure measure, a PTSD symptom inventory, and explicit cognitive bias measures (Study 2 only).

**Results:** Both IATs had good internal consistency, but only the traumatized self IAT was correlated with PTSD symptoms and identified participants meeting clinical cutoffs for PTSD symptoms. Study 2 focused on the traumatized self IAT and included explicit cognitive bias measures. The IAT correlated with PTSD symptoms and explicit cognitions, and predicted variance in PTSD symptoms above and beyond trauma exposure and explicit cognitions.

**Limitations:** Study designs were cross-sectional; samples were unselected; and PTSD symptoms were self-reported.

**Conclusions:** Despite these limitations, these studies provide preliminary validation of an implicit measure of PTSD-related cognitive bias – the traumatized self IAT – that is consistent with PTSD theories and may ultimately improve the identification and treatment of individuals with PTSD.

© 2013 Elsevier Ltd. All rights reserved.

### 1. Introduction

Posttraumatic stress disorder (PTSD) has high personal and societal costs (Kessler, 2000), and there is a need for additional tools to identify and predict which individuals are vulnerable to developing PTSD (Gates et al., 2012). Self-report measures are common and well-validated tools, but are hampered by the potential for over- and under-reporting of symptoms. Therefore, we focus on implicit cognitive measures as novel tools that could aid in the prediction, identification, and ultimately, treatment of PTSD.

The use of implicit cognitive measures – a class of measures that are indirect – has increased greatly in psychopathology research (see Roefs et al., 2011). They capture aspects of cognition that are relatively reflexive, fast, spontaneous, and that may be less subject to conscious control and/or awareness. Thus, they appear to measure a different type of cognitive process than the reflective, slower, and/or controlled processes typically measured through self-report assessments. Surprisingly, there has been little published research about implicit cognitive measures and PTSD (for exceptions, see Engelhard, Huijding, van den Hout, & de Jong, 2007; Roth, Steffens, Morina, & Stangler, 2012). This is notable given the prominence of the role of cognitions in models of PTSD (e.g., Brewin, Dalgleish, & Joseph, 1996; Ehlers & Clark, 2000; Foa, Steketee, & Rothbaum, 1989). These models posit that changes in cognitive biases – both implicit and explicit – are key mechanisms in the development and maintenance of PTSD. Therefore, we sought to develop and validate an implicit measure of PTSD-related cognitions.

\* Corresponding author. Tel.: +1 206 685 8083.

E-mail addresses: [KPL9716@uw.edu](mailto:KPL9716@uw.edu) (K.P. Lindgren), [dkaysen@uw.edu](mailto:dkaysen@uw.edu) (D. Kaysen), [ajw3x@virginia.edu](mailto:ajw3x@virginia.edu) (A.J. Wertz), [mlgasser@uw.edu](mailto:mlgasser@uw.edu) (M.L. Gasser), [bat5x@virginia.edu](mailto:bat5x@virginia.edu) (B.A. Teachman).

### 1.1. Implicit cognitions and anxiety

Interest in measuring implicit cognitive biases related to anxiety stems in part from cognitive theories of anxiety pointing to the uncontrollable nature of selectively processing potential threat cues by anxious individuals (e.g., Beck & Clark, 1997; Ehlers, Chen, Payne, & Shan, 2006; Michael, Ehlers, & Halligan, 2005). Developing measures that can access and reflect this less controlled processing thus allows for novel theoretical tests, and from a clinical assessment perspective, using implicit measures can help overcome self-report biases due to lack of conscious insight, introspection ability, or impression management (i.e., seeking to present oneself in a particular manner).

The Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) is widely used in the social cognition field to assess memory associations that are more difficult to consciously control. The IAT has been increasingly applied in the anxiety disorders field (see reviews in Roefs et al., 2011; Teachman, Joormann, Steinman, & Gotlib, 2012). Disorder-specific implicit associations, as measured by the IAT or related tasks, appear to differentiate among persons with versus without specific fears or phobias (Teachman, Gregg, & Woody, 2001), persons with social anxiety (de Jong, 2002), anxiety sensitivity (Teachman, 2005), and panic disorder (Teachman, Smith-Janik, & Saporito, 2007). Moreover, these implicit associations predict avoidance behavior above and beyond self-report symptom measures (e.g., Teachman, 2007) and change over the course of successful treatment (e.g., Teachman & Woody, 2003). The extent of change in implicit associations appears to predict subsequent symptom reduction during treatment (Teachman, Marker, & Smith-Janik, 2008). Thus, these measures show promise for illuminating important aspects of a disorder. However, there has been little work examining implicit associations in the domain of PTSD.

