Emotion, memory and the self in complex post-traumatic stress following repeated interpersonal trauma

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DECLARATION

This dissertation is the result of my own work and includes nothing which is the outcome of work done in collaboration except as declared in the Preface and specified in the text. It is not substantially the same as any that I have submitted, or, is being concurrently submitted for a degree or diploma or other qualification at the University of Cambridge or any other University or similar institution except as declared in the Preface and specified in the text. I further state that no substantial part of my dissertation has already been submitted, or, is being concurrently submitted for any such degree, diploma or other qualification at the University of Cambridge or any other University or similar institution except as declared in the Preface and specified in the text. It does not exceed the prescribed word limit for the relevant Degree Committee.

ABSTRACT

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Individuals who experience repeated interpersonal trauma often present with Posttraumatic Stress Disorder (PTSD) with more complex features than those exposed to single-incident traumas. However, there is contention in the literature regarding whether PTSD and Complex PTSD can be conceptualised as different disorders, and there is currently no consensus regarding whether tailoring current evidence-based interventions for PTSD for complex features will improve treatment outcomes. This thesis is structured as a series of five stand-alone research papers, with each addressing one of the overarching themes associated with PTSD following repeated traumas (outlined in chapter one); The first study (chapter 2) explores the structure of autobiographical memory, by examining the organisation of past autobiographical knowledge. The second study (chapter 3) explores self-identity by examining the structure of the self-concept. The third study (chapter 4) explores the prevalence of pseudohallucinations in a sample of adult survivors of repeated physical and sexual trauma. The fourth study (chapter 5) explores the relationship between emodiversity and clinical manifestations of PTSD. The fifth study (chapter six) outlines the development and preliminary evaluation of a group intervention for individuals following repeated interpersonal trauma. Finally, in the General Discussion (chapter seven) the findings from all five research papers are considered in light of current theories of PTSD. I critically evaluate whether the extant theories are adequate in their conceptualisations of more complex presentations of the disorder and whether the current treatments available are adequate in effectively treating more complex presentations of PTSD. This thesis contributes to the conceptualisation of CPTSD through the identification of particular symptoms in a client group

who have experienced repeated interpersonal trauma, but only with more research in this area

can we further refine our understanding and of and develop efficacious treatments for these more

complex presentations of CPTSD. Limitations and future directions are considered.

PREFACE

This dissertation is submitted for the degree of Doctor of Philosophy at the University of Cambridge. This dissertation is 395 pages in length and contains 76.528 words.

Part of this work has been presented in the following publications:

Clifford, G., Dalgleish, Tim., & Hitchcock, C. (2018). Prevalence of auditory pseudohallucinations in adult survivors of physical and sexual trauma with chronic post-traumatic stress disorder (PTSD). *Behaviour Research and Therapy*. 111.

Clifford, G., Meiser-Stedman, R., Johnson, R. D., Hitchcock, C., & Dalgleish, T. (2018). Developing an Emotion- and Memory-Processing Group Intervention for PTSD with complex features: a group case series with survivors of repeated interpersonal trauma. *European Journal of Psychotraumatology*, *9*(1), 1495980.

Clifford, G., Hitchcock, C., & Dalgleish, T. (2019). Compartmentalization of self-representations in female survivors of sexual abuse and assault, with posttraumatic stress disorder (PTSD). *Psychological Medicine,* 1-8.

Clifford, G., Hitchcock, C., & Dalgleish, T. (2019). Fractured pasts: The structure of the life story in sexual trauma survivors with Posttraumatic Stress Disorder (PTSD). Preprint: https://doi.org/10.31234/osf.io/tpxdr

Clifford, G., Hitchcock, C., & Dalgleish, T. (2019). Negative and positive emotional complexity in the autobiographical representations of sexual trauma survivors with posttraumatic stress disorder (PTSD). Preprint: https://doi.org/10.31234/osf.io/f3h5w

For these papers, the candidate planned the study, collected the data, analysed the results and wrote the paper. The co-authors supervised the research process and made comments on iterative drafts of the manuscript.

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My father wanted me to study in Cambridge as an Undergraduate but I was still in the midst of my teenage rebellion. When the opportunity came up to apply for a PhD many years later as a qualified Clinical Psychologist, the prospect of studying in Cambridge, at the Cognition and Brain Sciences Unit was very exciting. At the time of my application, I was working in the NHS, providing specialist assessment and individual treatment to victims of rape and sexual assault and I had a keen interest in translational research.

Working towards this PhD has been an incredible experience and a huge challenge, both physically and mentally. It has been seven years since I started my PhD and now here I am with my thesis written - three pregnancies and countless journeys on my Brompton through the rain and snow later. I have learnt a great deal and I am both grateful to have been granted the opportunity and relieved to have finished.

Through my research, it has been a privilege to work with so many women with complex trauma histories who have shared their life stories with me, disclosed intimate details of their past experiences and worked hard to manage and improve the symptoms they have struggled with.

I am grateful to Rebecca Johnson and Liz Willows who ran the group interventions with me, often on a Friday afternoon, at the end of a busy week. They provided support and compassion – to the women who attended the groups and also to me. I couldn't have done it without them.

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I would like to thank my husband Philip and my family and friends, who have provided me with the support and encouragement I needed throughout my PhD. And lastly I would like to thank my three children Clara, Ira and Thomas - although they have depleted my time and cognitive ability, they have more than made up for it with the joy and sense of perspective they have provided.

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1.1   Trauma and PTSD

"Traumatized people chronically feel unsafe inside their bodies: The past is alive in the form of gnawing interior discomfort. Their bodies are constantly bombarded by visceral warning signs, and, in an attempt to control these processes, they often become expert at ignoring their gut feelings and in numbing awareness of what is played out inside. They learn to hide from their selves." - Bessel van der Kolk (1994)

'*Trauma*', from a Greek word meaning '*wound*', now evokes thoughts of internal and emotional injury more immediately than it does a laceration or broken bone. During the First World War, the term"shell shock"was first used to describe the range of both physical and psychological symptoms experienced by soldiers in combat. Shell shock has been identified as an important marker in the recognition and gradual development in the understanding of psychological symptoms caused by traumatic experiences (Loughran, 2010).

Exposure to traumatic events, such as war, conflict, natural disasters, assault and life threatening illnesses are common, with over two thirds of the general population likely to be exposed to a traumatic incident in their lifetime (Neria, Nandi, & Galea, 2008). Exposure to such events can have adverse psychological consequences, including both mood and anxiety disorders, and in the last three decades there has been an increase in the discussion of the impact of trauma, with particular focus on posttraumatic stress disorder (PTSD) (Jones & Wessely, 2005). Previous systematic reviews have documented PTSD to be the most commonly studied psychopathology in the aftermath of trauma (Breslau, 2002; Neria et al., 2008; Norris, Friedman, Watson, Byrne, Diaz & Kaniasty, 2002). The lifetime prevalence of

PTSD has been estimated to be 7% (De Vries & Olff, 2009; Kessler et al., 2005). The risk of someone developing PTSD following a traumatic experience has been found to be associated with both individual characteristics and the type of event they have experienced (Yehuda, 2002). Trauma of an interpersonal nature has been found to result in a greater risk of developing PTSD than traumatic events that were unintentional/not of an interpersonal nature (e.g. Kessler et al., 2014). Women are four times more likely to develop PTSD than men, after adjusting for exposure to traumatic events (Vieweg et al., 2005).

An analysis from a survey of a large, representative community-based sample in 24 countries (Kessler et al., 2014) estimated the conditional probability of PTSD for 29 types of traumatic events. The prevalence of PTSD following sexual relationship violence (e.g., rape, childhood sexual abuse, intimate partner violence) was 33%, following interpersonal-network traumatic experiences (e.g., unexpected death of a loved one, life-threatening illness of a child, other traumatic event of a loved one) was 30%, following Interpersonal violence (e.g., childhood physical abuse or witnessing interpersonal violence, physical assault, or being threatened by violence) was 12%. And following other life-threatening traumatic events (e.g., life-threatening motor vehicle collision, natural disaster, toxic chemical exposure) was 12%.

By the time of the publication of the Diagnostic and Statistical Manual of Mental Disorders, Third Edition-Revised (DSM-III-R, American Psychiatric Association, 1987), PTSD was already one of the most complex diagnoses in the manual (Brewin et al., 2017). It included 17 symptoms divided into three clusters (re-experiencing, avoidance and numbing, and physiological arousal), with different thresholds for each cluster, and two additional criteria concerning the nature of the stressor and the duration of symptoms. The DSM-IV (APA, 1994) included another criterion: the presence of clinically significant distress or impairment. In the DSM-V (APA, 2013), the three symptom clusters were increased to four (including *'negative alterations in cognitions and mood'*) on the basis of factor analytic

findings (e.g., Zelazny & Simms, 2015) and three further symptoms were added. A dissociative subtype was also included for the first time, along with a separate subtype for preschool children. PTSD was also taken out of the category of anxiety disorders and recharacterized within its own category of stressor-related disorders. A "text revision" of the DSM-IV, known as the DSM-IV-TR, was published in 2000 (APA, 2000). The diagnostic criterion for PTSD were unchanged.

A diagnosis of PTSD in the DSM-V requires a person to have had direct or indirect (e.g., witnessing or learning about the experience of a close friend or relative) death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence (Criterion A; see Table 1.1). The symptoms of PTSD develop in response to a specific incident (or incidents), and there is commonly an observable relationship between the characteristics of the traumatic incident experienced and the content of the intrusive images the triggers to these as well as the associated distress and physiological reactivity.

According to the DSM-V, PTSD symptoms are divided into four clusters: intrusive re-experiencing, avoidance, negative alterations in cognitions and mood and physiological arousal (Criterion B – E; see Table 1.1). Symptoms of re-experiencing can include: thoughts, images, flashbacks and nightmares evoking extreme feelings of distress and fear. Flashbacks are an intrusive, vivid reminder or sense of *'reliving'* the trauma memory and can be re-experienced as images, smells, sounds or sensations (or a combination). People with PTSD often report feeling as though the traumatic experience is happening again in the present and re-experiencing symptoms can sometimes cause people to lose touch with the *"here and now"* and react in ways they did when the trauma originally occurred (due to a reliving/re-experiencing of the same thoughts, emotions and physiological sensations). For example, many victims of assault report sitting in a particular room in their house with the lights off, having ensured that all of the doors and windows are locked. Flashbacks tend to re-occur in

response to reminders of the traumatic experience (such as being asked to talk about what happened or seeing something related such as a similar event on the television) and are associated with strong feelings and physiological sensations that were experienced at the time of the traumatic experience.

Symptom Cluster (A – E)	Criteria
A. The person was exposed to one or more of the following event(s): death or threatened death, actual or threatened serious injury, or actual or threatened sexual violation, in one or more of the following ways:	1. Experiencing the event(s) him/herself. 2. Witnessing, in person, the event(s) as they occurred to others. 3. Learning that the event(s) occurred to a close relative or close friend; in such cases, the actual or threatened death must have been violent or accidental. 4. Experiencing repeated or extreme exposure to aversive details of the event(s) (e.g., first responders collecting body parts; police officers repeatedly exposed to details of child abuse); this does not apply to exposure through electronic media, television, movies, or pictures, unless this exposure is work related.
B. Intrusion symptoms that are associated with the traumatic event(s) (that began after the traumatic event(s)), as evidenced by one or more of the following:	1. Spontaneous or cued recurrent, involuntary, and intrusive distressing memories of the traumatic event(s). 2. Recurrent distressing dreams in which the content and/or affect of the dream is related to the event(s). 3. Dissociative reactions (e.g., flashbacks) in which the individual feels or acts as if the traumatic event(s) were recurring. 4. Intense or prolonged psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event(s). 5. Marked physiological reactions to reminders of the traumatic event(s).
C. Persistent avoidance of stimuli associated with the traumatic event(s) (that began after the traumatic event(s)), as evidenced by efforts to avoid	1. Internal reminders (thoughts, feelings, or physical sensations) that arouse recollections of the traumatic event(s). 2. External reminders (people, places, conversations,

one or both of the following:	activities, objects, situations) that arouse recollections of the traumatic event(s).
D. Negative alterations in cognitions and mood that are associated with the traumatic event(s) (that began or worsened after the traumatic event(s)), as evidenced by three or more of the following:	1. Inability to remember an important aspect of the traumatic event(s) (typically dissociative amnesia; not due to head injury, alcohol, or drugs). 2. Persistent and exaggerated negative expectations about one's self, others, or the world. 3. Persistent distorted blame of self or others about the cause or consequences of the traumatic event(s). 4. Pervasive negative emotional state (for example, fear, horror, anger, guilt, or shame). 5. Markedly diminished interest or participation in significant activities. 6. Feeling of detachment or estrangement from others. 7. Persistent inability to experience positive emotions (e.g., unable to have loving feelings, psychic numbing).
E. Alterations in arousal and reactivity that are associated with the traumatic event(s) (that began or worsened after the traumatic event(s)), as evidenced by three or more of the following:	1. Irritable or aggressive behavior. 2. Reckless or self-destructive behavior. 3. Hypervigilance. 4. Exaggerated startle response. 5. Problems with concentration. 6. Sleep disturbance (for example, difficulty falling or staying asleep, or restless sleep).

Table 1.1: DSM-V Criteria for PTSD

Symptoms of PTSD also typically include persistent avoidance of stimuli associated with the trauma, such as attempts to avoid talking or thinking about what happened, avoiding contact with the assailant and anything that might trigger re-experiencing symptoms and the associated unpleasant emotions. PTSD symptoms also commonly include persistent symptoms of increased physiological arousal, such as concentration and memory problems, sleep difficulties, irritability and anger, being easily startled and hypervigilant to threat.

The cardinal symptoms of PTSD centre on intrusive memories of the traumatic experience that are prototypically high in frequency, sensorily-laden, involuntary, distressing, fragmented and relatively immune to attempts at prevention. Research suggests traumatic memories are likely to be fragmented into several key 'hotspots' (e.g. Grey, Holmes & Brewin, 2001). Hotspots are typically the 'worst moments' for the person during the traumatic event, and it is these moments that tend to come back as intrusive memories. While the hotspots may be recalled in a jumbled, non-sequential order, they are generally remembered as vivid and clear, whereas other details of the traumatic event may be more difficult to recall. Therefore, it is common for there to be gaps, and in some cases inaccuracies in the trauma narrative.

The reliving or reactivation of trauma memories in people with PTSD involves a reactivation of the body's threat response. For example, Van Der Kolk 2006 emphasises the notion that sensory triggers reinstate hormonal and motoric responses relevant to the original trauma. Therefore, a range of fear-related physiological symptoms are commonly reported. These can include: a pounding heart, sweating, shaking, feeling nauseous, dizziness or fainting, shortness of breath and headaches. However, the body's response to threat is idiosyncratic and therefore individuals tend to report a different combination of symptoms. Commonly reported thoughts and cognitive difficulties in people with PTSD include: disbelief, horror, confusion, poor concentration, disorientation, memory difficulties, poor attention (finding it difficult to retain information for example), poor decision making abilities and a preoccupation with the trauma memories. Commonly reported feelings include the following: shock, anxiety, agitation, panic, anger (at self and/or others), sadness, helplessness, hopelessness, guilt and shame.

1.2   Complex PTSD (CPTSD)

'...repeated trauma in childhood forms and deforms the personality. The child trapped in an abusive environment is faced with formidable tasks of adaptation. She must find a way to preserve a sense of trust in people who are untrustworthy, safety in a situation that is unsafe, control in a situation that is terrifyingly unpredictable, power in a situation of helplessness.'
– Herman (1997)

Individuals presenting with PTSD are not a homogenous group. Individuals who experience repeated interpersonal trauma (including sexual and domestic violence and abuse in childhood) often present with PTSD with more complex features than those exposed to single-incident traumas (Herman, 1997). The diagnostic conceptualisation of Complex PTSD (CPTSD) described in the clinical and empirical literature has varied over time, with symptom clusters between these conceptualisations overlapping but not identical. CPTSD has been alternately named Disorders of Extreme Stress Not Otherwise Specified (DESNOS) (Herman, 1997; Pelcovitz, Van der Kolk, Roth, Mandel, Kaplan, & Resick, 1997), *'PTSD and its Associated Features'* in the DSM-IV (APA, 1994), and Enduring Personality Change after Catastrophic Events (EPCACE) in the World Health Organisation (WHO) International Classification of Diseases (ICD-10, 1992).

The ICD-11 includes a proposal for diagnosis of CPTSD (due to be published in 2018) and this is the first time a diagnostic manual has included CPTSD, reflecting increasing clinical interest and research in the area, with many supporting the inclusion of CPTSD as a distinct construct. Diagnosis of CPTSD in the proposed ICD-11 includes the defining criteria of PTSD (re-experiencing, avoidance, numbing, and hyperarousal), as well as the presence of at least one symptom in each of three self-organisation features: affect, negative self-concept and

relational disturbance. The affective domain problems are characterised by emotion dysregulation (including alterations in attention and consciousness e.g., dissociation, including depersonalisation and derealisation), self-disturbances are characterised by negative self-concept (including persistent beliefs about oneself as diminished, defeated or worthless) and interpersonal disturbances are defined by persistent difficulties in sustaining relationships (Briere, Kaltman, & Green, 2008; Cloitre et al., 2009; Cloitre, Garvert, Brewin, Bryant, & Maercker, 2013).

Presentations consistent with the ICD-11 criteria have been more frequently reported in survivors of repeated interpersonal and/or sexual trauma, relative to other trauma survivors (e.g., Karatzias et al., 2017; Powers et al., 2017). As a result, much of the research into CPTSD has focused on survivors of childhood sexual abuse (e.g., Finkelhor & Dziuba-Leatherman, 1994). The conceptualisation of CPTSD has been influenced by developmental research, which has shown that childhood abuse (including neglect, emotional abuse, absent or mentally ill parents) commonly results in impairment in developmental processes including the ability to regulate emotion and to have effective interpersonal relationships (e.g., Shipman, Edwards, Brown, Swisher, & Jennings, 2005; Shipman, Zeman, Penza, & Champion, 2000). Further, there is evidence to suggest in the growing evidence base for CPTSD that both children and adults demonstrate a relationship between exposure to traumatic experiences and the presence of an increasing number of theoretically based and empirically constrained symptoms (Cloitre et al., 2009).

Further support for the relationship between childhood trauma and CPTSD comes from a study of a nationally representative sample of Danes (Hyland et al., 2017), which found that cumulative exposure to multiple forms of childhood interpersonal violence created a greater risk of developing CPTSD as compared to PTSD classification in a dose-response fashion. The presence of one type of childhood interpersonal violence produced twice the risk

of CPTSD relative to PTSD and that risk substantially increased with every additional event type.

Early relationships with parents or other caregivers provide the relational context in which children develop the earliest psychological representations of self, other, and self in relation to others. These working models form the foundation of a child's developmental competencies, including distress tolerance, curiosity, sense of agency, and communication (Spinazzola et al., 2005). When the child-caregiver relationship is the source of trauma (as is commonly the case with abuse that occurs in in childhood), the attachment relationship can be severely compromised. When attachment to a primary caregiver is severely disrupted, this can engender lifelong risk of mental illness (e.g. Spinazzola et al., 2005). Resulting impairments can include a heightened threat response, increased susceptibility to stress (e.g., difficulty focusing attention and modulating arousal); inability to regulate emotions without external assistance (e.g., feeling overwhelmed by intense or numbed emotions); and altered help-seeking (e.g., excessive help-seeking and dependency or social isolation and withdrawal).

Early trauma and the development of CPTSD, therefore, can have a pervasive impact on one's life history and sense of self, changing how people construct their life narrative and perceive themselves, their emotions and their relationships with others, in a way that simple PTSD does not. Some studies (e.g. Cloitre et al., 2009) suggest that exposure to multiple or repeated forms of maltreatment and trauma in childhood can lead to outcomes that are not simply more severe than the sequelae of single incident trauma, but are qualitatively different in their tendency to affect multiple affective and interpersonal domains. An increasing number of different types of traumatic experiences have been associated with an increasingly greater number of different types of symptoms experienced simultaneously (i.e., symptom complexity; Briere, Kaltman, & Green, 2008; van der Kolk, Roth, Pelcovitz, Sunday, &

Spinazzola, 2005) and this association can occur following repeated trauma in adulthood as well as childhood. In adulthood, Herman (1992) emphasises the importance of subordination to coercive control in the development of CPTSD and proposes that this can occur in situations where adults are exposed to multiple, repeated traumas such as within domestic violence relationships or during kidnapping or being held in captivity (Cloitre et al., 2009).

1.3 PTSD and the Sense of Self

"In the broad sense, as a processing of everything one hears or witnesses, all fiction is autobiographical – imagination ground through the mill of memory. It's impossible to separate the two ingredients." Rohinton Mistry

People with PTSD commonly report their traumatic experiences as being a fundamental part of their current identity, and having been an organising principal for their autobiography. PTSD can be considered as a disorder inherently driven by the autobiographical past. PTSD develops in response to past traumatic events and experiences and memories of the personal past can intrude into and dominate one's awareness in the present.

1.3.1 Autobiographical Memory and PTSD

Autobiographical memory refers to memory for one's personal history (Robinson, 1976). Examples might include memories for particular childhood experiences, learning to ride a bike or a memory of your grandparent's home. Brewer (1986) divided autobiographical memories into categories of personal memories, autobiographical facts, and generic personal memories. *Personal memories* are memories for specific events in one's life that tend to be represented by particular images and are dated in space and time. In contrast, *autobiographical facts* are facts about an individual that are devoid of personally experienced temporal or spatial context information. For example, you will know the date and location of

your own birth, but you will not have a personal memory of the event. *Generic personal memory* refers to more abstract knowledge about oneself (e.g., aspects of your personality) or to acquired procedural knowledge such as how to drive a car or play a musical instrument. Despite the conceptual overlap these classifications, a unique feature of autobiographical memory is that it must directly relate to oneself or one's sense of personal history (Deak & Holt, 2008).

The profound impact of traumatic events on autobiographical memory is something that has been discussed for over 100 years. Beginning with Freud (Breuer & Freud, 1895, cited in Corsini & Wedding, 2000) and Janet (1919/1925, cited in van der Kolk, 1994), the theoretical understanding has been that the occurrence of traumatic events, particularly during childhood, leads to dramatic alterations in memory functioning. More recent discussions have included the impact of trauma on memory fragmentation or disorganisation (e.g., van der Kolk, 1994) and the dissociation of trauma memories from other autobiographical memories (e.g., Brewin, 2001; Ehlers & Clark, 2000; van der Kolk, 1994), as a way of protecting one from the emotional distress associated with their traumatic experience(s).

It has been suggested that traumatic experiences could change the way memories are accessed, with trauma survivors learning to halt memory retrieval in order to avoid intense emotional distress. This can occur through mechanisms such as memory fragmentation or dissociation but also impaired retrieval of memories of specific autobiographical events (e.g., J. M. G. Williams, 1996), resulting in a difficulty in describing specific memories and what has been termed *autobiographical memory overgenerality* (e.g., Moore & Zoellner, 2007). Overgenerality in the retrieval of autobiographical memories is evident in PTSD and has been associated with the development of PTSD after trauma (e.g., Harvey, Bryant, & Dang, 1998). Williams et al., (2007) suggested that trauma-exposed children learn to avoid painful

emotions by halting autobiographical memory retrieval before a recollection of a specific event can be retrieved. Overgenerality of memory can therefore be viewed as a functional response to traumatic childhood events that serves to regulate intense negative emotions.

1.3.2 Self Identity and PTSD

Following extreme negative events, victims often struggle to rebuild and maintain positive views of themselves and their world (e.g. Janoff-Bulman, 1985, 1989, 1992). PTSD can persist and symptoms can become exacerbated due to excessive negative appraisals of the traumatic event and its sequelae (Ehlers & Clark, 2000) and thus can be perpetuated by negative social reactions such as criticism, attribution of blame or not being believed by others, which can then be internalised. Negative self-beliefs can have an impact on an individual's self-concept and psychological adjustment (Showers, Zeigler-Hill & Limke, 2006).

It has been argued that traumatic events can become central in the organisation of an individual's identity and life story (Berntsen & Rubin, 2006). As humans, we adapt to changes and difficulties in the environment by organising personally experienced events in terms of self-reference (e.g. Rogers, Kuiper & Kirker, 1977). This allows us to process and find meaning in our experiences. More specifically in relation to PTSD, intrusive memories of our traumatic experiences are believed to structure our autobiographical narratives, inform our sense of self, and act as a reference point for our expectations and attributions in daily life (e.g. Robinaugh & McNally, 2011). Researchers have used Berntsen and Rubin's (2006) Centrality of Events Scale (CES) to examine this and positive associations have been found between CES scores for traumatic or highly aversive events and PTSD symptom severity among undergraduates (e.g., Berntsen & Rubin, 2006, 2007; Robinaugh & McNally, 2010) and combat veterans (Brown, Antonius, Kramer, Root, & Hirst, 2010).

1.3.3 Negative Self-Talk and Pseudohallucinations

Symptoms of PTSD can include negative beliefs about the self being broken or damaged in some way, about others being difficult to trust and about the world being dangerous. In fact, one criterion in the DSM-V (American Psychiatric Association, 2013) diagnosis for PTSD is *'Persistent and exaggerated negative beliefs or expectations about oneself, others, or the world (e.g., "I am bad," "No one can be trusted,"'* In the proposed ICD-11 diagnosis for CPTSD, the negative self-concept cluster includes the following criterion: *'Persistent beliefs about oneself as diminished, defeated or worthless.'* Karatzias et al (2018) investigated the association between negative trauma-related cognitions and a CPTSD diagnosis. The most important correlate of CPTSD was negative cognitions about the self, characterised by a generalised negative view about the self and one's own symptoms of CPTSD. Negative self-concept is a central aspect of the both the PTSD and CPTSD formulation, which are commonly defined by persistent beliefs about the self being diminished, defeated or worthless, accompanied by feelings of shame, guilt or failure (Maercker et al., 2013).

The psychological phenomenon of "splitting" the self into distinctly positive and negative aspects (the good me vs. the bad me) is said to be an important mechanism for coping with both negative experiences and negative knowledge about the self (e.g. Bowlby, 1980; Sullivan, 1953). The "bad", damaged or broken parts of the self tend to be split off or compartmentalised into particular aspects of self (e.g. me with sexual partners), whilst people retain parts of themselves that are more positive and functional (e.g. me in a work environment). There are also mechanisms which people with PTSD frequently use to inhibit the reliving symptoms and overwhelming emotions associated with the disorder, including suppression repression, and dissociation (including depresonalisation and derealisation; e.g.

Holmes et al., 2005). Dissociation during traumatic events is a well-recognised phenomena (Holmes et al., 2005; Murray, Ehlers & Mayou, 2002). The term dissociation encapsulates a range of responses for victims of traumatic experiences and involves a partial or complete disruption of the normal integration of a person's conscious or psychological functioning (Dell & O'Neill, 2009).

Another element of a dissociative mechanism that may occur as a response to trauma may be the experience of auditory verbal hallucinations. Auditory verbal hallucinations (AVHs) have been defined as the experience of hearing a voice in the absence of an appropriate external stimulus (Stanghellini & Cutting, 2003). In non-psychotic conditions, AVHs are most commonly reported in cases of combat-related Post Traumatic Stress Disorder (PTSD) (David, Kutcher, Jackson, & Mellman, 1999; Hamner, Frueh, Ulmer & Arana, 1999; Seedat, Stein, Oosthuizen, Emsley, & Stein, 2003), but have also been reported in studies with civilian samples (e.g. Brewin & Patel, 2010). Both theory and a number of research studies in this area suggest that the experience of AVHs in PTSD may be better understood as a dissociative experience and thus conceptualised as 'pseudohallucinations.'

A recent review (Steel, 2015) explored the relationship between hallucinations (including AVHs) and stressful or traumatic life events. Steel (2015) concluded that the relationship between hallucinations and past traumatic experiences remains elusive and that further research is needed in this area to more fully establish the link. If AVHs are conceptualised as the auditory re-experiencing of past traumatic events then this has important implications for treatment.

The first three studies of this thesis (described in chapters two, three and four) explore the components of autobiographical memory, self-identity and pseudohallucinations in PTSD, respectively.

1.4   Emotions, Emotion Regulation and PTSD

"Emotions are central to human functioning, guiding thought and action from the earliest days of life" Frijda, 1988

As outlined above, the affective domain problems identified in CPTSD have been characterised by emotion dysregulation. Multiple early traumatic experiences commonly result in impairment in developmental processes including the ability to recognise, identify and regulate emotion. This has been understood in the context of early attachment relationships with caregivers. It has been suggested that, in early life, regulation of emotion is situated outside of the individual, with caregivers playing a primary role in influencing infants' emotions, by teaching them to recognise and name their own emotions, as well as to comfort and self-soothe in times of distress (e.g. Carstensen, Pasupathi, Mayr, & Nesselroade, 2000).

Over time, regulatory processes become internalised; cognitive appraisals – the *meaning* people attribute to their experiences begin to influence their emotional responses (Lazarus, 1991). As stated above, in relation to self-identity and PTSD, PTSD can persist and symptoms can become exacerbated due to excessive negative appraisals of the traumatic event and its sequelae (Ehlers & Clark, 2000). Ehlers and Clark's (2000) model of PTSD emphasises the role of self-relevant appraisals of traumatic experience and/or its sequelae in the maintenance of PTSD. The model suggests that appraisals function to maintain a sense of current threat in the survivor's life and are instrumental in promoting the use of maladaptive strategies intended to control this threat and the current symptoms. Ehlers, Clark and

colleagues (e.g. Ehlers, Hackmann & Michael, 2004; Dunmore, Clark & Ehlers, 1997; Ehlers et al., 2002) interviewed individuals with chronic PTSD and found that they showed excessively negative appraisals of the trauma and/or its sequelae. These appraisals tended to represent highly idiosyncratic personal negative meanings (rather than being the expected or "normal" response to a particular experience).

It follows that repeated unpleasant, traumatic experiences over time commonly result in more fully entrenched beliefs about the self, others and the world, but also beliefs in relation to one's own ability to adequately understand, validate and manage distressing emotions. Impairments in regulating emotion can compromise one's ability to cope with the distress associated with the re-experiencing symptoms of PTSD. Current conceptualisations suggest that individuals with PTSD over-utilise relatively ineffective emotion regulation strategies, such as expressive suppression and under-utilise more effective emotion regulation strategies such as cognitive reappraisal (Boden et al, 2013). Adults with a history of childhood abuse often report problems with modulating emotional states (van der Kolk, 1996), higher levels of hostility and anxiety compared to other clinical samples (Zlotnick et al., 1996) and chronic problems with anger management (Briere, 1988).

It is not only emotional awareness and effective emotion regulation that have been associated with good mental health, emphasis has also been placed on the *diversity* of emotional experience that an individual reports (Quoidbach et al., 2014; although see Sommers, 1981, for discussion of 'emotional range'). Beyond the individual differences in awareness and recognition of different emotions, there are individual differences in how people understand, interpret and communicate their own emotional experience. It has been suggested that more specific, differentiated emotional states (e.g., happiness, excitement, and joy) have greater adaptive value than less differentiated, more global affective states (e.g., feeling good) because differentiated emotional states can be more easily identified and

understood by others and are less subject to misattribution (e.g., Kehner, Locke & Aurain, 1993). Moreover, differentiated emotional states are argued to provide richer information to guide the use of specific strategies to effectively regulate emotion (Barrett & Gross, 2001; Barrett et al., 2001).

Quoidbach et al., (2014) examined the benefits of greater emotional diversity – or *emodiversity* as it has been termed, deriving their definition from the literature on biodiversity. The fourth study of this thesis (described in chapter five) seeks to expand existing research findings on the association between emodiversity and mental health to explore the relationship between emodiversity and clinical manifestations of PTSD.

1.5   Simple and Complex PTSD

An important initial question that has been raised regarding the proposed ICD-11 diagnosis of CPTSD is whether CPTSD describes a class of individuals who are distinct from those with PTSD and who differ from those with PTSD by having a more "complex" symptom profile comprised of a greater number and type of clinically significant symptoms, not simply just more complicated cases of simple PTSD (e.g. Brewin et al., 2017, Resick et al., 2012). According to a recent review by Brewin et al. (2017), the distinction between PTSD and CPTSD has been supported in several latent class and latent profile analyses. Brewin et al (2017) identified 10 studies that had been published and nine of them identified the presence of at least two distinct symptom profiles, one describing a group of individuals endorsing high levels of CPTSD symptoms in all six clusters (re-experiencing, avoidance, sense of threat, affect dysregulation, negative self- concept, and disturbances in relationships), and another reporting high levels of PTSD symptoms but low levels of symptoms related to disturbances in self organization (reflecting a simple PTSD profile). There is also a question regarding whether current evidence-based interventions for PTSD (e.g. eye movement desensitisation and reprocessing [EMDR], trauma-focused cognitive behavioural therapy [TF-CBT]) need to be tailored for to better account for complex features

(Cloitre et al., 2012; van Minnen, Harned, Zoellner, & Mills, 2012). Guidelines recently published by the National Institute for Clinical Excellence (NICE, 2018) state '*Offer an individual trauma-focused CBT intervention to adults with a diagnosis of PTSD or clinically important symptoms of PTSD who have presented more than 1 month after a traumatic event and consider EMDR for adults with a diagnosis of PTSD or clinically important symptoms of PTSD who have presented between 1 and 3 months after a non-combat-related trauma if the person has a preference for EMDR.'* They further suggest that *'trauma-focused CBT interventions for adults should: be based on a validated manual and typically be provided over 8 to 12 sessions, but more if clinically indicated, for example if they have experienced multiple traumas'* (NICE guidelines, NG 116).

The most recent NICE guidelines (December 2018, NG116, section 1.7.3) also include some recommendations for individuals with additional needs, including those with complex PTSD:

- build in extra time to develop trust with the person, by increasing the duration or the number of therapy sessions according to the person's needs

- take into account the safety and stability of the person's personal circumstances (for example their housing situation) and how this might affect engagement with and success of treatment

- help the person manage any issues that might be a barrier to engaging with trauma-focused therapies, such as substance misuse, dissociation, emotional dysregulation, interpersonal difficulties or negative self-perception

- work with the person to plan any ongoing support they will need after the end of treatment, for example to manage any residual PTSD symptoms or comorbidities.

However, at this time, there are not any specific interventions recommended for individuals who have more complex presentations of PTSD or meet the proposed ICD-11 criteria for CPTSD.

NICE (2018) guidelines indicate that PTSD can be treated somewhat effectively with specifically tailored psychological interventions (including cognitive processing therapy; CPT, cognitive therapy for PTSD, narrative exposure therapy; NET and prolonged exposure therapy) and current best practice comprises a range of techniques, predominantly based on the CBT approach. Trauma Focused-CBT (TF-CBT) involves a collaborative development of an individualised formulation, commonly a version of the Ehlers and Clark (2000) cognitive model of PTSD, by identifying the relevant appraisals, memory characteristics and triggers, and behavioural and cognitive strategies that maintain an individual's PTSD. A treatment plan is constructed, with specific interventions tailored to the formulation. Analysis of memory processes in PTSD and their link with problematic appraisals and behaviors that maintain PTSD has led to the development of specific theory-guided memory-based treatment procedures for this condition (e.g. Ehlers & Clark, 2000; Ehlers, Clark, Hackmann, McManus, & Fennell, 2005). For example, The *Updating Trauma Memories* procedure (e.g. Ehlers 2015) addresses the *disjointedness* of memories of the worst moments of the trauma from information that gives them a less threatening meaning. This procedure includes (1) identifying the moments during the trauma that create the greatest distress and sense of "nowness" through imaginal reliving or writing a narrative, and identification of the patient's intrusive memories, (2) identifying the personal meanings of these moments, and (3) identifying "updating" information that puts the impressions the patient had at the time or the problematic meanings into perspective. Treatment also commonly involves behavioural experiments designed to help clients reduce unhelpful behaviors and cognitive processes, such as rumination, hypervigilance to danger,

thought suppression, and "safety behaviours" (behaviours considered to be excessively cautious due to heightened threat perception) (Ehring, Ehlers, & Glucksman, 2008).

Recent figures for PTSD suggest an average recovery rate of 37.8% (Health and Social Care Information Centre, 2016) following TF-CBT but dropping as low as 15–20% for some services, making it one of the disorders with lowest recovery in UK-based Improving Access to Psychological Therapies (IAPT) services (Murray, 2017). One reason proposed for the low recovery rates following treatment for PTSD relates to the recognised complexity of the disorder. It is widely accepted that the effects of trauma exposure are heterogeneous and according to a number of researchers, this heterogeneity is not addressed in many of the evidence-based therapies available to date (e.g. Cloitre, 2015).

A number of authors propose that trauma-focused treatments can be offered to those who have experienced multiple and/or repeated traumatic experiences without any major modifications (e.g., Cook, Schnurr, & Foa, 2004; Resick, Nishith, & Griffin, 2003; van Minnen et al., 2012). However, others argue that interventions should be adapted to address the additional symptoms identified in individuals presenting with more complex presentations of the disorder. An expert consensus survey (Cloitre et al., 2011) indicated that 84% of 50 expert clinicians endorsed a phase-based or sequenced approach as a first line treatment for CPTSD, involving three phases, each with a distinct function. Phase one focuses on ensuring the individual's safety, reducing symptoms, and increasing important emotional, social and psychological competencies. Phase two focuses on processing the unresolved aspects of the individual's memories of traumatic experiences (this phase emphasizes the review and re-appraisal of traumatic memories so that they are integrated into an adaptive representation of self, relationships and the world). Phase three involves consolidation of treatment gains to facilitate the transition from the end of the treatment to greater engagement in relationships, work or education, and community life.

There was also strong consensus that the treatment be patient-centered and that interventions be tailored to prominent symptoms: *'The symptom profile of Complex PTSD recognizes the loss of emotional, social, cognitive and psychological competencies that either failed to develop properly or that deteriorated due to prolonged exposure to complex trauma. The treatment for Complex PTSD, then, emphasizes not only the reduction of psychiatric symptoms, but equally, improvement in key functional capacities for self-regulation and strengthening of psychosocial and environmental resources.'* (ISTSS guidelines, page 5, 2012). In light of these recommendations, some clinicians and researchers are of the opinion that treatment for CPTSD should focus on the core symptoms of PTSD as well as on an individual's associated functional capacities and resources.

The efficacy of the phase-based treatment approach for treating CPTSD has only been addressed in two studies to date. The first study (Cloitre, Koenen & Cohen, 2002) used a randomised controlled trial (RCT) to compare the efficacy of Skills Training in Affective and Interpersonal Regulation (STAIR) followed by prolonged exposure versus a waiting-list condition in a sample of female patients that suffer from PTSD as a result of childhood physical and/or sexual abuse. STAIR is a phase-based, sequential treatment that was specifically developed to treat women (in individual therapy) who had experienced childhood sexual abuse. The first phase (STAIR) emphasises skills training to improve daily life functioning, while the second phase (Narrative Story Telling; NST) focuses on the re-appraisal of trauma memories. The STAIR/exposure condition resulted in significant symptom reductions (i.e., PTSD severity, depression, general anxiety, dissociation), plus significant improvements in mood and anger regulation skills. In the STAIR phase, depression, anxiety, anger expression, and negative mood regulation improved significantly. This change occurred following the facilitation of Phase 2 of the treatment programme. There were no improvements in PTSD symptoms, dissociation, and alexithymia. The prolonged Exposure (PE) phase showed

reductions in PTSD symptoms, dissociation, and alexithymia, and further improvements in depression and anxiety. More specifically, relative to the women on wait list, those who received STAIR–modified PE showed significant improvement in three specifically targeted problem domains: affect regulation problems, interpersonal skills deficits and PTSD symptoms. No improvements were found in negative mood regulation and in anger expression in the PE phase. The results of Cloitre et al's (2002) study suggest that the combination of STAIR/exposure is feasible and leads to a decrease in PTSD and a broad range of other symptoms associated with CPTSD.

A second study by Cloitre et al. (2010) evaluated the efficacy of a phase-based treatment (STAIR/exposure) versus supportive counselling followed by prolonged exposure (support/ exposure) and versus STAIR followed by supportive counselling (STAIR/support) with women who had PTSD related to childhood sexual and/or physical abuse. The application of STAIR/exposure was found to be associated with greater benefits compared to the support/exposure condition in terms of self-reported reduction in PTSD symptom severity, interpersonal problems, and emotion regulation, but only at the three and six month follow up. Immediately after treatment, all three experimental treatment conditions resulted in a substantial proportion of patients no longer meeting criteria for PTSD. However, it has been argued that the lack of a treatment condition in which patients were directly exposed to their traumatic memories prevents definite conclusions being made about the relative benefits of a phase-based treatment approach over an immediate trauma-focused approach for patients suffering from PTSD related to childhood abuse (De Jongh et al., 2016). At present, there is no clear evidence-base to demonstrate consistently superior treatment effects for the use of a standard or phase-based approach to treating complex features (e.g.,Wagenmans, Van Minnen, Sleijpen, & De Jongh, 2018; Bongaerts, Van Minnen, & De Jongh, 2017; Cloitre, 2016; Van Minnen et al., 2012).

The fifth study of this thesis (described in chapter six) therefore involved the development and preliminary evaluation of a group-based intervention for individuals who had experienced repeated interpersonal trauma. To facilitate group-based delivery, we replaced the NST phase of the STAIR programme with a number of different mnemonic control techniques. Given the key role of memory characteristics in predicting prognosis, we aimed to include greater emphasis (relative to STAIR) on memory-processing work, in line with existing evidence-based treatments (e.g., Ehlers & Clark, 2000; Ehlers, Clark, Hackmann, McManus, & Fennell, 2005). The final protocol consisted of a skills in affective and interpersonal regulation phase, a memory processing phase, and a skills consolidation phase, delivered over twelve group-based sessions.

1.6   Structure of Thesis and Description of Research Participants

1.6.1   Structure of Thesis

This thesis is for consideration for a degree of PhD by research papers. This means that the thesis is structured as a series of five stand-alone research papers, with each paper addressing one of the overarching themes identified in this first chapter. Each paper has either been accepted for publication or is currently under review and published as a preprint. Broadly speaking, the five presented papers that comprise the thesis explores some of the proposed features of PTSD and CPTSD, by exploring how memory systems may become disrupted by trauma and what this means for the sense of self and consequent psychological symptoms and the treatment of those symptoms through the use of a number of different research studies (which have all been published or submitted for publication).

The first study (see chapter 2) explores the components of autobiographical memory, by examining the organisation of past autobiographical knowledge in a sample of sexual trauma survivors with PTSD compared to a sample of individuals with depression and healthy controls using a self-descriptive card-sorting task.

The second study (see chapter 3) explores self-identity by examining the structure of the self-concept in a sample of sexual trauma survivors with PTSD compared to healthy controls using a self-descriptive card-sorting task.

The third study (see chapter 4) explores the prevalence of pseudohallucinations in a British sample of adult survivors of repeated physical and sexual trauma.

The fourth study (see chapter 5) seeks to expand existing research findings on the association between emodiversity and mental health to explore the relationship between emodiversity and clinical manifestations of PTSD.

The fifth study of this thesis (see chapter six) outlines the development and preliminary evaluation of a group intervention for individuals who had experienced repeated interpersonal trauma.

Each stand-alone research paper will be introduced at the start and discussed at the end of the relevant chapter, with an overview of how the research related to the overarching questions of the thesis, which were: whether the organisation of past autobiographical knowledge and self-concept differed in individuals with PTSD following sexual trauma and non-clinical controls, whether pseudohallucinations were prevalent in those with PTSD, whether there was an association between emotional diversity and clinical manifestations of PTSD and whether a group intervention incorporating some of the emerging interventions for PTSD with more complex features would be effective. Some of the content relevant to the research carried out (but not included in the publication of the paper) will be included in the appendices.

