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The organisation and content of trauma memories in survivors of road traffic accidents

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Abstract

We investigated the trauma narratives of 131 road traffic accident survivors prospectively, at 1 week, 6 weeks, and 3 months post-trauma. At 1 and 6 weeks, narratives of survivors with acute stress disorder (ASD) or post-traumatic stress disorder (PTSD) were less coherent and included more dissociation content. By 3 months, their narratives also contained more repetition, more non-consecutive chunks, and more sensory words. Traumatic brain injury was associated with a separate characteristic, confusion, at all three time points. Three aspects of narrative organisation at 1 week—repetition, non-consecutive chunks, and coherence—predicted PTSD severity at 3 months after controlling for initial symptoms. The results suggest both a strong concurrent and predictive relationship between narrative disorganisation and ASD/PTSD but that as people *recover* from ASD, their narratives do not necessarily become less disorganised.

Keywords: PTSD; ASD; Narrative memory; Traumatic brain injury

Introduction

It is often claimed that trauma memories, or narratives, provided by participants diagnosed with post-traumatic stress disorder (PTSD) are disorganised and fragmented when compared to those of trauma victims without this disorder. For example, Halligan, Michael, Clark, and Ehlers (2003) demonstrated disorganisation and fragmentation to be characteristic of PTSD at 3 and 6 months post-trauma in their study of assault victims. In a study of road traffic accident (RTA) victims, Murray, Ehlers, and Mayou (2002) found evidence for a relationship between greater fragmentation of narratives and PTSD severity at 6 months post-trauma. Moreover, Harvey and Bryant (1999) reported that within 1 month post-trauma, RTA survivors with acute stress disorder (ASD) reported more disorganised narratives, relative to RTA survivors without ASD.

It has been suggested that disorganisation maintains PTSD by impeding the processing and resolution of the trauma memory (Ehlers & Clark, 2000; Foa & Rothbaum, 1998). Two types of study are useful in

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evaluating this proposal: (1) the analysis of trauma narratives before and after treatment for PTSD and (2) the analysis of naturalistic change in trauma narratives over time. Two studies have analysed the organisation of trauma narratives pre- and post-treatment. First, as part of exposure therapy, sexual assault victims provided trauma narratives which were coded for fragmentation and disorganisation by independent raters (Foa, Molnar, & Cashman, 1995). Participants who exhibited a decrease in narrative fragmentation over time reported a reduction in trauma-related anxiety, but symptom improvement was not related to a change in disorganisation. In a second study, also of exposure therapy, van Minnen, Wessel, Dijkstra, and Roelofs (2002) found that the narratives of participants whose PTSD symptoms improved became less disorganised, relative to those of non-improvers. However, there was no difference between the narratives of 'improvers' and 'non-improvers' on a separate measure of fragmentation.

In a prospective study (Halligan et al., 2003), individuals provided a trauma narrative and were assessed for PTSD within 3 months of an assault and again at 6 months post-trauma. At both assessments, narrative disorganisation was associated with more severe PTSD. In addition, narrative disorganisation at 3 months post-trauma predicted PTSD symptom severity at 6 months post-trauma. However, in contrast to the treatment studies (Foa et al., 1995; van Minnen et al., 2002), there was no association between decrease in PTSD severity and decrease in narrative disorganisation over time (Halligan et al., 2003).

To summarise these three studies, there is mixed evidence as to the relationship between recovery from PTSD and a change (decrease) in narrative disorganisation. There are at least two possible accounts of this mixed evidence. First, as noted by Halligan et al. (2003), their longitudinal sample showed very little symptom change between the two assessments, in contrast to the large symptom changes found in treatment studies. Second, it is possible that decreased narrative disorganisation following exposure therapy is epiphenomenal, rather than causal, to recovery (van Minnen et al., 2002).

An important limitation of the research conducted thus far is that there have been differences across studies in the measures of fragmentation and disorganisation employed. For example, in Murray et al.'s (2002) study, an expert rated fragmentation on a four point scale ranging from 'very coherent' to 'very incoherent'. Harvey and Bryant (1999) operationalised narrative disorganisation as any evidence of disjointedness, confusion or repetition. Foa et al. (1995) operationalised fragmentation as evidence of repetition of the same utterance, and disorganisation as confusion or disjointed thinking. van Minnen et al. (2002) explored participants' use of disorganised thoughts in their narratives and, like in Foa et al. (1995), took note of repetition in narratives as evidence of fragmentation. Finally, Halligan et al. (2003) employed two measures of disorganisation based on expert ratings. First, evidence of repetition, expressions of uncertainty and non-consecutive chunks were rated. These ratings were then z-transformed and combined to produce an overall disorganisation score. Second, the raters gave each narrative a global rating of coherence, from 'not at all disorganised' 'to extremely disorganised'. In the present study, we aimed to build on previous research by investigating these different indices separately, rather than combining them.

The present study provided an opportunity to clarify the association between narrative disorganisation and recovery from ASD/PTSD. In addition, we have gone further than previous studies by addressing three additional questions. First, the development of trauma narratives from the first week post-trauma across the next 3 months has not yet been investigated. Second, traumatic brain injury (TBI) is a common consequence of trauma (e.g., Harvey, Brewin, Jones, & Kopelman, 2003). In the United States, it is estimated that more than half of brain injuries are caused by RTAs (Kraus & McArthur, 1996). TBI is known to impair the encoding of the trauma memory and is associated with disorientation and confusion (e.g., Grigsby & Kaye, 1993; Schacter & Crovitz, 1977). Hence, it is important to know whether TBI can have the same effects on narrative disorganisation that are ascribed to ASD/PTSD symptomatology. Third, relative to narrative organisation, narrative *content* has received little empirical scrutiny. In one study of trauma narratives written by participants with PTSD, 'flashback periods' were found to comprise high levels of sensory content and emotions such as fear and helplessness, in contrast to non-flashback periods (Hellawell & Brewin, 2004). These findings are consistent with cognitive theories of PTSD that describe the reexperiencing of trauma as being rich in sensory and emotional content (e.g., Brewin, Dalgleish, & Joseph, 1996; Ehlers & Clark, 2000). In another study, participants with PTSD who reported high levels of dissociation at the time of the trauma provided narratives which exhibited more dissociative content, relative to participants who reported low levels of dissociation at the time of the trauma (Zoellner, Alvarez-Conrad, & Foa, 2002). To the best of the authors'