### 1.2. Cognition and theories of PTSD

Many theories of the etiology and maintenance of PTSD symptoms point to the importance of cognitions. A hallmark of PTSD is exposure to a traumatic event; however, the vast majority of trauma-exposed individuals do not develop PTSD (e.g., Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Consequently, many theories propose that cognitive changes resulting from trauma exposure or pre-existing maladaptive cognitive styles play a critical role in the development of PTSD (see Dalgleish, 2004; Elwood, Hahn, Olatunji, & Williams, 2009). These theories include schema models (e.g., Janoff-Bulman, 1985), associative network models (e.g., Foa et al., 1989), and integrative models (e.g., Ehlers & Clark, 2000).

Several PTSD theories suggest that memories of the traumatic event and interpretations of one's PTSD symptoms or the consequences of the traumatic event become associated with automatically activated negative appraisals (Brewin et al., 1996; Ehlers & Clark, 2000; Foa et al., 1989). Although different theories emphasize and/or posit different types of negative appraisals, there is often a focus on the memory of the traumatic event (e.g., Halligan, Michael, Clark, & Ehlers, 2003), such that the memory of the traumatic event is viewed as dangerous or threatening (Foa & Rothbaum, 1998). Thus, it may be that individuals with PTSD are more likely to have implicit associations connecting memory to danger than individuals without PTSD.

Trauma exposure may also disrupt beliefs about self: several theories implicate rigid or extreme beliefs about the self as inadequate, incompetent, or damaged in the development of PTSD (see Brewin et al., 1996; Dunmore, Clark, & Ehlers, 2001; Foa & Rothbaum, 1998). Trauma exposure is thought to change previously positive views of the self or reinforce negative views (Brewin

et al., 1996; Foa & Rothbaum, 1998; Resick & Schnicke, 1993). Along these lines, negative appraisals of the self are associated with PTSD and prospectively predict PTSD following trauma exposure (Bryant & Guthrie, 2007; Dunmore et al., 2001; Foa, Ehlers, Clark, Tolin, & Orsillo, 1999; Owens, Chard, & Cox, 2008). Negative self-appraisals have traditionally been measured using explicit measures, but theories note that negative associations about the self can be automatically activated (Brewin et al., 1996; Ehlers & Clark, 2000; Resick & Schnicke, 1993). Consequently, individuals with PTSD may be more likely to have implicit associations with the self as traumatized or damaged than individuals without PTSD.

### 1.3. Implicit associations & PTSD

Despite the increasing emphasis on implicit cognitive measures in anxiety research and the prominence of cognition in theories of PTSD, few published studies have examined implicit PTSD-related associations, and findings have been mixed. For example, Engelhard et al. (2007) adapted the IAT to measure associations with the self and vulnerability (vs. invulnerability) among a sample of Dutch soldiers deployed to Iraq. Pre-deployment IAT scores did not significantly predict clinician- or self-evaluated PTSD symptoms at either five- or 15-months post-deployment. However, post-deployment IAT scores were significantly correlated with clinician-rated, but not self-rated, PTSD symptoms at the concurrent (five month) assessment. In this prospective study of trauma-exposed combat veterans, implicit vulnerability associations were not a consistent or strong predictor of PTSD symptoms. Roth et al. (2012) also studied trauma-exposed participants, examining implicit self-esteem using an IAT. Findings were mixed. Participants with current PTSD had lower implicit self-esteem than participants who never met criteria. However, IAT scores did not differ significantly between current and past PTSD participants, or between past PTSD participants and participants who never met criteria. A final study, which included participants from the Netherlands Study of Depression and Anxiety, used the IAT to measure implicit self-depression and self-anxiety associations (van Harmelen et al., 2010). Although not a study of PTSD specifically, the study focused on a trauma that is often a risk factor for PTSD: childhood abuse. Implicit negative self IAT scores were positively related to a history of childhood abuse and partially mediated the relationship between childhood emotional maltreatment and symptoms of anxiety and depression. PTSD symptoms were either not evaluated or not reported in this study; thus, their relation to IAT scores is unknown.

These studies are the only published studies of which we are aware that address – even indirectly – whether implicit associations measured by the IAT predict PTSD symptoms and/or trauma exposure. Findings are inconsistent, and the studies vary in their samples, design, and specific associations measured. Accordingly, we tested two adaptations of the IAT that were derived from prominent models of PTSD, investigating their predictive validity with self-reported PTSD scores.

### 1.4. Overview of studies

Given the promise of implicit cognitive measures, the need for additional tools for identifying and predicting PTSD, and the theoretical importance of cognitive biases in the development and maintenance of PTSD symptoms, we sought to validate a novel implicit measure of PTSD-related cognitive bias. We focused on the IAT because it is widely-used and has reliable psychometric properties. Two trauma-related IATs were developed – a traumatized self IAT and a dangerous memory IAT. We expected that they would have good internal consistency and be positively correlated with self-reported PTSD symptoms.

Download English Version:

<https://daneshyari.com/en/article/10448219>

Download Persian Version:

<https://daneshyari.com/article/10448219>

[Daneshyari.com](https://daneshyari.com)