The screening and assessment measures used in each of the studies will be described within the relevant manuscript in each chapter. Copies of the measures themselves will be included in the general appendices in section 1.0.

Ethics approval for all of the studies described here was obtained from the NHS National Research Ethics Service (reference 11/H0305/1). The full ethics application is included in the general appendices in section 2.0

For ease of reference, for each research paper we have included the numbering system utilised in the rest of the thesis.

1.6.2   Description of Research Participants

For Studies 1-4 presented in this thesis (see chapters 2 – 5), we recruited adults (aged 18 and over) for our clinical group with a current diagnosis of chronic[1] PTSD according to the DSM-IV (APA, 1994) – studies commenced prior to the publication of the DSM-V – following a history of sexual, physical and/or emotional abuse (as Criterion A events), and a healthy control group with no history of disordered mental health.

The majority of these PTSD participants were recruited from The Haven: A Sexual Assault Referral Centre (SARC) in London, UK. They were invited to take part following attendance at The Haven follow-up clinic or during an assessment for counseling or psychological therapy.The remainder of the chronic PTSD participants were recruited from the Cognition and Brain Sciences Unit Volunteer Mental Health Panel – a database of some 400 community volunteers with a history of mental health problems who have agreed to help with psychological research. Volunteers are recruited to the panel via advertisements in local newspapers.

For the studies presented in this thesis, we selected participants with PTSD with a similarly chronic history. We focused on PTSD following sexual assault or abuse due to the recognition that presentations consistent with the ICD-11 criteria have been more frequently reported in survivors of repeated interpersonal and/or sexual trauma, relative to other trauma survivors (e.g., Karatzias et al., 2017; Powers et al., 2017). We anticipated that the long-lasting

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[1] duration of symptoms is 3 months or more (APA, 2013)

effects of such significant interpersonal trauma might have the clearest effects on the variables we sought to measure such as autobiographical memory, self-concept and overall life structure (Herman, 1992).

There was some overlap in terms of the PTSD and control participants who took part in the individual studies. Ten participants in the PTSD group took part in both the life-structure (study 1) and self-structure (study 2) and 8 participants in the control group took part in both. All of the participants in both the PTSD group and control group for studies 1 and 2 also completed the auditory pseudo-hallucination semi-structured interview (study 3) and the emodiversity metrics (study 4) were calculated from the data collected from studies 1 and 2.

In each of the studies, PTSD diagnosis and history and other Axis I and II psychiatric comorbidity according to the DSM-IV were determined using the Structured Clinical Interview for the *DSM-IV* Axis I Disorders – Clinician Version (SCID, Version 2.0; First, Spitzer, Williams & Gibbon, 1996) and the Structured Clinical Interview for DSM-IV-TR Axis II Personality Disorders (Borderline, Avoidant and Dependent) either by, or under the supervision of, a Clinical Psychologist, and by trained interviewers.

In each of the studies, a control group of participants was recruited. These participants had no history of PTSD according to the SCID. They were recruited from the Cognition and Brain Sciences Unit Volunteer Panel – a database of some 2000 community volunteers who have agreed to help with psychological research. Volunteers are recruited to the panel via advertisements in local newspapers.

The clinical group in Studies 1-4 consisted of a sample of individuals who experienced sexual/physical abuse and/or assault and who, as a consequence, had developed PTSD. Our controls comprised individuals who did not report traumas of this nature and who did not meet criteria for PTSD. The reason for a lack of trauma-matched control group is that

it is very difficult to find individuals with this kind of trauma history, at the level of severity of our sample, who are without mental health problems and so any trauma-matched control group would likely present with significant symptoms of PTSD (alongside diagnoses of other disorders) even though they might not meet criteria for a full diagnosis.

To be eligible for the study, participants had to be fluent in English and over 18 years of age. Exclusion criteria comprised a diagnosis of substance dependence, a history of psychosis, and organic brain injury. No participants were excluded on these bases.

For Study 5 (see chapter 6), inclusion criteria were that participants experienced complex features of PTSD, had been raped or sexually assaulted in the 12 months prior to the group and had also experienced at least one prior interpersonal trauma in their lives. Complex features of PTSD were operationalized by cross-referencing participants' scores on the Complex Trauma Symptoms Questionnaire (CTSQ; Cloitre et al., unpublished) with the ICD-11 criteria for CPTSD, providing a measure of perceived threat, emotion regulation difficulties, sense of self, self-recognition and agency, interpersonal difficulties, emotional blunting, and meaning attached to the trauma. Exclusion criteria were insufficient knowledge and understanding of English and current substance dependence. No participants were excluded on these bases.

Participants (N= 15) for Study 5 were recruited following assessment at the Haven Sexual Assault Referral Centre (n=11); by the Sexual Offences Investigative Team (n=1); by the Sexual Health Psychology service (n=2); from the Praed Street Project (supporting women in the sex industry; n=1); from Eaves (a voluntary sector organisation supporting female victims of violence; n=1).

Finally, for study 1 (see Chapter 2), we compared our PTSD and healthy control particpants with a pooled set of participants with chronic major Depressive Disorder using two datasets where the same past autobiographical life structure task had been used (Dalgleish et al., 2011; Werner-Seidler et al., 2018). We removed any participants from this

pooled sample who also met criteria for present or past PTSD, to create a chronic, recurrent MDD /No PTSD Group. We also removed participants from the MDD study control samples with current or past PTSD to create a No MDD/No PTSD Control group. Full details are included in the paper presented in Chapter 2.

CHAPTER 2

Research paper: *Fractured pasts: The structure of the life story in sexual trauma survivors with Posttraumatic Stress Disorder (PTSD)*

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For this paper, the candidate planned the study, collected the data for individuals with PTSD and matched control participants, analysed the results and wrote the paper. The co-authors supervised the research process and made comments on iterative drafts of the manuscript.

Preamble

For each of chapters 2-6, there is a short 'Background to the Study' section setting the scene for the research paper that forms the heart of the chapter, as well as a short discussion section following the paper. These sections tie the stand-alone research papers into the overall programme of research and signpost the reader to additional research materials where relevant.

2.1   Background to the Study

As outlined in Chapter 1, it has been argued that traumatic events can become central in the organisation of an individual's identity and life story (Berntsen & Rubin, 2006) and further to that, it has been suggested that traumatic experiences could change the way memories are accessed. The DSM-V avoidance symptoms of PTSD (avoiding reminders of the trauma, attempts not to think or talk about the trauma, social withdrawal, emotional numbing, loss of interest in particular activities, and psychogenic amnesia) (APA, 2013) have been proposed as an observable feature of the nature of autobiographical memory in individuals with PTSD – with individuals demonstrating an 'overgeneral' response, due to a relative difficulty in accessing specific memories of past events (e.g. Harvey, Bryant, & Dang, 1998; McNally, Lasko, Macklin, & Pitman, 1995; McNally, Prassas, Shin, & Weathers, 1994; see Moore & Zoellner, 2007, for a review).

Further to this, these avoidance strategies in PTSD and other strategies, including dissociation, suppression and repression are believed to be employed by individuals with PTSD in order to inhibit traumatic recollections of their past traumatic life experiences (Holmes et al., 2005). It has been argued that behavioural strategies are commonly employed by those with PTSD as a way of protecting themselves against the intrusive, distressing reminders that are characteristic of the disorder.

The aim of study 1 was to examine the structure of the autobiographical life story in those with PTSD in order to establish the ways in which the disorder impacts on how individuals represent and organise personal memories of their life history. The life structure task used in this study allowed the computation of several metrics which allowed us to compare the personal narratives of individuals with PTSD, with individuals with depression and a non-clinical control group in order to establish whether these narratives had been chronically shaped by the experience of trauma. In this study, we focused on PTSD following

sexual assault or abuse as we anticipated that such significant interpersonal trauma might have the clearest effects on life structure (Herman, 1992).

2.2   Research paper: *Fractured pasts: The structure of the life story in sexual trauma survivors with Posttraumatic Stress Disorder (PTSD)*

2.2.1   Abstract

This study primarily examined the organization of past and future autobiographical knowledge in a sample of sexual trauma survivors with posttraumatic stress disorder (PTSD) compared to a sample of healthy controls, using a self-descriptive card-sorting task. Participants were asked to imagine that they had to write their autobiography and in preparation that they should divide their past (and future) life into chapters (e.g. 'school years' and 'marriage'). They then characterized each chapter using a list of positive or negative attributes. We explored whether individuals with PTSD possessed a more affectively-compartmentalized life-structure, whereby positive and negative self-attributes showed greater disaggregation into separate chapters. We also examined redundancy (i.e., consistent endorsement) of positive and negative self-attributes across the different life-chapters. Results revealed that the PTSD group overall utilized a greater proportion of negative descriptors, along with greater affective compartmentalization and reduced positive redundancy, across their past life-structure relative to the control participants. Groups did not differ on negative redundancy for the past life structure nor on any metrics for future life structure. Follow-up secondary analyses compared the past life-structure profile for those with PTSD to that of individuals with chronic depression, revealing significantly greater negative redundancy in the depressed group. Our findings are consistent with the prior theoretical and empirical literatures on mechanisms, such as avoidance and dissociation, that are implicated in PTSD as a means of inhibiting the negative impact of past traumatic experiences specifically, and negative information more generally.

2.2.2 Introduction

Maladaptive responses to psychological trauma such as Posttraumatic Stress Disorder (PTSD) are fundamentally defined by how the autobiographical past is remembered and processed. Most clearly, the cardinal symptoms of PTSD and associated syndromes center on intrusive memories of the traumatic experience itself. These intrusions are prototypically high in frequency, fragmented, sensorily-laden, involuntary, distressing, and relatively immune to attempts to prevent them. Intrusions often take the form of images or thoughts but can also occur as 'flashbacks' – the intense reliving of the original experience as if in the present moment (Brewin, 2014; Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition [DSM-5]; American Psychiatric Association [APA], 2013).

Another core feature of PTSD is the way that these past memories of trauma are managed by those who experience them. Those suffering from PTSD commonly exhibit a variety of different of psychological and behavioral strategies to protect themselves against potentially toxic or damaging information stemming from their traumatic experiences and its impact upon the self. Many of these strategies are included among the DSM-5 Avoidance Symptoms of PTSD (avoiding reminders of the trauma, attempts not to think or talk about the trauma, social withdrawal, emotional numbing, loss of interest in particular activities, and psychogenic amnesia) (APA, 2013). Other strategies include dissociation (including depersonalization and derealization), suppression and repression, which are employed by sufferers of PTSD to inhibit traumatic recollections and the overwhelming emotions associated with the trauma (Holmes et al., 2005).

These avoidance features of PTSD are proposed to be related to a second observable feature of autobiographical memory in the disorder – a relative difficulty in accessing specific memories of all past events, whether positive, negative or neutral in valence (e.g. Harvey, Bryant, & Dang, 1998; McNally, Lasko, Macklin, & Pitman, 1995; McNally, Prassas, Shin,

& Weathers, 1994; see Moore & Zoellner, 2007, for a review). For example, in laboratory studies, when explicitly asked to retrieve a specific memory from their lives in response to a cue word (e.g., *happy)* on the Autobiographical Memory Test (AMT) – the standard paradigm for examining memory specificity – those with PTSD are more likely to generate an overgeneral response (e.g., *Whenever I visit my friend*) instead of a memory of a single, circumscribed event (e.g., *Going to my friend's place last Saturday afternoon*). The leading hypothesis is that this tendency for overgeneralized recollection of the past reflects an avoidant processing style that is initially focused on preventing detailed recollection of specific trauma memories, but which has subsequently generalized to all autobiographical material (Williams et al., 2007). There is some support for this view, with those PTSD sufferers exhibiting higher levels of avoidance symptoms showing the greatest overgenerality when remembering non-trauma material (e.g. Kuyken & Brewin, 1995, Williams, Stiles, & Shapiro, 1999, Williams et al, 2007).

This extension of the effects of PTSD to how other non-trauma personal memories are processed is proposed to reflect a more pervasive influence of the syndrome on the autobiography. For all of us, memories of past traumatic experiences are thought to provide meaning and structure to our life narratives, as well as helping to stabilize our conceptions of ourselves (e.g., Baerger & McAdams, 1999; Pillemer, 1998, 2003). However, for those with PTSD, it has been argued that trauma memories form a central reference point for the individual's whole life and identity infusing other, non-traumatic, experiences with trauma-related meaning (Bernsten & Rubin, 2006, 2008). Such meanings include negative beliefs about the self being broken or damaged by past traumatic experiences, or the world being untrustworthy and toxic, as reflected in the DSM-5 (APA, 2013).

The aim of the present study was to examine the structure of the autobiographical life-story in those with PTSD to further elucidate the impact of the syndrome on how individuals

represent and organize information about their past. To do this we used a card-sorting methodology originally formulated within the self-organization literature (Dozois & Dobson, 2001a, 2001b; Linville, 1985, 1987; Showers, 1992; Showers & Kling, 1996; Zajonc, 1960) but subsequently applied to study of the autobiographical past (Dalgleish et al., 2011; Jobson et al., 2018). The advantage of this approach is that, rather than extracting meta-beliefs about the life narrative, using self-report, the task instead requires participants to map out their life structure and to think independently about each 'chapter' of their lives (Conway, 2005; Thomsen & Berntsen, 2008). This allows us to examine patterns that manifest across the different chapters and that systematically differ between those with and without PTSD.

2.2.2.1 The Life Structure Task

The central premise of the Life Structure Task (Dalgleish et al., 2011) is to request participants to generate a list of the important time periods – life chapters – from their past (e.g. '*my time at college*', '*my marriage*'). Participants are then asked asked to allocate sets of negative and positive adjectives (pre-selected as prototypical descriptors of life periods) to those chapters for which they are relevant. Life chapters have been identified as a component in theories of autobiographical memory (e.g. Conway & Pleydell-Pearce, 2000) that provide the basic scaffolding for mental representation of an individual's life story. Life chapters are thought to contain knowledge and information relating to places, activities and people associated with a particular period of time in an individual's life and to be associated with a certain emotional valence (Conway, 2005; Conway & Pleydell-Pearce, 2000). Chapters appear to be of no fixed length, with most lasting from months to years (e.g. Thomsen & Berntsen, 2008).

The Life Structure Task permits the computation of several metrics where one might predict systematic differences for those whose personal narratives had been chronically shaped by the experience of trauma. The first is the overall relative proportions of negative

and positive descriptors seen as applicable across chapters. Related to this are indices of positive and negative 'redundancy' – the degree to which the same descriptors are repeatedly applied across all chapters (Linville, 1987). Finally, we can compute a measure of 'compartmentalization' – the extent to which positive and negative descriptors are disaggregated into different life chapters. Utilizing these metrics, in the original study employing the Life Structure Task, Dalgleish et al. (2011) found that individuals with chronic and recurrent Major Depressive Disorder (MDD) used a greater proportion of negative cards and showed greater negative redundancy, reduced positive redundancy, and greater compartmentalization in the way the cards were allocated, relative to a never-depressed control group, across their life structure.

In the present study we selected participants with PTSD with a similarly chronic history. We focused on PTSD following sexual assault or abuse as we anticipated that the long-lasting effects of such significant interpersonal trauma might have the clearest effects on overall life structure (Herman, 1992). This choice had implications for our control participants as it is very difficult to find survivors of such experiences with no or few significant symptoms of past or current posttraumatic stress to act as a 'trauma-matched' control sample. We therefore recruited control participants who had no such history of sexual assault/abuse trauma *and* no history of PTSD to any trauma.

We predicted that our PTSD participants would utilize a greater proportion of negative descriptors across their life structure. Based on the extensive literature describing avoidant and dissociative psychological strategies to manage negative information about the past in PTSD, we also anticipated that there would be greater compartmentalization of positive and negative information in those with the disorder, relative to our control group. Our hypotheses concerning the redundancy metrics were less clear. There is evidence of reduced life satisfaction and wellbeing in those with PTSD (e.g. Karatzias et al., 2013;

Richardson et al., 2008) but it is unclear whether this would translate to impoverished positive themes across the life structure. Similarly, although chronic PTSD, as already noted, is characterized by the endorsement of dysfunctional higher-order meanings pertaining to the trauma (e.g. *My life has been destroyed*; Foa et al., 1999) (see Park, 2010, for a discussion), and evidence of increased centrality of traumatic events in the life narrative (Bernsten & Rubin, 2006, 2008), it is again unclear to what extent this would impact the development of negative themes more generally across the life structure. We therefore had no strong hypotheses concerning the redundancy metrics.

In order to evaluate the putative specificity of the profile of performance across the life structure metrics associated with PTSD, we also planned to compare the current PTSD sample and controls to a chronically depressed sample with MDD sample and associated controls, pooled from prior studies (Dalgleish et al., 2011; Werner-Seidler et al., 2018), as the methodology and research setting were the same.

2.2.2.2 Future Life Structure

In the previous study using the Life Structure Task, Dalgleish et al. (2011) also asked depressed and control participants to generate anticipated future chapters of their life and allocate the same positive and negative descriptors to these future periods. Dalgleish et al. (2011) found no significant differences between the MDD and control groups regarding the organization of putative future life chapters. Thus, we also examined future life structure metrics in our participants with and without PTSD but we had no clear hypotheses, given the previous data.

2.2.3 Method

2.2.3.1 Participants

We based our power calculations for minimal sample size estimations per group on the smallest effect size (Cohen's d=.96) for the past life structure metrics between the MDD

and control groups in Dalgleish et al. (2011). With alpha set at .05, with 80% power, two-tailed, this indicated sample sizes of 19 per group.

Our initial analyses compared a group of women with chronic PTSD with a history of sexual assault and/or abuse with a group of healthy controls with no such trauma history *and* with no current or lifetime history of PTSD. The PTSD Group comprised 27 participants who met diagnostic criteria for current PTSD according to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association, 1994). Nineteen of these participants were recruited from The Haven: A Sexual Assault Referral Centre (SARC) in London, UK. They were invited to take part following attendance at The Haven follow-up clinic or during an assessment for counseling or psychological therapy. The remaining eight participants were recruited from the Cognition and Brain Sciences Unit, Cambridge, Volunteer Mental Health Panel – a database of some 400 community volunteers with a history of mental health problems who have agreed to help with psychological research. Volunteers are recruited to the panel via advertisements online and in local newspapers.

PTSD diagnosis, trauma history and other Axis I and II psychiatric comorbidity were determined according to the DSM-IV using the Structured Clinical Interview for the *DSM-IV Axis I Disorders – Clinician Version* (SCID, Version 2.0; First, Spitzer, Williams & Gibbon, 1996) and the Structured Clinical Interview for DSM-IV-TR Axis II Personality Disorders (Borderline, Avoidant and Dependant). Interviews were administered either by trained research staff under the supervision of a clinical psychologist, or by a clinical psychologist.

Participants without PTSD (the No PTSD Control Group; $n = 23$), had no history of PTSD according to the SCID and no self-reported history of sexual trauma. They were recruited from the Cognition and Brain Sciences Unit, Cambridge, Volunteer Panel – a database of some 2000 community volunteers who have agreed to help with psychological research. Volunteers are recruited to the panel via advertisements online and in local newspapers.

To be eligible for the study, participants had to be fluent in English and over 18 years of age. Exclusion criteria comprised a current diagnosis of substance dependence, a history of psychosis, or organic brain injury, all assessed via the SCID. No participants were excluded on these bases.

2.2.3.2 Materials and Measures

2.2.3.2.1 Life Structure Task

The Life Structure Task was delivered as used by Dalgleish et al. (2011). Participants were first asked to imagine that they had to write their autobiography and in preparation they should divide their past life into chapters. Participants were told that they were free to create as many chapters as they felt were appropriate, that chapters did not need to have a clear beginning and end, and that chapters could run in parallel with other chapters. They were also informed that ongoing life chapters could be included. Participants were given a blank table

and asked to record their life chapters at the top of each column and to include their age at the beginning and end of each chapter.

Participants were then given a deck of 48 cards, each containing an adjective or phrase that might be used to describe a period of one's life. Some of these adjectives differed slightly from Dalgleish et al.'s (2011) study to allow us to reference affective states that trauma survivors endorse. For example, *'feeling contaminated', 'feeling broken'* and *'feeling dirty.'* The adjectives/phrases were either positive or negative in valence (24 of each; see Appendix A). Prior to the study, we had the adjectives/phrases rated (n = 15 unselected raters) for valence on 15-point Likert scales anchored at 1 (*strongly positive*), 7 (*weakly positive*), 8 (*neutral*), 9 (*weakly negative*), 15 (*strongly negative*). The positive set of adjectives had a mean rating of 2.59 (*SD* = 0.81), whereas the negative set of adjectives had a mean rating of 13.61 (*SD* = 1.09). An independent samples *t* test showed that the two sets of cards did not differ significantly in intensity (distance from the neutral score of 8; *t* <1).

For the card sort, participants were asked to allocate cards (adjectives/phrases) that they felt were relevant to each of the life chapters identified (see Dalgleish et al, 2011 for further details on the card-sorting procedure).

Participants were next asked to imagine their future life structure – the chapters of their life that were potentially still to come (e.g., *'retirement', 'grandchildren'*) and to repeat the card-sorting procedure for the future life chapters.

2.2.3.2.2 Life Structure Task metrics

Proportion of Negative Cards. This is the number of negative attributes, including repetitions, appearing in the card sort, divided by the total number of attributes used. It is a measure of the overall negativity of the card-sort (Showers, 1992).

Compartmentalization (Showers, 1992). Compartmentalization is calculated as a *phi* (φ) coefficient based on a chi-squared (χ^2) statistic (Everitt, 1977). It compares the

frequencies of negative and positive cards in each chapter to those that would be expected, based on the proportion of negative items for the card-sort as a whole. A frequency table is constructed that contains as many columns as there are chapters in the individual's card sort and two rows for number of positive cards and number of negative cards. The observed frequencies for each cell are generated from the whole card sort. The expected frequencies are generated as follows: If the card sort contained, for example, 40% negative cards overall and the first chapter contained 20 cards, then the expected frequencies for that chapter would be 8 (40%) negative cards and 12 (60%) positive cards. A χ^2 statistic is then computed using these expected and observed frequencies. This is then normalized by dividing by the number of cards in the sort (N) as follows:

$$\Phi = \sqrt{\chi^2} / N$$

where, φ can range from 0 to 1 (0 represents a perfectly random sort, and 1 represents a perfectly compartmentalized sort).

Redundancy. Redundancy (Dozois & Dobson, 2001a, 2001b) was computed separately for positive and negative attributes, with each redundancy score representing the degree of card repetitions across chapters, controlling for both the number of chapters in a given card sort and the number of cards used. The following formula generated the redundancy rates:

$$\text{Redundancy} = x = \frac{1}{n_{dw} \text{x} \ n_{dg}} \text{x} \ \Sigma \ n_{ri}$$

where (using the example of negative redundancy) n_{dw} equals the number of distinct negative words used in an individual's card sort, n_{dg} equals the number of chapters generated, and n_{ri} equals the sum of repetitions of each negative card up to the maximum of 23 cards.

2.2.3.2.3 Procedure

Ethics approval was obtained from the NHS National Research Ethics Service (reference 11/H0305/1). Participants completed the tasks and measures individually and face-

to-face with the experimenter, in a quiet testing room. Following provision of informed consent, participants completed the SCID, a semi-structured interview on auditory pseudo-hallucinations (not reported here) and several self-report questionnaire measures of mood and PTSD symptoms. In a separate session, approximately a week later, they completed the life structure task.

2.2.3.2.4 Screening and Questionnaire Measures

The Complex Trauma Symptoms Questionnaire **(CTSQ, Cloitre et al., 2014)** is a 49-item measure that indexes symptoms of complex PTSD. The measure has been previously used to index symptoms of complex PTSD in women with a history of interpersonal violence (Cloitre et al., 2014). Internal consistency was high in the current sample (α=.97).

The Beck Depression Inventory (BDI-I; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is a widely used and well validated measure of depressive symptoms over the previous week.[2] The BDI demonstrates high internal consistency, with α coefficients of .86 and .81, for psychiatric and non-psychiatric populations, respectively (Beck et al., 1988). Internal consistency was high in the current sample (α=.96).

The Centrality of Events Scale (CES-Negative; Berntsen & Rubin, 2006, 2007) measures the extent to which a traumatic memory forms a central component of personal identity, a turning point in the life story and a reference point for everyday inferences. We used the full version, which consists of 20 items rated on 5-point scales (*1=totally disagree; 5=totally agree*) in relation to the most stressful or traumatic event in the person's life. The CES-negative is positively correlated with severity of PTSD symptoms, which remains significant when controlling for measures of anxiety, depression, dissociation and self-consciousness (Berntsen & Rubin, 2006, 2007). Internal consistency was high in the current sample (α=.98).

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[2] The original BDI was preferred here over updated versions for legacy reasons involving comparability of scores across time for the Cognition and Brain Sciences Unit Volunteer Panel.

2.2.4 Results

2.2.4.1 Descriptive Data

As is typical for clinical groups with a history of sexual trauma, there was notable psychiatric comorbidity in the PTSD group. According to the SCID, in the PTSD Group, seven participants also met criteria for a current episode of Major Depressive Disorder (MDD), 25 met the criteria for a past episode of MDD, eight for current panic disorder (secondary to PTSD), three for current Agoraphobia, five for current Borderline Personality Disorder (BPD), and three for current Avoidant Personality Disorder. In the No PTSD Control Group, three participants met the criteria for a past Major Depressive Episode, and one for current panic disorder.

The remaining descriptive group data are presented in Table 2.1. The groups did not differ in age, $t(48) = 0.64$, $p = 0.52$, $d = 0.18$; 95% CIs [-0.40, -0.76] but did differ significantly in education level, $t(47.53) = 2.89$, $p = .006$, $d = 0.82$; 95% CIs [0.22, 1.42]. There were the expected differences in BDI and CES scores between the PTSD and Control Groups (BDI: $t(27.16) = 9.19$, $p <.001$, $d = 2.61$; 95% CIs [1.82, 3.40]; CES: $t(43.61) = 9.83$, $p < .001$, $d = 2.79$; 95% CIs [1.97, 3.61]). Because our PTSD and No PTSD Control samples were not matched on education level, we repeated all analyses with education levels covaried. Results remained the same. We therefore present the uncontrolled analyses but have included the key results with education covaried in the footnotes.

Table 2.1. Mean (SD) descriptive data for the PTSD and No PTSD Control groups.

	PTSD Group (*n=27*)	No PTSD Control Group (*n=23*)
Years in Education	14.15 (2.87)	16.48 (2.27)
Age (in years)	37.63 (13.17)	35.09 (14.87)

Complex Trauma Symptoms Questionnaire (CTSQ)	105.93 (48.93)	4.74 (5.00)
Beck Depression Inventory (BDI-I)	26.07 (12.70)	1.52 (1.76)
Centrality of Event Scale (CES)	82.19 (15.27)	36.13 (17.87)

2.2.4.2 Past Life Structure in PTSD

All participants were able to come up with multiple chapters to describe their past lives (minimum=3). Examples of chapter titles were ' *learning first steps* ', *'school years'*, *'marriage'*, *'the grand challenge, 'a new beginning'* and '*what it all means'*.

Data concerning numbers of chapters generated and numbers of cards used are presented in Table 2.2. The groups did not significantly differ in the number of past chapters they generated, $t(48) = 0.57$, $p = .57$, $d = 0.16$; 95% CIs [-0.42, 0.74], nor in the total number of cards used in the past card sort, $t(48) = 1.13$, $p = .26$, $d = 0.32$; 95% CIs [-0.26, 0.90]. This suggests broadly comparable engagement in the task across groups and indicates that any group differences on the structure metrics considered below were not a simple function of numbers of chapters and/or cards employed.

The past life structure metrics for the PTSD and No PTSD Control groups are presented in Figure 2.1. There were broad ranges of scores across both groups on the four past life structure metrics (maximum possible range 0 to 1) suggesting that across-group floor and ceiling effects were not evident; Proportion of Negative Cards 0.02 – 0.93; Negative Redundancy 0.12 – 0.45; Positive Redundancy 0.09 – 0.72; and Compartmentalization 0.22 to 1. To illustrate the raw data, Appendix B shows two examples of actual past card sorts demonstrating lower and higher levels of Compartmentalization. Of particular note, in the more integrated card sort example (low Compartmentalization) in Table B1, several of the life chapters contain positive and negative descriptors that are diametrically opposite in meaning.
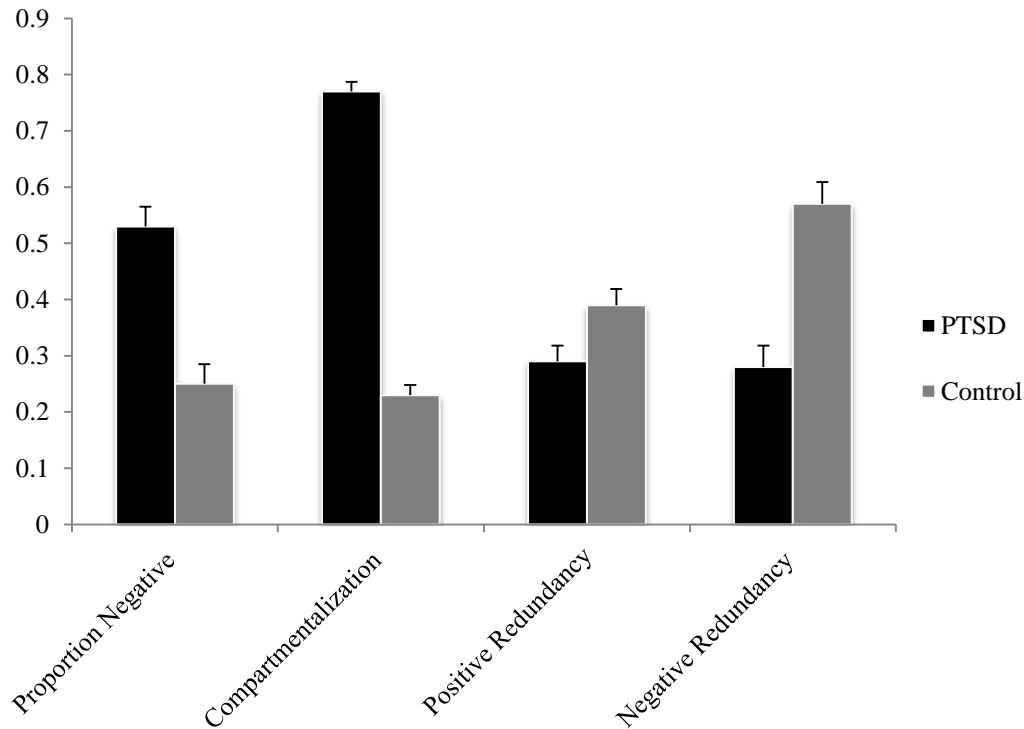
Figure 2.1. Mean (+1 *SE*) performance (*y*-axis) for the PTSD and No PTSD Control groups for proportion of negative cards used, positive and negative redundancy, and compartmentalization, for the past life chapters.

To test our hypotheses and assess whether past life structure differed across the two groups we first conducted a Multivariate Analysis of Variance (MANOVA) (cf., Dalgleish et al., 2011) across groups with the four life structure metrics as the dependent variables. There was a statistically significant multivariate difference for the past life structure components across groups, Wilk's $\Lambda = 0.49$, $F(4, 45) = 11.80$, $p < .001$, $d= 0.97$; 95% CIs [0.36, 1.58] [3]

Follow-up univariate ANOVAs indicated a significantly greater Proportion of Negative Cards were used, $F(1, 48) = 39.19$, $p < .001$, $d = 1.78$; 95% CIs [1.09, 2.47], significantly greater Compartmentalization, $F(1, 48) = 18.88$, $p < .001$, $d = 1.23$; 95% CIs [0.60, 1.86], and significantly reduced Positive Redundancy, $F(1, 48) = 7.59$, $p = .02$, $d = 0.78$; 95% CIs [0.18, 1.38], for the PTSD group relative to the No PTSD Controls. There was

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[3] MANOVA across groups with years in education covaried: $\Lambda = 0.71$, $F (4, 44) = 4.55$, $p = .004$, $d = 0.61$; 95% CIs [0.02, 1.20].

no significant difference between groups on Negative Redundancy $F(1, 48) = 2.18$, $p = .15$, $d = 0.42$; 95% CIs [-0.17, 1.01][4].

2.2.4.3 Future Life Structure in PTSD

We next examined performance on the future Life Structure Task for the PTSD group and No PTSD Control group. All participants generated multiple future life chapters. Some examples of chapter headings were '*hard times', 'new career', 'grannies and chickens', 'children married', 'parent death', 'death of spouse', 'holidays abroad',* and '*grandchildren*'. The future life structure data are presented in Table 2.2 and Figure 2.2. The across-group ranges of scores on the future life structure metrics were broad, as for the past metrics. Proportion of Negative Cards ranged from 0 – 0.94; Negative Redundancy 0 – 1; Positive Redundancy 0.18 – 1; and Compartmentalization 0 - 1. Also, in line with the past metrics, the groups were not significantly different on the number of future chapters, $t(48) = 1.17$, $p = .25$, $d = 0.33$; 95% CIs [-0.25, 0.91], nor on total number of cards used in the future sort, $t(48) = 1.69$, $p = .10$, $d = 0.48$; 95% CIs [-0.11, 1.07]. A MANOVA on the future metrics revealed no statistically significant differences in the future life structure components between groups, Wilk's $\Lambda = 0.89$, $F(4, 45) = 1.45$, $p = .23$, $d = 0.34$[5]; 95% CIs [-0.24, 0.92].

Table 2.2 Mean (Standard Deviation) numbers of past and future chapters and cards used in the past and future card sorts by group

	PTSD Group	No PTSD Control
	($n = 27$)	Group ($n = 23$)

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[4] Proportion of Negative Cards with years in education covaried: $F(1, 47) = 27.60$ $p < .001$, $d = 1.49$; 95% CIs [0.83, 2.15]

Compartmentalization with years in education covaried: $F(1, 47) = 10.86$ $p = .002$, $d = 0.94$; 95% CIs [0.33, 1.55]

Positive Redundancy with years in education covaried: $F(1, 47) = 6.47$ $p = .01$, $d = 0.72$; 95% CIs [0.12, 1.32]

Negative Redundancy with years in education covaried: $F(1, 47) = 2.38$ $p = .13$, $d = 0.44$; 95% CIs [-0.15, 1.03]

[5] MANOVA with years in education covaried: $\Lambda = 0.91$, $F(4, 44) = 1.08$, $p = .38$, $d = 0.29$; 95% CIs [-0.29, 0.87].

Past chapters (range 3 – 16)	8.74 (3.18)	9.26 (3.22)
Cards used in past sort (range 11 – 266)	81.67 (51.95)	98.70 (54.42)
Future chapters (range 1 – 9)	4.26 (2.30)	5.04 (2.44)
Cards used in future sort (range 2 – 173)	40.30 (30.19)	57.39 (41.25)
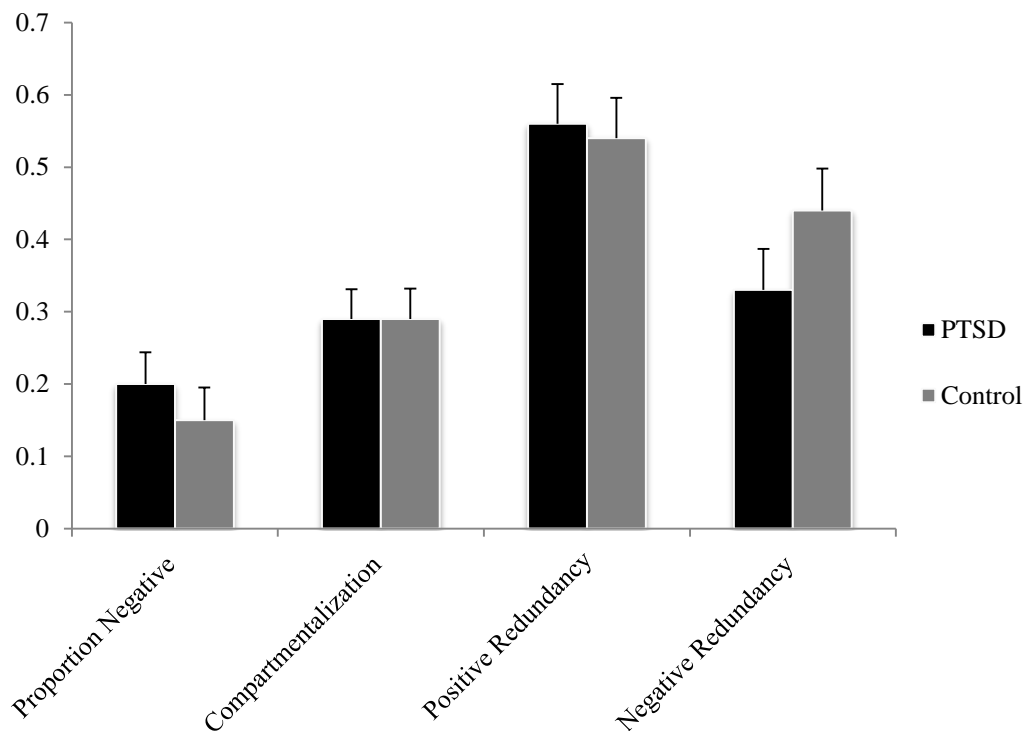
Figure 2.2 Mean (+1 *SE*) performance (*y*-axis) for the PTSD and No PTSD Control groups for proportion of negative cards used, positive and negative redundancy, and compartmentalization for the future life chapters.

Although the multivariate effect was non-significant, we conducted follow-up univariate ANOVAs to further explore the separate life structure metrics. These revealed no significant difference between groups for Proportion of Negative Cards used, Positive

Redundancy, and Negative Redundancy, all Fs<1. There was however significantly greater Compartmentalization for the No PTSD Control Group than the PTSD group, $F(1, 48) = 4.29$, $p = .04$, $d = 0.59$; 95% CIs [-0.002, 1.18] – the opposite pattern to what one might predict based on the past life structure results – but this effect became non-significant once education was included as a covariate, $F(1, 47) = 2.85$, $p = .10$, $d = 0.48$; 95% CIs [-0.11, 1.07].

2.2.4.4 Correlations between PTSD symptomatology and past life structure metrics

Because our PTSD group differed from our No PTSD Controls in both the experience of sexual trauma and the presence of PTSD, we explored which of the past life structure metrics that were significantly different in the PTSD sample (reduced Positive Redundancy, increased Proportion of Negative Cards, increased Compartmentalization; Figure 2.1) related to severity of PTSD symptoms on the CTSQ in the clinical group. We found significant correlations between increased PTSD symptoms and both higher Proportion of Negative Cards, $r(25)=.50$, $p =.008$, and lower Positive Redundancy, $r(25)=-.41$, $p =.04$, but no evidence of a correlation between symptom severity and Compartmentalization, $r(25)=-.09$, $p =.64$.

2.2.4.5 Comparing individuals with a primary diagnosis of PTSD and a primary diagnosis of chronic Major Depressive Disorder (MDD), relative to controls for past life structure

The present findings exploring past life structure in individuals with a diagnosis of chronic PTSD show a different profile to earlier research using the same task with individuals with a long-term diagnosis of chronic MDD (see Dalgleish et al., 2011, for details). Specifically, both clinical groups show similar patterns relative to healthy controls in terms of Proportion of Negative Cards used, Compartmentalization of the card sort, and Positive Redundancy across life chapters. The MDD participants however also showed enhanced

Negative Redundancy – the tendency to endorse the same trait constructs across multiple life

chapters – relative to controls. This effect was not observed in the current PTSD data (see

Figure 2.1).

Because the procedure for the MDD study (see Dalgleish et al., 2011) was almost

identical to the current PTSD study, and the two studies were conducted in the same research

setting by the same research team, we next sought to statistically compare the MDD and

PTSD groups, against controls, to further evaluate these apparent differences in life-structure

across the two clinical groups.

To do this we set aside those participants (n=7) from the current PTSD Group who

also met criteria for a diagnosis of current MDD, to create a PTSD/No-MDD Group (n=20).

We also excluded data from the three participants in our current No PTSD Control group who

met criteria for a past Major Depressive Episode (MDE; APA, 2013) to create a a No

PTSD/No MDE Control Sample (n=20). We next pooled participants with chronic MDD

from two datasets where we had used the past life structure task (Dalgleish et al., 2011;

Werner-Seidler et al., 2018) but removed any participants who also met criteria for present or

past PTSD, to create a chronic, recurrent MDD /No PTSD Group (n=30). Finally, we also

removed participants from the MDD study control samples with current or past PTSD to

create a No MDD/No PTSD Control group (n=36). We therefore analyzed data for four

groups; PTSD/No-MDD, MDD/No-PTSD, a healthy control group from the PTSD study and

a healthy control group from the MDD study.

As a validity check of the original life structure profiles[6] presented above and in

Dalgleish et al. (2011) and Werner-Seidler (2018) we reanalyzed the data with comorbid

participants set aside for the current PTSD/No MDD group (n=20) against the current No

PTSD/No MDE Control group (n=20), and also reanalyzed the MDD/No PTSD group (n=30)

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[6] prior to the removal of comorbid participants

against the No MDD/No PTSD controls from the prior studies (n=36). The past life structure profiles mirrored those in the original studies prior to the removal of comorbid participants. There was a significant relative decrease in Negative Redundancy in the MDD/No PTSD Group, compared to the No MDD/No PTSD controls, $F(1, 64) = 18.85$, $p< .001$, $d = 1.07$; 95% CIs [0.53, 1.61], that was not present in the PTSD/No MDD group compared to the No PTSD/No MDD controls, $F(1, 41) = 2.00$, $p = .17$, $d = 0.44$; 95% CIs [-0.22, 1.10]. The two clinical groups performed similarly, relative to their respective control groups, on the remaining past life-structure metrics (see Supplementary Materials for full analyses). This confirmed the decision to examine these putatively different profiles statistically within a combined analysis.

To this end, as the next step in integrating the current dataset with the previous MDD dataset, we compared the current No PTSD/No MDD Control group (n=20) against the previous No MDD/No PTSD Control group (n=36) to check that the two control groups did not differ significantly in terms of their past life structure profiles. Because the study samples differed overall on age, $F(3,102) =7.46$, $p<.001$, $d = 0.51$; 95% CIs [0.13, 0.89], and gender ratio, Freeman-Halton Fisher exact probability, $p<.001$ (see Supplementary Table 2.S3 in Appendix C), we covaried age and gender for these and subsequent analyses comparing across the two datasets. As anticipated, there were no significant differences between the two control groups on any of the past life structure metrics, Fs$(1, 53) < 2.49$, ps$>.12$, ds < 0.44. We therefore combined the two control groups into a single Combined Control group (n=56) for our main analysis.

We thus proceeded with three groups for our key analyses, each with sample sizes that remained in line with our *a priori* power calculations; a PTSD/No MDD group (n=20), an MDD/No PTSD Group (n=30) and a Combined Control Group (n=56). The past life structure metrics for the three groups are presented in Figure 2.3. We conducted a

MANCOVA, across the three groups, with the four life structure metrics as the dependent variables, with age and gender covaried. There was a statistically significant difference for past life structure components across groups, Wilk's $\Lambda = 0.42$, $F(8, 196) = 13.25$, $p< .001$. Follow-up univariate ANOVAs demonstrated significant effects of group for all four of the life structure metrics, Fs $(2,101) > 12.65$, ps$<.001$.
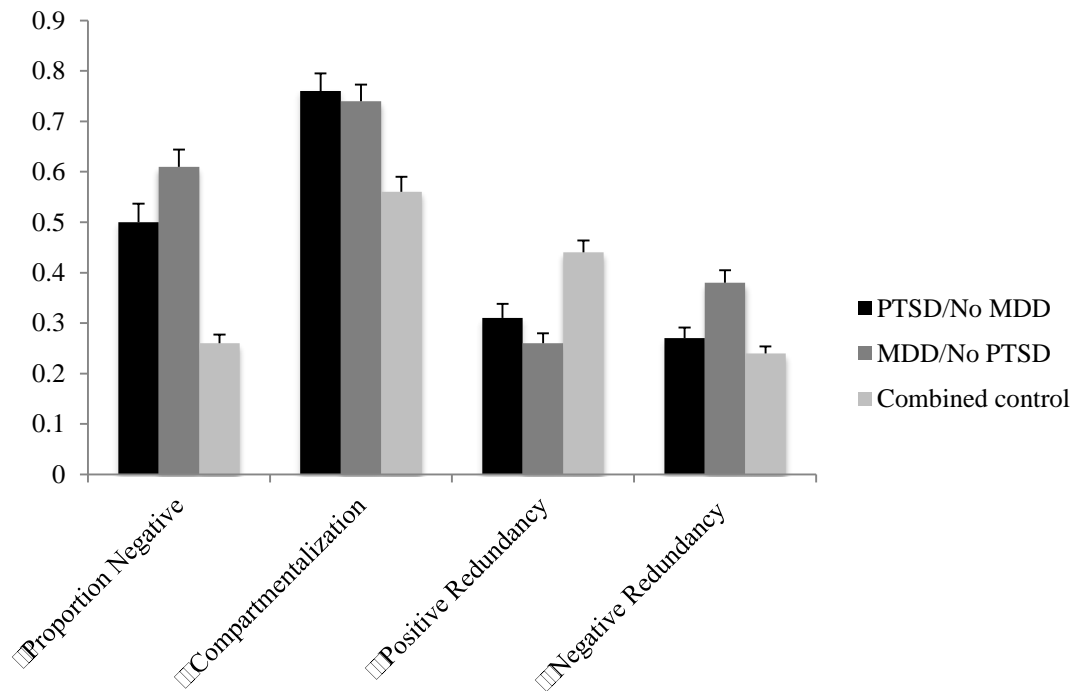
Figure 2.3 Mean (+1 *SE*) performance (*y*-axis) for the PTSD/No MDD, MDD/No PTSD and Combined Control groups for proportion of negative cards used, positive and negative redundancy, and compartmentalization for past life chapters.

Breaking down these effects revealed, as expected, that the MDD/No PTSD group differed from the Combined Control group on the multivariate analysis, Wilk's $\Lambda = 0.45$, $F(4, 79) = 24.51$, $p< .001$, $d = 1.12$; 95% CIs [0.63, 1.61], and on all four univariate metrics, Fs $(1,82) > 14.52$, ps$<.001$, ds $>.80$, mirroring the previous MDD findings (Dalgleish et al., 2011). Also, as expected, the PTSD/No MDD group differed from the Combined Control group on the multivariate analysis, Wilk's $\Lambda = 0.61$, $F(4, 69) = 10.95$, $p < .001$, $d = 0.86$; 95% CIs [0.31, 1.41]. As with the initial PTSD sample analyses reported earlier, the univariate

analyses demosntarted no significant differences between the PTSD/No MDD and Combined Control groups for Negative Redundancy, $F<1$, but significant group differences for Positive Redundancy, Proportion of Negative Cards and Compartmentalization, Fs $(1,72) > 8.53$, ps$<.005$, ds$>.70$.

Finally, the critical comparison between the two clinical groups – the PTSD/No MDD and MDD/No PTSD groups – revealed a significant multivariate effect, Wilk's $\Lambda = 0.45$, $F(4, 43) = 2.85$, $p = .04$, $d = 0.49$; 95% CIs [-0.11, 1.09]. The univariate analyses revealed that the two clinical groups did not differ significantly on either Positive Redundancy, $F(1, 46) = 1.24$, $p = .27$, $d = 0.32$; 95% CIs [-0.27, 0.91], or Compartmentalization, $F<1$. There was a non-significant trend for the MDD/No PTSD Group to select a higher Proportion of Negative Cards, $F(1, 46) = 3.66$, $p= .06$, $d = 0.55$; 95% CIs [-0.05, 1.15]. Importantly, there was a significant difference indicative of greater Negative Redundancy in the MDD/No PTSD Group relative to the PTSD/No MDD Group, $F(1, 46) = 8.42$ $p < .01$, $d = 0.84$; 95% CIs [0.22, 1.45]. Taken together, these findings indicate that the life structure profiles of those with chronic MDD and those with chronic PTSD, although broadly similar, also critically differ in specific ways.

2.2.5   Discussion

The primary aim of this study was to examine the organization of past autobiographical knowledge in a sample of sexual trauma survivors with PTSD compared to a sample of healthy controls with no history of sexual trauma or of PTSD, using a self-descriptive card-sorting task (Showers, 1992). The secondary aim was to compare our findings in this PTSD sample to previously collected data on the same task from individuals with chronic, recurrent Major Depressive Disorder (MDD).

In terms of our primary analyses, consistent with our predictions we found that those with PTSD utilized a greater proportion of negative descriptors across their past life structure,

and showed greater compartmentalization of positive and negative information across chapters. We had no strong hypotheses concerning the past life structure redundancy metrics and found no significant differences for negative redundancy between the PTSD and No PTSD Control groups, but significantly greater positive redundancy for the Control group relative to the PTSD group. For the future card-sort, we found no significant differences on any life structure metrics between the PTSD and Control groups that survived statistically adjusting for group differences in years-in-education.

These primary findings for past life structure for the PTSD group, relative to controls, were ostensibly different to earlier research using the same card-sorting task with individuals with a long-term diagnosis of MDD (Dalgleish et al., 2011). The key difference is that we found no support in our PTSD sample for the enhanced negative redundancy that characterizes MDD participants relative to controls. We therefore statistically compared the PTSD participant data against the prior MDD participant data, relative to controls, and indeed found a significant difference indicative of greater negative redundancy in the MDD-only group relative to the PTSD-only group, with no significant differences in other aspects of the life structure.

The current findings are notable in three important ways. First, they indicate that sexual trauma survivors with PTSD structure their autobiographical narrative fundamentally differently to healthy control participants. This is consistent with the notion that profound trauma markedly alters the sense of personal identity (e.g., Bernsten & Rubin, 2006, 2008). Second, the narrative structure is not simply rendered more negative following the impact of trauma and PTSD, but is also more compartmentalized, with positive and negative life epochs relatively more isolated from one another, compared to the life structure in healthy controls. Finally, there appears to be some specificity with respect to clinical presentation, with the elevated negative redundancy that is characteristic of chronic depression not emerging as a

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feature of the life-structure in those with PTSD, suggesting that alterations in life-structure are not simply a broad feature of mental health problems per se.

The greater overall negativity of the life-structure in PTSD is perhaps the least surprising of the current results, given our participants' experience of a chronic life-changing mental health problem rooted in profoundly traumatic experiences, the sequelae of which we know are characterized by pervasive negative affect and cognitions. As suggested in the Introduction, the higher levels of affective compartmentalization observed in the PTSD sample are consistent with other aspects of the clinical presentation of PTSD, and may have generalized from an initial segregation of traumatic experiences as a way of 'ring fencing' off traumatic information (Holmes et al., 2005), to a broader disaggregation of positive and negative evaluative information more generally. This is consistent with the data and theory in other cognitive domains such as overgeneral autobiographical memory (see Moore & Zoellner, 2007).

The reduced positive redundancy effect in the PTSD group indicates that there are fewer consolidated positive themes running through the life narrative for those with PTSD, relative to controls. We have proposed that higher positive redundancy is reflective of augmented well-being and positive mental health, as opposed to merely the absence of negative mental-health (Dalgleish et al., 2011; Dalgleish & Werner-Seidler, 2015). In this light, the lack of positive redundancy in the present findings concords with other evidence of reduced wellbeing in those with PTSD (e.g. Karatzia et al., 2013; Richardson et al., 2008) and is perhaps unsurprising given the chronically disrupted lifestyles associated with chronic PTSD following sexual trauma.

Why did we find no support for a difference in negative redundancy between our PTSD and control groups, but a significant difference between our PTSD group and a chronic MDD group with the latter showing elevated negative redundancy? This profile suggests that,

in our PTSD sample, distressing or toxic information relating to past negative experiences is more effectively segregated across the past life-structure than for individuals with chronic MDD, such that instead of pervading the individual's entire history of personal experiences, the negative information is prevented from contaminating the other, more positive life epochs. This fits with the clinical presentation of PTSD, where pervasive and chronic avoidance of trauma-related information and its consequences, via behavioral and lifestyle changes through to more profound dissociative phenomena, can give rise to oases of healthy functioning (Dalgleish, 2004; Holmes et al., 2005). In contrast, for those with MDD, negative affect and information are characteristically less contained, pervading all aspects of the self, world and future (Beck et al., 1979).

The present results have no immediate clinical implications but indicate a clear empirical pathway to translation. The first question is the extent to which these changes in life structure drive and maintain PTSD symptoms over time within longitudinal cohorts. If future studies suggest a causal role for autobiographical structure in driving symptoms, one could then work directly with the life structure task, modifying generated life structures to integrate positive and negative material within each chapter and to enhance positive redundancy across chapters with a view to ameliorating outcomes (Dalgleish & Werner-Seidler, 2014).

The study has some potential limitations. Although we did ask participants to describe their own life chapters, we did not ask them to produce their own descriptive words for the cards used in the sorting task. This decision was made because we wanted to ensure that there were comparable numbers of positive and negative cards to select from and also that the intensity of descriptors was comparable across participants so that we could draw conclusions about the life structure as opposed to the language used to describe it. Future studies could ask participants to provide their own adjectives to allocate to each of the cards used in the

card-sort, that could then be rated in terms of valence and coded using metrics similar to those employed here (Rubin & Bernstein, 2003).

As discussed previously, our choice to work with participants with PTSD with a chronic history of interpersonal trauma had implications for our selection of control participants as it is very difficult to find survivors of such experiences with no significant symptoms of past or current posttraumatic stress to act as a trauma-matched control sample. We therefore recruited control participants who had no such history of sexual assault/abuse trauma and no history of PTSD to any trauma. This means that it is difficult to disentangle whether it is the development of PTSD rather than the trauma history *per se* that accounts for our primary findings. We did explore this question using correlational analyses within the PTSD group. While the proportion of negative cards endorsed and the reduced positive redundancy across the life structure were significantly correlated with PTSD severity this was not the case for the degree of compartmentalization, suggesting that PTSD severity may not be the only driving force behind the current profile of findings. Future studies could examine the replicability of the effects with survivors of more discrete or less severe trauma, which would also enable greater generalization of the effects from severe interpersonal trauma to other trauma categories.

A further limitation of the life structure task is that, although it focuses on the whole life narrative, it remains retrospective. The life reconstruction approach with its mandate to generate individual chapters and consider them separately is an advance over less structured methodologies but the possibility remains that contemporaneous consideration of past life chapters may have generated a different profile of findings. However, to the extent to which we are seeking to understand how those with chronic PTSD organize their current narrative of their past life, the chosen methodology is actually valid. PTSD as a disorder is often less about what actually happened in the past but more so about what is perceived to have

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happened and what the perceived implications are for the present (Dalgleish, 2004; Ehlers & Clark, 2000).

Another limitation relates to the samples used in the current analyses. The sample sizes for the two clinical groups were modest, as is often the case for hard-to-recruit clinical samples. However, there is nothing to indicate that the pattern and magnitude of the results relates to a lack of statistical power and the sample sizes exceeded our *a priori* power estimates. The PTSD sample was also all female. Finally, the PTSD/No MDD sample contained some individuals with past experience of depression, although if anything this would have been more likely to reduce between-group effects when comparing with the MDD/No PTSD sample. Nevertheless, it would be important to replicate the current findings with both clinical groups in larger samples including individuals with PTSD who have experienced different traumas, who are male, and with no lifetime history of depression.

In summary, the present study used an established card-sorting task to examine the organization of autobiographical knowledge in a sample of sexual trauma survivors with PTSD compared to a sample of individuals with chronic depression, and to healthy controls. The PTSD group presented with a life structure significantly different to controls and to those with chronic depression, supporting proposals that the life narrative is organized differently in those with PTSD.

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2.2.7   Appendices

2.2.7.1 Appendix A

Positive and Negative Words/Phrases Used in the Card Sorts

Positive	Negative
Happy	Naïve
Satisfying	Incomplete
Overjoyed	Confused
Fulfilling	Boring
Successful	Apathetic
Feeling Loved	Moody
Confident	Regretful
Creative	Feeling Contaminated
Feeling Needed	Stressful
Passionate	Out of Control
Feeling Nurtured	Unsuccessful
Joyful	Feeling Broken
Wisdom	Insignificant
Accomplished	Insecure
Important	Ashamed
Feeling Together	Feeling Rejected
Exciting	Unfulfilling
Complete	Gloomy
Relaxed	Feeling Unwanted
Feeling Courageous	Lonely
In Control	Depressing
Organised	Feeling Unloved
Stable	Hopeless
Feeling Pure	Failure

(Appendices continue)

2.2.7.2 Appendix B

Sample Past Life Card Sorts for Two Participants

Chapter titles have been adapted slightly for the purpose of anonymity, though they remain faithful to the chapter content. Negative words are in bold, and positive words are in italics.

Table B1
Card Sort for a participant with a more integrated card sort (Φ= 0.53)

Mother & Father	Grandmother	England	University	Sedentary Life	First Job	Second Job
Exciting	**Depressing**	**Incomplete**	**Depressing**	Loved	Relaxed	Happy
Fulfilling	**Unsuccessful**	**Sad**	**Unsuccessful**	Wisdom	Fulfilling	**Moody**
Happy	**Sad**	**Failure**	**Contaminated**	**Failure**	**Incomplete**	**Ashamed**
Joyful	**Lonely**	**Confused**	**Stressful**	**Sad**	**Insecure**	**Incomplete**
Loved	**Confused**	**Insecure**	**Naive**	Passionate	**Sad**	**Unfulfilling**
Satisfying	**Insecure**	Successful	Loved	Successful	**Moody**	In control
Important	**Naive**	**Broken**	**Out of control**	**Insecure**	**Ashamed**	**Confused**
Relaxed	**Stressful**	Passionate	**Moody**	**Incomplete**	Accomplished	Joyful
	Rejected	Wisdom	Creative	Together	**Unfulfilling**	Complete
	Failure	**Moody**	**Broken**	In control	In control	Successful
	Unwanted	Nurtured	Wisdom	Accomplished	Stable	**Hopeless**
	Unfulfilling	Creative	Passionate	Stable	**Stressful**	Relaxed
	Contaminated		**Sad**	Fulfilling	Creative	**Rejected**
	Hopeless		**Failure**	Needed	Loved	**Unsuccessful**
	Incomplete		**Confused**	Satisfying	Wisdom	**Out of control**
				Exciting	Needed	**Failure**
				Important	Together	Exciting
				Happy	Happy	Passionate
				Relaxed	Courageous	**Depressing**
				Stressful	Satisfying	Wisdom
				Creative	Important	**Insecure**
					Failure	**Sad**
					Passionate	Confident
					Depressing	Needed
					Successful	Satisfying
					Confident	Loved
					Unsuccessful	
					Exciting	

Table B2

Card Sort participant with a more compartmentalized sort (Φ= 0.90)

Infant school	Junior School	Senior School	University	Qualified	The break up	Sisterhood
Important	Exciting	In control	Exciting	Overjoyed	**Regretful**	Exciting
Fulfilling	Stable	Together	Nurtured	Exciting	**Failure**	Overjoyed
Joyful	Satisfying	Important	**Stressful**	Courageous	**Broken**	Accomplished
Happy	In control	Loved	**Confused**	Accomplished	**Rejected**	Stable
Exciting	Together	Passionate	Wisdom	**Out of control**	**Stressful**	Complete
Overjoyed	Important	Confident	Organised	Important	**Incomplete**	Satisfying
	Passionate	Pure	Important	Loved	**Confused**	**Confused**
	Confident	Successful	Loved	Passionate	**Insecure**	In control
	Pure	Fulfilling	Passionate	Successful	**Apathetic**	Organised
	Successful	Happy	Successful	Joyful	**Unloved**	Important
	Happy		Happy	Happy	**Unwanted**	Loved
	Creative		Creative	Creative	**Lonely**	Passionate
			Fulfilling	Fulfilling	**Sad**	Confident
						Pure
						Successful
						Joyful
						Happy
						Creative
						Fulfilling

2.2.7.3 Appendix C

Supplementary Results

Sensitivity analysis comparing the PTSD/No MDD Group versus the No PTSD/No MDE Control Group on past life structure metrics

In these analyses we set aside the seven participants with a comorbid diagnosis of MDD from the original PTSD group and the three controls with a past Major Depressive Episode (MDE) from the original No PTSD Control Group and conducted sensitivity analyses on the remaining sample (*n*=20 per group; see Table 2.S1 for past life structure

metrics) in order to verify that these smaller groups still showed the same pattern of differences on our past life structure metrics. These sample sizes still fell within the acceptable estimations based on our *a priori* power calculations (see Participants section of the main manuscript).

Table 2.S1: Means (standard deviation) of scores on the past life structure metrics for the PTSD/No MDD Group and the No PTSD/No MDD Control Group

	PTSD/No MDD Group	No PTSD/No MDE Control Group
	(*n*=20)	(*n* = 20)
	Mean (SD)	*Mean (SD)*
Prop. of Negative Cards	0.50 (0.16)	0.24 (0.14)
Negative Redundancy	0.27 (0.09)	0.24 (0.07)
Positive Redundancy	0.31 (0.12)	0.40 (0.15)
Compartmentalisation	0.76 (0.16)	0.54 (0.22)

Mirroring the data with the full sample (see main manuscript), these sensitivity analyses revealed a statistically significant multivariate difference in the past life structure components across groups, Wilk's $\Lambda = 0.52$, $F (4, 35) = 8.13$, $P < .001$; $d = 0.90$; 95% CIs [0.22, 1.58]. The follow-up univariate ANOVAs revealed a significantly greater proportion of negative cards, $F (1, 38) = 30.85$, $P < .001$, $d = 1.76$; 95% CIs [0.99, 2.53], significantly greater compartmentalization, $F (1, 38) = 12.67$, $P = .001$, $d = 1.13$; 95% CIs [0.43, 1.83], and significantly reduced positive redundancy, $F (1, 38) = 4.49$, $P = .04$, $d = 0.67$; 95% CIs [0.002, 1.34], in the PTSD/No MDD group. There was no significant difference between groups for negative redundancy, $F (1, 41) = 2.00$, $P = .17$, $d = 0.45$; 95% CIs [-0.21, 1.11].

Sensitivity analysis comparing the MDD/No PTSD group against the No MDD/No PTSD Control group on past life structure metrics

Table 2.S2: Means (standard deviation) of scores on the past life structure metrics for the MDD/No PTSD Group and the No MDD/No PTSD Control Group

	MDD/No PTSD) Group (n=30) *Mean (SD)*	No MDD/No PTSD Control Group (*n* = 36) *Mean (SD)*
Prop. of Negative Cards	0.61 (0.19)	0.28 (0.12)
Negative Redundancy	0.38 (0.19)	0.24 (0.12)
Positive Redundancy	0.26 (0.11)	0.46 (0.19)
Compartmentalisation	0.74 (0.18)	0.56 (0.23)

In these analyses we set aside participants with a diagnosis of current or past PTSD. Mirroring the original depression study findings (Dalgleish et al., 2011), there was a statistically significant multivariate difference in the past life structure components across groups, Wilk's $\Lambda = 0.43$, $F(4, 61) = 20.23$, $P < .0001$; $d = 1.11$; 95% CIs [0.57, 1.65]. The follow-up univariate ANOVAs revealed a significantly greater proportion of negative cards, $F(1, 64) = 76.29$, $p < .0001$, $d = 2.16$; 95% CIs [1.53, 2.79], significantly greater compartmentalization, $F(1, 64) = 18.85$, $p < .0001$, $d = 1.07$; 95% CIs [0.53, 1.61], significantly greater negative redundancy, $F(1, 64) = 18.85$, $P < .0001$, $d = 1.07$; 95% CIs [0.53, 1.61], and significantly reduced positive redundancy, $F(1, 64) = 28.19$, $p < .0001$, $d = 1.31$; 95% CIs [0.76, 1.86], in the MDD (No PTSD) relative to the MDD study controls.

Table 2.S3: Frequencies for gender and means (standard deviations) for age and depression symptom scores for the PTSD/No MDD group, the MDD/No PTSD Group, the No PTSD/No MDE control group and the No MDD/No PTSD control group

	PTSD/No MDD Group (*n*=20)	MDD/No PTSD Group (*n* = 30)	No PTSD/No MDE Control Group (*n* = 20)	No MDD/No PTSD Control Group (*n* = 36)
Gender (*female/male*)	20/0	20/10	20/0	28/8
Age in years	37.70 (13.65)	47.00 (11.80)	34.65 (15.91)	48.58 (10.33)
BDI Total Score	21.20[ab] (9.36)	26.00[cd] (11.68)	1.55[ac] (1.84)	3.14[bd] (4.02)

Note

[abcd] Beck Depression Inventory (BDI) scores sharing the same superscript differ significantly from each other, Ps<.001.

END OF RESEARCH PAPER

2.3   Discussion and Integration

There has been increasing interest in the observed impact of traumatic experiences on autobiographical memory. Literature in this area has included research into the impact of trauma on memory fragmentation or disorganisation (e.g., van der Kolk, 1994) and the dissociation of trauma memories from other autobiographical memories (e.g., Brewin, 2001; Ehlers & Clark, 2000; van der Kolk, 1994), as a way of protecting individuals from the emotional distress associated with their traumatic re-experiencing. In study 1 reported in the

current chapter we examined the structure of the autobiographical life story in those with PTSD in order to establish the ways in which the disorder impacts on how individuals represent and organise personal memories of their life history. Consistent with our predictions, the PTSD group utlilised a greater proportion of negative descriptors across their past life structure. They also demonstrated greater compartmentalization of positive and negative information than the non-PTSD control group.

Although there is evidence in the literature of reduced wellbeing in those with PTSD (e.g. Karatzias et al., 2013; Richardson et al., 2008) and the endorsement of dysfunctional higher-order meanings pertaining to past traumatic experiences, we found a greater use of negative descriptors across the past life story in the PTSD only group but no evidence of the same descriptors repeatedly applied across the life chapters identified. The finding for our PTSD only group contrasts with previous research in individuals with clinical depression who have been found to demonstrate greater overall negativity, but also greater redundancy of negative attributes across the life story, reduced positive redundancy, *and* stronger affective compartmentalization than those who had never suffered from depression. (e.g. Showers & Zeigler-Hill, 2007; Dalgleish et al., 2011). Our PTSD group more effectively segregated distressing or toxic information relating to past negative experiences across the past life-structure than individuals with chronic MDD.

Our results suggest that, individuals with PTSD use strategies to compartmentalise or "ring-fence" the distressing or toxic information related to their past traumatic experiences, rather than allowing it to pervade or contaminate other, more positive aspects of their life story. This is consistent with our understanding of PTSD (and the symptoms in the DSM-V criteria for the disorder) – that PTSD typically includes persistent avoidance of stimuli associated with the trauma, such as attempts to avoid talking or thinking about what

happened, avoiding contact with specific reminders or anything that might trigger re-experiencing symptoms and the associated unpleasant emotions.

It has been argued that trauma memories form a central reference point for an individual's whole life but also their personal identity - infusing other, non-traumatic, experiences with trauma-related meaning (Bernsten & Rubin, 2006, 2008). Therefore, we decided it would also be interesting to explore whether there were similar patterns in the ways in which those with PTSD represent and organise personal beliefs and memories in relation to their individual self-concept.

Research paper: *Compartmentalization of self-representations in female survivors of sexual abuse and assault, with posttraumatic stress disorder (PTSD)*

Authors: Clifford, G., Hitchcock, C. & Dalgleish, T.

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For this paper, the candidate planned the study, collected all of the data, analysed the results and wrote the paper. The co-authors supervised the research process and made comments on iterative drafts of the manuscript.

3.1 Background to the Study

As discussed in Chapter 1, we have a tendency to adapt to changes and difficulties in the environment by organising personally experienced events in terms of self-reference (e.g. Rogers, Kuiper & Kirker, 1977). More specifically in relation to PTSD, it has been argued that intrusive memories of past traumatic experiences are believed to structure our autobiographical narratives, inform our sense of self, and act as a reference point for our expectations and attributions in daily life (e.g. Robinaugh & McNally, 2011).

There has been increasing interest in the relationship between the structure of the self-concept and mental health, with a particular focus on how affective self-related information is organised across different aspects of our individual self-concept. One area of interest has been the degree to which positive and negative affective material is segregated into separate aspects of the self-concept (Showers, 2002). It has been proposed that high levels of affective compartmentalization may arise out of stressful or traumatic life experiences as a

means of 'ring fencing' off toxic self-related material from more positive self-aspects (Linville, 1987; Morgan & Janoff–Bulman, 1994; Showers, Zeigler-Hill & Limke, 2006; cf. also Steinberg, Pineles, Gardner, & Mineka, 2003), due to the use of avoidance and dissociative strategies, as discussed previously in relation to the life structure.

Another organisational strategy that has been identified in relation to the structure of the self-concept to mental health is the extent to which affective self-related knowledge shows overlap or *redundancy across* (Linville, 1987) different self-concepts. The implication is that potentially toxic negative information is not effectively confined or compartmentalised into discrete self-aspects but pervades the individual's entire sense of self, potentially contaminating even the most positive self-aspects.

The principal focus of study 2 was to examine degree of negativity, positive- and negative-redundancy, and the compartmentalisation of valenced information across self-generated self-aspects of an individual's self-concept in a sample of participants with current PTSD following significant interpersonal trauma, relative to healthy controls who had not experienced such trauma. Using the same card-sorting task and methodology described in study 1, the aim of this study was to establish whether an individual's self-concept had been chronically shaped by the experience of trauma. In study 2, again we focused on PTSD following sexual assault or abuse as we anticipated that such significant interpersonal trauma might have the clearest effects on self-concept.

3.2 Research paper: *Compartmentalization of self-representations in female survivors of sexual abuse and assault, with posttraumatic stress disorder (PTSD)*

3.2.1 Abstract

This study examined the structure of the self-concept in a sample of sexual trauma survivors with posttraumatic stress disorder (PTSD) compared to healthy controls using a self-descriptive card-sorting task. We explored whether individuals with PTSD possess a

highly affectively-compartmentalized self-structure, whereby positive and negative self-attributes are sectioned off into separate components of self-concept (e.g., self as an employee, lover, mother). We also examined redundancy (i.e., overlap) of positive and negative self-attributes across the different components of self-concept. Participants generated a set of self-aspects that reflected their own life (e.g., 'self at work',). They were then asked to describe their self-aspects using list of positive or negative attributes. Results revealed that, relative to the control group, the PTSD group used a greater proportion of negative attributes and had a more compartmentalized self-structure. However, there were no significant differences between the PTSD and control groups in positive or negative redundancy. Sensitivity analyses demonstrated that the key findings were not accounted for by comorbid diagnosis of depression. Findings indicated that the self-structure is organized differently in those with PTSD, relative to those with depression or good mental health.

3.2.2 Introduction

There are profound individual differences in the way we process and organize information related to our self-concept – our experienced sense of self. Theoretical accounts of how the self-concept is structured propose that it comprises multiple 'self-aspects'– distinct identities that are represented by organised bodies of both declarative and episodic knowledge (e.g., Cantor & Kihlstrom, 1987; McConnell, 2011). Self-aspects can include roles (e.g. mother, teacher) (e.g., Roberts & Donahue, 1994), social identities (e.g. being a Muslim, a member of the UK Labour party), social relationships (e.g. friend, wife), affective states (e.g. 'when I'm depressed'), behavioral situations (e.g. 'when I'm meeting new people'), private and public selves (e.g., Triandis, 1989), and relational and collective identities (e.g., Brewer & Gardner, 1996). Self-aspects are conceptualized as cognitive structures containing sets of specific attributes or beliefs (Showers, Zeigler-Hill & Limke, 2006) that prototypically include significant amounts of affect-laden information (Cantor,

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Markus, Nedenthal & Nurius, 1986). It is proposed that different self-aspects will preside over mental experiences in different contexts – what we have previously called the 'self-in-place' (Dalgleish & Power, 2004). So, the 'self with family' self-concept would preside when an individual is with their family, whereas the 'depressed self' would drive self-related experiences when the individual is under the yoke of depressed mood. Under such circumstances, the attributes, beliefs and affect associated with the presiding self-aspect will be more accessible relative to information pertaining to self-aspects that are subordinate in that context.

3.2.2.1 Affective compartmentalization

It is proposed that self-concepts can vary in complexity across individuals. Linville (1987) argued that a more complex self-concept is characterized by a greater number of self-aspects and stronger distinctions or boundaries between different self-aspects, in other words, the degree to which the self-concept is compartmentalized. There has been increasing interest in the relationship between the structure of the self-concept and mental health, with a particular focus on how affective self-related information is organized across different self-aspects and how this relates to different degrees of self-concept complexity.

Two aspects of how affective information is organized seem particularly important for mental health. The first is the degree to which affective material is compartmentalized such that positive and negative self-attributes are segregated into separate self-aspects (Showers, 2002). For an individual with a high degree of affective compartmentalization, any given self-aspect (e.g., 'self at work', 'self with friends') will be dominated by either positive (e.g., happy, confident) or negative (e.g., worried, hopeless) self-attributes, as opposed to a self-aspect being represented by a balance of positive and negative attributes (e.g., happy, worried). For example, an affectively compartmentalized person may have a positive self-aspect category (e.g., 'self with close friends'), which contains predominantly positive

conceptualizations about that instantiation of the self (e.g., confident, optimistic, happy and organized). As long as such positively valenced self-aspects are salient, these primarily positive self-beliefs will populate conscious awareness with consequent implications for affect and well-being. Conversely, when negatively valenced self-aspects are salient, the phenomenology of highly compartmentalized individuals would be dominated by negative self-beliefs. For example, for a highly compartmentalized person with a negative self-aspect category (e.g. 'self at work'), it is proposed that highly accessible negative self-related beliefs (e.g., worried, hopeless, uncomfortable and insecure) will dominate mental life when at work.

Several authors have discussed how high levels of affective compartmentalization may arise out of stressful or traumatic formative experiences as a means of 'ring fencing' off toxic self-related material from more positive self-aspects (Linville, 1987; Morgan & Janoff–Bulman, 1994; Showers, Zeigler-Hill & Limke, 2006; cf. also Steinberg, Pineles, Gardner, & Mineka, 2003). Such affective compartmentalization can be viewed as both a protective strategy and as a vulnerability factor. When positively-valenced compartmentalized self-aspects preside over mental life, difficult or toxic self-related information is kept psychologically at bay, promoting experiential well-being (Linville, 1987). However, to the extent that the individual is vulnerable to the self-in-place (Dalgleish & Power, 2004) being occupied by a predominantly negative self-aspect, characterized by self-attributes grounded in experiences of significant unresolved stress or trauma, then such compartmentalization represents a risk factor for mental distress or ill health.

The counterpart to this compartmentalized structure is the notion of an integrated self-concept characterized by a mixture of positive and negative self-attributes *within* most or all self-aspects (Showers, 2002). An individual with a highly-integrated self-concept may also endorse the self-aspect – 'self at work,' – but in this case, this self-aspect would contain a balance of both positive and negative self-content. Although such individuals may not inhabit

self-aspects with unremittingly positive content they are also less susceptible to the toxic override potential of highly negative self-aspects and consequently have reduced mental health vulnerability. This has been corroborated across numerous studies linking self-concept integration with mental health and well-being (e.g., Rhodewalt, Madrian, & Cheney, 1998; Showers, 1992; Showers & Kling, 1996; Showers, Abramson, & Hogan, 1998).

The first aim of the present study was to extend this work on self-structure and mental health to look at individuals who had experienced significant trauma – in this case sexual/physical abuse and/or assault – and who are suffering as a consequence from Post-Traumatic Stress Disorder (PTSD). PTSD is characterized by negative beliefs about the self being broken or damaged in some way by the trauma. For example, one criterion in the DSM-5 (American Psychiatric Association [APA], 2013) diagnosis for PTSD is *'Persistent and exaggerated negative beliefs or expectations about oneself, others, or the world (e.g., "I am bad," "No one can be trusted,")'*. Sufferers of PTSD also invariably possess a rich repertoire of psychological and behavioral strategies to protect against potentially toxic information about their trauma and its implication or consequences for the self. Many of these comprise the DSM-5 avoidance symptoms of PTSD (avoiding trauma reminders, attempts to never think about or talk about the trauma, social withdrawal, loss of interest in activities, emotional numbing and psychogenic amnesia) (APA, 2013). Others involve associated phenomena such as dissociation (including depersonalization and derealization), suppression and repression, which sufferers of PTSD often use to inhibit the reliving symptoms and overwhelming emotions associated with the trauma (Holmes et al., 2005)

Based on these aspects of the PTSD phenotype and on the theoretical literature outlined above, our first hypothesis was that individuals with PTSD following an experience or experiences of interpersonal trauma such as sexual or physical abuse or assault would possess a highly affectively-compartmentalized self-structure relative to individuals who

have not experienced sexual trauma and do not suffer PTSD.

3.2.2.2 Affective redundancy

The second organizational principle relating the structure of the self-concept to mental health is the extent to which affective self-related knowledge shows overlap or *redundancy across* (Linville, 1987) different self-concepts. For example, the self may be represented as "worthless" across multiple self-aspects such as 'self as a friend', 'self at work', 'self as a spouse' (e.g. Dalgleish & Power, 2004; Dozois & Dobson, 2001a, 2001b, 2003; Linville, 1985). In such circumstances, potentially toxic negative information is not effectively confined or compartmentalized into discrete self-aspects but pervades the individual's entire sense of self, potentially contaminating even the most positive self-aspects. In contrast, high redundancy of positive information would reflect a stable positive sense of self, with beneficial consequences for mental health and well-being. Unsurprisingly, perhaps, research on the structure of the self-concept in those with clinical depression reveals greater overall negativity, greater redundancy of negative attributes across self-aspects, reduced positive redundancy, and stronger affective compartmentalization than is the case for those who have never suffered from depression. (e.g. Showers & Zeigler-Hill, 2007; Dalgleish et al., 2011).

The second aim of the present study was to examine redundancy of positive and negative self-attributes across the self-concept in trauma-exposed individuals with PTSD and the healthy control participants. We had a clear hypothesis regarding positive redundancy, predicting that it would be reduced in the individuals with PTSD, reflecting the absence of a stable positive sense of self. We had no clear hypothesis regarding negative redundancy. It is plausible that the repertoire of inhibitory strategies that characterizes PTSD would serve to corral negative self-related information into a small number of negatively-laden self-aspects with little 'spillover' or redundancy with the rest of the self-concept. In contrast, it is also plausible that the content of any negative self-attributes that had their origins in the person's

experience of trauma would generalize to pervasive negative self-representations that populated the entire self-concept, akin to the pervasive negativity observed in depression (Dalgleish et al., 2011).

3.2.2.3 Self-Descriptive Card Sort

To examine the structure of self-concept we used the self-descriptive card-sorting task that was adapted by Showers (1992) from Linville (1985, 1987). In this card sorting procedure, participants are first asked to generate a set of self-aspects that reflect their own life (e.g., 'self at work', 'self when angry'). There can be as many, or as few, self-aspects as seem relevant to a given individual. Participants are then presented with a set of 48 cards, each containing a trait word or phrase which is either positive or negative in valence and that potentially describes them in one or more of their self-aspects.

The participants are asked to sort the cards into one, many or none of the self-generated self-aspects (Linville, 1985, 1987). So, for example, a card may contain the adjective 'confident' and, during the card sort, the participant would decide how many, if any, of his/her self-aspects could be described in this way and allocate that card accordingly. Any card can be used repeatedly if it is relevant to more than one self-aspect, or not at all if it is deemed irrelevant to the self. Within this procedure the degree of negativity (Showers, 1992) is the overall proportion of cards selected that are negative in valence across all self-aspects, including repetitions. Redundancy or overlap is the extent to which the same cards are used across multiple self-aspects (Dozois & Dobson, 2001a, 2001b). Finally, affective compartmentalization is the extent to which positive and negative cards are allocated to distinct self-aspects such that some self-aspects are predominantly positive, while others are predominantly negative (Showers, 1992).

3.2.2.4 The Current Study

The principal focus of the present study was to examine degree of negativity,

positive- and negative-redundancy, and compartmentalization of valenced information across the self-generated self-aspects of an individual's self-concept, as revealed by the card sort procedure, in a sample of participants with current PTSD following significant interpersonal trauma, relative to healthy controls who had not experienced such trauma.

In sum, we predicted that the PTSD group would identify the most stressful or traumatic event in their lives as more centrally defining in terms of how they see themselves, relative to the controls, as measured by the Centrality of Events Scale (Berntsen & Rubin, 2006, 2007) – a self-report inventory assessing how identified events have come to define your personal identity. In terms of the card-sorting task, we hypothesized that all participants would generate multiple self-aspects but that the PTSD sample would display greater negativity across the self-concept as well as greater compartmentalization between positive and negative components of the self-concept, across their different self-aspects. We also predicted that redundancy of positive information across the different self-aspects would be reduced in those with PTSD relative to the controls, but we had no clear directional hypotheses regarding negative redundancy.

3.2.3 Method

3.2.3.1 Participants

A power calculation estimating the effect size ($d = 1.02$) for the difference between healthy and depressed samples in card-sort metrics observed by Dalgleish et al. (2011) indicated that 22 participants per group would provide 90% power (two-tailed, $\alpha = .05$).

Two groups of female participants were included in the study. Participants who had developed PTSD following sexual trauma were allocated to a PTSD group. Current diagnosis of PTSD was determined according to the DSM-IV ($n = 23$). Fifteen of these participants were recruited from the Haven; A Sexual Assault Referral Centre (SARC) in Paddington. They were invited to take part following attendance at the Haven or during an assessment for

counseling or psychological therapy. Eight participants were recruited from the MRC Cognition and Brain Sciences Unit Clinical Volunteer Panel – a database of some 400 community volunteers with a history of significant mental health problems who have agreed to help with psychological research. Volunteers are recruited to the panel via advertisements in local newspapers and through local clinics.

PTSD diagnosis and history and other Axis I and II psychiatric comorbidity according to the DSM-IV were determined using the Structured Clinical Interview for the *DSM-IV* Axis I Disorders – Clinician Version (SCID, Version 2.0; First, Spitzer, Williams & Gibbon, 1996) and the Structured Clinical Interview for DSM-IV-TR Axis II Personality Disorders (Borderline, Avoidant and Dependant), administered by trained interviewers, under the supervision of a Clinical Psychologist.

The female participants with no experience of sexual abuse/assault and without PTSD (which may have occurred from other events such as motor vehicle accidents) as determined by the SCID (the control group; $n = 22$), were recruited from the MRC Cognition and Brain Sciences Unit Non-Clinical Volunteer Panel – a database of some 2000 community volunteers who have agreed to help with psychological research. Volunteers are recruited to the panel via advertisements in local newspapers.

To be eligible for the study, participants had to be fluent in English and over 18 years of age. Exclusion criteria comprised a diagnosis of substance dependence, organic brain injury and a history of psychosis. No participants were excluded based on this criteria.

3.2.3.2 Materials and Measures

3.2.3.2.1 Self-structure card-sorting task.

The card-sorting task was adapted from Showers (1992; Showers & Kevlyn, 1999; Showers & Kling, 1996), although the original task was proposed by Zajonc (1960) and subsequently adapted by Linville (1985, 1987). First, participants were given a description of

how we define "self-aspects." Participants were then asked to identify and describe each of their different "self-aspects". They were told that they were free to come up with as many different self-aspects as they felt were appropriate. Participants were given a blank table and asked to record their self-aspects at the top of a column.

Participants were given a deck of 48 cards (listed in Appendix A), shuffled anew for each participant. Each card contained an adjective or phrase that might be used to describe a self-aspect. Participants were asked to record which of the cards fell under each self-aspect. The adjectives chosen were modified from Dalgleish et al.'s (2011) study to be more specifically trauma-related. For example, *'feeling contaminated', 'feeling broken'* and *'feeling dirty.'* The adjectives/phrases were either positive or negative in valence (24 of each; see Appendix A). Prior to the study, we had the adjectives/phrases rated ($n = 15$ raters) for valence on 15-point Likert scales anchored at 1 (*strongly positive*), 7 (*weakly positive*), 8 (*neutral*), 9 (*weakly negative*), 15 (*strongly negative*). The positive set of adjectives had a mean rating of 2.59 ($SD = 0.81$), whereas the negative set of adjectives had a mean rating of 13.61 ($SD = 1.09$). A paired samples t test showed that the two sets of cards did not differ significantly in intensity (distance from the neutral score of 8; $t < 1$).

We also asked participants to think about their "core self" – the parts of their self concept that they felt were always almost experientially present and that underlay their experience of their different self-concepts. Participants were provided with a definition and then asked to take the 48 cards and then select those which they felt described their 'core-self.'. We hypothesized that the core self in our sample with PTSD would be more negatively laden than in our control group.

3.2.3.2.2 Self-structure metrics

Proportion of negative items. This is the number of negative words or phrases, including repetitions, appearing in the card sort, divided by the total number of words or phrases used. It is a measure of the overall negativity of the sort (Showers, 1992).

Compartmentalization (Showers, 1992). The measure of compartmentalization is a phi (φ) coefficient based on a chi-square statistic (Everitt, 1977). It compares the frequencies of positive and negative cards in each self-aspect of the card sort to those that would be expected, given the proportion of negative items for the sort as a whole. A frequency table is constructed that contains as many columns as there are self-aspects in the individual's card sort and one row each for number of positive cards and number of negative cards. The observed frequencies for each cell are generated from the whole card sort. The expected frequencies are generated as follows: If the card sort contained, for example, 40% negative cards overall and the first self-aspect contained 20 cards, then the expected frequencies for that aspect would be 8 (40%) negative cards and 12 (60%) positive cards. A chi-square statistic is then computed using these expected and observed frequencies. This is then normalized by dividing by the number of cards in the sort (*N*) as follows:

$$\Phi = \sqrt{\chi^2} / N$$

where, φ can range from 0 to 1 (0 represents a perfectly random sort, and 1 represents a perfectly compartmentalized sort).

Redundancy. Redundancy (Dozois & Dobson, 2001a, 2001b) was computed separately for positive and negative attributes, with each redundancy score representing the degree of card repetitions across self-aspects, controlling for both the number of self-aspects in a given card sort and the number of cards used. The following formula generated the redundancy rates:

$$\text{Redundancy} = x = \frac{1}{n_{dw} \text{x} \, n_{dg}} \text{x} \sum n_{ri}$$

where (using the example of negative redundancy) n_{dw} equals the number of distinct negative words used in an individual's card sort, n_{dg} equals the number of self-aspects generated, and Σn_{ri} equals the sum of repetitions of each negative card up to the maximum of 23 cards.[7]

3.2.3.2.3 Screening and Questionnaire Measures

SCID-I for Mood Disorders; Anxiety and Other Disorders. Axis I diagnoses according to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association, 1994) were determined by having participants complete the Structured Clinical Interview for the *DSM-IV* Axis I Disorders – Clinician Version (SCID, Version 2.0; First, Spitzer, Williams & Gibbon, 1996) under the supervision of a Clinical Psychologist. The reliability and validity of the SCID-I for DSM-IV has been reported in several published studies (e.g. Lobbestael, et al., 2011; Zanarini et al., 2000).

SCID-II (Borderline, Avoidant and Dependent Personality Disorder sub-sections). Diagnoses of Borderline, Avoidant and Dependent Personality Disorder were determined by having participants complete the Structured Clinical Interview for DSM-IV Axis II disorders (SCID-II; First, Gibbon, Spitzer, Williams, & Benjamin, 1997). Excellent inter-rater reliability has been found on the SCID-II (range 0.77 to 0.94). The intraclass correlation coefficient (ICC) trait scores of all personality disorders were excellent, with the exception of the schizotypal, histrionic, narcissistic and the A criteria of antisocial personality disorders which displayed fair inter-rater agreement (e.g. Lobbestael, et al., 2011).

Beck Depression Inventory (BDI-I; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is a widely-used and well validated measure of depressive symptoms over the previous

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[7] The prototypical work on self-structure by Linville (1985, 1987) used a metric of "self-complexity," which is a combination of overlap or redundancy across self-aspects and the overall numbers of self-aspects generated. However, self-complexity is highly correlated with numbers of different cards used in each card sort (Woolfolk et al., 1995), which militates against its use. We did not anticipate group differences in numbers of self-aspects generated in the present study and we were careful to match our groups on mean age. For these reasons among others (Dozois & Dobson, 2001a, 2001b; Rafaeli-Mor et al., 1999), we did not use the self-complexity metric in the present study.

week.[8] The BDI demonstrates high internal consistency, with alpha coefficients of .86 and .81 for psychiatric and non-psychiatric populations respectively (Beck et al., 1988). Internal consistency was high in the current sample (α =. 96).

Centrality of Events Scale (CES -Negative; Berntsen & Rubin, 2006, 2007). The CES-Negative (Berntsen & Rubin, 2006, 2007) measures the extent to which a negative or traumatic memory forms a central component of personal identity, a turning point in the life story, and a reference point for everyday inferences. We used the full version, which consists of 20 items rated on 5-point scales (1=totally disagree to 5=totally agree) in relation to the most stressful or traumatic event in the person's life. The CES-negative is positively correlated with severity of PTSD symptoms, and this relationship remains significant when controlling for measures of anxiety, depression, dissociation, and self-consciousness (Berntsen & Rubin, 2006, 2007). Internal consistency for the CES was high in the current sample (α = .98).

3.2.3.2.4 Procedure

Ethics approval was obtained from the NHS National Research Ethics Service (reference 11/H0305/1). Participants completed the experimental session individually and face-to-face with the experimenter, in a quiet testing room. Following provision of informed consent, participants completed the SCID and several self-report questionnaire measures of mood and PTSD symptoms.. In a separate session, approximately a week later, they completed the self-structure card sort.

3.2.4   Results

3.2.4.1 Participant characteristics

According to the SCID, of the 23 participants in the PTSD group, nine also met the criteria for a current episode of Major Depressive Disorder (MDD), 19 met the criteria for a

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[8] The original BDI was preferred here over updated versions for legacy reasons because the Cognition and Brain Sciences Unit Volunteer Panel has an extensive historical database of original BDI scores that can be used when recruiting for studies.

past episode of MDD, one for current panic disorder (secondary to PTSD), four for current

Borderline Personality Disorder (BPD) and two for current Avoidant Personality

Disorder. In the control group, one participant met the criteria for a current episode of MDD

and five met the criteria for a past episode of MDD. The participant in the control group who

met criteria for a current episode of MDD was excluded from the analyses.

Descriptive group data are presented in Table 3.1. The groups did not differ

significantly in age, t (42) = 1.41, p = .17, d = 0.44; 95% CIs [-0.03, 2.63], nor in education

level, t (42) = 1.75, p = .09, d = 0.54; 95% CIs [-0.17, 2.77], although there was tendency for

the PTSD group to report fewer years in education. There were the expected differences in

BDI scores between the PTSD and Control groups (BDI: t (24.01) = 7.35, p < .001, d= 3.0;

95% CIs [-2.16, 4.76]; and support for our first hypothesis that the PTSD group would

identify the negative events they had experienced as more self-defining on the CES: t (37.63)

= 6.79, p < .001), d = 2.21; 95% CIs [-1.67, 4.27].

Table 3.1: Descriptive Data for Study Participants.

Category	PTSD Group (*n*=23)	Control Group (*n*= 21)
Years in Education	14.87 (2.32)	16.05 (2.13)
Age (in years)	35.87 (14.03)	30.19 (12.54)
Beck Depression Inventory (BDI-I) Total Score	24.77 (12.83)	3.95 (3.37)
Centrality of Events (CES) Total Score	80.00 (15.49)	42.76 (20/07)

3.2.4.2 Self-Structure

All participants were able to come up with multiple self-aspects (range 2-15). Examples of self-aspects were 'self at work', 'self with close friends', self with men', and 'self at home.'

The self-structure data are presented in Table 3.2 and Figure 3.1. The groups were not significantly different on the total number of self-aspects generated, $t(42) = 1.02$, $p = .31$, $d = 0.31$; 95% CIs [0.19, 2.41], nor the total number of cards used, $t(42) = 1.54$, $p = .13$, $d = 0.48$; 95% CIs [-0.09, 2.69], although participants in the PTSD group used numerically more cards on average. This suggests comparable engagement in the task across groups and indicates that any group differences on the structure metrics considered below, which nevertheless control for overall numbers of self-aspects and cards used, were not likely to be a function of the number of self-aspects generated.

Table 3.2: Mean (and Standard Deviation) Numbers of Self-Aspects and Cards Used Sorts Across Groups

Variable	PTSD Group (*n* = 23)	Control Group (*n* = 21)
Number of Self-Aspects (range 2-15)	6.70 (2.98)	5.90 (2.02)
Cards used in sort (range 10 –229)	75.04 (56.69)	53.90 (28.19)
Cards per Self Aspect (range 1-36)	10.59 (6.11)	9.27 (4.01)

There were broad ranges of scores across both groups on the four self-structure metrics (maximum possible range 0 to 1) suggesting that across-group floor and ceiling effects were not at work in the data: Proportion of Negative Cards: 0.02 – 0.92; Negative Redundancy: 0 – 0.67; Positive Redundancy: 0.18 – 0.74; and Compartmentalization: 0 to 1. In illustration of the raw data, Appendix B shows two examples of actual past card sorts from participants in the control group illustrating relatively high and low levels of Affective

Compartmentalization. Of particular note is how, in the integrated card sort example illustrating relatively low Compartmentalization (Appendix B1), several of the self-aspects contain positive and negative descriptors that are diametrically opposite in meaning.
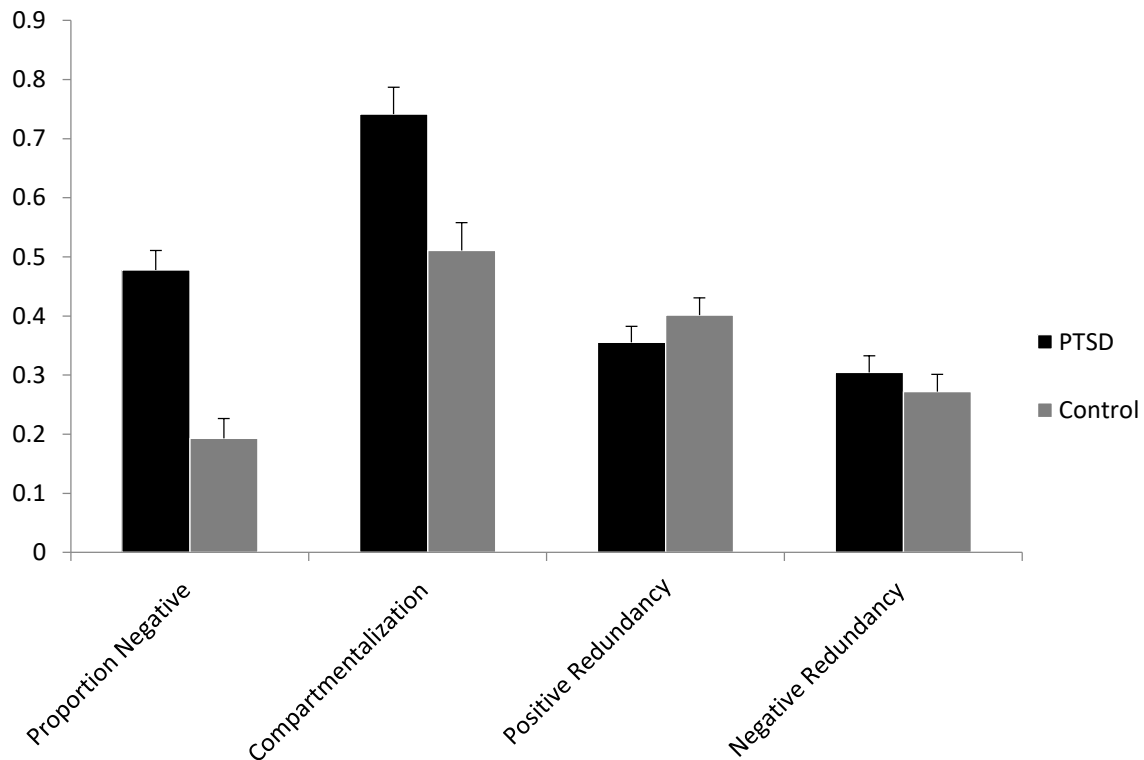
Figure 3.1. Mean (+1 *SE*) performance (*y*-axis) for the PTSD and control groups for Proportion of Negative cards used, Positive and Negative Redundancy, and Compartmentalization across their multiple self-aspects.

The first analysis assessed whether, overall, self-structure differed across the two groups. To that end we conducted a Multivariate Analysis of Variance (MANOVA) with the four self-structure metrics as the dependent variables.

There was a statistically significant difference in the self-structure components based on group, Wilk's $\Lambda = 0.41$, $F(4, 39) = 13.85$, $p = .00$, $\eta_p^2 = 0.59$.

Follow-up Univariate ANOVAs showed a significantly greater Proportion of Negative cards ($F(1, 42) = 36.14$, $p = .00$, $\eta_p^2 = 0.46$; 95% CIs [0.41, 0.54], [0.12, 0.26]) and significantly greater Compartmentalization ($F(1, 42) = 12.50$, $p = .001$, $\eta_p^2 = 0.23$; 95% CIs

[0.65, 0.83], [0.42, 0.61]) for the PTSD group. There were no significant differences between groups for Positive or Negative Redundancy, Fs < 1

3.2.4.3 Sensitivity analysis examining the effects of comorbid depression

To assess the likely effects of clinical depression comorbidity on self-structure, we set aside the nine participants with a comorbid diagnosis of MDD from the PTSD group and conducted sensitivity analyses using the remaining PTSD sample, for whom the self-structure metrics were similar to the whole sample ($n = 14$; see Table 3.3).

Table 3.3: Means and Standard Deviations of Scores on the Self-Structure metrics for the Participants without co-morbid MDD in the PTSD Group and the Control Group

Self-structure metric	PTSD Group without MDD (n=14)	Control Group (n = 21)	Effect Size (η_p^2)
	Mean (SD)	*Mean (SD)*	
Proportion of Negative Cards	0.42 (0.13)	0.19 (0.13)	0.44
Negative Redundancy	0.31 (0.11)	0.27 (0.16)	0.02
Positive Redundancy	0.39 (0.15)	0.40 (0.13)	0.003
Compartmentalization	0.79 (0.22)	0.51 (0.22)	0.30

The MANOVA with the four self-structure metrics for this sensitivity analysis again revealed a statistically significant difference in the self-structure components based on group, Wilk's $\Lambda = 0.46$, $F (4, 30) = 8.99$, $p = .00$, $\eta_p^2 = 0.55$. Univariate ANOVAs again showed a significantly greater proportion of negative cards used, $F (1, 33) = 26.28$, $p = .00$,

$\eta_p{}^2 = 0.44$; 95% CIs [0.35, 0.49], [0.14, 0.25] and significantly greater compartmentalization (F (1, 33) = 14.42, p = .002, $\eta_p{}^2 = 0.30$; 95% CIs [0.68, 0.91], [0.42, 0.61], for the PTSD group. There was again no significant difference between groups on positive or negative redundancy, $Fs < 1$.

3.2.4.4 Core Self Data

The core-self data are presented in Table 3.4. The groups were not significantly different on the total number of cards used, t (42) = 1.05, p = .30, d = 0.32; 95% CIs [0.17, 2.43],. As anticipated, the PTSD group used a significantly greater proportion of negative cards to describe their core self, t (34.38) = 3.32, p = .002, d = 1.13; 95% CIs [-0.83, 3.43].

3.2.5   Discussion

The aim of the present study was to examine the structure of self-concept in a sample of sexual trauma survivors with PTSD compared to healthy controls using a self-descriptive card-sorting task (Showers, 1992). Consistent with our predictions, across self-aspects, the PTSD group used a greater proportion of negative cards and had a more compartmentalized self-structure than the control group. However, in contrast to our predictions, there were no significant differences between the PTSD and control group in positive redundancy. We also found no group differences for negative redundancy, where we had no clear predictions. We also demonstrated, unsurprisingly, that those with PTSD characterized their 'core self' as more negative relative to the healthy control group. The pattern of findings on the card-sorting task was not simply a function of different numbers of self-aspects or number of cards used across the group, because there were no significant differences on these variables. To account for the previously established effects of depression (Dalgleish et al., 2011) on self-structure, we set aside the participants with a comorbid diagnosis of MDD from the PTSD group and the resultant sensitivity analyses showed that the key findings were unchanged, indicating that the results are not accounted for by depression comorbidity.

As noted in the Introduction, a number of authors have suggested that the higher levels of affective compartmentalization observed our PTSD sample may arise out of stressful or traumatic experiences as a way of 'ring fencing' off what tends to be highly distressing negative self-related material from more positive self-aspects (Linville, 1987; Morgan & Janoff–Bulman, 1994; Showers, Zeigler-Hill & Limke, 2006; cf. also Steinberg, Pineles, Gardner, & Mineka, 2003). So, for an individual with PTSD following a sexual trauma, a particular self-aspect, such as 'self with men', which encompassed feelings of shame, hopelessness and insecurity might be compartmentalized or split off from other self-aspects, such as 'self with close friends,' which were associated with more positive affect.

The fact that we found no support for a difference in negative redundancy between our groups suggests that in our sample with PTSD, distressing or toxic information relating to past traumatic experiences is compartmentalized across the self-structure, rather than pervading the individual's entire sense of self. In this way, negative material is prevented from contaminating the other, more positive self-aspects. This finding contrasts with previous research in individuals with clinical depression who were found to demonstrate greater overall negativity, greater redundancy of negative attributes across self-aspects, reduced positive redundancy, *and* stronger affective compartmentalization than those who had never suffered from depression. (e.g. Showers & Zeigler-Hill, 2007; Dalgleish et al., 2011). This suggests that the self-structure is organized differently in those with PTSD, relative to depression.

Similarly, based on these earlier depression findings, we had predicted that positive redundancy would be reduced in those with PTSD relative to controls, reflecting a reduced stable positive sense of self. However, this was not the case. Our results suggest that, although the overall positivity across the self-structure is lower in those with PTSD, as one would expect given the severe and distressing nature of the disorder, and the positive information is more compartmentalized, the positive *content* that is represented is as consistent across the self-structure as it is healthy participants. Again, this suggests clear

differences between the self-structure of those with PTSD compared to those with depression.

The study has some potential limitations. Although we did ask participants to generate their own self-aspects, we did not ask them to generate their own descriptive words to assign to the cards used in the sorting task. This was because we wanted to ensure that there were comparable numbers of positive and negative cards to select from and also to ensure that the intensity of descriptors was comparable across participants so that we could draw conclusions about the structure of the self-concept as opposed to the language used to describe it. Future studies could ask participants to provide their own adjectives to describe each self-aspect, that could then be rated in terms of valence and coded using metrics similar to those employed here (Rubin & Bernstein, 2003).

The second issue is that our clinical group and control group differed in two key ways. The clinical group consisted of a sample of individuals who experienced sexual/physical abuse and/or assault and who, as a consequence, had developed PTSD. Our controls comprised individuals who did not report traumas of this nature and who did not meet criteria for PTSD. This means that it is not possible to disentangle whether it is the development of PTSD rather than the trauma history, per se, that can account for differences in negative material and compartmentalization. The reason for this is that it is very difficult to find individuals with this kind of trauma history, at the level of severity of our sample, who are without mental health problems and so any trauma-matched control group would likely present with significant symptoms of PTSD (alongside diagnoses of other disorders) even though they might not meet criteria for a full diagnosis. Future studies could examine the replicability of the effects with survivors of more discrete or less severe trauma to seek to disentangle the experience of trauma from the presence of PTSD. Such studies would also speak to the generalizability of the effects from severe interpersonal trauma to other trauma categories.

A third issue is that the sample sizes for the two groups were modest as is often the case for hard-to-recruit clinical samples. However, there is no suggestion in the pattern and magnitude of the results that lack of statistical power is responsible for any of the findings. The samples were also all female. It is now important to replicate the findings with larger samples including individuals with PTSD who have experienced different traumas and who are male. And finally, although we draw conclusions about the self-structure in PTSD relative to depression based on comparisons with the previous literature, we have not directly compared a PTSD (with no comorbid depression) group to a clinically depressed (with no comorbid PTSD) group.

In summary, the present study used an established card-sorting task to examine degree of negativity, positive and negative redundancy, and compartmentalization of valenced information across the self-generated self-aspects of an individual's self-concept in a female sample of individuals with PTSD relative to healthy controls. The data revealed a greater proportion of negative cards and a more compartmentalized self-structure in individuals with PTSD, compared to a non-clinical control group, but provided no support for differences in positive or negative redundancy. This is consistent with literature proposing that high levels of affective compartmentalization may arise out of stressful or traumatic experiences as a way of 'ring fencing' off negative self-related material from the more positive self-aspects. These data fit with our understanding of PTSD and the mechanisms involved, such as avoidance and dissociation, that are used to inhibit the negative impact of past traumatic experiences.

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3.2.7   Appendices

3.2.7.1 Appendix A

Positive and negative words/phrases used in the Card Sorts

Positive	Negative
Happy	Naïve
Satisfying	Incomplete
Overjoyed	Confused
Fulfilling	Boring
Successful	Apathetic
Feeling Loved	Moody
Confident	Regretful
Creative	Feeling Contaminated
Feeling Needed	Stressful
Passionate	Out of Control
Feeling Nurtured	Unsuccessful
Joyful	Feeling Broken
Wisdom	Insignificant
Accomplished	Insecure
Important	Ashamed
Feeling Together	Feeling Rejected
Exciting	Unfulfilling
Complete	Gloomy
Relaxed	Feeling Unwanted
Feeling Courageous	Lonely
In Control	Depressing
Organised	Feeling Unloved
Stable	Hopeless
Feeling Pure	Failure

3.2.7.2 Appendix B

Sample self-structure card sorts for two Control group participants

Table B1
Card Sort for a control group participant with a predominantly positive self-structure and a relatively integrated mix of positive and negative words (Φ= 0.28)

Friends	Relationship	Colleagues	Alone	Travelling	Home
Creative	*Exciting*	*Organised*	*Exciting*	*Stable*	*Couraegous*
Happy	*Nurtured*	*Wisdom*	*Courageous*	*Confident*	*Nurtured*
Confident	*Relaxed*	*Satisfying*	**Naive**	*Importan*	*Relaxed*
Important	**Confused**	*In control*	*Relaxed*	*Loved*	*Stable*
Loved	*Stable*	**Out of control**	*Stable*	*Fulfilling*	*In control*
Fulfilling	*Satisfying*	*Courageous*	**Insecure**	*Joyful*	*Satisfying*
Joyful	*Together*	**Naive**	*Accomplished*	**Confused**	*Together*
Needed	*Passionate*		*In control*	*Wisdom*	*Needed*
Together	*Needed*		**Out of control**	**Stressful**	*Pure*
Complete	**Stressful**		*Together*	*Together*	*Joyful*
In control	*Joyful*		*Needed*	**Lonely**	**Moody**
Stable	*Fulfilling*		**Lonely**	*Complete*	*Loved*
Relaxed	*Loved*		*Wisdom*	*Satisfying*	*Important*
	Important		**Stressful**	**Out of control**	**Boring**
	Happy		*Loved*	*In control*	*Happy*
			Important	*Relaxed*	
			Creative	**Naive**	
			Moody	*Accomplished*	
				Courageous	
				Exciting	

Note: Self-aspect titles have been adapted slightly for the purpose of anonymity, though they remain faithful to the content. Negative words are in bold, and positive words are in italics.

Table B2
Card Sort for a control participant with a more compartmentalized structure (Φ= 0.90)

With parents	With my brother	With friends	At school	With boyfriend	When unwell	When alone
Organised	*Organised*	*Organised*	*Organised*	*Happy*	**Stressful**	*Happy*
Accomplished	**Stressful**	*Happy*	*Accomplished*	*Feeling Loved*	**Confused**	*Courageous*
Feeling Loved	**Insecure**	*Feeling Loved*	**Insignificant**	*Nurtured*	**Moody**	*Feeling Loved*
Nurtured	**Boring**	*Joyful*	**Stressful**	*Feeling Together*	**Lonely**	**Moody**
Stressful	**Regretful**	*Courageous*	**Confused**	*Stable*	**Boring**	*Stable*
Boring	**Out of Control**	*Relaxed*	**Insecure**	*Feeling Needed*	**Sad**	*Creative*
Joyful		*Exciting*	**Lonely**	*Joyful*	**Depressing**	*Joyful*
Stable		*Creative*	**Unsuccessful**	**Ashamed**	**Out of Control**	*Relaxed*
Out of Control		*Important*	**Out of Control**	*Relaxed*		*Confident*
Confident		*Feeling needed*	**Apathetic**	*Creative*		*In control*
Important		*Confident*	**Failure**	*Satisfying*		*Satisfying*
In control		*Satisfying*		*Important*		*Exciting*
		Passionate		*Confident*		
		Feeling Together		*Passionate*		
		In control		*Exciting*		

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3.2.7.3 Appendix C

Supplementary Material

Selection of the Trauma-related Adjectives for the Card-Sorting Task

The adjectives chosen were modified from Dalgleish et al.'s (2011) study to be more specifically trauma-related. For example, *'feeling contaminated', 'feeling broken'* and *'feeling dirty.'* The adjectives/phrases were either positive or negative in valence (24 of each; see Appendix A). Prior to the study, we had the adjectives/phrases rated (*n* = 15 raters) for valence on 15-point Likert scales anchored at 1 (*strongly positive*), 7 (*weakly positive*), 8 (*neutral*), 9 (*weakly negative*), 15 (*strongly negative*). The positive set of adjectives had a mean rating of 2.59 (*SD* = 0.81), whereas the negative set of adjectives had a mean rating of 13.61 (*SD* = 1.09). A paired samples *t* test showed that the two sets of cards did not differ significantly in intensity (distance from the neutral score of 8; *t* <1).

END OF RESEARCH PAPER

3.3   Discussion and Integration

In study 2, we sought to extend our findings on the structure of the life story in PTSD by exploring the notion that not only do intrusive memories of past traumatic experiences structure our autobiographical narratives, they also inform our sense of self, and act as a reference point for our expectations and attributions in daily life (e.g. Robinaugh & McNally, 2011). Our predictions in line with this (and based on the findings from study 1) were that the PTSD group would identify the most stressful or traumatic event in their lives as more centrally defining in terms of how they see themselves, relative to the controls, as measured by the Centrality of Events Scale (Berntsen & Rubin, 2006, 2007), that individuals with PTSD would display greater negativity across the self-concept as well as greater

compartmentalisation of both positive and negative components of the self. We also predicted that redundancy of positive information across the different self-aspects would be reduced in those with PTSD relative to those without.

Consistent with our predictions and the findings from study 1 relating to the life story, across self-aspects, individuals with PTSD used a greater proportion of negative cards and had a more compartmentalized self-structure than individuals without PTSD. However, in contrast to our predictions, there were no significant differences in positive redundancy or *overlap* between self-aspects.

The results from study 2 add support to the theory that individuals with PTSD use strategies to compartmentalise or "ring-fence" the distressing or toxic information related to their past traumatic experiences. These additional findings suggest that these strategies are utilised by those with PTSD not only to prevent this negative and potentially distressing information from spreading or contaminating other parts of their history or life story, but also to separate it from other, more positive aspects of their self-concept.

These findings are consistent with the fairly well-established psychological phenomenon of "splitting" the self into distinctly positive and negative aspects (the good me vs. the bad me), which is believed to be an important mechanism for coping with both negative experiences and negative knowledge about the self (e.g. Bowlby, 1980; Sullivan, 1953). As discussed, there are also mechanisms which people with PTSD frequently use to inhibit the reliving symptoms and overwhelming emotions associated with the disorder. These include avoidance but also suppression, repression, and dissociation (including depresonalisation and derealisation; e.g. Holmes et al., 2005). Dissociative strategies and the different ways in which they can manifest in the symptomatic presentation of PTSD are explored more fully in chapter 4.

<div align="center">

CHAPTER 4

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Research paper: *Prevalence of Auditory Pseudohallucinations in Adult Survivors of*

Physical and Sexual Trauma with Chronic Post-Traumatic Stress Disorder (PTSD)

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For this paper, the candidate planned the study, collected all of the data, analysed the

results and wrote the paper. The co-authors supervised the research process and made

comments on iterative drafts of the manuscript.

4.1 Background to the Study

Throughout chapters 1-3 of this thesis, we have identified and discussed a number of

mechanisms, which people with PTSD frequently use to inhibit the reliving symptoms and

overwhelming emotions associated with the disorder. Dissociation during traumatic events is

one of these mechanisms and a well-recognised phenomena in the research literature (Holmes

et al., 2005; Murray, Ehlers & Mayou, 2002). One element of a dissociative mechanism that

has been identified as occurring in response to trauma is an auditory verbal hallucination

(AVH). Auditory verbal hallucinations (AVHs) have been defined as the experience of

hearing a voice in the absence of an appropriate external stimulus (Stanghellini & Cutting,

2003).

AVHs are commonly associated with psychosis (American Psychiatric Association,

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[9] Published version of the manuscript is included in Appendix 3.0

2013) but have also been identified in other disorders (Pilton, Verese, Berry & Bucci, 2015), where the experience of voices can impede therapeutic efficacy. In non-psychotic conditions, AVHs are most commonly reported in cases of combat-related Post Traumatic Stress Disorder (PTSD) (David, Kutcher, Jackson, & Mellman, 1999; Hamner, Frueh, Ulmer & Arana, 1999; Seedat, Stein, Oosthuizen, Emsley, & Stein, 2003). Studies with civilian samples have been much less common. A critical question that has been raised in the literature is whether AVHs in PTSD are better conceptualised as pseudohallucinations linked to dissociative states, rather than as psychotic symptoms.

Brewin and Patel (2010) suggested that AVHs are reported by 67% of a civilian sample with PTSD, but this runs counter to clinical descriptions of the disorder; AVHs are not included as a criterion in the DSM-V, nor are they included as a key focus of treatment in any of the current evidence-based interventions for PTSD. Therefore, there remains an important question of whether particular types of trauma exposure or trauma history are likely to be associated with pseudohallucinations and whether there was an association between the experience of pseudohallucinations and other dissociative symptoms.

In study 3, using both a self-report measure of dissociative experiences and a semi-structured interview to assess pseudohallucinations in trauma survivors, we sought to determine if the prevalence of pseudohallucinations in a British sample of adult survivors of repeated physical and sexual trauma was as high as has been previously reported. We also aimed to determine whether the frequency of pseudohallucinations was associated with the experience of childhood versus adult trauma, with other dissociative symptomatology and with the experience of comorbid depression.

4.2 Research paper: *Prevalence of Auditory Pseudohallucinations in Adult Survivors of Physical and Sexual Trauma with Chronic Post-Traumatic Stress Disorder (PTSD)*

4.2.1 Abstract

Auditory Verbal Hallucinations (AVHs) are commonly associated with psychosis but are also reported in post-traumatic stress disorder (PTSD). Hearing voices after the experience of stress has been conceptualised as a dissociative experience. Brewin and Patel's (2010) seminal study reported that hearing voices is relatively common in PTSD, as hearing voices was associated with PTSD in half and two thirds of military veterans and survivors of civilian trauma, respectively. The authors conceptualised these voices as "auditory pseudohallucinations." To build upon this work, we administered Brewin and Patel's' interview to adult survivors ($n = 40$) of physical and sexual trauma with chronic PTSD, and healthy controls ($n = 39$). In contrast to previous findings, only 5% ($n = 2$) of our PTSD sample reported recently hearing a voice that was consistent with an auditory pseudohallucination, with no reports in our control group. Thus, no support was provided for auditory pseudohallucinations as a significant symptom in this population.

4.2.2 Introduction

Auditory verbal hallucinations (AVHs) can be defined as the experience of hearing a voice in the absence of an appropriate external stimulus (Stanghellini & Cutting, 2003). However, the conceputalisation of AVHs and the extent to which hearing voices can be considered phenomenologically independent from other intrusive, unwanted and/or unintended cognitions, has been a matter of enduring academic and clinical debate (e.g., Aleman & Larøi, 2008; Slade & Bentall, 1988). AVHs are commonly associated with psychosis(American Psychiatric Association, 2013) and are recognised as a frequent source of distress and interference with functioning. As a result, AVHs are a major target of pharmacological interventions (Shergill, Murray, & McGuire, 1998) and psychological

therapies (Thomas et al., 2014) for psychosis. However AVHs have also been identified in other disorders (Pilton, Verese, Berry & Bucci, 2015), where the experience of voices can impede therapeutic efficacy. Consequently, there are recommendations for tailoring existing therapeutic interventions (such as cognitive behaviour therapy; CBT) specifically for the treatment of AVHs (e.g. Smailes, Alderson-Day, Fernyhough, McCarthy-Jones, & Dodgson, 2015). Although other types of (pseudo)hallucinatory experiences, such as visual and olfactory hallucinations have been described in individuals with severe PTSD (e.g. Hamner, 1997; Hamner, Frueh, Ulmer, & Arana, 1999), the focus of the current study was on the experience of hearing voices.

In non-psychotic conditions, AVHs are most commonly reported in cases of combat-related Post Traumatic Stress Disorder (PTSD) (David, Kutcher, Jackson, & Mellman, 1999; Hamner et al., 1999; Seedat, Stein, Oosthuizen, Emsley, & Stein, 2003). Prevalence rates of AVHs in combat-related PTSD range from 20% to 58% (Brewin & Patel, 2010; David et al., 1999; Hamner et al., 1999; Ivezic, Bagariæ, Oruè, Mimica, & Ljubin, 2000; Seedat et al., 2003). Studies with civilian samples have been much less common. Anketell et al. (2010) evaluated a mixed sample of general psychiatric outpatients and those who had experienced conflict-related trauma and found that 50% of their sample with chronic PTSD reported AVHs. Similarly, Brewin and Patel (2010) suggested that AVHs are reported by a remarkable 67% of a civilian sample with PTSD.

This suggested preponderance of AVHs in sufferers of PTSD runs counter to clinical descriptions of the disorder. AVHs are not included as a criterion in the DSM-5 (American Psychiatric Association [APA], 2013) criteria for PTSD, nor are they included as a key focus of treatment in any of the current evidence-based interventions for PTSD (i.e., eye movement desensitisation and reprocessing [EMDR], trauma-focused CBT, prolonged exposure, and cognitive processing therapy [CPT])). If AVHs are indeed a common and central component

of the phenomenology of not only combat-related but civilian PTSD then this would have important nosogolical and therapeutic implications. Given this, the nature of AVHs in PTSD and the frequency of their experience in community PTSD samples is in need of further investigation and that is the focus of the present study.

A critical question is whether AVHs in PTSD are better conceptualised as pseudohallucinations linked to dissociative states, rather than as psychotic symptoms. Strong links between psychotic symptoms, including AVHs, and dissociative experiences have been demonstrated in a number of studies, in both clinical and non-clinical populations (see Moskowitz, Barker-Collo, & Ellson, 2004 for review). Allen, Coyne, and Console (1997) argued that dissociative detachment deprives individuals of "internal and external anchors". The absence of anchors is proposed to increase an individual's sense of feeling disconnected from the world, interpersonal relationships, and within their intrapersonal self, resulting in a sense of confusion and disorientation, and critically, in an impairment in reality-testing. In this way, Moskowitz and Corstens (2007) proposed that for individuals hearing voices when exposed to high levels of stress, AVHs should be conceptualised as dissociative experiences. Similarly, Longden, Madill, and Waterman (2012) proposed that voices could be conceptualised as dissociated or 'disowned components of the self', arising from the failure to integrate adverse and traumatic sensory and psychological experiences into the context of the self. Hallucinatory experiences might therefore reflect directly or indirectly dissociated traumatic content (e.g., the voice of an abuser) impinging on conscious awareness (e.g. Anketell et al., 2010), rather than a psychotic symptom.

Indeed, prior research has demonstrated a strong correlation in veterans with PTSD between hearing voices and other dissociative experiences both in the present and at the time the traumatic event occurred (Brewin & Patel, 2010). Wearne, Curtis, Genetti, Samuel, and Sebastian (2017) also showed that dissociative experiences (including depersonalisation and

derealisation) were a better predictor of AVHs than a diagnosis of PTSD. Both theory and prior research therefore suggest that the experience of AVHs in PTSD may be better understood as a dissociative experience and thus conceptualised as 'pseudohallucinations' and we shall use this term for the rest of the current article. A focus of the present study was therefore on the association between the experience of such pseudohallucinations and other dissociative symptoms.

For those experiencing civilian PTSD this raises the question of whether particular types of trauma exposure or trauma history are more or less likely to be associated with the experience of pseudo-hallucinations, as we know that dissociation is differentially associated with particular profiles of trauma exposure (Briere, 2006). The experience of childhood sexual abuse, has been established as a predictor of pseudohallucinations in samples both with and without psychosis (Hammersley & Fox, 2006; McCarthy-Jones, 2011; Read, McGregor, Coggan, & Thomas, 2006; Wearne et al., 2017), although the properties of the voices in these populations do not appear to differ between those with and without CSA (e.g. Offen, Waller, & Thomas, 2003). For this reason, the present study focused on a civilian sample presenting with PTSD following sexual assault, abuse or violence either in childhood or adulthood. We reasoned that the predicted high incidence of dissociation in this population would mean that the clinical presentation should include pseudohallucinations if such experiences are indeed a prevalent symptom in civilian samples. This population also allowed us to elucidate putative associations between pseudohallucinations and trauma in childhood.

Hamner and colleagues (Hamner, 1997; Hamner et al., 1999) have also suggested that pseudohallucinations in PTSD might be best accounted for as a function of comorbid depression. Since depression is not typically associated with high levels of dissociation, Brewin and Patel (2010) proposed that finding high levels of

pseudohallucinations in a depressed sample would argue against their being a dissociative phenomenon. In their study of civilians with PTSD, Brewin and Patel (2010) collected an additional depressed sample without a primary diagnosis of PTSD. They found that 10% of the depressed sample reported the experience of pseudohallucinations and that these individuals scored in the low range on dissociative measures.[1] From this, Brewin and Patel (2010) concluded that pseudohallucinations were not a function of comorbid depression but likely to be an aspect of dissociation. However, showing that pseudohallucinations do not characterize individuals with depression is not the same as investigating the role of comorbid depression in those with PTSD. In the present study, we therefore evaluated the relationship between depression comorbidity and pseudohallucinations in our community PTSD sample. In sum, using both a self-report measure of dissociative experiences and a semi-structured interview to assess pseudohallucinations in trauma survivors (Brewin & Patel, 2010), we sought to determine if the prevalence of pseudohallucinations in a British sample of adult survivors of repeated physical and sexual trauma was as high as reported in the two previous studies with civilian samples (Anketell et al., 2010; Brewin & Patel, 2010). We also aimed to determine whether the frequency of pseudohallucinations was associated with the experience of childhood versus adult trauma. Finally, we aimed to explore the nature of pseudohallucinations by determining if their experience was associated with other dissociative symptomatology and with the experience of comorbid depression.

4.2.3 Method

4.2.3.1 Participants

Ethics approval was obtained from the NHS National Research Ethics Service (reference 11/H0305/1). We recruited adults (aged 18–62) with a current diagnosis of chronic[2] PTSD ($n = 40$) according to the DSM-IV (APA, 2013), following a history of sexual, physical and/or emotional abuse (as Criterion A events), and a healthy control group with no

history of disordered mental health ($n = 40$), as determined using the Structured Clinical

Interview for the *DSM-IV* (SCID-I; First, Spitzer, Gibbon, Williams, & Janet, 1996). Fifteen

of the PTSD participants were recruited from the Haven – A Sexual Assault Referral Centre

(SARC) in Paddington. They were invited to take part following attendance at the Haven

follow-up clinic or during an assessment for counseling or psychological therapy. Twenty-

five of the PTSD participants and all of the control participants were recruited from the MRC

Cognition and Brain Sciences Unit Volunteer Panels –databases of some 2000 community

volunteers who have agreed to help with psychological research. Volunteers were recruited to

the panels via advertisements in local newspapers.

According to the SCID-I, 35 (88%) of the PTSD group were exposed to between two

and '*too many to count*' past traumatic experiences ('Criterion A traumas'). Nineteen

(47.5%) reported that they experienced trauma prior to the age of 18, with the remaining 52%

having only experienced trauma during adulthood (allowing us to compare AVHs between

those with and without childhood trauma histories). Thirty eight percent of the total sample

had experienced sexual assault during adulthood. All participants met DSM-IV criteria for

chronic PTSD occurring as a result of these traumatic experiences. Sixteen (40%) had a

comorbid diagnosis of Major Depressive Disorder (MDD), as determined by the SCID-I. One

control participant met criteria for Obsessive Compulsive Disorder and was excluded.

4.2.3.2 Procedure and Measures

Participants completed the measures in a single session, individually and face-to-face

with the experimenter, in a quiet testing room. All participants completed the SCID-I, to

derive diagnoses of PTSD and other Axis I disorders and to determine that criteria

for Schizophrenia Spectrum and Other Psychotic Disorders were not met. In addition,

participants completed the Beck Depression Inventory (BDI-I; Beck, Ward, Mendelson,

Mock, & Erbaugh, 1961[3]) to assess current depression symptomatology, along with two

measures of hearing voices – the Dissociative Experiences Scale II (DES-II; Item 27 focuses on hearing voices), and a semi-structured interview to assess hearing voices (Brewin & Patel, 2010).

4.2.3.2.1 Dissociative Experiences Scale-II (DES-II; Carlson & Putnam, 1993).

The Dissociative Experiences Scale (DES-II) is a 28-item self-report instrument and widely used clinical tool to measure dissociation. The DES-II has good validity and reliability, and good psychometric properties (Carlson et al., 1993; Carlson & Putnam, 1993). Hearing voices is included as Item 27 on the DES-II: *"Some people sometimes find they hear voices inside their head that tell them to do things or comment on things they are doing. Circle a number (0–100) to show what percentage of time this happens to you."* This item is part of a subset of DES-II items (the Dissociative Experiences Scale-II Taxon; DES-T; comprising items 3, 5, 7, 8, 12, 13, 22 and 27) that differentiate individuals with pathological dissociation from those showing normal variation in dissociative experiences (Waller, Putnam, & Carlson, 1996).

4.2.3.2.2 Auditory Pseudohallucinations Interview (Brewin & Patel, 2010).

Pseudohallucinations Interview was administered to all PTSD and control participants. This measure was taken from prior evaluations of pseudohallucinations (Brewin & Patel, 2010). To our knowledge, this measure has not been used in any other published studies. We administered the semi-structure interview in its entirety, as used by Brewin and Patel (2010).

The interview asked *"Have you been aware in the past week of a stream of thoughts that repeats a very similar message over and over again inside your head? Sometimes the thoughts may just comment, or give instructions, or say if something is good or bad"*. If participants responded yes, they were asked *"Do you experience this as a voice or as a stream of thoughts?*[4]*"* If identified as a voice, details of up to three separate voices were

recorded, including gender, whether it was a voice they recognised, how the voice referred to them, how often they currently heard the voice, when they had first noticed the voice, whether the voice related in any way to a past traumatic experience and the extent to which the voice seemed real (i.e., like someone was actually speaking to them). Participants described what the voice typically said and rated the effect of hearing the voice on a five-point scale for the extent to which they a) believed the content, b) could disagree with the voice, and c) could control the voice. Finally, again using five-point scales, they were asked to rate the extent to which *encouraging, critical, happy, angry, rational, intimidating, supportive,* and *strong* described each voice.

4.2.4 Results

Demographic and symptom data are presented in Table 4.1. We observed the expected between-group difference in BDI-I scores. The control group were younger and more educated than the PTSD group, thus these variables were covaried in analyses. All results remained the same when the participants who had only experienced one trauma (n = 5) were removed from analyses, and data were re-analysed including only those who had experienced repeated traumas. The relationship between the number of experienced traumatic events and the key outcome measures is presented in Fig. 4.1.

Table 4.1. Mean (standard deviation) clinical Characteristics of PTSD Participants and Controls

	PTSD Group (n=40)	Control Group (n=39)	Statistical Test	Effect Size (d)
Years in Education	14.15 (2.54)	17.03 (1.90)	$t(70.37)= 5.78, p<.001$	
Age (in years)	34.40 (12.35)	28.95 (8.22)	$t(67.39)=2.33, p=.02$	
Beck Depression Inventory score	27.10 (12.59)	3.46 (6.16)	$t(55.39)=10.42, p<.001$	
Dissociative Experiences Scale[1] (DES-II) score	26.80 (18.95)	5.41 (6.04)	$F(1, 75) = 22.03, p<.001$	0.54
DES-II Item 27 (hearing voices) score	13.00 (25.34)	0.00 (0.00)	$F(1, 75) = 6.36, p=.01$	0.29
DES-T score	21.44 (19.36)	1.85 (3.33)	$F(1, 75) = 19.57, p <.001$	0.51

1. DES-II analyses covaried age and education

Figure 4.1. a) Relationship between the Number of Experienced Traumatic Events and the CTSQ Total Score for the PTSD Group
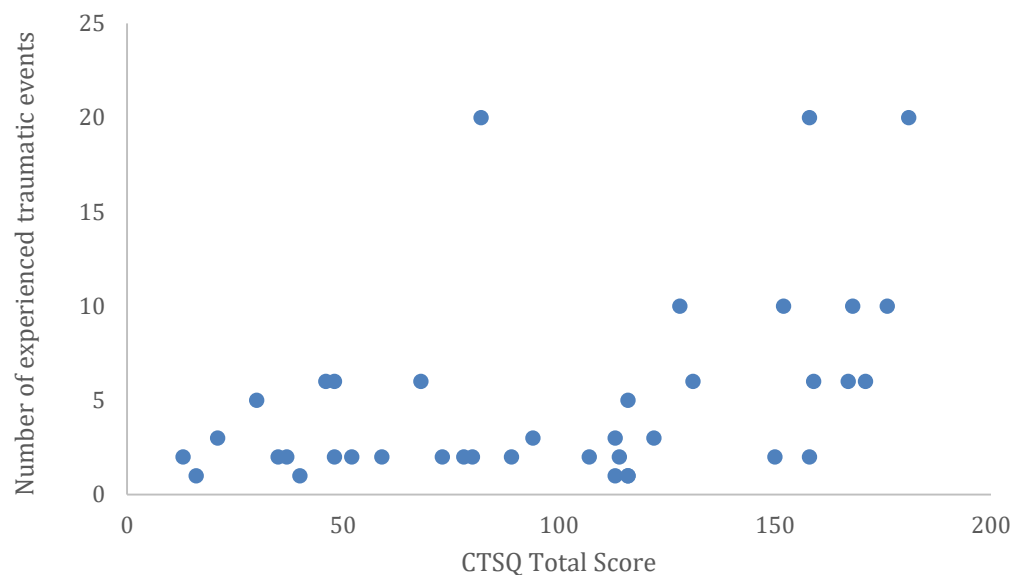
b) Relationship between the Number of Experienced Traumatic Events and the DES-II Total
Score for the PTSD Group
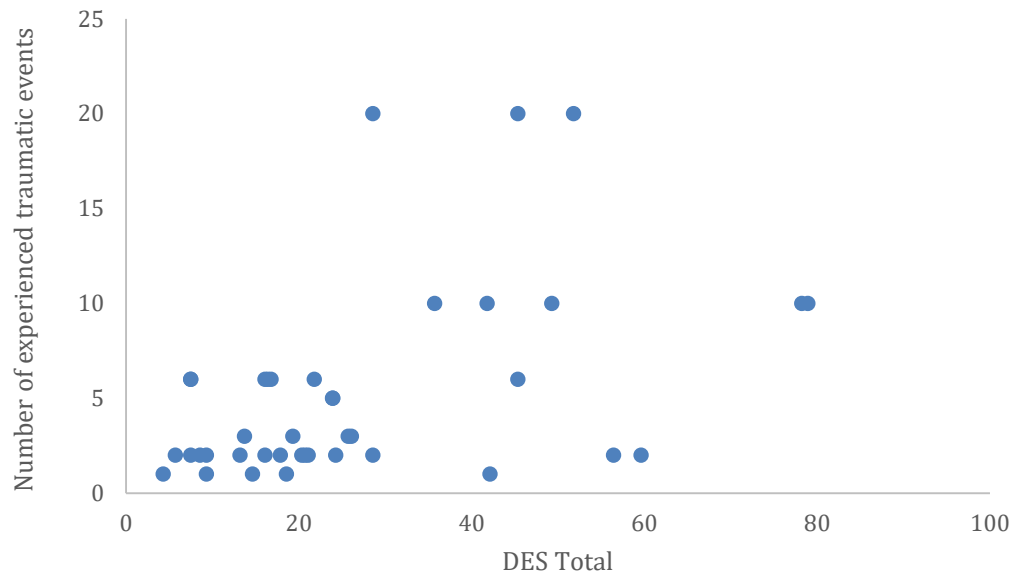
c) Relationship between the Number of Experienced Traumatic Events and the DES-T for the
PTSD Group
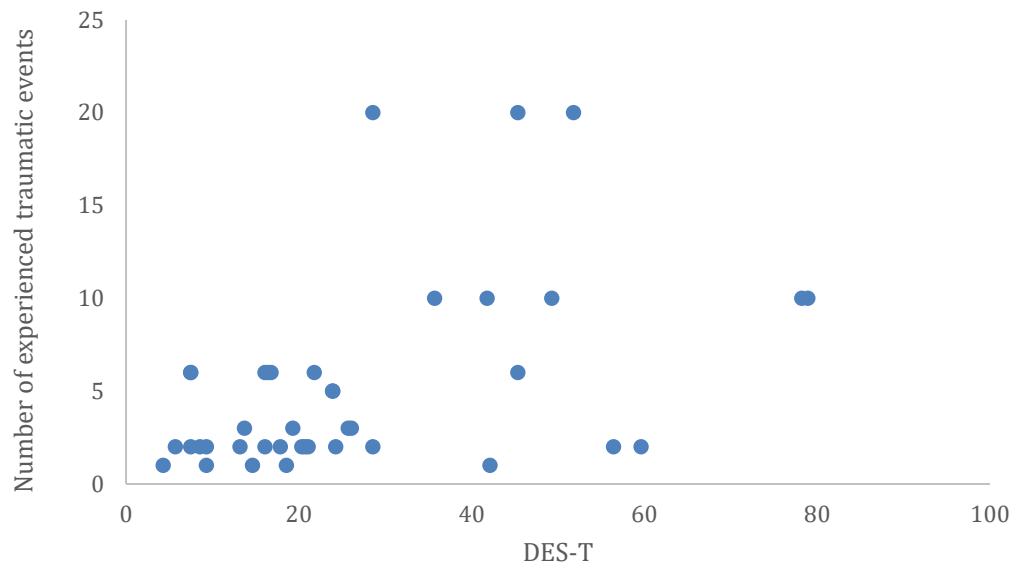
4.2.4.1 DES-II data.

DES scores across groups are also displayed in Table 4.1. As can be seen from the table, ANCOVAs including age and education as covariates comparing the PTSD and control groups revealed significant group differences on the DES-II, DES-T and DES Item 27, with

the PTSD group scoring significantly higher on all indices. Scores on Item 27 were strongly correlated with the sum of the remaining DES-T items, $r(38) = 0.68$, $p < .001$. Within the PTSD sample, 13/40 (32.5%) answered positively (reported hearing voices >10% of the time) to Item 27. This contrasts with 48.4% of Brewin and Patel's (2010) veteran sample. None of the controls endorsed this item.

Those within the PTSD group reporting childhood trauma ($n = 19$) scored significantly higher on the DES-II (M = 33.31, SD = 22.52), $t(36) = 2.32$, $p = .03$, and on the DES-T (M = 27.04, SD = 23.33), $t(36) = 2.08$, $p=.05$, than those reporting trauma only in adulthood ($n = 21$; DES-II: M = 19.55, SD = 12.57; DES-T: M = 14.47, SD = 12.22). However, critically, there was no support for a difference between groups on Item 27 (childhood: M = 11.58, SD = 25.44; adulthood: M = 11.05, SD = 22.08), $t(36) = 0.07$, $p = .95$, d = 0.02, where the effect size was trivial (Cohen, 1992).

There were positive significant correlations between the DES-T scores and the total score on the CTSQ, $r(38) = 0.64$, $n = 40$, $p < .001$ and the BDI, $r(38) = 0.45$, $n = 40$, $p = .004$) for the PTSD group.

Sixteen (40%) participants with PTSD also had a diagnosis of MDD. Scores on the DES-II did not significantly differ between those with (DES-II: M = 28.48, SD = 17.20; DES-T:M = 23.52, SD = 17.97; Item 27: M = 11.25, SD = 26.05) and without (DES-II: M = 25.67, SD = 20.31; DES-T: M = 20.05, SD = 20.50; Item 27: M = 14.17, SD = 25.35) comorbid MDD on the DES-II, $t(38) = 0.46$, $p = .65$, DES-T, $t(38) = 0.55$, $p > .05$, or Item 27, $t(38) = -0.35$, $p = .73$ and effect sizes were trivial (0.11 for DES-II, 0.12 for DES-T and 0.10 for Item 27) (Cohen, 1992).

4.2.4.2 Semi-structured interview

In response to the interview, 18/40 (45%) participants with PTSD reported having experienced a stream of thoughts in the past week. Of these, 11 (61.1%) had an MDD

diagnosis and eight (44.4%) reported experiencing childhood trauma. However, only two (11.11%) of those participants reported hearing repetitive thoughts in the form of a voice speaking to them. Each had PTSD following childhood trauma (one had experienced sexual and one physical childhood abuse). This contrasts starkly with Brewin and Patel's (2010) finding of 67% of a heterogeneous civilian PTSD sample reporting voices on the same interview measure. Both participants here regarded the voice as a manifestation of their own thoughts (a "pseudohallucination", Brewin & Patel, 2010). Each reported hearing one voice, which they recognised. One participant identified the voice as her father, who referred to her by name, and the other was identified as the female participant's own voice, which referred to them as *'stupid bitch'* and was described as *'talking to me like someone else would'.* In both cases, the voice was heard *'many times a day'.* The effect of the voice was described as positive in one case (own voice) and negative in the other (father's voice). Both participants described the voice as having been present since childhood.

In the control group, 3/39 (8%) participants reported having experienced a stream of thoughts, but none identified these as a voice.

4.2.5   Conclusions

In this study, we sought to determine if the prevalence of auditory pseudohallucinations in a British sample of adult survivors of physical and sexual trauma with chronic PTSD was as high as reported in the two previous studies with civilian samples (Anketell et al., 2010; Brewin & Patel, 2010). We also aimed to determine whether the frequency of auditory pseudohallucinations was associated with the experience of childhood versus adult trauma. Finally, we aimed to explore the nature of auditory pseudohallucinations by determining if their experience was associated with other dissociative symptomatology and with the experience of comorbid depression.

In our PTSD sample, 32.5% answered positively (reported hearing voices >10% of the time) to Item 27 of the DES-II. When this question was presented within a semi structured interview, 45% of the PTSD group endorsed such experiences. However, when probed as to whether they experienced this *"as a voice or a stream of thoughts",* only 2/40 (5%) of our sample of survivors of physical and sexual trauma reported recently hearing *"a voice"* that was consistent with an auditory pseudohallucination. This is significantly lower than the 67% of Brewin and Patel's (2010) PTSD sample, using the same semi-structured interview approach, and than the 50% reported by Anketell et al. (2010). None of our healthy control participants endorsed hearing voices on the interview measure nor on item 27 of the DES-II.

We also sought to evaluate the relationship of the experience of childhood trauma and of comorbid depression with the experience of hearing voices. However, as only two participants endorsed hearing voices, meaningful analyses were not possible. Of note, however, we found no support for differential endorsement of the relevant items on the DES for those with PTSD as a function of childhood trauma, or for those with PTSD and comorbid depression.

There are a number of factors which may have contributed to the discrepancy in endorsement of voices on the DES-II relative to the interview. A key difference between these measures is that during the interview the individual is required to explicitly distinguish between the endorsed experience being either a) a voice talking to them or b) a stream of thoughts, and the majority (all bar two) of the participants reported that it was a stream of thoughts. It is possible that the DES-II may capture rumination and internal self-talk, and thus the more fine-grained evaluation provided by the interview question may account for why the incident reduced from that reported in the DES-T. Of course, there is also the possibility that participants did not want to discuss the voice face-to-face with a clinician for fear of negative

evaluation or discomfort, and thus more readily reported hearing voices in the self-report format but we feel this is unlikely given that participants had consented to take part in the study knowing that this was a focus. These issues will need to be addressed in future studies.

In our sample of adults with a history of repeated physical and sexual trauma, we therefore found no evidence to support the previously reported high prevalence rates of auditory pseudohallucinations in other PTSD samples assessed using similar interview measures. The question of course is raised as to why there should be such a discrepancy between our findings and previous work. One possibility is that auditory pseudohallucinations are not a feature, specifically, of PTSD populations who have experienced repeated sexual or physical interpersonal trauma. However, given the previous literature linking such trauma exposure to higher levels of dissociation (Briere, 2006) and to the experience of auditory pseudohallucinations in individuals with and without psychosis (Hammersley & Fox, 2006; McCarthy-Jones, 2011; Read, van Os, Morrison, & Ross, 2015; Wearne & Genetti, 2015), one would have predicted *a priori* a higher prevalence of AVHs in the present sample relative to a heterogeneous community sample of the kind evaluated by Brewin and Patel (2010). Another possibility is although auditory pseudohallucinations have been conceptualised in the literature as a distinct psychological symptom, they should instead be considered as an artefact of recurrent intrusive memories and the auditory re-experiencing of traumatic events. We found that 18/40 of our PTSD group reported having experienced a stream of thoughts but only two reported this was a voice speaking to them when probed by a clinician with extensive experience of working with complex PTSD populations. Perhaps only these two participants had found the metaphor of "hearing voices" to be a helpful way of explaining a recurrent intrusion.

A recent review (Steel, 2015) explored the relationship between hallucinations (including AVHs) and stressful or traumatic life events, with the reviewed studies indicating that there was a 12–40% overlap in the content of pseudohallucinations and traumatic memories The largest phenomenological survey of AVHs to date involved interviewing 199 voice hearers (McCarthy-Jones et al., 2014). Of these, 12% reported that they heard voices, which were identical replays of memories of previous conversations, whilst 31% reported that the relationship was similar but not identical. Similarly, studies reviewed by Steel (2015) suggested the presence of thematic links between prior trauma and the content of hallucinations. Steel (2015) concluded that the relationship between hallucinations and past traumatic experiences remains elusive, and thus is in need of further investigation. If AVHs *are* the auditory re-experiencing of past traumatic events then this has important implications for treatment; for example, the content of AVHs may represent hotpots that require rescripting in trauma-focused CBT and other similar interventions.

Limitations of this study include the specific focus on individuals with a chronic history of multiple incidences of sexual, physical and/or emotional abuse, rather than a broader inclusion of other, non-interpersonal traumatic experiences. As is common when working with survivors of repeated traumas, it was difficult to distinctly separate out different trauma types and their timing, especially with those who had experienced childhood trauma, and this therefore represents a methodological limitation. Our control and PTSD groups were also not matched for age and education level, although this turned out to be moot as there was minimal difference in our core construct of interest – endorsement of hearing voices in a semi-structured clinical interview. An additional limitation of the study was not including a formal measure of PTSD severity, such as the Clinician-Administered PTSD Scale

(CAPS; Blake et al., 1995), although all participants did meet criteria for the Chronic PTSD specifier on the SCID.

In summary, in contrast to our predictions we found no support for a significant presence of auditory pseudohallucinations in a civilian sample of adults with chronic PTSD following sexual and/or physical interpersonal trauma. Our results suggest that prior reports of high prevalence of auditory pseudohallucinations in civilian samples are in need of further replication.

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END OF RESEARCH PAPER

4.3   Discussion and integration

In our sample of adults with a history of repeated physical and sexual trauma, we

found no evidence to support the previously reported high prevalence rates of auditory

pseudohallucinations in other PTSD samples assessed using similar interview measures. We

predicted that there would be a higher prevalence of AVHs in a sample of individuals who

had developed PTSD following repeated sexual or physical interpersonal trauma, relative to a

heterogeneous community sample of the kind evaluated by Brewn and Patel (2010). This is

due to literature linking exposure to interpersonal trauma with higher levels of dissociation

(Briere, 2006). However, this was not the case.

AVHs have been proposed as a *distinct* psychological symptom, that have been

observed in individuals with and without psychosis (Hammersley & Fox, 2006; McCarthy-

Jones, 2011; Read et al., 2005; Wearne et al., 2015), but we have discussed the possibility

that AVHs should be considered as an artefact of the intrusive memories and auditory re-experiencing of traumatic events, commonly experienced by individuals with PTSD. In support of this, Steel (2015)'s review which explored the relationship between AVHs and stressful or traumatic events, found a 12-40% overlap in the content of pseudohallucinations and traumatic memories. Clinically, we understand and recognise that intrusive memories of past traumatic experiences are frequently auditory, as well as visual. And individuals with PTSD who report *'hearing a voice,'* can often identify that voice as one of a past abuser, and often identify particular content as a *'reliving'* or *'re-experiencing'* of something said to them. However, we do not have enough evidence from our study to fully support this.

The relationship between AVHs or "pseudohallucinations" and past traumatic experiences clearly needs further investigation, as it has clear implications for treatment. If AVHs *are* the auditory re-experiencing of past traumatic events the content of AVHs may represent "hotspots" that require rescripting in trauma-focused CBT and other similar interventions. Perhaps future studies could focus more on the content of AVHs and the overlap between AVHs and past traumatic events, with less reliance on this experience being conceptualised as "hearing voices."

<div align="center">**CHAPTER 5**</div>

Research paper: *Negative and positive emotional complexity in the autobiographical representations of sexual trauma survivors with posttraumatic stress disorder (PTSD)*

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For this paper, the candidate planned the study, collected all of the data, analysed the results and wrote the paper. The co-authors supervised the research process and made comments on iterative drafts of the manuscript.

5.1 Background to the Study

Much of the research literature has identified that multiple early traumatic experiences commonly result in impairment in developmental processes including the ability to recognise, identify and regulate emotion. Impairments in regulating emotion are significant for individuals with PTSD as they can compromise one's ability to cope with and minimise the distress associated with the re-experiencing symptoms, which characterise the disorder. Emotional awareness and effective emotion regulation have been associated with good mental health, but emphasis has also been placed on the *diversity* of emotional experience (Quoidbach et al., 2014). It has been suggested that more specific, differentiated emotional states have greater adaptive value than less differentiated, more global affective states because differentiated emotional states can be more easily identified and understood by

others and are less subject to misattribution (e.g., Kehner, Locke & Aurain, 1993). It has also been argued that differentiated emotional states provide richer information to guide the use of specific strategies to effectively regulate emotion (Barrett & Gross, 2001; Barrett et al., 2001), which is important for individuals with PTSD in the regulation of distressing emotions.

Quoidbach et al., (2014) examined the benefits of greater emotional diversity – or *emodiversity* as it has been termed and found that greater levels of emodiversity were associated with better mental and physical health. In study 4, we sought to expand existing research findings on the association between emodiversity and mental health to explore the relationship between emodiversity and clinical manifestations of PTSD. In order to do this, we used the data collected for the self-structure and life structure studies in studies 1 and 2. with our samples of female survivors of sexual abuse and assault with PTSD, relative to non-clinical control participants.

5.2 Research paper: *Negative and positive emotional complexity in the autobiographical representations of sexual trauma survivors with posttraumatic stress disorder (PTSD)*

5.2.1 Abstract

This study examined the diversity of experienced positive and negative emotions – emodiversity – within two existing datasets involving female survivors of sexual abuse and assault, with chronic Posttraumatic Stress Disorder (PTSD). Study 1 investigated the structure of the self-concept and Study 2 explored the organization of past autobiographical knowledge. In each study, we measured emodiversity for positive and negative emotion constructs in the PTSD samples, relative to healthy control participants with no PTSD and no history of sexual trauma. Results confirmed our hypotheses that individuals with chronic PTSD would show elevated negative emodiversity and reduced positive diversity across both

the structure of the self-concept and the structure of the life narrative, relative to control participants. The current results differ from community studies where greater negative emodiversity is associated with better mental health but mirror those from a prior study with individuals with Major Depressive Disorder. This suggests that valence-based differences in emodiversity are potentially a broader transdiagnostic marker of chronic emotional disorder.

5.2.2 Introduction

Emotions are fundamental to human experience. Historically, research indicates that high levels of positive emotion and low levels of negative emotion are an essential component of good mental health and subjective well-being (e.g., Fredrickson, 2001). However, there is increasing interest in how the complexity of emotion experience, over and above this simple balance of positive and negative felt emotions, can underpin mental health (Barrett, 2017). The richness and complexity in people's self-reported experience of emotion is a primary aspect of the broad concept of *emotional complexity* (e.g., Lindquist & Barrett, 2008), which has been linked to adaptive emotion regulation and mental health (Labouvie-Vief & Medler, 2002; Ryan & Deci, 2001).

Emotional complexity has been operationalized in a variety of ways, which can be grouped into two broad categories: emotional granularity and emotional covariation. Granularity (Barrett, 1998, 2004; Barrett, Gross, Christensen, & Benvenuto, 2001) refers to the degree to which individuals can describe their emotional life with precision, using discrete emotion descriptors to precisely characterize different emotions. Covariation, or dialecticism, refers to the experience of both positive and negative emotional states in a contemporaneous way, or in ways that are temporally related (Bagozzi, Wong, & Yi, 1999). Emotional granularity and emotional covariation measures have been reported to capture important aspects of the complexity of one's emotional life (Quoidbach et al., 2014). For example, the propensity to experience positive and negative affect independently

('granularity') has been linked to various indicators of adjustment (Carstensen, Pasupathi, Mayr, & Nesselroade, 2000; Coifman, Bonanno, & Rafaeli, 2007; Reich, Zautra, & Davis, 2003).

Recent research has focused on the *diversity* of emotion experience that an individual reports, and questions have been asked regarding whether the *diversity* within an individual's emotional life is beneficial for greater mental and physical health (Quoidbach et al., 2014; although see Sommers, 1981, for discussion of 'emotional range'). The thesis is that there are individual differences in how people understand, interpret and communicate the range and nature of their own emotion experience. Some people are more aware of and able to articulate a wide range of discrete, specific emotions while others are more prone to represent how they feel with a relatively narrow set of specific descriptors alongside more global self-characterizations of their emotional life (e.g., feeling 'good' or 'bad') . It has been suggested that a wider range of experience of specific, differentiated emotional states (e.g., happiness, excitement, and exhilaration) has greater adaptive value than a narrower range and than less differentiated, more global affective states (e.g., feeling good). The theory is that differentiated emotional states can be more easily identified and understood by others around us, and are less subject to misattribution (e.g., Kehner, Locke & Aurain, 1993). Moreover, differentiated emotional states are also argued to provide richer information to guide the use of specific strategies to effectively regulate emotion (Barrett & Gross, 2001; Barrett et al., 2001). This approach fits within a broader view that biological and psychological flexibility is beneficial for adaptive mental functioning and promotes greater resistance to disease (e.g., Kashdan & Rottenberg, 2010).

Quoidbach et al., (2014) examined the psychological and mental health benefits of such greater emotional diversity – or *emodiversity* as it has been termed. The concept of emodiversity was derived from the literature on biodiversity (i.e., the variety and differential

prevalence of different types of life forms within an ecosystem). Greater biodiversity has been associated with adaptive flexibility and greater resilience within an ecosystem (Danovaro et al., 2008; Elmqvist et al., 2003; Heller & Zavaleta, 2009; Potvin & Gotelli, 2008; Rammel & van den Bergh, 2003; Tilman, Reich, & Knops, 2006). Quoidbach et al. (2014) therefore adapted the Shannon Biodiversity Index (Shannon, 1948) to quantify emodiversity using two domains: the richness (how many specific emotions are experienced); and evenness (the extent to which specific emotions are experienced in the same proportion) in what they described as the *'human emotional ecosystem.'* Their hypothesis was that greater emodiversity would be associated with comparable benefits in emotional and physical health, over and above the frequency of positive and negative emotions experienced.

Quoidbach et al. (2014) surveyed 37,000 participants in the general population to measure symptoms of depression and the self-reported diversity of experienced emotion (emodiversity). They computed three emodiversity indices (positive, negative, and global) using the formula derived from the Shannon Biodiversity Index. The richness and evenness of an individual's emotional experience was computed for each of the three indices. Results suggested that greater levels of emodiversity, whether computed for positive emotions, negative emotions or all emotions, were associated with better mental health, in the form of lower levels of self-reported depression symptoms, as well as better physical health, for example, levels of attendance at a doctor's (Quoidbach et al., 2014).

In related research, the tendency to use undifferentiated global emotion descriptors (particularly global negative descriptors) established from both self-report and ecological assessment data has been shown to be associated with a range of mental health disorders including borderline personality disorder (Tomko et al., 2015), social anxiety (Kashdan & Farmer, 2014) and major depressive disorder (Demiralp et al., 2012). Researchers have also recently found that greater diversity in specific positive emotion experience is associated with

lower levels of systemic inflammation, providing a biological basis, perhaps, to help explain how positive emodiversity promotes physical health (Ong, Benson, Zautra, & Ram, 2017).

Complexity in an individual's experience of emotion, including emodiversity, is proposed to index the degree of complexity in the underlying conceptual structure of emotions. Theories of how such conceptual understanding might develop – for instance, the Levels of Emotional Awareness (LEA) approach (Lane & Schwarz, 1987) – posit that increased complexity of emotion experience emerges as a function of the underlying emotional schemas that have developed from early childhood onwards. In this analysis, differences across individuals in the complexity of their emotional lives reflect individual variation in the complexity of the underlying emotional representations that evolve throughout development (Lane & Nadel, 2000). This has led to the proposal (Werner-Seidler et al., 2018) that individuals who have suffered from chronic, sometimes lifelong, mental health problems may actually experience greater diversity of negative emotion experiences, due to their long history, familiarity and discourse with negative emotional constructs (Beck, Rush, Shaw, & Emery, 1979; Ratcliffe, 2015). In this view, negative emodiversity would reflect lifelong 'expertise' with negative emotions (Werner-Seidler et al., 2018) rather than some form of protection against mental health problems (cf. Quoidbach et al., 2014).

Werner-Seidler et al (2018) investigated this proposal in individuals with chronic and lifelong depression. They found that, in contrast to those with elevated scores on depression measures in a general population sample (Quoidbach et al., 2014), chronically depressed individuals instead showed elevated levels of emodiversity for negative emotions relative to control participants who had never suffered depression. For positive emotions, emodiversity was reduced in the chronic, clinically depressed sample in line with the previous community findings. Werner-Seidler et al. (2018) proposed that, taken together, these findings suggest that, although negative emodiversity in the wider population may offer some protection

against depression, for those with chronic clinical depression greater negative emodiversity will have emerged out of their long-term immersion in a complex, emotionally negative, personal narrative.

In the current study we sought to expand on these existing findings by examining the relationship between emodiversity and another mental health condition - chronic posttraumatic stress disorder (PTSD). Our rationale was first to establish whether the greater negative emodiversity associated with recurrent depression extended beyond this clinical syndrome to another chronic mental health problem. Second, recurrent depression is characterized by negative emotionality that infuses an individual's broadest representations of the self, the world and the future (Beck et al., 1979). In contrast, PTSD is ostensibly characterized by negative affect associated with an external precipitating event or events (American Psychiatric Association, 2013), although the affective repercussions are often more profound than this (Bernsten & Rubin, 2006, 2007). We were therefore interested in whether a disorder where negative emotionality is potentially more constrained to discrete areas of experience, would in fact be characterized by elevated negative emodiversity across the entire autobiographical narrative, as has been found in recurrent depression (Werner-Seidler et al., 2018). For that reason, as in the prior clinical depression study (Werner-Seidler et al., 2018), we examined emodiversity within data that reflected the broadest notions of the self and the personal past.

Specifically, we examined emodiversity within two existing PTSD datasets. The first investigated the structure of self-concept (Clifford, Hitchcock & Dalgleish, 2018a) and the second explored the organization of past autobiographical knowledge (Clifford, Hitchcock & Dalgleish, 2018b) in female survivors of sexual abuse and assault, with chronic PTSD. In each study, we measured emodiversity for positive and negative emotion constructs in the

PTSD samples, relative to healthy control participants with no PTSD and no history of sexual trauma.

Based on the earlier clinical depression study (Werner-Seidler et al., 2018), we hypothesized that individuals with chronic PTSD would show elevated negative emodiversity and reduced positive diversity across both the structure of the self-concept and the structure of the life narrative.

5.2.3   Study 1: Emodiversity within the self-structure in PTSD

5.2.3.1 Method

5.2.3.1.1 Participants

Participants for Study 1 were drawn from the study by Clifford et al. (2018a) on the self-structure in PTSD. Full details for inclusion and exclusion are reported in the original article. Briefly, participants were included in the PTSD group if they currently met diagnostic criteria for PTSD, according to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association, 1994) ($n = 23$). Fifteen of these participants were recruited from the Haven; A Sexual Assault Referral Centre (SARC) in London. They were invited to take part following attendance at the Haven follow-up clinic or during an assessment for counseling or psychological therapy. Eight participants were recruited from the MRC Cognition and Brain Sciences Unit Clinical Volunteer Panel – a database of approximately 400 community volunteers with a history of significant mental health problems. Volunteers are recruited to the panel via advertisements in local newspapers and through local clinics.

The participants without PTSD (the Control Group; $n = 22$), had no history of PTSD and no reported history of sexual assault or abuse. They were recruited from the MRC Cognition and Brain Sciences Unit Volunteer Panel – a database of approximately 2000 community volunteers who have agreed to help with psychological research. Volunteers are recruited to the panel via advertisements in local newspapers.

PTSD diagnosis and history, and other Axis I and II psychiatric comorbidity according to the DSM-IV were determined by having participants complete the Structured Clinical Interview for the *DSM-IV* Axis I Disorders – Clinician Version (SCID, Version 2.0; First, Spitzer, Williams & Gibbon, 1996) and the Structured Clinical Interview for DSM-IV-TR Axis II Personality Disorders (Borderline, Avoidant and Dependant). To be eligible for the study, participants had to be fluent in English and over 18 years of age. Exclusion criteria comprised a diagnosis of substance dependence, a history of psychosis, and organic brain injury. No participants were excluded on these bases.

5.2.3.1.2 Materials and Measures

Self-Structure Task. The Self-Structure Task is described in Clifford et al. (2018a). The task was adapted from Showers (1992; Showers & Kevlyn, 1999; Showers & Kling, 1996). Participants are given a description of how 'self-aspects' are defined and asked to identify and describe each of their different 'self-aspects'. Participants are then given a deck of 48 cards, each containing a positive or negative trait adjective or phrase and asked to choose all cards which they felt were relevant in describing each of the self-aspects identified. Participants were instructed to use as many or as few adjectives as were relevant, and that repetitions were permitted. Four self-structure metrics (proportion of negative cards used, compartmentalization, and positive and negative redundancy) were derived and these metrics are reported in Clifford et al. (2018a).

Emodiversity. Emodiversity across the card-sort data was calculated as in Werner-Seidler et al. (2018), using the formula below. This procedure was based on the formula provided by Quoidbach et al (2014), which was originally derived from the Shannon biodiversity index (Shannon, 1948):

$$\text{Emodiversity} = \sum_{i=1}^{s} (p_i \text{ x } \ln p_i)$$

Where s = the number of total number of emotional trait adjective cards used in the card sort task by a given participant, and p_i is the proportion of s made up by cards for each emotion trait experienced. A value is calculated for each distinct trait card used, which is then imputed into the above formula. This formula takes into account both the number of traits reported as experienced (richness), as well as the degree to which different traits make up an individual's emotion experience (evenness/abundance). High values represent more diverse emotion experience. Emodiversity indices are calculated separately for negative and positive emotional traits.

5.2.3.1.3 Procedure

Participants completed the tasks and measures individually and face-to-face with the experimenter, in a quiet testing room. Once they had consented, participants completed the SCID and then the Beck Depression Inventory (BDI-I; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) to assess current symptoms of depression, and the Centrality of Events Scale (CES -Negative; Berntsen & Rubin, 2006, 2007) to measure of the extent to which a traumatic memory forms a central component of personal identity. The questionnaire measures were designed to validate our categorical participant group assignments by revealing significantly worse self-reported mood and symptoms of PTSD in the PTSD group relative to the Control Group. In a separate session, approximately a week later, participants completed the card-sorting task.

5.2.3.2 Results

5.2.3.2.1 Participant characteristics

As described in Clifford et al. (2018a), according to the SCID, in the PTSD group, nine participants also met criteria for a diagnosis of Major Depressive Disorder (MDD), with a current Major Depressive Episode, 19 met criteria for a past Major Depressive Episode, one for current panic disorder (secondary to PTSD), four for current Borderline Personality Disorder (BPD) and two for current Avoidant Personality Disorder. In the Control Group, one participant met criteria for current MDD and five met criteria for a past Major Depressive Episode. The participant in the Control Group who met criteria for current MDD was excluded from analyses.

The remaining descriptive group data are presented in Table 5.1. Effect sizes are presented as Cohen's *d*s. All confidence intervals (CIs) are 95% confidence intervals. The PTSD and Control Groups did not significantly differ in age, $t(43) = 1.48$, $p = .15$, $d = 0.45$ [95% CI: -0.18, 1.08] or education level, $t(43) = 1.96$, $p = .06$, $d = 0.60$ [-0.03, 1.23]. There were the expected differences in BDI and CES scores between the groups, BDI: $t(27.78) = 6.76$, $p < .001$, $d = 2.57$ [1.73, 3.41]; CES: $t(39.87) = 6.96$, $p < .001$, $d = 2.20$ [1.41, 3.00].

Table 5.1 Means (and standard deviations) of participant characteristics in Study 1.

Category	PTSD Group (*n*=23)	Control Group (*n*=21*)
Years in education	14.87 (2.32)	16.18 (2.17)
Age (in years)	35.87 (14.03)	30.05 (12.26)
Beck Depression Inventory	24.77 (12.83)	4.82 (5.23)
Centrality of Events Scale	80.00 (15.49)	42.95 (19.60)

Note. *****data for one Control Group participant were set aside due to the presence of current MDD

5.2.3.2.2 Emodiversity

The Positive and Negative Emodiversity findings are presented in Figure 5.1. Across all participants, Negative and Positive Emodiversity scores were not significantly correlated, $r(45)= -.05, p = .75$, demonstrating that it is valid to examine diversity indices separately across different valence domains (Quoidbach et al., 2014).

To examine patterns of Positive and Negative Emodiversity across groups, we conducted a mixed model ANOVA with Valence (negative, positive) as the within-subjects factor, Group (PTSD, Control) as the between-groups factor, and Emodiversity index as the dependent variable (cf. Werner-Seidler et al., 2018). There was a significant main effect of Valence, $F(1,43) = 23.94, p < .001, d = 1.48$ [0.78, 2.18], such that there was greater Positive Emodiversity than Negative Emodiversity, and a significant main effect of Group, $F(1,43)=5.77, p=.02, d= 0.73$ [0.09, 1.37], with greater Emodiversity in the PTSD Group relative to the Control Group. There was also a significant Valence × Group interaction, $F(1,43) = 39.34, p < .001, d= 1.89$ [1.14, 2.64]. In line with our predictions, follow-up ANOVAs demonstrated significantly greater Negative Emodiversity for the PTSD group,

$F(1, 43) = 24.90$, $p < .001$, $d = 1.51$ [0.81, 2.21], and significantly greater Positive

Emodiversity for the Control Group, $F(1, 43) = 4.47$, $p = .04$, $d = 0.64$ [0.01, 1.27].
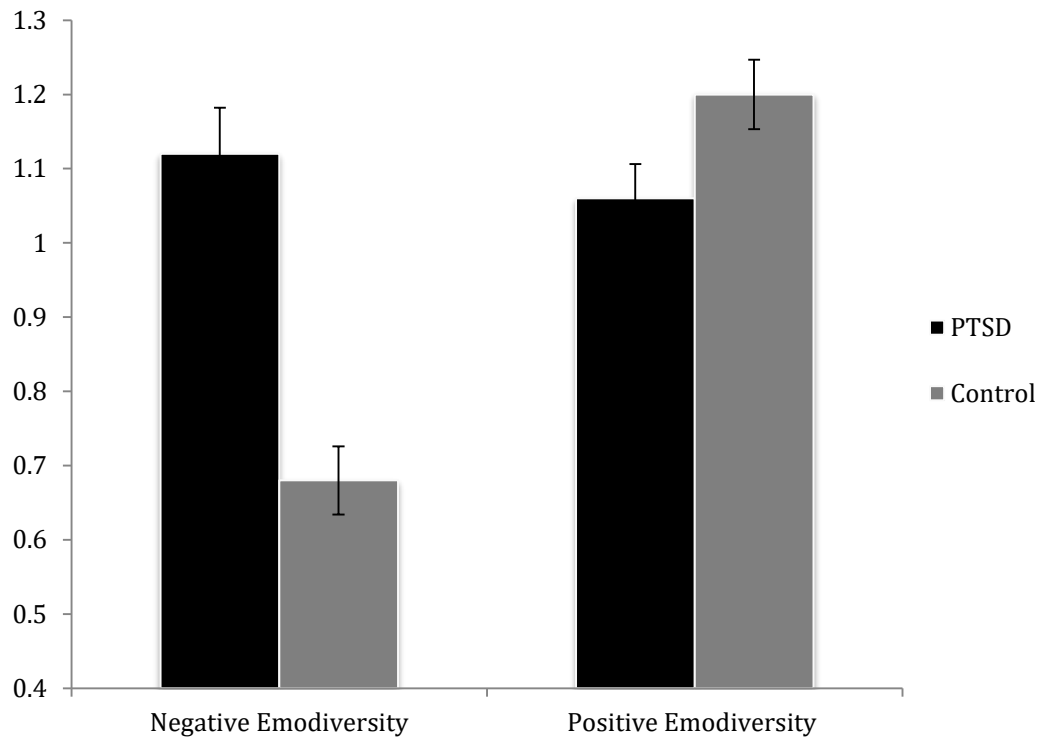
Figure 5.1 Mean (+1 SE) performance (y-axis) for the PTSD and Control Groups for

Negative and Positive Emodiversity within the Self-Structure Task in Study 1

5.2.3.2.2.1 Emodiversity and emotional negativity/positivity within the Self Structure

We next sought to evaluate whether these differential emodiversity effects across

groups were a function of greater overall endorsement of emotional words (cf. Quoidbach et

al., 2014; Werner-Seidler et al., 2018). We first looked at Negative Emodiversity. As a

function of our formula to calculate emodiversity, higher levels of Negative Emodiversity are

linked to the selection of a greater number of negative cards overall in the card-sort, so we

cannot simply use the latter when trying to disentangle emodiversity and general negativity.

However, we can compute the number of times a diverse set of selected negative cards is

used r*epeatedly* by each participant across their Self Structure (i.e., Negative Repetitions). To

calculate this, we used the following formula: Negative Repetitions = (Total number of negative cards used – number of distinct negative cards used)/number of distinct negative cards used. The PTSD Group had a higher mean level of Negative Repetitions (M=0.94, SD=0.85) relative to the Control Group (M=0.47, SD=0.39), $t(31.38) = 2.40$, $p = .02$; d= 0.86 [0.21, 1.51], reflecting a greater repeated endorsement of their diverse set of negative cards across their self-aspects.

We next entered these Negative Repetition scores as a covariate into our main analyses to see if the greater repeated negativity of the PTSD group mitigates our core findings. The pattern of core emodiversity results was unchanged, with a significant Valence ×Group interaction, $F(1,41) = 31.75$, $p< .001$, $d = 1.70$ [0.97, 2.43] and follow-up comparisons showing greater Negative Emodiversity for the PTSD Group compared to the Control Group, $F(1,42) = 17.14$, $p <.001$, $d = 1.25$ [0.57, 1.93], but lower levels of Positive Emodiversity, $F(1,42) = 8.03$, $p = .007$; d= 0.86 [0.21, 1.51].

Using the same formula, we computed the number of times a diverse set of selected positive cards was used repeatedly by each participant across their self-structure (i.e., Positive Repetitions). Interestingly, the PTSD Group actually had a marginally higher mean level of Positive Repetitions reflecting a greater repeated endorsement of their diverse set of positive cards across their self-aspects (M=1.33, SD=1.37) relative to the Control Group (M=1.25, SD=0.80), although this difference was not significant $t(43) = 0.23$, $p = .82$, $d = 0.07$ [-0.55, 0.69].

We then entered these Positive Repetition scores as a covariate into our core analyses and again the pattern of results was unchanged, with a significant Valence × Group interaction, $F(1,42) = 39.68$, $p < .001$, d= 1.90 [1.15, 2.65], and follow-up comparisons showing significantly greater Negative Emodiversity for the PTSD Group, $F(1, 42) = 25.07$,

$p < .001$, $d= 1.51$ [0.81, 2.21], and significantly greater Positive Emodiversity for the Control Group, $F(1, 42) = 6.59$, $p = .01$, $d= 0.77$ [0.13, 1.41].

5.2.3.3 Discussion

Study 1 investigated the diversity of endorsed emotion descriptors – emodiversity – across the self-structure in individuals with chronic PTSD following sexual trauma relative to healthy controls with no history of such experiences. In line with our predictions, we found that, relative to healthy controls, our PTSD participants endorsed a greater diversity of emotion descriptors within the negative affective domain and a reduced diversity of positive descriptors. These effects appeared to be independent of the frequency of endorsement of those descriptors. These findings mirror the emodiversity results in individuals with chronic Major Depressive Disorder reflecting on their autobiographical past (MDD; Werner- Seidler et al., 2018). Thus, findings suggest that elevated negative emodiversity may be a broader transdiagnostic marker of emotional disorders, rather than a specific feature of any one syndrome within the mood, anxiety and stressor disorder spectrum.

The current findings and the previous findings in individuals with depression (Werner-Seidler et al., 2018) are discrepant to earlier results with community samples of mostly healthy individuals. Quoidbach et al. (2014) had shown an association between greater negative emodiversity and reduced symptoms of depression, with the authors arguing that emodiversity thereby serves as a protective factor against mental health problems. The present results suggest that, in chronic clinical samples, different processing dynamics might be operating with greater negative emodiversity in these groups reflecting immersed 'expertise' with negative affective experiences.

In Study 2 we sought to replicate the present results using the same task as the prior findings in groups with clinical depression (Werner-Seidler et al., 2018). In the task,

participants endorse a diversity of emotion descriptors with reference to the entirety of their past autobiography as opposed to their current self-concept.

5.2.4   Study 2: Emodiversity within the Life Structure in PTSD

5.2.4.1 Method

5.2.4.1.1 Participants and procedure

Participants in Study 2 were drawn from Clifford et al (2018b) and full details on participant recruitment and inclusion criteria are provided there. These criteria are identical to those for Study1. The PTSD and Control groups in Clifford et al. (2018b) were not matched for years in education. Due to the likely importance of education as an influence on conceptual measures such as emodiversity, prior to completing analyses we excluded data from four participants from the original PTSD Group in Clifford et al (2018b) who had a low number of years in education and one member of the Control Group with a high number of years in education, to ensure a better balance across groups. This gave us a PTSD group of n=23 and a Control Group of $n = 22$. Of this PTSD Group, 15 participants were recruited from the Haven; and eight were recruited from the MRC Cognition and Brain Sciences Unit Clinical Volunteer Panel.

Nine of the participants in the PTSD group and 8 participants in the control group were also participants in Study 1. The pattern of results remained the same when these participants were excluded from the analyses.

The procedure was as for Study 1 except for the Life Structure Task being administered in place of the Self Structure task.

Life Structure Task. The Life Structure task is described in detail in Clifford et al. (2018b). In brief, participants were asked to think back over their life and divide it into chapters. Participants then provided a relevant heading for each chapter and completed the

card sort task as outlined in Study 1, this time allocating cards to life chapters instead of self-aspects. Positive and Negative Emodiversity were calculated as described in Study 1.

5.2.4.2 Results

5.2.4.2.1 Descriptive Group Data

According to the SCID, in the PTSD group, five participants also met criteria for current MDD, 22 met the criteria for a past Major Depressive Episode, seven for current panic disorder (secondary to PTSD), two for current Agoraphobia, five for current Borderline Personality Disorder, and two for current Avoidant Personality Disorder. In the Control Group, three participants met criteria for a *past* episode of MDD and one for current panic disorder.

The descriptive group data are presented in Table 5.2. The groups did not differ in age, $t(43) = 0.27$, $p = .79$, $d = 0.08$ [-0.53, 0.69], nor years in education, $t(43) = 1.90$, $p = .07$, $d = 0.58$ [-0.04, 1.20]. There were the expected differences in BDI and CES scores between the PTSD and Control groups – BDI: $t(22.89) = 8.79$, $p < .001$, $d = 3.67$ [2.65, 4.68]; CES: $t(42.10) = 8.81$, $p < .001$, $d = 2.72$ [1.86, 3.58].

Table 5.2. Means (and standard deviations) of participant characteristics in Study 2.

Category	PTSD Group (*n*=23)	Control Group (*n*=22)
Years in Education	14.91 (2.83)	16.36 (2.26)
Age (in years)	36.70 (13.48)	35.55 (15.05)
Beck Depression Inventory	25.09 (12.69)	1.59 (1.76)
Centrality of Events Scale	82.09 (16.43)	36.55 (18.17)

5.2.4.2.2 Emodiversity

The emodiversity data for the Life Structure task are presented in Figure 5.2. As in Study 1, across all participants, Negative and Positive Emodiversity scores were not significantly correlated, $r(45) = -.05$, $p = .76$.

As for Study 1, to examine patterns of Positive and Negative Emodiversity across groups, we conducted a mixed ANOVA with Valence (negative, positive) as the within-subjects factor, Group (PTSD, Control) as the between-subjects factor, and the emodiversity index as the dependent variable. As in Study 1, there was a main effect of Valence, $F(1,43) = 9.39$, $p = .004$, $d = 0.91$ [0.27, 1.55], with significantly higher Positive Emodiversity across the Life Structure. However, unlike Study 1, there was no significant main effect of Group, $F < 1$. As hypothesized and in line with the results of Study 1, there was a significant Valence × Group interaction, $F(1,43) = 11.98$, $p < .001$, $d = 1.03$ [0.38, 1.68]. Follow-up ANOVAs again showed significantly greater Negative Emodiversity in the PTSD group, $F(1, 43) = 5.42$, $p = .03$, $d = 0.69$ [0.06, 1.32], and significantly greater Positive Emodiversity in the Control Group, $F(1, 43) = 5.60$, $p = .02$, $d = 0.71$ [0.08, 1.34].
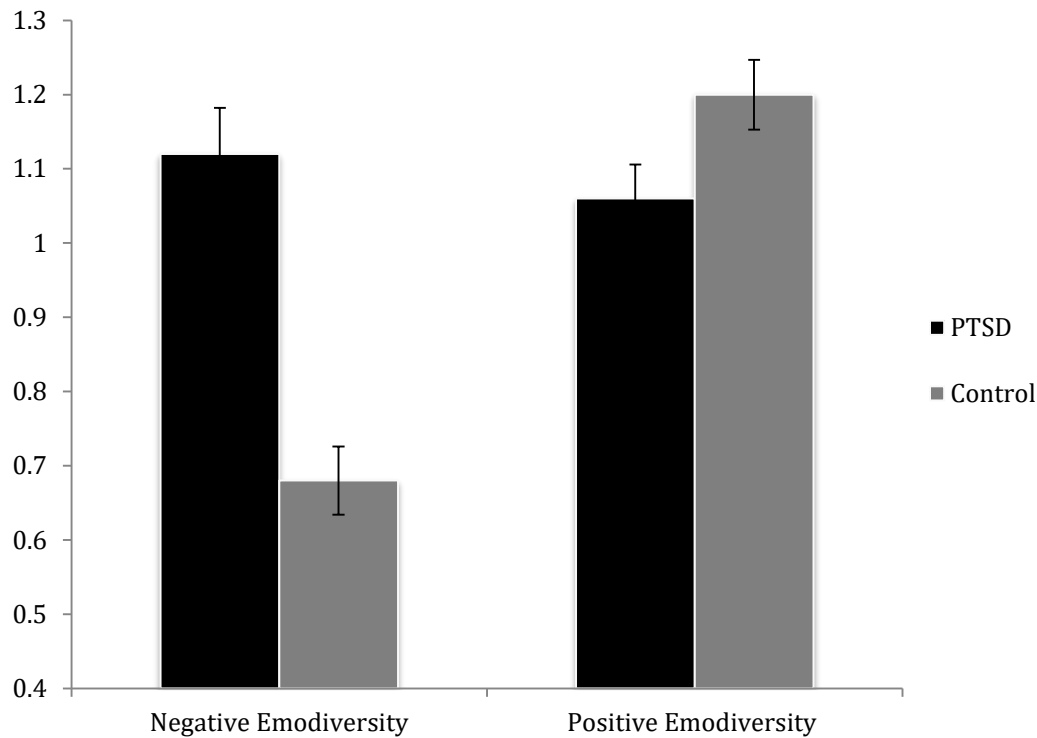
Figure 5.2 Mean (+1 *SE*) performance (*y*-axis) for the PTSD and Control Groups for

Negative Emodiversity and Positive Emodiversity across the Life Structure in Study 2.

5.2.4.2.3 Emodiversity and Negativity/Positivity

As for Study 1, we repeated our main analyses covarying Negative and Positive

Repetitions. The PTSD Group (*M* = 1.29, *SD* = 0.91) had a numerically higher mean level of

Negative Repetitions relative to the Control Group (*M* = 1.25, *SD* = 1.27), but this difference

was not significant $t(43) = 0.19$, $p = .91$, $d = 0.06$ [-0.55, 0.67]. Covarying for Negative

Repetition scores in our main emodiversity analyses again left the pattern of results

unchanged, with a significant Valence × Group interaction, $F(1,42) = 12.02$, $p = .001$ $d = 1.03$

[0.38, 1.68] and follow-up paired comparisons showing greater Negative Emodiversity,

$F(1,42) = 5.61$, $p = .02$; $d = 0.71$ [0.08, 1.34], but lower levels of Positive Emodiversity,

$(1,42) = 5.66$, $p = .02$; $d = 0.71$ [0.08, 1.34], in the PTSD Group compared to the Control

Group.

The Control Group (*M*=2.52, *SD*=1.43) had a significantly higher mean level of Positive Repetitions relative to the PTSD Group (*M*=1.46, *SD*=1.57), $t(42.91) = 2.37$, $p = .02$; $d = 0.72$ [0.09, 1.35]. Entering these Positive Repetition scores as a covariate into our main analyses did impact the pattern of significant results. There remained a significant Valence × Group interaction, $F(1,42) = 8.87$, $p = .005$; $d = 0.89$ [025, 1.53], and the follow-up paired comparison continued to show greater Negative Emodiversity, $F(1,42) = 5.94$, $p = .02$; $d=$ 0.73 [0.10, 1.36], for the PTSD group relative to the Control Group. However, there was no longer a significant group difference for Positive Emodiversity, $F(1,42) = 1.91$, $p = .17$, d =0.41 [-0.21, 1.03].

5.2.4.3 Discussion

The results of Study 2 replicated the critical negative emodiversity results from Study 1, demonstrating that our participants with chronic PTSD following sexual trauma exhibited greater negative emodiversity relative to healthy controls with no such history. However, once we adjusted analyses to account for the frequency with which the diverse emotion descriptors were employed, the group difference in positive emodiversity was no longer significant.

These results suggest that within a different autobiographical domain (i.e., the life narrative relative to self-concept), chronic PTSD following sexual trauma remains characterized by greater negative emodiversity, independent from the frequency with which negative emotion descriptors are endorsed. In the positive domain, the findings support the notion that positive emodiversity is also reduced in our sample with PTSD but that such reduced positive emodiversity may go hand-in-hand with a reduced endorsement of positive emotion terms more generally.

5.2.5   General Discussion

Across two studies we showed that sexual trauma survivors with a diagnosis of chronic PTSD endorsed a greater diversity of negative emotion descriptors when describing either their current self-structure (Study 1) or their autobiographical past (Study 2), relative to healthy control participants who had no such trauma history. This greater negative emodiversity appears to be independent of the *frequency* of endorsement of negative descriptors. Relatedly, in both studies we showed that those with PTSD also exhibited reduced positive emodiversity relative to controls. In Study 1, this appeared to be independent of the frequency of endorsement of those positive descriptors. However, when examining the life-structure in Study 2, the group difference was no longer significant when adjusting for endorsement frequency, suggesting that the frequency and diversity of positive emotion descriptor use are highly associated.

The current results mirror those in another chronic mental health condition – recurrent Major Depressive Disorder (Werner-Seidler et al., 2018) – using the same life structure methodology as in the current Study 2. This suggests that valence-based differences in emodiversity are potentially a broader transdiagnostic marker of emotional disorder. The current results, along with those from Werner-Seidler et al. (2018), are somewhat divergent from earlier studies using community samples (Quoidbach et al., 2014) which suggested that greater emodiversity (including in the negative valence domain) is associated with fewer symptoms of mental ill health.

As discussed in the Introduction, taken together these studies suggest that in a wider community context, greater negative emodiversity may be associated with protection against mental health difficulties, but that this protective factor is not evident for chronically unwell individuals. Once significant difficulties become established and consolidated over time, the chronic immersion in negative affective self-referent material and the relative paucity of

positive self-reference material may see that those with chronic emotional disorders such as PTSD and recurrent MDD develop 'expertise' in negative affective experiences. This would afford concomitantly greater diversity in the ways that such negative experiences are described and articulated.

It is proposed that greater emodiversity in community samples (Quoidbach et al., 2014) may lead to better mental health as more affective differentiation in the description of emotional life reflects more granularity in the emotional experiences themselves. This is in turn associated with an enhanced ability to target emotion regulation strategies at specific emotion experiences, with consequent enhancement of overall emotion regulation and of mental health (e.g. Barrett & Gross, 2001; Barrett et al., 2001). The current data do not necessarily contradict this analysis. It remains possible that chronic emotional disorders such as recurrent depression and PTSD are in fact associated with an enhanced *underlying capacity* for emotion regulation but that emotions in the day-to-day remain more dysreguylated as a simple function of the severity and dysfunctionality that unwell individuals are trying to regulate. In a sense this would not be surprising as trauma survivors with PTSD report spending large amounts of their time trying to regulate aversive negative cognitions and affect. They are therefore highly practiced with the techniques even if they are often experienced as ineffectual. Although this view has not been investigated directly (most studies examine self-reported emotion regualtion using questionnaires which confounds capacity and day-to-day experience; e.g. Ehring & Quack, 2010) there is some support in the literature. For example, young adults who have been exposed to childhood adversity perform better, and show reduced neural engagement of emotion regulatory circuitry in the brain, on a laboratory emotion regualtion task relative to participants who report no such adversity (Schweizer, Walsh, Stretton, Dunn, Goodyer & Dalgleish, 2016; see also Sheperd &Wild, 2014).

The studies reported here, either together or individually, have some possible limitations that merit discussion. We did not ask participants to generate their own descriptive words for the cards used in the self- and life-structure tasks. This was to ensure that there were equal quantities of positive and negative descriptors matched for emotional intensity, world length and frequency. Future studies could adopt an ideographic approach, potentially in combination with experience sampling methods, to provide a richer personalized evaluation of diversity. For both studies we recruited participants with chronic PTSD and with a history of interpersonal trauma. Selecting such a severe trauma placed constraints on our selection of control participants. It is prohibitively difficult to find survivors of sexual trauma with only a few or no significant symptoms of past or current PTSD to serve as a trauma-matched control sample. We therefore had to recruit a comparison sample who both had no history of sexual trauma *and* no history of PTSD to any trauma. This precludes disentangling whether it is the presence of PTSD rather than the trauma history itself which accounts for our results.

A limitation of the life structure task is that, although it focuses on the whole life narrative, it remains retrospective. Similarly, while the self-structure task lacks this historical element, it does require participants to reflect on self-aspects that they may not currently have immediate cognitive access to. It is therefore possible that a methodology that permitted contemporaneous consideration of past life chapters or of alternative current self-aspects may have generated a different set of results.

Finally, the sample sizes for each study were modest, as is often the case for hard-to-recruit clinical samples. However, the replication of the results across two different versions of the card sorting task mitigates these sampling concerns. The study samples were also all female. It would therefore be important to replicate the current findings with larger samples including individuals with PTSD who have experienced different traumas, and who are male.

In summary, across two studies we showed that PTSD following sexual trauma is associated with the endorsement of a greater diversity of negative emotion descriptors and a reduced diversity of positive emotion descriptors when describing either the self or the autobiographical past relative to healthy control participants with no history of sexual trauma. These results, along with similar findings in individuals with chronic depression (Werner-Seidler et al., 2018), suggest that elevated negative emodiversity may be a transdiagnostic marker of chronic emotional disorders. This contrasts somewhat with proposals in the emotion literature that enhanced negative emodiversity represents a protective factor against mental health difficulties.

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<div align="center">**END OF RESEARCH PAPER**</div>

5.3   Discussion and Integration

Across two studies we showed that sexual trauma survivors with a diagnosis of chronic PTSD endorsed a greater diversity of negative emotion descriptors when describing either their current self-structure or their autobiographical past, relative to healthy control participants who had no such trauma history. The current results mirror those in another chronic mental health condition – recurrent Major Depressive Disorder (Werner-Seidler et al., 2018) but are somewhat divergent from earlier studies using community samples (Quoidbach et al., 2014) which suggested that greater emodiversity (including in the negative valence domain) is associated with fewer symptoms of mental ill health. In light of the results from our studies, we propose that in a wider community context, greater negative emodiversity may be associated with *protection* against mental health difficulties, but that this protective factor is not evident for chronically unwell individuals.

Throughout this thesis, we have discussed how the affective domain problems identified in CPTSD have been characterised by emotion dysregulation. Multiple early traumatic experiences commonly result in impairment in developmental processes including the ability to recognise, identify and regulate emotion. In light of the results from study 4, we suggest that chronic emotional disorders such as recurrent depression and PTSD could be associated with an enhanced *underlying capacity* for emotion regulation but that emotions in the day-to-day remain more dysreguylated as a simple function of the severity and

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dysfunctionality that individuals with these disorders are trying to regulate. This theory is consistent with individuals with PTSD reporting that they spend large amounts of their time trying to regulate aversive negative cognitions and affect, and supported by our findings from studies 1 and 2 - that individuals with PTSD commonly use strategies to compartmentalise or "ring-fence" the distressing or toxic information related to their past traumatic experiences. Individuals with PTSD are therefore highly practiced with the techniques even if they are often experienced as ineffectual.

CHAPTER 6

Research paper: *Developing an Emotion- and Memory-Processing Group Intervention for PTSD with complex features: a group case series with survivors of repeated interpersonal trauma[10]*

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For this paper, the candidate planned the study, collected all of the data, analysed the results and wrote the paper. The co-authors supervised the research process and made comments on iterative drafts of the manuscript.

6.1   Background

As discussed in Chapter 1, some researchers have argued that interventions for PTSD should be adapted to address the additional symptoms identified in individuals presenting with more complex presentations of the disorder. An expert consensus survey (Cloitre et al., 2012) indicated that 84% of 50 expert clinicians endorsed a phase-based or sequenced approach as a first line treatment for CPTSD, involving three phases, each with a distinct function. STAIR is a phase-based, sequential treatment that has been specifically developed to treat women (in individual therapy) who had experienced childhood sexual abuse. The efficacy of the phase-based treatment approach for treating CPTSD has only been addressed in two studies to date,

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[10] Published version of the paper is included in Appendix 4.0

but at present, there is no clear evidence-base to demonstrate consistently superior treatment effects for the use of a standard or phase-based approach to treating complex features (e.g.,Wagenmans, Van Minnen, Sleijpen, & De Jongh, 2018; Bongaerts, Van Minnen, & De Jongh, 2017; Van Minnen et al., 2012).

Group therapy for PTSD is not currently included in any treatment guidelines (e.g. Forbes et al., 2010). However, the group–based format is commonly used in health care settings (e.g., Foy et al., 2000), and a recent meta-analysis demonstrated its efficacy, relative to waitlist control, in reducing PTSD symptoms (d=0.56; Sloan et al., 2013). Some evidence has emerged in recent years to demonstrate that group treatments have promising effects on both core PTSD symptoms (e.g., Sikkema et al., 2007) and the negative affect cluster of symptoms for samples with complex trauma histories (e.g., group therapy for incarcerated women; Bradley & Follingstad, 2003; trauma-focused group therapy; Classen et al., 2011). However, in reviewing the literature, it becomes clear that the majority of group-based interventions have not explicitly addressed the complex features of CPTSD.

In study 5, we describe the development, facilitation and evaluation of a group intervention for individuals who had experienced repeated interpersonal trauma: an Emotion- and Memory-Processing Group Programme. We implemented the recommended phased-based approach for more complex presentations of PTSD and based our group programme on the STAIR (Cloitre, Cohen, & Koenen, 2006) protocol.

As discussed in Chapter 1, the cardinal symptoms of PTSD centre on intrusive memories of the traumatic experience that are prototypically high in frequency, sensorily-laden, involuntary, distressing, fragmented and relatively immune to attempts at prevention. To facilitate group-based delivery, we replaced the NST phase of the STAIR programme with a number of different mnemonic control techniques, such as identifying triggers to traumatic memories and describing the associated meanings, emotions and physiological sensations,

cognitive/narrative restructuring and imagery rescripting. Analysis of memory processes in PTSD and their link with problematic appraisals and behaviors that maintain PTSD has led to the development of specific theory-guided treatment procedures for this condition (e.g. Ehlers & Clark, 2000; Ehlers, Clark, Hackmann, McManus, & Fennell, 2005). We incorporated a number of these specific theory-guided treatment procedures into our intervention to facilitate processing of trauma memories in a group format.

As explored throughout this thesis, the affective domain problems in CPTSD have been characterised by emotion dysregulation, including alterations in attention and consciousness (e.g. dissociation, depersonalization, and derealization). We therefore also incorporated sessions into the group programme on emotional awareness, psychoeducation and regulation. The final protocol therefore consisted of a skills training in affective and interpersonal regulation (STAIR) phase, a memory processing phase, and a consolidation phase which was delivered over twelve group-based sessions.

We completed a three-group case series of the Emotion- and Memory-Processing Group Programme for complex features of PTSD with female survivors of rape or sexual assault. Guidance on the development of complex interventions (e.g., Medical Research Council [MRC], 2000) recommends that novel clinical techniques are first piloted in small studies, such as case series that serve to establish the promise of a new approach, and are important in refining an intervention (through use of clinician and participant feedback) prior to commencement of trials. The key focus of study 5 was to develop the novel treatment manual to the point that it may be evaluated in a future feasibility trial, and to provide a preliminary, uncontrolled estimate of any effects of the intervention.

Study 5 details the delivery of the programme, and provides a preliminary examination of acceptability, feasibility and the potential efficacy of the intervention in reducing symptoms of PTSD, along with measures of complex features, namely emotion dysregulation, dissociation,

and interpersonal difficulties.

The full treatment manual for the group is included in Appendix 5.0 at the end of the thesis.

6.2   Research paper: *Developing an Emotion- and Memory-Processing Group Intervention for PTSD with complex features: a group case series with survivors of repeated interpersonal trauma*

6.2.1   Abstract

Individuals who experience repeated interpersonal trauma exposure often present with posttraumatic stress disorder (PTSD) with more complex features. There is currently no consensus regarding whether current evidence-based interventions for PTSD need to be tailored to better account for these complex features. However, one recommended adaptation is to adopt a phase-based or sequenced approach involving three phases, each with a distinct function. This paper describes the development of a 12-session Emotion- and Memory-Processing Group Programme, adapted from Cloitre's Skills Training in Affective and Interpersonal Regulation (STAIR) phase-based treatment protocol. A single case series provided a preliminary examination of the group-based intervention's efficacy for three groups of women with a history of repeated interpersonal trauma and PTSD with complex features ($N = 15$; age 19–46 years) at The Haven Sexual Assault Referral Centre in London. Results revealed significant reductions in: PTSD, complex features of PTSD, and depression, along with improvements in process measures of maladaptive cognitions and emotion processing. Results from this case series demonstrate that an Emotion- and Memory-Processing Group Programme holds promise for treating individuals with a history of interpersonal trauma in outpatient settings, and provides evidence to warrant the completion of a feasibility trial.

6.2.2   Introduction

Individuals presenting with posttraumatic stress disorder (PTSD) are not a homogenous group. Those who experience repeated interpersonal trauma, such as sexual and

domestic violence, and abuse in childhood often present with PTSD with more complex

features (Karatzias et al., 2017; Powers et al., 2017) than individuals exposed to single-

incident traumas (Herman, 1997). Proposed diagnostic criteria for Complex PTSD (CPTSD)

in the ICD-11 (due to be published in 2018) include the defining criteria of PTSD (re-

experiencing, avoidance, numbing, and hyperarousal), in addition to the presence of at least

one symptom in each of three self-organization features: affect dysregulation, negative self-

concept, and interpersonal disturbance. The affective domain problems are characterized by

emotion dysregulation, including alterations in attention and consciousness (e.g. dissociation,

depersonalization, and derealization). Negative self-concept criteria include persistent beliefs

about oneself as diminished, defeated, or worthless, and interpersonal disturbances are

defined by persistent difficulties in sustaining relationships (Briere, Kaltman, & Green, 2008;

Cloitre, Garvert, Brewin, Bryant, & Maercker, 2013; Cloitre et al., 2009).

There is contention in the literature regarding whether PTSD and CPTSD can be

conceptualized as different disorders (see Resick et al., 2012, for discussion), and there is

currently no consensus regarding whether tailoring current evidence-based interventions for

PTSD (e.g. eye movement desensitization and reprocessing [EMDR], trauma-focussed

cognitive behavioural therapy [CBT]) for complex features will improve treatment outcomes

(Cloitre et al., 2012; Van Minnen, Harned, Zoellner, & Mills, 2012). A number of authors

propose that trauma-focused treatments can be offered to those who have experienced

repeated interpersonal trauma without any major modifications (e.g. Cook, Schnurr, &

Foa, 2004; Resick, Nishith, & Griffin, 2003; Van Minnen et al., 2012). Others propose that

outcomes for complex presentations can be improved using a phase-based or sequenced

approach involving three phases, each with a distinct function (e.g. Cloitre et al., 2012).

Phase one focuses on ensuring the individual's safety, reducing symptoms, and increasing

important emotional, social, and psychological competencies. Phase two focuses on

processing the unresolved aspects of the individual's memories of traumatic experiences. Phase three involves consolidation of treatment gains to facilitate engagement in relationships, work or education, and community life. At present, there is no clear evidence-base to demonstrate consistently superior treatment effects for the use of a standard or phase-based approach to treating complex features (e.g. Wagenmans, Van Minnen, Sleijpen, & De Jongh, 2018; Bongaerts, Van Minnen, & De Jongh, 2017; Van Minnen et al., 2012).

Other elements of treatment format are also in need of further examination, including the use of group-based delivery. There are a number of advantages to offering group-based treatment, including a shared focus on resolution of symptoms through psychoeducation and skills training, which can be effective in terms of both time and cost. Relative to individual therapy, group interventions may be particularly useful for survivors of repeated interpersonal trauma, to normalize symptoms, foster social support, and enable observational learning (Dorrepaal et al., 2012; Zlotnick et al., 1997). Group therapy can provide an opportunity for individuals to experience, explore, and work through individual difficulties with others perceived to be in some way similar to oneself (e.g. Foy et al., 2000), and help them to make sense of their own experiences and responses to trauma (Klein & Schermer, 2000). In turn, this can reduce self-blame and feelings of disconnection or isolation from others (e.g. Johnson & Lubin, 2000).

Group therapy for PTSD is not currently included in any treatment guidelines (e.g. Forbes et al., 2010). However, the group-based format is commonly used in health care settings (e.g. Foy et al., 2000), and a recent meta-analysis demonstrated its efficacy, relative to waitlist control, in reducing PTSD symptoms ($d= 0.56$; Sloan, Feinstein, Gallagher, Beck, & Keane, 2013). Indeed, group-based cognitive processing therapy (CPT) yields superior treatment effects for both PTSD and depression symptoms, relative to a present-focused group therapy (Resick et al., 2015) and combined individual and group treatment for adults

with childhood sexual trauma (Chard, 2005), with some evidence of a significant effect on complex features (e.g. reductions in dissociation following combined individual and group therapy; Chard, 2005). Other group treatments have also demonstrated promising effects on both core PTSD symptoms (e.g. Sikkema et al., 2007) and the negative affect cluster of symptoms for samples with complex trauma histories (group therapy for incarcerated women; Bradley & Follingstad, 2003; trauma-focussed group therapy; Classen et al., 2011).

However, the majority of group-based interventions have adopted an education and supportive counselling or traditional cognitive-behavioural approach and not explicitly addressed the complex features of CPTSD. This is a vital need within the field, as meta-analysis suggests that current group-based treatments produce smaller effect sizes for indiviudals with more complex trauma histories (e.g. repeated interpersonal trauma; Sloan et al., 2013), compared to mixed trauma samples, suggesting that it may be necessary to explicitly address complex features to maximize therapeutic gains for this group. Dorrepaal et al. (2013) conducted the first study evaluating enhanced PTSD treatment in group format with a specifically CPTSD population: a randomized controlled trial of a 20-week stabilization-focussed cognitive behavioural treatment (CBT) for child-abuse-related CPTSD. The protocol included sessions on psychoeducation, skills training to target the negative affect domain of complex symptoms (learning to tolerate negative emotions and decrease avoidance), and cognitive restructuring. The results demonstrated significant improvements in symptoms of PTSD and CPTSD. We aimed to move beyond this initial study by more explicitly addressing all three symptom domains of CPTSD, with a greater emphasis on memory processing work, and in a shorter-time frame (three rather than five months) that can more easily fit within the time constraints of clinical services.

Here we describe the development and preliminary evaluation of a group intervention for individuals who have experienced repeated interpersonal trauma: an Emotion- and

Memory-Processing Group Programme. Developing an efficacious group treatment for PTSD requires careful consideration of the process of intervention, as well as its content (e.g. Foy et al., 2000; Hickling & Blanchard, 1999; Resick & Schnicke, 1993). To implement the phase-based approach, we based our group programme on the Skills Training in Affective and Interpersonal Regulation (STAIR; Cloitre, Cohen, & Koenen, 2006) protocol. STAIR is a phase-based, sequential treatment that was specifically developed to treat women (in individual therapy) who had experienced childhood sexual abuse (Cloitre, Koenen, Cohen, & Han, 2002). The treatment first emphasizes skills training in affective and interpersonal regulation (STAIR) to improve daily life functioning, while the second module (Narrative Story Telling; NST) focuses on the re-appraisal of trauma memories. In NST, patients are asked repeatedly to imagine and then retell the details of their traumatic experiences, which can be difficult to facilitate effectively in a group format due to the risk of trauma narratives triggering responses among fellow group members. Prior research has addressed in a variety of ways, including asking group participants to write their trauma narrative and complete imaginal exposure either while in the group (Beck, Coffey, Foy, Keane, & Blanchard, 2009) or as homework (Castillo et al., 2016). We therefore required participants to complete exposure at home by writing out a narrative of the trauma between sessions, to retain elements of NST from the original protocol. However, we did not ask participants to share a full account of their traumatic experiences within the group sessions.

To facilitate group-based delivery, therefore, we replaced the NST phase of the STAIR programme with a number of different mnemonic control techniques. Given the key role of memory characteristics in predicting prognosis, we aimed to include greater emphasis (relative to STAIR) on memory-processing work, in line with existing evidence-based treatments (e.g. Ehlers & Clark, 2000; Ehlers, Clark, Hackmann, McManus, & Fennell, 2005). Trauma-focused interventions typically involve processing and 'updating'

trauma memories (e.g. Ehlers & Wild, 2015), and these techniques can be easily implemented in a group format. The second phase of treatment thereby included identifying triggers to traumatic memories and describing the associated meanings, emotions and physiological sensations, cognitive/narrative restructuring, and imagery rescripting. In sum, the final protocol consisted of a skills in affective and interpersonal regulation phase, a memory processing phase, and a skills consolidation phase, delivered over 12 group-based sessions.

We completed a three-group case series of the Emotion- and Memory-Processing Group Programme for complex features of PTSD with female survivors of rape or sexual assault. Guidance on the development of complex interventions (e.g. Medical Research Council [MRC], 2000) recommends that novel clinical techniques are first piloted in small studies, such as case series that serve to establish the promise of a new approach, and are important in refining an intervention (through use of clinician and participant feedback) prior to commencement of trials. The key focus of this study was to develop the novel treatment manual to the point that it may be evaluated in a future feasibility trial, and to provide a preliminary, uncontrolled estimate of any effects of the intervention.

This case series details the delivery of the programme, and provides a preliminary examination of acceptability, feasibility, and potential efficacy of the intervention in reducing symptoms of PTSD, along with measures of complex features, namely emotion dysregulation, dissociation, and interpersonal difficulties. We also looked at changes in posttraumatic cognitions, and depression. Hypotheses for our primary outcomes were: (1) The intervention would show promising acceptability and feasibility, determined by an average attendance of at least eight of the 12 sessions and completion of at least 50% of homework tasks (75% attendance was the rule used within the clinical service from which the participants were recruited, for continuation of psychological treatment. Based on our clinical experience, with this client group, we considered 50% of homework tasks to be the minimum

someone could complete and still engage satisfactorily between sessions); (2) Participants would show a reduction in core symptoms of PTSD and associated complex features from pre- to post-treatment. Hypotheses for our secondary outcomes were: (3) Participants would show a reduction in associated symptoms of depression and anxiety from pre- to post-treatment; (4) Participants would show a reduction in scores on process measures of maladaptive cognitions and emotion processing associated with the onset and maintenance of PTSD (Dalgleish, 2004).

6.2.3 Method

6.2.3.1 Participants

We conducted three intervention groups in London in 2012–2014. Participants were 15 women aged 19–46 years ($M = 27.93$; $SD = 6.86$). Five women participated in the first group, six in the second group (although one dropped out as she was hospitalized due to suicide risk after the initial assessment, before group began, and her data were set aside) and five in the third group.

Inclusion criteria were that participants experienced complex features of PTSD, had been raped or sexually assaulted in the 12 months prior to the group, and had also experienced at least one prior interpersonal trauma in their lives. Exclusion criteria were insufficient knowledge and understanding of English and current substance dependence. No participants were excluded on this basis.

We operationalized CPTSD by cross-referencing participants' scores on the Complex Trauma Symptoms Questionnaire (CTSQ; Mendelsohn et al., unpublished). The CTSQ items index the ICD-11 criteria for CPTSD, providing a measure of perceived threat, emotion regulation difficulties, sense of self, self-recognition and agency, interpersonal difficulties, emotional blunting, and meaning attached to the trauma. Responses to each item on the CTSQ ranged from 0 (*not at all*), 1 (*a little bit*), 2 (*moderately*), 3 (*quite a bit*) and 4 (*extremely*). Eleven participants met criteria for at least one symptom on each of the domains

(affect, negative self-concept and relational disturbance), determined by a score of two or more on the CTSQ. Three participants met criteria for at least one symptom on two out of three of the domains. One participant described mild complex features, scoring one on a number of criteria on each of the subscales.

Participants were recruited following assessment at The Haven (Sexual Assault Referral Centre) ($n = 11$); by the Sexual Offences Investigative Team ($n = 1$); by the Sexual Health Psychology service ($n = 2$); from the Praed Street Project (supporting women in the sex industry; $n = 1$); from Eaves (a voluntary sector organization supporting female victims of violence; $n = 1$). The group programme was offered as an adjunct to treatment as usual, which involved one or two follow-up medical review and/or support sessions with nurses/support workers at The Haven.

6.2.3.2 Measures
6.2.3.2.1 Symptom and Clinical Impact Measures

PTSD was diagnosed with the Clinician-Administered PTSD Scale (CAPS; Blake et al., 1995). The CAPS is a semi-structured interview which assesses the PTSD diagnostic criteria defined by the Diagnostic and Statistical Manual of Mental Disorders (4th ed; DSM-IV; American Psychiatric Association, 1994 - The CAPS for DSM-IV was used as the CAPS for DSM-V was not available when the first group started.) . The CAPS includes standardized questions to determine frequency and intensity of each symptom in the preceding month. A total severity score for is determined by summing scores for the 17 core symptoms.

The CAPS has good psychometric properties (Weathers, Keane, & Davidson, 2001) and is a sensitive and specific measure of PTSD (Hovens et al., 1994). Inter-rater reliability is high ('Frequency' $r = .92$–1.00; 'Intensity' $r = .93$–$.98$; 'Severity' $r = .89$; Hovens et al., 1994). Test-retest reliabilities range from .77 to .96 for the three symptom clusters and

from .90 to .98 for the 17-item core symptom scale (Blake et.al., 1995). Internal consistency for the severity score was high in the current sample (α = .82).

The Complex Trauma Symptoms Questionnaire (CTSQ; Mendelsohn et al., unpublished) is a 49-item assessment measure intended to assess CPTSD symptoms and has been used in previous evaluation of a phase-based approach for treating PTSD in women with a history of interpersonal violence (Cloitre et al., 2014). Internal consistency was high in the current sample (α = .97).

Comorbid Axis I diagnoses were determined using the Structured Clinical Interview for DSM-IV disorders (SCID-I; First, Spitzer, Gibbon, & Williams, 2002). The SCID-I assesses DSM-IV diagnostic criteria. The interview takes 45–90 minutes to complete. It is divided into six self-contained modules that can be administered in sequence. The reliability and validity of the SCID-I for DSM-IV is well established and has been reported in several published studies (e.g. Lobbestael, Leurgans, & Arntz, 2011; Zanarini et al., 2000).

The Beck Depression Inventory (BDI-I; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) indexed symptoms of depression using 21 questions about how the subject has been feeling in the last week. Internal consistency was high in the current sample (α = .81). The BDI-I was used for legacy reasons to provide comparability across studies within the research unit.

6.2.3.2.2 Process Measures

The Post-Traumatic Cognitions Inventory (PTCI; Foa, Ehlers, Clark, Tolin, & Orsillo, 1999) is a 33-item measure of negative and dysfunctional post-trauma cognitions about the self and world. Cognitive models of PTSD emphasize these dimensions as foci of change in cognitive-behavioural interventions (Dalgleish, 2004). The three factors have good test-retest reliability and discriminate well between traumatized individuals with and without PTSD (Foa et al., 1999). Internal consistency was high in the current sample (α = .96).

The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a 36-item self-report measure designed to measure emotion dysregulation. Items focus on lack of emotional awareness, lack of emotional clarity, non-acceptance of negative emotions, lack of strategy building, lack of control of impulsive behaviors, and inability to behave in accordance with goals under negative emotions. The DERS has good test-retest reliability, and adequate construct and predictive validity (Gratz & Roemer, 2004). Internal consistency was high in the current sample ($\alpha = .91$).

6.2.3.3 Description of the Intervention[11]

The 12-session group programme comprised: one session involving an introduction to the group and an overview of the subsequent sessions; three sessions focused on emotional awareness and regulation, identifying and labelling feelings, emotion management, distress tolerance and acceptance of feelings, and experiencing positive emotions; two sessions focused on navigating interpersonal problems, exploration and revision of maladaptive schemas, effective assertiveness, awareness of social context (including exploration of other people's reactions to rape and sexual assault), and flexibility in interpersonal expectations and behaviours; one session for psychoeducation focused on symptoms of PTSD and the impact of trauma on memory; four sessions focused on exposure and mnemonic techniques to better manage trauma memories, identifying triggers to and re-conditioning flashbacks, imagery and nightmare rescripting, narrative restructuring, and the method of loci (Dalgleish et al., 2013; Werner-Seidler & Dalgleish, 2016); and one session for summary and review (see Supplementary materials for an outline of the final 12 session Emotion- and Memory-Processing Group Intervention).

As noted, exposure was not a mandatory part of the group programme. Although we focused on techniques of memory restructuring, such as imagery and nightmare rescripting

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[11] The full treatment manual for the group is included in Appendix 5.0 at the end of the thesis.

exercises which involved an element of exposure, we did not facilitate an in-the-moment reliving sessions as a group but, similar to Beck et al. (2009), set an exposure exercise for homework by asking participants to write out a narrative of their traumatic experience(s).

Minor modifications were made following each of the groups in the case series, in line with case series development (MRC, 2000), based on both reflections of the facilitators and specific feedback provided by group members. We offered sessions corresponding to each of the recommended phases for complex presentations of PTSD. Although the initial presentation of the phases was in the linear order originally proposed, development of the manual throughout the case series saw that in Groups 2–3, the phases became more integrated. In particular we continued to use elements of stabilization work in the trauma-processing stage, as group members reported difficulties in practising the regulation of emotions and management of distress before any trauma-focused processing had taken place.

We therefore re-ordered the group sessions to alternate between processing/managing memories and then regulating/coping with the distress, rather than having distinct, linear phases. Facilitators observed ambivalence towards and avoidance of homework tasks and therefore dedicated more time to addressing the reasons for avoidance and included more frequent re-iteration of the importance of between-session exercises. Facilitators also modified the session on 'interpersonal schemas' to focus more generally on interpersonal difficulties following a traumatic event as the former was difficult to facilitate in a group within a single session.

The first group was facilitated by a Senior Clinical Psychologist and a Trainee Clinical Psychologist; the second and third groups were facilitated by a Senior Clinical Psychologist and a Mental Health Independent Sexual Violence Advisor. Participants were asked to attend all 12 group sessions, each of which was two hours long, including a 20 minute break. The sessions comprised a combination of clinician-led teaching, group

discussions, group exercises, and discussion of homework tasks. Each session began with a review of the homework tasks, an update for any of the group members who had not been present, and then an overview of the current session. Each session ended with a description of the homework tasks for the following week.

6.2.3.4 Procedure

Ethics approval was obtained from the NHS National Research Ethics Service (reference 11/H0305/1). During pre- and post-intervention assessments, participants completed the study measures individually and face-to-face in a quiet testing room. Following provision of informed consent, participants completed the CAPS and the SCID-I with the assessor, then the self-report questionnaire symptom and process measures. Group sessions took place on a weekly basis in a room in St. Mary's Hospital, London, UK.

6.2.4   Results

6.2.4.1 Description of the Sample

The socio-demographic, trauma history, and diagnostic information of the study participants is presented in Table 6.1 and pre- and post-treatment scores on symptom and process measures are presented in Table 6.2.

Table 6.1: Sociodemographic, trauma history and diagnostic information of study participants

	Group 1 (*n* = 5)	Group 2 (*n* = 5)	Group 3 (*n* = 5)	Total (*n* = 15)
Sociodemographic				
Employed (full or part-time)	3	1	3	7
Full-time study	0	3	2	5
Education[1]	2/3/0/0	1/1/2/1	0/0/3/2	3/4/5/3
Married/co-habiting	0	0	0	0
Children	1	1	0	2
Ethnicity[2]	4/1/0/0	1/2/1/1	4/1/0/0	9/4/1/1
Trauma History				
Abuse in Childhood[3]	1/1/1	1/2/1	2/0/2	4/3/4
Abuse in Adulthood[4]	3/5/2	2/5/2	2/5/1	7/15/5
Adulthood Road Traffic Accident	0	0	1	1
Adulthood Natural Disaster	0	1	0	1
Current Axis I comorbidities				
Major depressive disorder	3	3	1	7
Eating disorder	0	1	0	1
Obsessive Compulsive Disorder	0	0	1	1
Panic Disorder[5]	1	1	2	4

[1] Secondary education/College/Further Education – Undergraduate/Further Education – Postgraduate;
[2] White/Black/Asian/Mixed;
[3] Sexual/Physical/Emotional
[4] Domestic Violence/Rape or Sexual Assault/Physical Assault;
[5] Secondary to PTSD diagnosis

Table 6.2: Pre- and Post-treatment Scores for Symptom and Process Measures

	Pre		Post			
	M	*SD*	*M*	*SD*	*t* (15)	*d*
CAPS Severity	72.92	16.00	56.31	17.28	2.70*	1.18
DERS	116.46	23.42	93.54	16.49	3.97**	1.13
Beck Depression Inventory	26.62	9.06	16.23	4.71	5.82***	1.44
CTSQ Total Score	100.38	43.54	63.92	31.76	4.12**	0.96
Chronic state of perceived threat	17.15	6.99	12.38	6.42	2.63	0.71
Emotion dysregulation	16.85	5.51	12.77	5.72	2.32	0.73
Disturbed sense of self	25.92	13.36	16.54	11.58	3.54**	0.75
Lack of Recognition and Agency	9.54	6.05	4.15	3.89	4.46**	1.06
Interpersonal disturbances	13.15	7.40	10.08	7.27	1.50	0.42
Emotional blunting	12.38	6.89	6.62	3.64	3.47**	1.05
Lack of Meaning	5.38	3.48	1.38	1.66	4.76***	1.47
PTCI Total Score	171.77	40.83	128.08	29.71	4.41**	1.22
Negative cognitions about the self	4.49	1.31	3.28	0.88	3.79**	0.48
Negative cognitions about the world	5.11	1.29	4.29	1.00	4.37**	0.47
Self-blame	4.15	1.03	2.80	1.19	3.90**	0.52

*Note. * p<0.05 ** p<0.01 *** p<0.001*

All participants presented with complex features of PTSD, including emotion regulation difficulties, interpersonal problems, impulsive and/or self-destructive behaviour, high levels of dissociation, substance-related problems, and somatic symptoms. Fourteen of the 15 met criteria for DSM-IV PTSD on the CAPS at baseline. The participant who did not meet criteria for PTSD on the CAPS at baseline presented with PTSD symptoms of

avoidance and physiological arousal. However, she did not present with reliving symptoms at that time due to very high levels of dissociation and disconnection from her emotions.

All participants had been raped or sexually assaulted in the 12 months prior to the group and had also experienced at least one prior interpersonal trauma in their lives. Participants reported being exposed to between two and *too many to count* past traumatic experiences, as measured by the SCID-I. Seven of the 15 participants had experienced *too many to count* past traumatic experiences due to prolonged abuse in childhood or an adult relationship. Baseline severity on the CAPS was comparable with levels reported in a high dissociation sample of victims of childhood sexual and/or physical abuse (Cloitre et al., 2012), victims of childhood sexual abuse (Chard, 2005), and rape victims with a childhood sexual abuse history (Resick et al., 2003).

6.2.4.2 Group Attendance and Homework Adherence

The main adherence outcomes of interest were mean number of group sessions completed and percentage of homework tasks completed. There was only one drop out from the intervention (one member of the first group was hospitalized due to suicide risk) and data are presented for the remaining 15 group completers. Participants attended an average of 9.07/12 sessions ($SD = 2.99$; range 2–12). An average of 8.8 sessions were attended in the first group, 8.0 in the second group, and 10.2 in the third group. Across groups, participants completed between five and 28 homework tasks in total (out of 32 tasks set) ($M = 15.14$, $SD = 8.11$). An average of 17.2 homework tasks were completed for the first group, 9.4 for the second group, and 19 for the third group. Overall, eight of the 15 group participants (53%) wrote out a narrative of their traumatic experience in between sessions eight and nine (four in the first group, one in the second group, and three in the third group).

6.2.4.3 Clinical Outcomes

The main clinical outcomes of interest were the effect sizes for the symptom and process measures. Prior to the group intervention, 14 participants met DSM-V criteria for PTSD on the CAPS. This reduced to five post-treatment. Table 6.2 shows the inferential statistics and effect sizes assessing change from pre- to post-treatment on CAPS severity score, the CPTSD measure (CTSQ), BDI, PTCI, and DERS for the three groups combined. Figure 6.1 presents pre- and post- scores for each participant on the CAPS, CTSQ, and PTCI. Analyses were Bonferroni corrected for multiple testing (α = .05/15 = .003).

Figure 6.1: Pre- and post-scores on the CAPS, CTSQ, and PTCI

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CTSQ

PTCI
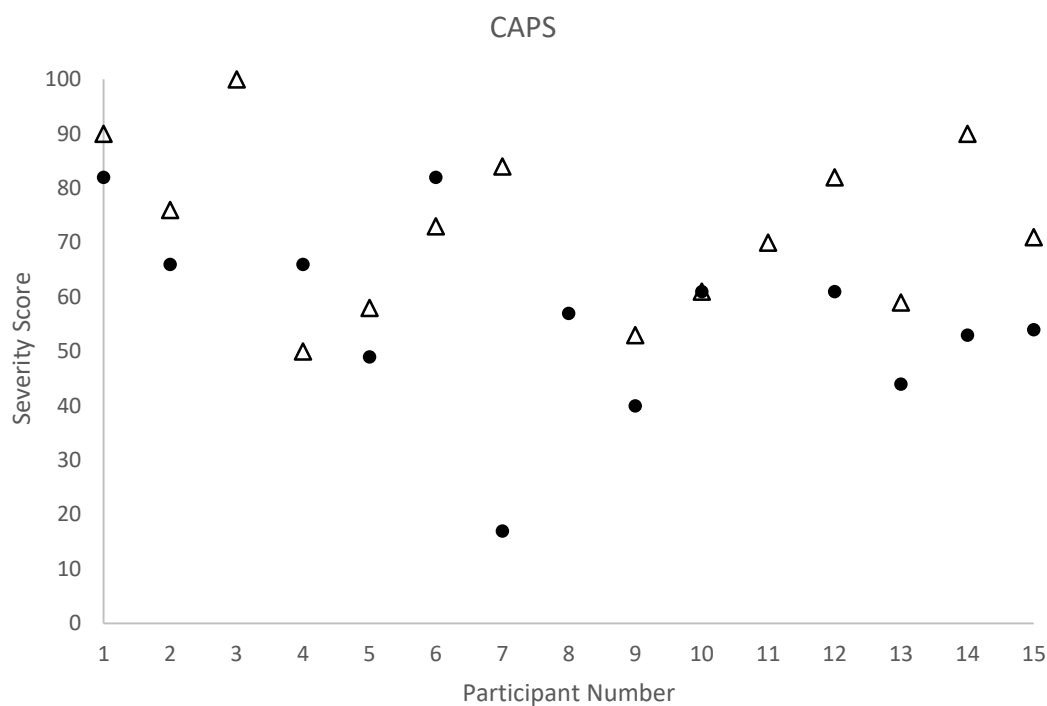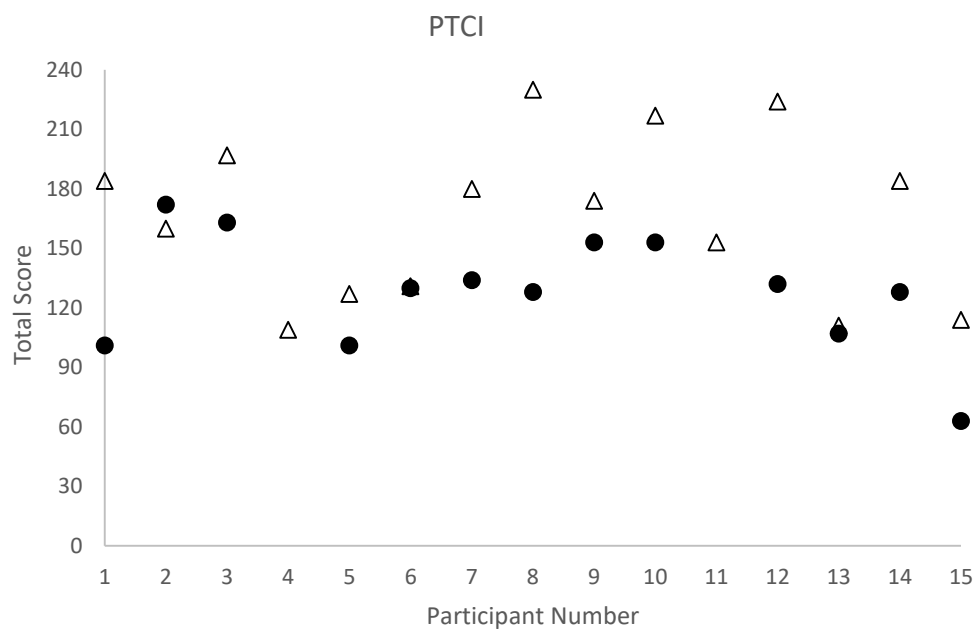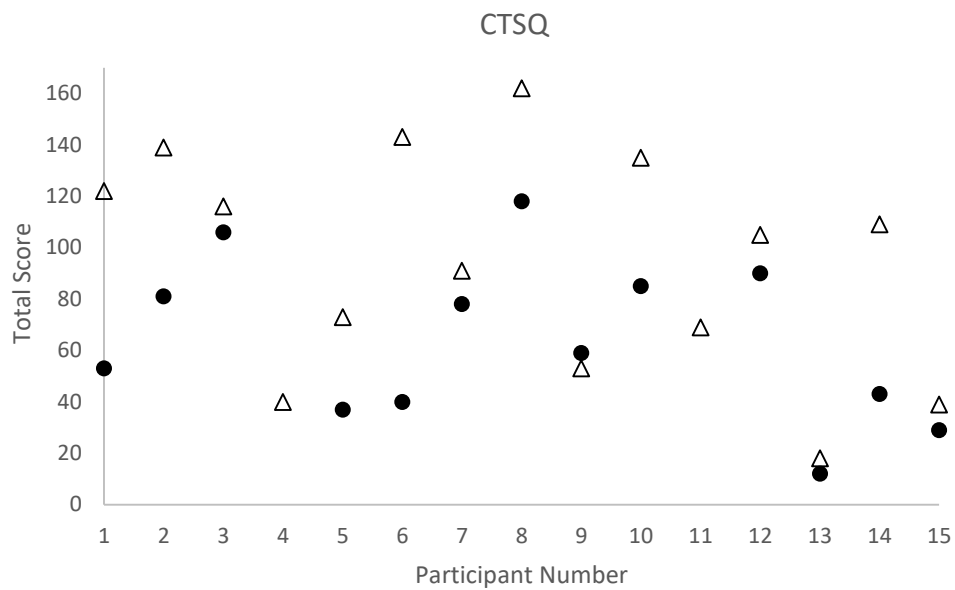
Δ Pre
•   Post

Group 1: Participant Number 1-5
Group 2: Participant Number 6-10
Group 3: Participant Number 11-15

As can be seen, there were medium to large effect sizes (Cohen, 1977) for improvement on all clinical and process outcomes. Although traditional statistical significance was not the focus of this case series, it is worth noting that these effects reached statistical significance (albeit uncorrected for multiple comparisons) for the CAPS, BDI, PTCI, DERS, and the majority of the subscales of the CPTSD measure.

6.2.4.4 Calculation of Reliable Change

Reliable change (Christensen & Mendoza, 1986) indexes whether participants changed sufficiently enough to ensure that the change is unlikely to be due to simple measurement unreliability. The formula for the standard error of change is: $SD1\sqrt{(2)} \times \sqrt{(1-rel)}$, where SD1 is the initial standard deviation and rel indicates the test-retest reliability of the measure. The formula for criterion level, based on change that would happen less than 5% of the time by unreliability of measurement alone, is: $1.96 \times SD1\sqrt{(2)} \times \sqrt{(1-rel)}$. Using this calculation, reliable change was observed for four participants on the CAPS, nine on the BDI, seven on the DERS, and six on the PTCI (see Table 6.3).

Table 6.3: Reliable Change and Clinically Significant Change for Combined Groups

	Test-retest Reliability	*SE* of Change	Reliable Change		Clinically Significant Change	
			Criterion	*n* (%)	Criterion	*n* (%)
CAPS - Severity	0.83	9.47	18.55	4 (27)	15 point change	6 (40)
Beck Depression Inventory	0.89	4.25	8.33	9 (60)	18% decrease	10 (75)
Difficulties in Emotion Regulation Scale	0.88	11.47	22.49	7 (47)		
Post-traumatic Cognitions Inventory	0.82	24.50	48.02	6 (40)		

Note. n = number of participants who met the change criterion.

6.2.4.5 Calculation of Clinically Significant Change

Clinically significant change indexes whether the participant's score on a given measure has shifted from a score typically associated with the presence of clinical problems to a score typical of the healthy population. On the BDI, clinically significant change was defined as an 18% reduction in total score (Button et al., 2015). On the CAPS, a 15-point change indicates clinically significant change (Weathers et al., 2001). Clinically significant change was observed for six participants on the CAPS and 10 on the BDI (see Table 6.3).

6.2.5 Discussion

This case series has demonstrated initial evidence for the feasibility, acceptability, and efficacy of the Emotion- and Memory-Processing Group Intervention. Our primary aim was to determine feasibility and acceptability of the intervention. There was only one drop out

from treatment – who was admitted to hospital – and participants attended an average of 9.07 of 12 sessions and completed an average of 15.14 of the 32 homework tasks set. These outcomes provide initial support for the intervention being feasible and broadly acceptable to participants, although a more in-depth qualitative assessment is now indicated.

We also aimed to explore treatment efficacy. Results demonstrated medium to large effect-size improvements on all clinical and process outcomes. Interestingly, effect sizes for change in emotion regulation, a core element of CPTSD, and change in depression symptoms, perhaps as an index of the negative mood component of CPTSD, were in fact larger than overall severity of PTSD symptoms. For the CAPS, BDI, PTCI, DERS, and the majority of the subscales of the CPTSD measure, these reached traditional statistical significance despite the modest sample size. Furthermore, at post-treatment all three groups demonstrated a reduction in the number of participants who met criteria for PTSD, with nine of 14 participants no longer having a PTSD diagnosis post-treatment. Forty percent of participants demonstrated clinically significant change and 27% demonstrated reliable change on the CAPS. A large effect size ($d = 1.18$) for pre-to-post-treatment change in CAPS symptom severity was superior to the moderate effect size reported in meta-analysis of within-group effects of existing group treatments (Standardized mean gain = 0.55) for survivors of repeated sexual violence (as experienced by our sample) (Sloan et al., 2013). Together, these results suggest that the Emotion- and Memory-Processing Group Intervention shows promise for reducing symptoms of PTSD, other complex features of PTSD, and depression in clients with a history of repeated interpersonal trauma.

There are a number of potential strengths of this protocol. The intervention incorporated elements of the phase-based treatment model into a single group programme. We integrated techniques such as imagery- and nightmare-rescripting to help facilitate the processing of trauma memories, along with sessions focused on the consolidation of

treatment gains, including 'emotionally engaged living', 'interpersonal emotion regulation',

and the 'method of loci' (Dalgleish et al., 2013; Werner-Seidler & Dalgleish, 2016). This

study addresses a research gap by examining the effectiveness of a trauma-focused

intervention for clients with a history of interpersonal trauma and complex features of PTSD

in a group setting, by incorporating the use of mnemonic control techniques and exposure-

based interventions. This Emotion- and Memory-Processing Group Programme has

promising outcomes as a resource-limited trauma-focused intervention for clients with a

history of repeated interpersonal trauma. NICE guidelines currently recommend individual

trauma-focused therapy for individuals with PTSD but, as part of a stepped-care approach

with limited time and resources available, there is promise for this group intervention.

6.2.5.1 Limitations and Future Research

This case series was an important first step in evaluating the clinical utility of the

programme, however, there were some limitations to the study. As recommended for early-

stage work to explore clinical efficacy (Medical Research Council, 2000), we utilized a small

sample size, which limits confidence in the conclusions drawn from the results. Two

participants did experience an increase in PTSD symptoms from pre- to post-treatment;

however, the small sample size limited evaluation of potential participant characteristics or

moderators, which may have influenced treatment effects. Finer examination of patient-level

change will be an important aspect of future, larger studies. Further, absence of an established

diagnostic criteria and psychometric measures for CPTSD limited the availability of rigorous

measures with which in index our outcomes. In addition, not all patients met diagnostic

criteria for PTSD and although all participants had experienced at least two past interpersonal

traumas, only seven participants had experienced prolonged abuse in childhood or an adult

relationship. Variation of treatment effects within different trauma-exposed samples thereby

warrants further consideration. Other limitations include the lack of follow-up to measure the

long-term effects of the intervention and no personality disorder assessments were performed. Moving forward, the increasing emphasis on CPTSD in clinical literature will ensure the availability of sound clinical measures that can be used in future research. As group processes such as peer support, or the normalization of experiences, are likely to contribute to improvement in symptoms, comparison against a control group will be an important next step in developing the intervention. Future studies will need to explore the facilitation of the group programme with a greater number of participants, against control groups.

Further refinement of a treatment protocol is a key aim of a case series, and we identified potential areas in which the intervention may be further developed. Due to concerns identified in the research literature (Beck et al., 2009), direct exposure was not a mandatory part of the group programme. Although we focused on techniques of memory restructuring which involved an element of exposure due to participants being asked to describe their trauma memories (e.g. imagery rescripting), we did not facilitate an in-the-moment reliving session as a group, which would be valuable to consider moving forward.

Avoidance difficulties are a fundamental part of the PTSD presentation and a direct target of trauma-focused interventions. It is difficult to address avoidance in a group setting and to ensure that group participants actually complete homework tasks, such as practicing imagery rescripting or writing out a trauma narrative. Fewer than half of the participants wrote a trauma narrative for homework and, of those who did, it was difficult to determine to what extent they had been *emotionally* engaged with the task at the time. This will thereby need further exploration, as engagement in homework may need to be enhanced to improve treatment effects. Finally, although the group intervention focused specifically on 'emotion regulation' and 'interpersonal emotional regulation', and achieved good outcomes on a standardized measure of emotion regulation – the DERS – the programme nevertheless only

included two-hour sessions focused specifically on each. Group participants had a history of repeated interpersonal trauma and all had some difficulties in emotion regulation and social relationships, and may have benefitted from further intervention in this area.

6.2.5.2 Conclusion

This study represents an important initial step for building knowledge about effective group-based interventions for individuals who present with complex features of PTSD following a history of interpersonal trauma. Group-based treatments are a practical, cost-effective, and efficacious treatment approach for many psychological disorders, and here we have presented preliminary evidence for a group-based treatment approach, which includes elements (e.g. exposure, memory rescripting) essential to effective treatment for trauma survivors. Evidence from this case series provides a solid platform for future completion of a controlled trial of treatment efficacy, as this protocol presents a novel and promising group-based treatment.

6.2.6 References

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END OF RESEARCH PAPER

6.3 Discussion and Integration

Study 5 detailed the development of a 12-session Emotion- and Memory-Focused Group Intervention for complex post-traumatic stress structured around Cloitre's STAIR programme (Cloitre, Cohen, & Koenen, 2006), and the initial assessment of the group intervention's utility as a clinical technique, using a case series design, in line with recommendations for the development of complex interventions (e.g., Medical Research Council, MRC, 2000). We aimed to develop the treatment protocol in preparation for a future feasibility trial, to provide a preliminary examination of the group programme's efficacy for reducing symptoms of PTSD, CPTSD and depression in female victims of rape or sexual assault, and to explore the initial acceptability and feasibility of the protocol, by monitoring drop out, attendance and completion of homework tasks in a series of three groups of women.

Our results indicated that the programme holds promise as a clinical technique. There were medium to large effect-size improvements on all clinical and process outcomes. For the CAPS, BDI, PTCI, DERS and the majority of the subscales of the CPTSD measure, these reached traditional statistical significance ($p < .05$) despite the modest sample size. Furthermore, at post-treatment all three groups demonstrated a reduction in the number of participants who met criteria for PTSD, with 9 of 14 participants no longer having a PTSD diagnosis post-treatment and with 40% of participants demonstrating clinically significant change and 27% demonstrating reliable change on the CAPS.

The intervention followed the ISTSS guidelines by incorporating elements of the phase-based treatment model into a single group programme and there are a number of strengths of this protocol. Sessions focused on safety and stabilization by providing participants with a greater understanding and awareness of their emotions and teaching them strategies to better manage their emotions when they became overwhelming. We integrated techniques, such as group-based imagery- and nightmare-rescripting to help facilitate the processing of trauma memories and we included sessions focused on the consolidation of treatment gains, including 'emotionally engaged living', 'interpersonal emotion regulation' and the 'method of loci.' (Dalgleish et al., 2013; Werner-Seidler & Dalgleish, 2016). This study addressed a critical research gap by examining the effectiveness of a trauma-focused intervention for clients with complex trauma histories in a group setting. This group programme incorporated the use of mnemonic control techniques and exposure-based interventions, a key feature of efficacious treatments for PTSD (e.g. Foa et al., 2005).

This Emotion and Memory-Focused group programme has promising outcomes for a time-limited trauma-focused intervention for clients with complex trauma histories. NICE guidelines currently recommend individual trauma-focused therapy for individuals with PTSD but, as part of a stepped-care approach with limited time and resources available, there is promise for this group intervention.

Further refinement of a treatment protocol is a key aim of a case series, and we have identified in the manuscript potential areas in which the intervention may be further developed. To expand on the area of affective domain problems in PTSD and CPTSD, symptoms of emotion regulation and interpersonal disturbance have been conceptualised as the *'emotional, social, cognitive and psychological competencies that either failed to develop properly or that deteriorated due to prolonged exposure to complex trauma'* (ISTSS guidelines, page 5, 2008), requiring interventions to target *'improvement in key functional capacities for self-regulation and*

strengthening of psychosocial and environmental resources.' (page 5) Although the group

intervention focused specifically on 'emotion regulation' and 'interpersonal emotional

regulation,' and achieved good outcomes on a standardized measure of emotions regulation – the

DERS – as discussed in the manuscript, future Group Programmes would benefit from a greater

focus on these areas of intervention.

CHAPTER 7

General Discussion

7.1   Overview

Each of the studies in this thesis includes an extensive discussion of the findings within the five research papers presented in chapters 2 through 6. At the end of each chapter, I have also included a discussion and integration section, linking the findings of each of the research papers with the over-arching themes of the thesis. Chapter 7, therefore, presents a more general discussion incorporating the broader clinical implications and general limitations of the research.

7.2   Summary of Aims

This thesis investigates how memory systems may become disrupted by trauma and what this means for the development of the sense of self and consequent symptoms associated PTSD and CPTSD presentations. The overarching questions of the thesis, which I aimed to answer within each of the research studies, were: 1) whether the organisation of past autobiographical knowledge and self-concept differed in individuals with PTSD following sexual trauma relative to non-clinical controls; 2) whether pseudohallucinations were prevalent in those with PTSD; 3) whether there was an association between emotional diversity and clinical manifestations of PTSD; and 4) whether a group intervention integrating some of the emerging intervention techniques for more complex features of PTSD would be effective.

The first study (see chapter 2) explored the components of autobiographical memory, by examining the organisation of past autobiographical knowledge in a sample of sexual trauma survivors with PTSD compared to a sample of individuals with depression, and healthy controls using a self-descriptive card-sorting task. The second study (see chapter 3) explored self-identity by examining the structure of the self-concept in a sample of sexual

trauma survivors with PTSD compared to healthy controls using a self-descriptive card-sorting task. The third study (see chapter 4) explored the prevalence of pseudohallucinations in a British sample of adult survivors of repeated physical and sexual trauma. The fourth study (see chapter 5) sought to expand existing research findings on the association between emodiversity and mental health to explore the relationship between emodiversity and clinical manifestations of PTSD. The fifth study of this thesis (see chapter six) outlined the development and preliminary evaluation of a group intervention for individuals who had experienced repeated interpersonal trauma.

7.3   Summary of the Findings

The results from studies 1 and 2 indicated that individuals with PTSD utilise a greater proportion of negative descriptors across their life story and self-concept, when compared to non-clinical controls. Those with PTSD also use strategies to compartmentalise or "ring-fence" the distressing or toxic information related to their past traumatic experiences, rather than allowing it to pervade or contaminate other, more positive aspects of their life story and self-concept. As discussed, this is consistent with our understanding of PTSD (and the symptoms in the DSM-V criteria for the disorder) – that PTSD typically includes persistent avoidance of stimuli associated with the trauma, such as attempts to avoid talking or thinking about what happened, avoiding contact with specific reminders or anything that might trigger re-experiencing symptoms and the associated unpleasant emotions. These findings do however contrast with previous research in individuals with clinical depression who have been found to demonstrate greater overall negativity, but also greater redundancy of negative attributes across the life story, reduced positive redundancy, *and* stronger affective compartmentalization than those who had never suffered from depression. (e.g. Showers & Zeigler-Hill, 2007; Dalgleish et al., 2011).

In study 3, in our sample of adults with a history of repeated physical and sexual trauma, we found no evidence to support the previously reported high prevalence rates of auditory pseudohallucinations in PTSD samples assessed using similar interview measures. In light of this, we discussed the possibility that Auditory Verbal Hallucinations (AVHs) could be considered as an artefact of the intrusive memories and auditory re-experiencing of traumatic events, which are commonly experienced by individuals with PTSD.

In study 4, we showed that sexual trauma survivors with a diagnosis of chronic PTSD endorsed a greater diversity of negative emotion descriptors when describing either their current self-structure or their autobiographical past, relative to healthy control participants who had no such trauma history. We suggested that chronic emotional disorders such as recurrent depression and PTSD could be associated with an enhanced *underlying capacity* for emotion regulation but that emotions in the day-to-day remained more dysreguylated as a simple function of the severity and dysfunctionality of symptoms that individuals with these disorders are trying to regulate.

Finally, the results from the group programme outlined in study 5 revealed medium to large effect-size improvements on all clinical and process outcomes. We concluded that the Emotion and Memory-Focused Group Programme has promising effects as a time-limited trauma-focused intervention for clients with complex trauma histories. NICE guidelines currently recommend individual trauma-focused therapy for individuals with PTSD but, as part of a stepped-care approach with limited time and resources available, there is promise for this group intervention.

7.4   Current Theories of PTSD

I will now consider the findings from the five research papers presented in chapters 2 through 6, in light of the current theories of PTSD, to evaluate whether the extant theories adequately account for and conceptualise more complex presentations of the disorder.

A diagnosis of PTSD in the DSM-V requires a person to have had direct or indirect (e.g., witnessing or learning about the experience of a close friend or relative) experience of death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence. The symptoms of PTSD develop in response to a specific incident (or incidents), and there is commonly an observable relationship between the characteristics of the traumatic incident experienced and the content of the intrusive images, the triggers to these, as well as the associated distress and physiological reactivity.

It is well recognised in the literature that individuals presenting with PTSD are not a homogenous group. Individuals who experience repeated interpersonal trauma (including sexual and domestic violence and abuse in childhood) often present with PTSD with more complex features than those exposed to single-incident traumas (Herman, 1997). Despite increasing clinical interest and research regarding these complex features, the proposed 'Complex PTSD' (CPTSD) diagnosis in the ICD-11 has not yet been published. An argument has been made for a distinction between so-called Simple PTSD arising as a result of a single incident trauma and with symptoms largely restricted to those documented within the DSM-V and CPTSD that generally results from protracted exposure to repeated social and/or interpersonal trauma. However, the conceptualization of CPTSD continues to be controversial with many questioning its utility as a distinct diagnostic entity (e.g. Resick et al., 2012).

It has been argued that early trauma and the development of CPTSD can have a pervasive impact on one's life history and sense of self, by changing how people construct their life narrative and perceive themselves, and impacting their emotions and their relationships with others, in a way that simple PTSD does not. Some studies (e.g. Cloitre et al., 2009) suggest that exposure to multiple or repeated forms of maltreatment and trauma in childhood can lead to outcomes that are not simply more severe than the sequelae of single incident trauma, but are qualitatively different in their tendency to affect multiple affective

and interpersonal domains. Although there is a lack of consensus regarding the proposed distinction between simple and more complex presentations of PTSD, and therefore whether a separate treatment approach is required, there is extensive evidence of a relationship between the total number of past traumatic events in childhood and symptom complexity, including emotion regulation difficulties, interpersonal problems, impulsive and/or self-destructive behavior, high levels of dissociation, substance-related problems, or somatic symptoms (Briere, Kaltman, & Green, 2008; Cloitre et al., 2009; Cloitre, Garvert, Brewin, Bryant, & Maercker, 2013).

One of the most widely accepted models of simple (or type I) PTSD is Ehlers and Clark's (2000) cognitive model, which emphasises the role not only of the traumatic experience itself but also of self-relevant appraisals an individual makes of this experience and the use of maladaptive cognitive strategies (e.g., thought suppression) used in response to the experience. The model suggests that these appraisals maintain the sense of current threat as and when the traumatic experience intrudes into present awareness, thus these appraisals are instrumental in promoting the use of maladaptive strategies intended to control the threat and the current symptoms.

In order to conceptualise CPTSD (and accept it as a distinct diagnostic entity), it is important to establish what distinguishes CPTSD from simpler, more straightforward presentations of the disorder. A key distinction made is the repetition of past trauma, usually in an interpersonal domain – that is, that we are working with a client group who have not experienced a single criterion A trauma, but multiple traumatic experiences, often of a similar nature. When reverting back to Ehlers and Clark's (2000) cognitive model, it follows that individuals who have experienced *multiple* past traumatic experiences would present with multiple intrusive memories of their experiences (which can often be merged or thematic in nature), and self-relevant appraisals related to each of these experiences, which, when

repeated over time, may have become more entrenched and therefore harder to challenge. Similarly, maladaptive strategies that have been used repeatedly in an attempt to control the threat may have become more long-standing and ingrained. It follows that some studies have suggested that exposure to multiple or repeated forms of maltreatment and trauma can lead to outcomes that are *qualitatively* different in their tendency to affect multiple affective and interpersonal domains (e.g. Cloitre et al., 2009). This suggestion has been supported by some recent research studies in this area and also observations made by Clinical Psychologists specializing in PTSD in clinical practice – that those meeting the proposed criteria for CPTSD are often qualitatively different in their clinical presentation, in terms of the *type* of symptoms they present with, the *number* of criteria met and not simply the *severity* of those symptoms.

Avoidance strategies (conceptualised as 'maladaptive strategies' by Ehlers and Clark, 2000) are utilised both by individuals with 'simple' PTSD and those with more complex presentations of the disorder. Studies 1 and 2 supported the theory that individuals with PTSD use strategies to compartmentalise or "ring-fence" the distressing or toxic information related to their past traumatic experiences. Findings from these studies suggested that these strategies are utilised by those with PTSD not only to prevent this negative and potentially distressing information from spreading or contaminating other parts of their history or life story, but also to separate it from other, more positive aspects of their self-concept. Our clinical groups for these studies consisted of a sample of individuals who experienced sexual/physical abuse and/or assault and who, as a consequence, had developed PTSD, which makes it hard to generalise the results. We cannot yet be confident that survivors of more discrete or less severe trauma or to other, repeated traumatic experiences that are not interpersonal in nature, would utilise these avoidance strategies in the same way.

Avoidance strategies commonly used by those with PTSD to inhibit the reliving symptoms and overwhelming emotions associated with the disorder are incorporated in the cognitive model of PTSD and have been discussed throughout this thesis. Dissociation during traumatic events is one strategy used and a well-recognised phenomena in the research literature (Holmes et al., 2005; Murray, Ehlers & Mayou, 2002). As discussed more fully in chapter 4, one element of a dissociative mechanism that has been identified as occurring in response to trauma is an auditory verbal hallucination (AVH). The conceputalisation of AVHs and the extent to which hearing voices can be considered phenomenologically independent from other intrusive, unwanted and/or unintended cognitions identified in the cognitive model of PTSD, has been a matter of enduring academic and clinical debate (e.g., Aleman & Larøi, 2008; Slade & Bentall, 1988). There is also the question of whether AVHs are one of the distinct qualitative features that are reported more by individuals with more complex presentations of PTSD and, related to this, whether particular types of trauma exposure or trauma history are more or less likely to be associated with the experience of AVHs, as we know that dissociation is differentially associated with particular profiles of trauma exposure (Briere, 2006).

In study 3, using a sample of adults with a history of repeated physical and sexual trauma, we found no evidence to support the previously reported high prevalence rates of AVHs in other PTSD samples assessed using similar interview measures. We proposed that AVHs should be considered as an artefact of recurrent intrusive memories and the auditory re-experiencing of traumatic events. However, there is a possibility that AVHs are not a feature, specifically, of PTSD populations who have experienced repeated sexual or physical interpersonal trauma. We do not yet have enough evidence to be confident either way but this raises the question of whether different *types* of traumatic experience result in very different symptoms and constellations of symptoms, particularly in those presenting with more

complex forms of the disorder. One of the current challenges in investigating this more fully

is the difficulty we have in distinctly separating out different trauma types and their timing,

especially with those who have experienced childhood trauma (which can involve a different

combination of psychological/emotional, physical and/or sexual abuse for each individual).

The relationship between AVHs or "pseudohallucinations" and past traumatic experiences

clearly needs further investigation, as it has clear implications for treatment.

The results from study 4, along with similar findings in individuals with chronic

depression (Werner-Seidler et al., 2018) suggest that elevated negative emodiversity may be

a transdiagnostic marker of chronic emotional disorders. Based on these findings, we

proposed that, in a non-clinical population, greater negative emodiversity may be associated

with *protection* against mental health difficulties. However, once significant psychological

difficulties become established and consolidated over time, the chronic immersion in

negative affective self-referent material and the relative paucity of positive self-referent

material that goes along with such problems means that those with chronic emotional

disorders such as PTSD develop 'expertise' in negative affective experiences, reflected in a

greater diversity in the way they describe and articulate their experiences.

Indeed, it is well understood that PTSD is conceptualised by a chronic immersion in

negative affective self-referent material and a relative paucity of positive self-referent

material. As discussed in chapter 1, PTSD can persist and symptoms can become exacerbated

due to excessive negative appraisals of the traumatic event and its sequelae (Ehlers & Clark,

2000) and thus can be perpetuated by negative social reactions such as criticism, attribution

of blame or not being believed by others, which can then be internalised. In more complex

presentations of PTSD, these self-relevant appraisals related to each past traumatic

experience, repeated over time, may have become more entrenched and therefore harder to

challenge. It therefore follows that the negative self-concept domain in the proposed criteria

for CPTSD includes these persistent and more entrenched (often referred to as "core beliefs") beliefs about oneself as diminished, defeated, or worthless (e.g. Briere, Kaltman, & Green, 2008; Cloitre, Garvert, Brewin, Bryant, & Maercker, 2013; Cloitre et al., 2009). In the context of emodiversity, the proposal is that these more entrenched negative beliefs are reflected in a greater diversity in the way individuals with PTSD describe and articulate their experiences.

The results from study 4 also led us to theorise about the possibility that chronic emotional disorders such as PTSD are in fact associated with an enhanced *underlying capacity* for emotion regulation but that emotions in the day-to-day remain more dysregulated as a result of the severity and dysfunctionality of the stressful and traumatic experiences that such individuals are trying to regulate. Difficulties in the ability to recognise, identify and regulate emotion have been identified in individuals with PTSD, particularly those with more complex presentations of the disorder. Current conceptualisations suggest that individuals with PTSD over-utilise relatively ineffective emotion regulation strategies, such as expressive suppression and under-utilise more effective emotion regulation strategies such as cognitive reappraisal (Boden et al, 2013). It follows that repeated unpleasant, traumatic experiences over time commonly result in more fully entrenched beliefs about the self, others and the world, but also beliefs in relation to one's own ability to adequately understand, validate and manage distressing emotions. Consequently, the affective domain problems identified in the proposed diagnosis of CPTSD have also been characterised by emotion dysregulation. In relation to this and our findings from study 4, we might expect a relationship between the severity and dysfunctionality of PTSD symptoms and the extent of difficulties experienced in regulating emotion in more complex presentations of the disorder, though further research is needed to more fully investigate this.

In study 5, we describe the development, facilitation and evaluation of a group intervention for individuals who had experienced repeated interpersonal trauma, by implementing the recommended phased-based approach for more complex presentations of PTSD. The group programme was developed in order to address symptoms identified in proposed conceptualisations of CPTSD (e.g., ICD-11), which accept its utility as a distinct diagnostic entity. These conceptualisations include a number of symptoms and strategies identified in the studies presented throughout this thesis: the tendency to compartmentalise negative material through the use of avoidance strategies, alterations in attention and consciousness (including dissociation), entrenched, pervasive negative or "core" beliefs, and difficulties in regulating emotion.

The group programme had promising outcomes for a time-limited trauma-focused intervention for clients with complex trauma histories. However, due to the group format and the limitations identified, it was difficult to accurately determine the mechanisms underlying the effects – specifically, which of the sessions (and particular intervention techniques within those sessions) accounted for an improvement in symptoms. As discussed within chapter 1, we recognise avoidance difficulties as a fundamental part of the PTSD presentation. However, we found it difficult at times to address avoidance in a group setting, to ensure that group participants actually completed in-session and homework tasks and to determine the extent to which they had been *emotionally* engaged with these tasks at the time.

Clinical interventions tailored specifically to address the particular symptoms (or individual criteria) that characterise psychological disorders such as PTSD can inform our conceptualisation of these disorders, based on the efficacy of the interventions used. Results from study 5 showed that effect sizes for change in emotion regulation, a core element of CPTSD, and change in depression symptoms (perhaps as an index of the negative mood component of CPTSD) were in fact larger than overall severity of PTSD symptoms. For the

CAPS, BDI, PTCI, DERS, and the majority of the subscales of the CPTSD measure, pre-to-post-intervention change reached traditional statistical significance despite the modest sample size. Although these findings suggest a positive impact of the intervention of the qualitatively distinct symptoms associated with more complex presentations, we are not able to directly attribute particular group sessions or interventions used to the observed change in particular symptoms due to the issues discussed above. Further refinement of this group programme (and interventions for this client group more generally) as well as the use of relevant (and perhaps more specifically tailored) outcome measures would be required to obtain a greater insight into more complex presentations of CPTSD and which of the symptoms (or symptom clusters) improve in response to particular therapeutic interventions. However, this study has taken a positive step in this direction, and indicated the such future research is worthwhile.

Although the ICD-11 includes a proposal for diagnosis of CPTSD, and there has been an increasing clinical interest and research in this area, research studies are sparse and relatively recent, with most studies conducted within the last ten years. There remains contention in the field and a lack of agreement regarding whether CPTSD should be considered as a separate disorder and, if it is accepted as such, how it should be conceptualised. This thesis contributes to the conceptualisation of CPTSD through the identification of particular symptoms that characterise a client group who have experienced repeated interpersonal trauma: the compartmentalisation of negative material through the use of avoidance strategies; alterations in attention and consciousness (including dissociation); entrenched, pervasive negative or "core" beliefs; and difficulties in regulating emotion. The group programme was designed to address these difficulties, and the broader symptoms identified in the proposed conceptualisations of CPTSD. The intervention was shown to be effective in treating and improving a number of the additional symptoms identified in more complex presentations of PTSD. Only with more research in this area can we further refine our understanding of these more complex presentations

of CPTSD and determine how best to conceptualise and define individuals with such a wide range of past traumatic experiences and such a heterogenous range of clinical presentations.

7.5   Current CPTSD Treatments

Following on from the previous discussion relating to the conceptualisation of CPTSD, and in light of the studies included in this thesis, I now consider whether the current treatments available are adequate in effectively treating more complex presentations of PTSD.

Although the ICD-11 includes a proposal for diagnosis of CPTSD, and there has been an increasing clinical interest and research in this area, there also remains a question regarding whether current evidence-based interventions for PTSD (e.g. eye movement desensitisation and reprocessing [EMDR], trauma-focused cognitive behavioural therapy [TF-CBT]) need to be tailored to better account for complex features (Cloitre et al., 2012; van Minnen, Harned, Zoellner, & Mills, 2012).

Only the most recent NICE guidelines, published in December 2018 (NG116, section 1.7.3) include recommendations for individuals with additional needs, including those with CPTSD. These recommendations include: increasing the duration or number of therapy sessions in order to *'develop trust'* in the therapeutic relationship; taking into account the *'safety and stability of the person's personal circumstances'* and being mindful of how this might affect engagement and treatment outcomes; *'help the person manage any issues that might be a barrier to engaging with trauma-focused therapies, such as substance misuse, dissociation, emotional dysregulation, interpersonal difficulties or negative self-perception';* and provide any *'ongoing support they will need'* to manage residual PTSD symptoms or comorbidities. Although these recent clinical guidelines go some way in incorporating some

of the additional symptoms and challenges identified in individuals with more complex presentations of PTSD, there are no specific recommendations regarding the specific therapeutic interventions that should be used to address these. Some of the symptoms incorporated in conceptualisations of CPTSD and identified throughout this thesis, including *'dissociation, emotional dysregulation, interpersonal difficulties'* and *'negative self-perception'* are defined in the NICE guidelines as potential *'barriers to engaging with trauma-focused therapies'* and it is recommended that therapists should *'help the person manage'* these potential issues. However, there is no further detail provided in the guidelines regarding *how* these issues should be managed.

As discussed in Chapter 1, recent figures for PTSD suggest an average recovery rate of 37.8% (Health and Social Care Information Centre, 2016) following TF-CBT but dropping as low as 15–20% for some services, making it one of the disorders with lowest recovery in UK-based Improving Access to Psychological Therapies (IAPT) services (Murray, 2017). One reason proposed for the low recovery rates following treatment for PTSD relates to the recognised complexity of the disorder. It is widely accepted that the effects of trauma exposure are heterogeneous and according to a number of researchers, this heterogeneity is not addressed in many of the evidence-based therapies available to date (e.g. Cloitre, 2015).

Although there is a lack of agreement regarding whether the existing trauma-focused treatments for PTSD need to be modified for more complex presentations of the disorder, due to the recognised heterogeneity of the disorder and the low recovery rates following available treatments, some researchers and clinicians argue that interventions should be adapted to address the additional symptoms identified in individuals presenting with more complex presentations of the disorder. An expert consensus survey (Cloitre et al., 2011) indicated that 84% of 50 expert clinicians endorsed a phase-based or sequenced approach as a first line treatment for CPTSD. However, the efficacy of the phase-based treatment approach for

treating CPTSD has only been addressed in two studies to date, both of which evaluated the efficacy of the STAIR treatment approach[12]. The first study (Cloitre, Koenen & Cohen, 2002) suggested that the combination of STAIR/exposure is feasible and leads to a decrease in PTSD and a broad range of other symptoms associated with CPTSD. The second study (Cloitre et al., 2010) evaluated the efficacy of STAIR/exposure versus supportive counselling followed by prolonged exposure, and versus STAIR followed by supportive counselling, with women who had PTSD related to childhood sexual and/or physical abuse. The application of STAIR/exposure was found to be associated with greater benefits compared to the support/exposure condition in terms of self-reported reduction in PTSD symptom severity and also symptoms associated with more complex presentations of the disorder including interpersonal problems, and emotion regulation, but only at the three and six month follow up. Immediately after treatment, all three experimental treatment conditions resulted in a substantial proportion of patients no longer meeting criteria for PTSD. However, it was argued that the lack of a treatment condition in which patients were directly exposed to their traumatic memories prevented definite conclusions being made about the relative benefits of a phase-based treatment approach over an immediate trauma-focused approach for patients suffering from PTSD related to childhood abuse (De Jongh et al., 2016).

In the absence of further research studies investigating phased-based approaches for the treatment if CPTSD, there is no clear evidence-base at this time to demonstrate consistently superior treatment effects for the use of a standard or phase-based approach to treating complex features (e.g.,Wagenmans, Van Minnen, Sleijpen, & De Jongh, 2018; Bongaerts, Van Minnen, & De Jongh, 2017; Cloitre, 2016; Van Minnen et al., 2012).

In study 5, we described the development, facilitation and evaluation of a group intervention for individuals who had experienced repeated interpersonal trauma: an Emotion-

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[12] STAIR is a phase-based, sequential treatment that was specifically developed to treat women (in individual therapy) who had experienced childhood sexual abuse.

and Memory-Processing Group Programme. We implemented the recommended phased-based approach for more complex presentations of PTSD by basing our group programme on the STAIR (Cloitre, Cohen, & Koenen, 2006) protocol. The group programme had promising outcomes for a time-limited trauma-focused intervention for clients with complex trauma histories. However, as noted above, due to the group format and the limitations identified, it was difficult to accurately determine which of the sessions (and particular interventions within those sessions) accounted for an improvement in symptoms.

The existing treatments for CPTSD are in an early stage of development. Although the phase-based STAIR approach has promising results for both individual and group treatment, further research in this area is needed. Specifically, it is necessary to refine the treatment protocols, to conduct robust, controlled trials with people with a wider range of trauma histories and to develop more specifically tailored outcome measures. Finer examination of patient-level change will be an important aspect of future, larger studies. However, the absence of an established diagnostic criteria and psychometric measures for CPTSD limits the possibility of rigorous outcome measures being utilised at this time.

It follows that the clinical presentation and conceptualisation of CPTSD needs to be fully and more comprehensively defined before adequate treatment approaches can be developed. This also leaves us with the important question of whether we need to think about tailoring particular interventions to different constellations of symptoms of more complex presentations of PTSD in a more 'transdiagnostic' sense, rather than attempting to put together a "one size fits all" intervention.

7.6   General Limitations

The specific limitations for each of the studies (1-5) are discussed in full within the respective manuscripts in chapters 2-6 of this thesis. Here I will draw out some more general

limitations in relation to the over-arching questions of the thesis and the research conducted with the aim of answering these questions.

For the studies presented in this thesis, we selected participants with PTSD with a similarly chronic history. We focused on PTSD following sexual assault or abuse due to the recognition that presentations consistent with the ICD-11 criteria have been more frequently reported in survivors of repeated interpersonal and/or sexual trauma, relative to other trauma survivors (e.g., Karatzias et al., 2017; Powers et al., 2017). We anticipated that the long-lasting effects of such significant interpersonal trauma might have the clearest effects on the variables we sought to measure such as autobiographical memory, self-concept and overall life structure (Herman, 1992).

However, as identified throughout this thesis, individuals presenting with PTSD are not a homogenous group and some studies (e.g. Cloitre et al., 2009) suggest that exposure to multiple or repeated forms of maltreatment and trauma can lead to outcomes that are qualitatively different in their tendency to affect multiple affective and interpersonal domains. An increasing number of different types of traumatic experiences have been associated with an increasingly greater number of different types of symptoms experienced simultaneously (i.e., symptom complexity; Briere, Kaltman, & Green, 2008; van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005) and this association can occur following repeated trauma in adulthood as well as childhood.

Our clinical groups for the studies outlined in this thesis consisted of a sample of individuals who experienced sexual/physical abuse and/or assault and who, as a consequence, had developed PTSD, which makes it hard to generalise the results from our studies to other trauma types. We cannot yet be confident that survivors of more discrete, less severe trauma or to other, repeated traumatic experiences that are not interpersonal in nature (such as combat-related trauma), would present with the same constellation of symptoms, utilise the

same strategies in managing those symptoms and respond in the same way to a phase-based treatment. Another limitation related to the samples used is that the participants were all female, and the sample sizes for the clinical groups were modest, as is often the case for hard-to-recruit clinical samples.

However, there is no suggestion in the pattern and magnitude of the results that lack of statistical power is responsible for any of the findings. More specifically in relation to our group programme (study 5), the small sample sizes in each of the groups we facilitated limits confidence in the conclusions drawn from the results. Two participants did experience an increase in PTSD symptoms from pre- to post-treatment, however, the small sample size limited evaluation of potential participant characteristics or moderators which may have influenced treatment effects.

Another limitation of studies 1-4 is the lack of replication, which also limits our ability to generalise our results. Repeating studies by testing the same or additional samples of the target population with the same methods can provide supportive or contradictory results and also control for any extraneous variables that might have confounded the original findings. Although we replicated the group programme three times as part of a case series, we did not include any follow-up to measure the longer-term effects of the intervention.

Choice of control groups may also limit the strength of our conclusions. Our control groups for studies 1-4 comprised individuals who did not report a history of interpersonal trauma and who did not meet criteria for PTSD. This means that it is not possible to disentangle whether it is the development of PTSD rather than the trauma history, per se, that can account for differences in our findings from these studies. As discussed in the limitations section of each of our studies, it is very difficult to find individuals with this kind of trauma history, at the level of severity of our sample, who are without mental health problems and so any trauma-matched control group would likely present with significant symptoms of PTSD

(alongside diagnoses of other disorders) even though they might not meet criteria for a full diagnosis. In study 1, because the procedure for a previously conducted and published MDD study (see Dalgleish et al., 2011) was almost identical to our PTSD study, and the two studies were conducted in the same research setting by the same research team, we did statistically compare the MDD and PTSD groups, against controls, to further evaluate these apparent differences in life-structure across the two clinical groups. Other than study 1, however, we did not include comparison with a psychiatric control group which means we cannot be confident that our results are specific to PTSD. Similarly, our group programme case series outlined in study 5 did not include comparison against a control group/intervention.

Finally, an additional limitation is that the studies outlined in this thesis were cross-sectional, which makes it difficult for us to be confident in the causal role of the variables investigated (including the structure of the life story and self-concept and emodiversity) in the onset and maintenance of PTSD.

7.7   Future Research Questions

As discussed previously in Chapter 7, research studies in the area of CPTSD are sparse and relatively recent. There are a number of questions which are yet to be answered, particularly in regards to whether CPTSD should be considered a separate disorder to 'simple' or type 1 PTSD. This thesis contributes to the conceptualisation of CPTSD through the identification of particular symptoms in a client group who have experienced repeated interpersonal trauma. However, more research is required for us to further refine our understanding of these more complex presentations of CPTSD.

The proposal for a diagnosis of CPTSD in the ICD-11 and the inclusion of recommendations for treatment of individuals with additional needs (including those with CPTSD) in the most recently published NICE guidelines for PTSD are a step in the right question but a great deal more research in this area is required.

Prior to the facilitation and evaluation of our group programme, the efficacy of the phase-based treatment approach for treating CPTSD had only been addressed in two studies and, in the absence of further research studies, there is not enough evidence to support the use of a phase-based approach to treating complex features of PTSD (e.g.,Wagenmans, Van Minnen, Sleijpen, & De Jongh, 2018; Bongaerts, Van Minnen, & De Jongh, 2017; Cloitre, 2016; Van Minnen et al., 2012).

Future research directions could address the limitations identified in this thesis. For example, it would be beneficial to replicate the studies with clinical groups in larger samples including individuals with PTSD who have experienced different, non-interpersonal traumas, male as well as female participants and other psychiatric control groups. Future studies could also examine the replicability of the effects with survivors of more discrete or less severe trauma to seek to disentangle the experience of trauma from the presence of PTSD. Such studies would also speak to the generalisability of the effects from severe interpersonal trauma to other trauma categories.

In order to address the issue of causality, it would be beneficial to conduct longitudinal or experimental manipulation studies. For example, future studies could intervene to decompartmentalise the self-concept by encouraging individuals to generate negative aspects of mostly positive selves and positive aspects of mostly negative selves to determine if a more integrated structure led to a reduction in PTSD symptoms. As discussed in relation to study 5, finer examination of patient-level change will be an important aspect of future, larger studies. Moving forward, the increasing emphasis on CPTSD in clinical literature will hopefully also ensure the availability of sound clinical measures that can be used in future research in this area. This thesis has taken some positive steps toward improving understanding of the conceptualisation and treatment of CPTSD, but much more needs to be done to help to improve quality of life for affected individuals.

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THESIS APPENDICES

Appendix 1.0: Measures

A. MOOD EPISODES

A1 – A15: MAJOR DEPRESSIVE EPISODE CRITERIA

"Now I am going to ask you some more questions about your mood ..."

NOTE: Criterion B (i.e., does not meet criteria for a Mixed Episode) has been omitted from the SCID.

A. Five (or more) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (1) or (2)

In the past month...

| A1 | ...has there been a period of time when you were feeling depressed or down most of the day, nearly every day? (What was that like?) IF YES: How long did it last? (As long as 2 weeks?) | ? | - | + |

(1) Depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful). **Note**: In children and adolescents, can be irritable mood.

| A2 | ... What about losing interest or pleasure in things you usually enjoyed? IF YES: Was it nearly every day? How long did it last? (As long as 2 weeks?) | ? | - | + |

(2) Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation made by others)

> If neither **A1** nor **A2** is "+" during the current month, check for past Major Depressive Episodes by asking questions **A1** and **A2** again looking for lifetime episodes, beginning with "Has there EVER…"
>
> IF AT LEAST ONE PAST DEPRESSED PERIOD: Have you had more than one time like that? Which one was the worst?
>
> If neither **A1** nor **A2** has ever been "+", go to **A16** (*Manic Episode*).

FOR THE FOLLOWING QUES

A3 How was your appetite? (Weight loss/gain, increased/decreased appetite?)

?   -   +

(3) Significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day. **Note**: In children, consider failure to make expected weight gains.

A4 How were you sleeping? (insomnia/hypersomnia, trouble falling asleep, waking frequently, waking too early) How many hours a night compared to usual? Was that nearly every night?

?   -   +

(4) Insomnia or hypersomnia nearly every day.

A5 Were you so fidgety or restless that you were unable to sit still? (was it so bad that other people noticed? What did they notice? Was it nearly every day?) *IF NO* what about the opposite?

?   -   +

(5) psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down)

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A6 What was your energy like? Fatigue/loss of energy, nearly every day ? - +
(6). Fatigue or loss of energy nearly every day

A7 How did you feel about yourself? (Worthless, guilty), nearly every day. ? - +
(7). Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick).
NOTE: CODE "-" IF ONLY LOW SELF ESTEEM

A8 Did you have trouble thinking or concentrating? (Indecisiveness) what kind of things did it interfere with? IF NO: Was it hard to make decisions about every day things? ? - +
(8). Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by objective account or as observed by others).

A9 Were things so bad that you were thinking a lot about death or that you would be better off dead? What about thinking of hurting yourself? IF YES: Did you do anything to hurt yourself? ? - +
(9). Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan or committing suicide.

A10 | AT LEAST FIVE OF A(1) – A(9) ARE "+" AND AT LEAST ONE OF THESE IS ITEM A(1) OR A(2). | ?   -   +

> If **A10** is "-" (i.e., fewer than give are "+"), ask the following if unknown:
>
> Have there been any other times when you've been depressed and had even more of
> the symptoms that we've just talked about?
> If "yes", go back to **A1** and ask about that episode.
> If "no", go to **A16** (*Manic Episode*).

A11 | IF UNCLEAR: has [the depression/OWN WORDS] made it hard for you to do your work, take care of
things at time or get along with other people? | ?   -   +

   C. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

> If **A11** is "-" (i.e. not clinically significant), ask the following if unknown:
>
> Have there been any other times when you've been depressed and it had more of an
> effect on your life?
> If "yes", go back to **A1**, and ask about that episode
> If "no", go to **A16** (*Manic episode*)

A12 | Just before this began, were you physically ill? Taking any medications/change in amount of medications? | ?   -   +

Just before this began, were you drinking or using any street drugs?

   D. The symptoms are not due to the direct physiological effects of a substance (e.g., a drug abuse, medication) or a general

medical condition.

Etiological general medical conditions include degenerative neurological illnesses (e.g., Parkinson's disease)(, cerebrovascular disease (e.g., stroke), metabolic conditions (e.g., vitamin B12 deficiency), endocrine conditions (e.g., hyper- and hypothyroidism, hyper- and hypoadrenocorticism), viral or other infections (e.g., hepatitis, mononucleosis, HIV), and certain cancers (e.g., carcinoma of the pancreas).

Etiological substances include alcohol, amphetamines, cocaine, hallucinogens, inhalants, opioids, phencyclidine, sedatives, hypnotics, anxiolytics. Medications include antihypertensives, oral contraceptives, corticosteroids, anabolic steroids, anticancer agents, analgesics, anticholinergics, cardiac medication.

> If there is any indication that the depression may be secondary (i.e., a direct physiological consequence of a general medical condition or substance), go to **A61** and return here to make a rating of "+" or "-".

> If **A12** is "-" (i.e. mood is due to a substance or general medical condition), ask the following:
>
> Have there been any other times when you've been depressed and it was not because of [GENERAL MEDICAL CONDITION/SUBSTANCE USE]?
> If "yes", go back to **A1**, and ask about that episode
> If "no", go to **A16** (*Manic episode*)

A13   IF UNKOWN: did   ?   -   +

Have there been any other times when you've been depressed and it was not because of the loss of a loved one?

E. The symptoms are not better accounted for by Bereavement, i.e., after the loss [death] of a loved one, the symptoms persist for longer than 2 months or are characterised by marked functional impairment, morbid preoccupation with worthlessness, suicidal ideation, psychotic symptoms, or psychomotor retardation.

> If **A13** is "-" (i.e., the depressed mood is better accounted for by Bereavement), ask the following:
>
> Have there been any other times when you've been depressed and it was not because of the loss of a loved one?
> If "yes", go back to **A1**, and ask about that episode
> If "no", go to **A16** (*Manic episode*)

A14 IF UNKOWN: have you had (SYMOTOMS RATED "+" ABOVE) in the past month?   ?   -   +

CRITERIA A, C, D AND E ARE "+" (MAKE A DIAGNOSIS OF MAJOR DEPRESSIVE EPISODE)

A15 How many separate times have you been [depressed/OWN WORDS] nearly every day for at least 2 weeks and had several of the symptoms you just descried, such as [SYMPTOMS OF THE WORST EPISODE] _____

Total number of Major Depressive Episodes, including current (CODE 99 if too numerous or indistinct to count)

A16 – A29 MANIC EPISODE CRITERIA

NOTE: Criterion C (i.e., does not meet criteria for a Mixed Episode) has been omitted from the SCID.

A16 Have you ever had a period of time when you were feeling so good, high, excited or hyper that   ?   -   +

other people thought you were not your normal self or you got in trouble? (Did anyone say you were manic? Was it more than just feeling good?) What was that like? IF NO: What about a period of time when you were so irritable that you found yourself shouting at people or stating fights or arguments? (Did you find yourself yelling at people you didn't really know?)

A. A distinct period of abnormally and persistently elevated, expansive or irritable mood...

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> If **A16** is "-" (i.e., never any periods of elevated or irritable mood), go to **A45** (*Dysthymic Disorder*).

A17 How long did that last? (As long as 1 week? Did you have to go into hospital?)   **?   -   +**

> If **A17** is "-" (i.e., duration is less than 1 week), go to **A30** (*Hypomanic Episode*).

Have you had more than one time such as this? Which time were you most [high irritable/OWN WORDS]

IF UNKNOWN: During this time, when were you the most [OWN WORDS for euphoria or irritability]?

FOR ITEMS A18 – A27 FOCUS ON THE MOST EXTREME EPISODE

B. During the period of mood disturbance, three (or more) of the following symptoms have persisted (four if the mood is only irritable) and have been present to a significant degree:

A18 How did you feel about yourself? (more self-confident than usual? Any special powers or abilities?)   **?   -   +**

(1). Inflated self esteem or grandiosity

A19 | Did you need less sleep than usual? IF YES: did you feel rested?

(2). Decreased need for sleep (e.g., feels rested after only 3 hours sleep)

?   -   +

A20 | Were you much more talkative than usual? (Did people have trouble stopping you or understanding you? Did people have trouble getting a word in edgeways?)

(3). More talkative than usual or under pressure to keep talking

?   -   +

A21 | Were your thoughts racing through your head?

(4). Flights of ideas or subjective experience that thoughts are racing.

?   -   +

A22 | Were you so easily distracted by things around you that you had trouble concentrating or staying on one track?

(5). Distractibility (i.e., attention too easily drawn to unimportant or irrelevant external stimuli)

?   -   +

A23 | How did you spend your time? Were you so active that your friends/family was concerned?

IF NO INCREASED ACTIVITY: were you physically restless? How bad was it?

(6). Increase in goal-directed activity (socially, at work or school, or sexually) or psychomotor agitation.

?   -   +

A24 | Did you do anything that could have caused trouble for you or your family? (Buying things not needed?

reckless driving? Anything sexual that was unusual for you?)

(7). Excessive involvement in pleasurable activities that have a high potential for painful consequences (e.g., engaging in unrestrained buying sprees, sexual indiscretions, or foolish business investments).

?   -   +

A25 | AT LEAST THREE OF B(1)-B(7) ARE "+" (OR FOUR IF MOOD IS IRRITABLE AND NOT ELEVATED)

?   -   +

If **A25** is "-" (i.e. fewer than three are "+"), ask the following if unknown:

Have there been any other times when you were [high/irritable/OWN WORDS] and had even more of the symptoms that we've just been talking about?
If "yes", go back to **A16**, and ask about that episode
If "no", go to **A45** *(Dysthymic episode)*

A26 IF NOT KNOWN: At the time, did you have serious problems at home or at work (school) because ?   -   +

you were [SYMPTOMS] or did you have to go into hospital?

D. The mood disturbance is sufficiently severe to cause marked impairment in occupational functioning or in usual social activities or relationships with others, or to necessitate hospitalisation to prevent harm to self or others, or there are psychotic features.

If **A26** is "-" (i.e. not sufficiently severe), ask the following:

Have there been any other times when you were [high/irritable/OWN WORDS] and you got into trouble with people or were hospitalised?

If "yes", go back to **A16**, and ask about that episode

If "no", go to **A39** (Criterion C for Hypomanic Episode)

A27 Just before this began, were you physically ill/were you taking any medication (change in amount)/ just ?   -   +

before this began were you drinking or taking any street drugs?

E. The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

Note: Manic-like episodes that are clearly caused by somatic antidepressant treatment (e.g., medication, electroconvulsive therapy, light therapy) should not count toward a diagnosis of Bipolar I Disorder but are considered Substance-Induced Mood Disorders.

Etiological general medical conditions include degenerative neurological illnesses (e.g., Huntington's disease, multiple sclerosis), cerebrovascular disease (e.g., stroke), metabolic conditions (e.g., vitamin B12 deficiency, Wilson's disease), endocrine conditions (e.g., hyperthyroidism), viral or other infections and certain cancers (e.g., cerebral neoplasms).

Etiological substances include alcohol, amphetamines, cocaine, hallucinogens, inhalants, opioids, phencyclidine, sedatives, hypnotics, and anxiolytics. Medications include psychotropic medications (e.g., antidepressants), corticosteroids, anabolic steroids, isoniazid, antiparkinson medication (e.g., levodopa), and sympathomimetics/decongestants.

If there is any indication that the mania may be secondary (i.e., a direct physiological consequence of a general medical condition or substance), go to **A57** and return here to make a rating of "+" or "-".

A28   IF UNKNOWN

If **A27** is "-" (i.e. the mania is due to a substance or general medical condition), ask the following:

Have there been any other times when you were [high/irritable/OWN WORDS] and you were not [physically ill/taking medication/using SUBSTANCE]?
If "yes", go back to **A16**, and ask about that episode
If "no", go to **A39** (Criterion C for Hypomanic Episode)

?   **-**   **+**

CRITERIA A, C, D AND E ARE "+" (MAKE A DIAGNOSIS OF MANIC EPISODE)

A29   How many separate times were you [HIGH/OWN WORDS] and had [ACKNOWLEDGED MANIC SYMTOMS] _____ for at least a week (or were hospitalised)?
Total number of Manic Episodes, including current (CODE 99 if too indistinct or numerous to count)

YOU ARE NOW FINISHED EVALUATING MOOD EPISODES. GO TO MODULE B (PSYCHOTIC AND ASSOCIATED SYMPTOMS), **B1**.

A30 – A44: HYPOMANIC EPISODE CRITERIA

A30 IF UNKNOWN: when you were [high/irritable/OWN WORDS], did it last for at least 4 days?   ?   -   +

Have you had more than one time like that? (which time were you the most [high/irritable/OWN WORDS]

A   A distinct period of persistently elevated, expansive, or irritable mood, lasting throughout at least 4 days, that is clearly different from the usual nondepressed mood.

> If **A30** is "-" (i.e., never any periods of elevated or irritable mood lasting at least 4 days), go to **A45** *(Dysthymic Disorder)*.

FOR ITEMS A31 – A37, FOCUS ON THE MOST EXTREME EPISODE

B. During the period of mood disturbance, three (or more) of the following symptoms have persisted (four if the mood is only irritable) and have been present to a significant degree:

A31 How did you feel about yourself? (more self-confident than usual? Any special powers or abilities?)   ?   -   +

inflated self-esteem or grandiosity.

(1). Inflated self-esteem or grandiosity

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A32 | Did you need less sleep than usual? IF YES: did you feel rested?   ?   -   +

(2). Decreased need for sleep (e.g., feels rested after only 3 hours of sleep)

A33 | Were you much more talkative than usual? (did people have trouble stopping or understanding you?   ?   -   +

Did people have trouble getting a word in edgeways?

(3). More talkative than usual or under pressure to keep talking

A34 | Were your thoughts racing through your head?   ?   -   +

(4). Flights of ideas or subjective experience that thoughts are racing

A35 | Were you so easily distracted by things around you that you had trouble concentrating on one thing?   ?   -   +

(5). Distractibility (i.e., attention too easily drawn to unimportant or irrelevant external stimuli)

		?	-	+
A36	How did you spend your time? Were you so active that your family/friends were concerned?			

IF NO INCREASED ACTIVITY: Were you physically restless? (how bad was it?)

(6). Increase in goal-directed activity (socially, at work or school, or sexually) or psychomotor agitation.

		?	-	+
A37	Did you do anything that could have caused trouble for you or your family? Excessive involvement in			

pleasurable activities that have a high potential for painful consequences.

(7). Excessive involvement in pleasurable activities that have a high potential for painful consequences (e.g., engaging in unrestrained buying sprees, sexual indiscretions, or foolish business investments).

		?	-	+
A38	AT LEAST THREE OF B(1)-B(7) ARE "+" (OR FOUR IF MOOD IS IRRITABLE AND NOT ELEVATED)			

> If **A38** is "-" (i.e. fewer than three are "+"), ask the following:
>
> Have there been any other times when you were [high/irritable/OWN WORDS] and had even more of the symptoms we've just talked about?
> If "yes", go back to **A30**, and ask about that episode.
> If "no", go to **A45**, (Dysthymic Disorder).

		?	-	+
A39	IF UNKNOWN: is this very different from the way you usually are? (How are you different?			

at work? With friends?).

C. The episode is associated with an unequivocal change in functioning that is uncharacteristic of the person when not symptomatic.

If **A39** is "-" (i.e. characteristically "hypomanic"), ask the following:

Have there been any other times when you were [high/irritable/OWN WORDS] and you were really different from the way you usually are?
If "yes", go back to **A30**, and ask about that episode.
If "no", go to **A45**, *(Dysthymic Disorder)*.

A40 | IF UNKOWN: did other people notice the change in you? (what did they say?) ?

? **-** **+**

D The disturbance in mood and the change in functioning are observable by others.

If **A40** is "-" (i.e., not observable by others), ask the following:

Have there been any other times when you were [high/irritable/OWN WORDS] and other people <u>did</u> notice the change in the way you were acting?
If "yes", go to **A30**, and ask about that episode.
If "no", go to **A45** *(Dysthymic Disorder)*

A41 | IF UNKNOWN: at that time, did you have serious problems at home or at work (school) because you were

? **-** **+**

[SYMPTOMS] or did you have to go to hospital?
E. The episode is not severe enough to cause marked impairment in social or occupational functioning, or to necessitate hospitalisation, and there are no psychotic features.

> If **A41** is "-" (i.e., severe enough to cause marked impairment, etc), AND either hospitalisation was required or duration was 1 week long or longer, go back to **A17** and recode "+" for that item, then continue with the rest of the ratings for Manic Episode. Otherwise, if there was marked impairment in functioning but duration was less than 1 week, skip to **A45** and eventually code "2" for item **D12**.

A42   Just before this began, were you physically ill?   ?   -   +

Were you taking any medication? IF YES: any change in the amount?
Just before this began, were you drinking or using any street drugs?

F. The symptoms are not due to the direct physiological effects of a substance (i.e., a drug of abuse, a medication) or a general medical condition.

Note: Hypomanic-like episodes that are clearly caused by somatic antidepressant treatment (e.g., medication, electroconvulsive therapy, light therapy) should not count toward a diagnosis of Bipolar II Disorder but are considered Substance-Induced Mood Episodes.
*Refer to list of possibly etiological general medical conditions and substances included with item **A27***

> If there is any indication that the hypomania may be secondary (i.e., a direct physiological consequence of a general medical condition or substance), go to **A61** and return here to make a rating of "-" or "+".

> If A42 is "-" (i.e., the hypomania is due to a substance or general medical condition), ask the following:
>
> Have there been any other times when you were {high/irritable/OWN WORDS] and you were not [physically ill/taking medication/using SUBTANCE]?
> If "yes", go back to A30, and ask about that episode.
> If "no", go to A45, (Dysthymic Disorder).

A43   IF UNKNOWN: have you had [SYMPTOMS RATED "+" ABOVE] in the past month?   ?   -   +

CRITERIA A, B, C, D, E AND F ARE "+" (MAKE A DIAGNOSIS OF HYPOAMIC EPISODE)

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A44 How many times were you [high/irritable/OWN WORDS] and had [ACKNOWLEDGED HYPOMANIC SYMPTOMS] ? - +

for a period of time?

Total number of hypomanic Episodes (CODE 99 if too indistinct or numerous to count)

YOU ARE NOW FINISHED EVALUATING MOOD EPISODES. GO TO MODULE B (PSYCHOTIC AND ASSOCIATED SYMPTOMS), **B1.**

A45 – A60: DYSTHYMIC DISORDER CRITERIA

> NOTE: For the presentations in which there is a history of multiple recurrent Major Depressive Episodes, the clinician may wish to skip the evaluation of Dysthymic Disorder (i.e., go to **B1**).

A45 For the past couple of years, have you been bothered by depressed mood, most of the day, more days than not? IF YES: what was it like?   **? - +**

A. Depressed mood for most of the day, for more days than not, as indicated wither by subjective account or observation by others, for at least 2 years. Note: In children and adolescents, mood can be irritable and duration must be at least 1 year.

> If **A15** is "-" (i.e., no chronic depressed mood ...), go to **B1**, (*Psychotic and Associated Symptoms*).

During these periods of [OWN WORDS FOR CHRONIC DEPRESSION], do you find that most of the time you...

B. Presence, while depressed, of two (or more) of the following:

A46 Lose your appetite? (What about over eating?)   **? - +**

(1) Poor appetite or overeating

A47 Have trouble sleeping or sleep too much?   **? - +**

(2) Insomnia or hypersomnia

A48 Have little energy to do things or feel tired a lot?   **? - +**

(3) low energy or fatigue

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A49 Feel down on yourself? (feel worthless/ a failure?)   ? - +

(4) Low self-esteem

A50 Have trouble concentrating or making decisions?   ? - +

(5) Poor concentration or difficulty making decisions

A51 Feel hopeless?   ? - +

(6) Feelings of hopelessness

A52 AT LEAST TWO "B" SYMTPOMS ARE "+"   ? - +

If **A52** is "-" (i.e., fewer than two are "+"), go to **B1**, (*Psychotic and Associated Symptoms*).

A53 What is the longest time, during this period of long-lasting depression, that you felt OK?   ? - +

(NO DYSTYMIC SYMPTOMS)

C. During the 2-year period (1 year for children or adolescence) of the disturbance, the person has never been without the symptoms in Criteria A and B for more than 2 months at a time.

If **A53** is "-" (i.e., more than 2 months without symptoms), go to **B1** (*Psychotic and Associated Symptoms*).

A54 How long have you been feeling this way? (When did this begin?)   ? - +

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A55 IF UNKNOWN: did it begin gradually or did it start with a bad period of depression?   ? - +

D. No Major Depressive Episode during the first 2 years of the disturbance (1 year in children and adolescents); i.e., not better accounted for by chronic Major Depressive Disorder, or Major Depressive Disorder, In Partial Remission.

Note: There may have been a previous Major Depressive Episode provided there was a full remission (no significant signs or symptoms for 2 months) before development of the Dysthymic Disorder. In addition, after the initial 2 years (1 year in children and adolescents) of Dysthymic Disorder, there may be superimposed episodes of Major Depressive Disorder, in which case both diagnoses may be given when the criteria are met for a Major Depressive Episode.

> If **A55** is "-" (i.e., MAJOR DEPRESSIVE EPISODE during first 2 years), go to **B1**, (*Psychotic and Associated Symptoms*).

A56   ? - +

E. There have never been a Manic Episode, a Mixed Episode or a Hypomanic Episode, and criteria have never been met for Cyclothymic Disorder.

> If A56 is "-" (i.e., past Manic, Mixed or Hypomanic Episode, or criteria met for Cyclothymic Disorder), go to B1 (Psychotic and Associated Symptoms).

A57 THIS MAY BE NEED TO BE DEFERRED UNTIL AFTER PSYCHOTIC DISORDERS HAVE BEEN RULED OUT   ? - +

F. Does not occur exclusively during the course of a chronic Psychotic Disorder such as Schizophrenia or Delusional Disorder.

A58 Just before this began, were you physically ill? Just before this began, were you taking any medications?   ? - +

IF YES: any change in the amount you were taking? Just before this began, were you drinking or using any street drugs?

G. The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

Etiological general medical conditions include degenerative neurological illnesses (e.g., Huntington's disease), cerebrovascular disease (e.g., stroke), metabolic conditions (e.g., vitamin B12 deficiency, Wilson's disease), endocrine conditions (e.g., hyperthyroidism), viral or other infections and certain cancers (e.g., cerebral neoplasms).

Etiological substances include alcohol, amphetamines, cocaine, hallucinogens, inhalants, opiods, phencyclidine, sedatives, hypnotics, and anxiolytics. Medications include antihypertensives, oral contraceptives, corticosteroids, anabolic steroids, anticancer agents, analgesics, anticholinergics, and cardiac medications.

| A59 | IF UNCLEAR: how | If **A58** is "-" (i.e., due to a chronic general medical condition or chronic substance use), go to **B1** (*Psychotic and Associated Symptoms*). | ? | - | + |

H. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

If **A59** is "-" (i.e., not clinically significant), go to **B1**, (*Psychotic and Associated Symptoms*).

| A60 | **CRITERIA A, B, C, D, E, F, G, AND H ARE "+"** (MAKE A DIAGNOSIS OF DYSTHYMIC DISORDER) | ? | - | + |

Go to **B1** (*Psychotic and Associated Symptoms*).

A61-A64: MOOD DISORDER DUE TO A GENERAL MEDICAL CONDITION CRITERIA

CONSIDER ETIOLOGICAL ROLE OF A GENERAL MEDICAL CONDITION OR SUBSTANCE USE

NOTE: Criterion D (i.e., not during delirium) has been omitted from the SCID

> If mood symptoms are not temporally associated with a general medical condition, go to **A65** (*Substance-Induced Mood Disorder*).

A61

CODE BASED ON INFORMATION ALREADY OBTAINED.   ?   -   +

A. A prominent and persistent disturbance in mood predominant in the clinical picture and by either (or both) of the following:
(1) Depressed mood or markedly diminished interest or pleasure in all, or almost all, activities.
(2) Elevated, expansive, or irritable mood.

A62

Do you think your [MOOD SYMPTOMS] were in any way related to your [COMORBID GENERAL   ?   -   +

MEDICAL CONDITION]? IF YES: tell me how. (Did the [MOOD SYMPTOMS] start or get worse only after [COMORBID GENERAL MEDICAL CONDITION] began?) IF YES AND GENERAL MEDICAL CONDITION HAS RESOLVED: Did the [MOOD SYMPTOMS] get better once the [COMORBID GENERAL MEDCIAL CONDITION] got better?

B/C. There is evidence from the history, physical examination, or laboratory findings that the disturbance is the direct physiological consequence of a general medical condition, and the disturbance is not better accounted for by another mental disorder (e.g., Adjustment Disorder with Depressed Mood in response to the stress of having a general medical condition).

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If **A62** is "-" (general medical condition not etiological), go to **A65** (*Substance-Induced Mood Disorder*).

A63 | IF UNCLEAR: how much did [MOOD SYMPTOMS] interfere with your life?   ?   -   +

E. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

A64 | IF UNKNOWN: have you had [SYMPTOMS RATED "+" ABOVE] in the past month?   ?   -   +

CRITERIA A, B/C AND E ARE "+" (MAKE A DIAGNOSIS OF DISORDER DUE TO A GENERAL MEDICAL CONDITION).

If mood symptoms are not temporally associated with substance use, return to episode being evaluated:

A12 for Major Depressive Episode
A27 for Manic Episode
A42 for Hypomanic Episode
D11 for Other Bipolar Disorders
D18 for Depressive Disorders NOS

A65-A69: SUBSTANCE-INDUCED MOOD DISORDER CRITERIA

NOTE: Criterion D (i.e., not during delirium) has been omitted from the SCID

| A65 | CODE BASED ON INFORMATION ALREADY OBTAINED | ? - + |

A. A prominent and persistent disturbance in mood predominant in the clinical picture and characterized by either (or both) of the following:
(1) Depressed or markedly diminished interest or pleasure in all, or almost all, activities
(2) Elevated, expansive or irritable mood.

A66   IF UNKNOWN: when did the [MOOD SYMPTOMS] begin? Were you already using [SUBSTANCE] or had you   **?**   **-**   **+**

just stopped or cut down your use?

B. There is evidence from the history, physical examination, or laboratory findings of either (1) or (2)

(1). The symptom in criterion A developed during, or within a month of Substance Intoxication or Withdrawal.

(2). Medication use is etiologically related to the disturbance.

If **A66** is "-" (i.e., not etiologically related to a substance), then return to episode being evaluated:

A12 for Major Depressive Episode
A27 for Manic Episode
A42 for Hypomanic Episode
A58 for Dysthymic Disorder
D11 for Other Bipolar Disorders
D18 for Depressive Disorder NOS

A67   Do you think your [MOOD SYMOTOMS] are in any way related to your [SUBSTANCE USE]?   **?**   **-**   **+**

IF YES: tell me how.

C. The disturbance is not better accounted for by a Mood Disorder that is not substance induced. Evidence that the symptoms are better accounted for by a Mood Disorder that is not substance induced might include:

ASK ANY OF THE FOLLOWING QUESTIONS AS NEEDED TO RULE OUT A NONSUBSTANCE ETIOLOGY

IF UNKNOWN: which came first, the [SUBSTANCE USE] or the [MOOD SYMPTOMS]

(1). The mood symptoms precede the onset of the substance use (or medication use)

IF UNKNOWN: have you had a period time when you stopped using [SUBSTANCE]? IF YES: after you stopped using [SUBSTANCE] did the [MOOD SYMPOTOMS] get better?

(2) The mood symptoms persist for a substantial period of time (e.g., about a month) after the cessation of acute withdrawal or severe intoxication.

IF UNKNOWN: how much of [SUBSTANCE] were you using when you began to have [MOOD SYMPTOMS]?

(3) The mood symptoms are substantially in excess of what would be expected given the type or amount of the substance used or the duration of use.

IF UNKNOWN: have you had any other episodes of [MOOD SYMPTOMS]? IF YES: how many? Were you using [SUBSTANCE] at those times?

(4) There is other evidence that suggests the existence of an independent non-substance-induced Mood disorder (e.g., a history of recurrent non-substance-related Major Depressive Episodes).

If **A67** is "-" (i.e., the disturbance is better accounted for by a non-substance-induced Mood Disorder), then return to episode being evaluated:

A12 for Major Depressive Episode
A27 for Manic Episode
A42 for Hypomanic Episode
A58 for Dysthymic Disorder
D11 for Other Bipolar Disorders
D18 for Depressive Disorder NOS

A68

IF UNKNOWN: how much did [MOOD SYMPTOMS] interfere with your life? The symptoms must be

? - +

clinically significant to cause impairment in social, occupational, or other important areas of functioning.

E. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

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A69   IF UNKNOWN: have you had [SYMPTOMS RATED "+" ABOCE] in the past month?   ?   -   +

CRITERIA A, B, C AND E ARE "+" (MAKE A DIAGNOSIS OF SUBSTANCE-INDUCED MOOD DISORDER)

Return to episode being evaluated:

A12 for Major Depressive Episode
A27 for Manic Episode
A42 for Hypomanic Episode
A58 for Dysthymic Disorder
D11 for Other Bipolar Disorders
D18 for Depressive Disorder NOS

BORDERLINE PERSONALITY DISORDER	BORDERLINE PERSONALITY DISORDER CRITERIA			
	A pervasive pattern of instability of interpersonal relationships, self-image, and affects and marked impulsivity, beginning by early adulthood and present in a variety of contexts, as indicated by five (or more) of the following:			
90. You've said that you have *[Have you]* often become frantic when you thought that someone you really cared about was going to leave you. What have you done? (Have you threatened or pleaded with him/her?)	(1) frantic efforts to avoid real or imagined abandonment (**Note:** Do not include suicidal or self-mutilating behavior covered in item (5).) 3 = several examples	? 1 2 3	112	
91. You've said that *[Do]* your relationships with people you really care about have lots of extreme ups and downs. Tell me about them. (Were there times when you thought they were everything you wanted and other times when you thought they were terrible? How many relationships were like this?)	(2) a pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation 3 = either one prolonged relationship or several briefer relationships in which the alternating pattern occurs at least twice	? 1 2 3	113	

? = inadequate information   1 = absent or false   2 = subthreshold   3 = threshold or true

79

92. You've said that you have *[Have you]* all of a sudden changed your sense of who you are and where you are headed.

    Give me some examples of this.

93. You've said that your sense of who you are often changes *[Does your sense of who you are often change]* dramatically.

    Tell me more about that.

94. You've said that you are *[Are you]* different with different people or in different situations so that you sometimes don't know who you really are.

    Give me some examples of this. (Do you feel this way a lot?)

95. You've said that there have been *[Have there been]* lots of sudden changes in your goals, career plans, religious beliefs, and so on.

    Tell me more about that.

96. You've said that you've *[Have you]* often done things impulsively.

    What kinds of things?

    (How about . . .
    . . . buying things you really couldn't afford?
    . . . having sex with people you hardly know, or "unsafe sex"?
    . . . drinking too much or taking drugs?
    . . . driving recklessly?

(3) identity disturbance: markedly and persistently unstable self-image or sense of self

[Note: Do not include normal adolescent uncertainty.]

3 = acknowledges trait

| | ? | 1 | 2 | 3 | | 114 |

(4) impulsivity in at least two areas that are potentially self-damaging (e.g., spending, sex, substance abuse, reckless driving, binge eating). (**Note:** Do not include suicidal or self-mutilating behavior covered in item (5).)

3 = several examples indicating a pattern of impulsive behavior (not necessarily limited to examples given above)

| | ? | 1 | 2 | 3 | | 115 |

? = inadequate information   **1 = absent or false**   **2 = subthreshold**   **3 = threshold or true**

IF YES TO ANY OF ABOVE:
Tell me about that. How often
does it happen? What kinds
of problems has it caused?

97. You've said that you have *[Have you]* tried to hurt or kill yourself or threatened to do so. | (5) recurrent suicidal behavior, gestures, or threats, or self-mutilating behavior | ? 1 2 3 | 116

98. You've said that you have *[Have you ever]* cut, burned, or scratched yourself on purpose.

Tell me about that. | 3 = two or more events (when not in a Major Depressive Episode)

99. You've said that *[Do]* you have a lot of sudden mood changes.

Tell me about that.

(How long do your "bad" moods last? How often do these mood changes happen? How suddenly do your moods change?) | (6) affective instability due to a marked reactivity of mood (e.g., intense episodic dysphoria, irritability, or anxiety usually lasting a few hours and only rarely more than a few days)

3 = acknowledges trait | ? 1 2 3 | 117

100. You've said that *[Do]* you often feel empty inside.

Tell me more about this. | (7) chronic feelings of emptiness

3 = acknowledges trait | ? 1 2 3 | 118

101. You've said that *[Do]* you often have temper outbursts or get so angry that you lose control.

Tell me about this. | (8) inappropriate, intense anger or difficulty controlling anger (e.g., frequent displays of temper, constant anger, recurrent physical fights)

3 = acknowledges trait and at least one example | ? 1 2 3 | 119

? = inadequate information   1 = absent or false   2 = subthreshold   3 = threshold or true

81

102. You've said that *[Do]* you hit people or throw things when you get angry.

     Tell me about this.

     (Does this happen often?)

103. You've said that *[Do]* even little things get you very angry.

     When does this happen?

     (Does this happen often?)

104. You've said that when you are under a lot of stress, you *[When you are under a lot of stress, do you]* get suspicious of other people or feel especially spaced out.

     Tell me about that.

(9) transient, stress-related paranoid ideation or severe dissociative symptoms

3 = several examples that do not occur exclusively during a Psychotic Disorder or a Mood Disorder With Psychotic Features

? 1 2 3   120

AT LEAST FIVE ITEMS ARE CODED "3"   1   3   121
                                                              ↓

┌─────────────┐
│ **BORDERLINE** │
│ **PERSONALITY** │
│ **DISORDER** │
└─────────────┘

? = inadequate information   1 = absent or false   2 = subthreshold   3 = threshold or true

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AVOIDANT PERSONALITY DISORDER	**AVOIDANT PERSONALITY DISORDER CRITERIA**						

A pervasive pattern of social inhibition, feelings of inadequacy, and hypersensitivity to negative evaluation, beginning by early adulthood and present in a variety of contexts, as indicated by four (or more) of the following:

1. You've said that you have *[Have you]* avoided jobs or tasks that involved having to deal with a lot of people.

   Give me some examples. What was the reason that you avoided these [LIST JOBS OR TASKS]?

   (Have you ever refused a promotion because it would involve dealing with more people than you would be comfortable with?)

   (1) avoids occupational activities that involve significant interpersonal contact because of fears of criticism, disapproval, or rejection

   3 = at least two examples

   ? 1 2 3   25

2. You've said that *[Do]* you avoid getting involved with people unless you are certain they will like you.

   If you don't know whether someone likes you, would you ever make the first move?

   (2) is unwilling to get involved with people unless certain of being liked

   3 = almost never takes the initiative in becoming involved in a social relationship

   ? 1 2 3   26

3. You've said that *[Do]* you find it hard to be "open" even with people you are close to.

   Why is this? (Are you afraid of being made fun of or embarrassed?)

   (3) shows restraint within intimate relationships because of the fear of being shamed or ridiculed

   3 = true for almost all relationships

   ? 1 2 3   27

? = inadequate information   1 = absent or false   2 = subthreshold   3 = threshold or true

53

273

4. You've said that *[Do]* you often worry about being criticized or rejected in social situations.

    Give me some examples.

    Do you spend a lot of time worrying about this?

(4) is preoccupied with being criticized or rejected in social situations

3 = a lot of time spent worrying about social situations

? 1 2 3 | 28

5. You've said that you're *[Are you]* usually quiet when you meet new people.

    Why is that?

    (Is it because you feel in some way inadequate, or not good enough?)

(5) is inhibited in new interpersonal situations because of feelings of inadequacy

3 = acknowledges trait and many examples

? 1 2 3 | 29

6. You've said that *[Do]* you believe that you're not as good, as smart, or as attractive as most other people.

    Tell me about that.

(6) views self as socially inept, personally unappealing, or inferior to others

3 = acknowledges belief

? 1 2 3 | 30

7. You've said that you're *[Are you]* afraid to try new things.

    Is that because you are afraid of being embarrassed?

    Give me some examples.

(7) is unusually reluctant to take personal risks or to engage in any new activities because they may prove embarrassing

3 = several examples of avoiding activities because of fear of embarrassment

? 1 2 3 | 31

AT LEAST FOUR ITEMS ARE CODED "3"

1   3 | 32
↓

┌─────────────────────┐
│ **AVOIDANT**   │
│ **PERSONALITY**   │
│ **DISORDER**   │
└─────────────────────┘

? = inadequate information   1 = absent or false   2 = subthreshold   3 = threshold or true

	DEPENDENT		
DEPENDENT	**PERSONALITY DISORDER**		
PERSONALITY DISORDER	**CRITERIA**		

A pervasive and excessive need to be taken care of that leads to submissive and clinging behavior and fears of separation, beginning by early adulthood and present in a variety of contexts, as indicated by five (or more) of the following:

| 8. You've said that *[Do]* you need a lot of advice or reassurance from others before you can make everyday decisions—like what to wear or what to order in a restaurant.

Can you give me some examples of the kinds of decisions you would ask for advice or reassurance about?

(Does this happen most of the time?) | (1) has difficulty making everyday decisions without an excessive amount of advice and reassurance from others

    3 = several examples | ? 1 2 3 | 33 |
| 9. You've said that you *[Do you]* depend on other people to handle important areas in your life such as finances, child care, or living arrangements.

Give me some examples. (Is this more than just getting advice from people?)

(Has this happened with MOST important areas of your life?) | (2) needs others to assume responsibility for most major areas of his or her life

[Note: Do not include merely getting advice from others or subculturally expected behavior.]

    3 = several examples | ? 1 2 3 | 34 |

? = inadequate information   1 = absent or false   2 = subthreshold   3 = threshold or true

55

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10. You've said that *[Do]* you find it hard to disagree with people even when you think they are wrong. Give me some examples of when you've found it hard to disagree. What are you afraid will happen if you disagree?	(3) has difficulty expressing disagreement with others because of fear of loss of support or approval (**Note:** Do not include realistic fears of retribution.) 3 = acknowledges trait or several examples	? 1 2 3	35
11. You've said *[Do]* you find it hard to start or work on tasks when there is no one to help you. Give me some examples. Why is that? (Is this because you are not sure you can do it right?)	(4) has difficulty initiating projects or doing things on his or her own (because of a lack of self-confidence in judgment or abilities rather than a lack of motivation or energy) 3 = acknowledges trait	? 1 2 3	36
12. You've said that you have *[Have you]* often volunteered to do things that are unpleasant. Give me some examples of these kinds of things. Why is that?	(5) goes to excessive lengths to obtain nurturance and support from others, to the point of volunteering to do things that are unpleasant [Note: Do not include behavior intended to achieve goals other than being liked, such as job advancement.] 3 = acknowledges trait and at least one example	? 1 2 3	37
13. You've said that [*Do*] you usually feel uncomfortable when you are by yourself. Why is that? (Is it because you need someone to take care of you?)	(6) feels uncomfortable or helpless when alone, because of exaggerated fears of being unable to care for himself or herself 3 = acknowledges trait	? 1 2 3	38

? = inadequate information   1 = absent or false   2 = subthreshold   3 = threshold or true

14. You've said that when a close relationship ends you *[When a close relationship ends, do you]* feel you immediately have to find someone else to take care of you. Tell me about that. (Have you reacted this way almost always when close relationships have ended?)	(7) urgently seeks another relationship as a source of care and support when a close relationship ends 3 = happens when most close relationships end	? 1 2 3	39

15. You've said that *[Do]* you worry a lot about being left alone to take care of yourself. Are there often times when you keep worrying about this? Do you have periods when you worry about this all the time?	(8) is unrealistically preoccupied with fears of being left to take care of himself or herself 3 = persistent unrealistic worry	? 1 2 3	40

AT LEAST FIVE ITEMS ARE CODED "3"

1   3   41
↓

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┌──────────────┐
│  DEPENDENT   │
│ PERSONALITY  │
│   DISORDER   │
└──────────────┘
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? = inadequate information   1 = absent or false   2 = subthreshold   3 = threshold or true

57

National Center for PTSD

CLINICIAN-ADMINISTERED PTSD SCALE FOR DSM-IV

Name: _____   ID # : _____

Date: _____

Interviewer: _____

Study: _____

Dudley D. Blake, Frank W. Weathers, Linda M. Nagy,
Danny G. Kaloupek, Dennis S. Charney, & Terence M. Keane

National Center for Posttraumatic Stress Disorder

Behavioral Science Division -- Boston VA Medical Center
Neurosciences Division -- West Haven VA Medical Center

Revised July 1998

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Criterion A. The person has been exposed to a traumatic event in which both of the following were present:
    (1) the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others
    (2) the person's response involved intense fear, helplessness, or horror.   Note: In children, this may be expressed instead by disorganized or agitated behavior

I'm going to be asking you about some difficult or stressful things that sometimes happen to people. Some examples of this are being in some type of serious accident; being in a fire, a hurricane, or an earthquake; being mugged or beaten up or attacked with a weapon; or being forced to have sex when you didn't want to. I'll start by asking you to look over a list of experiences like this and check any that apply to you. Then, if any of them do apply to you, I'll ask you to briefly describe what happened and how you felt at the time.

Some of these experiences may be hard to remember or may bring back uncomfortable memories or feelings. People often find that talking about them can be helpful, but it's up to you to decide how much you want to tell me. As we go along, if you find yourself becoming upset, let me know and we can slow down and talk about it. Also, if you have any questions or you don't understand something, please let me know. Do you have any questions before we start?

ADMINISTER CHECKLIST, THEN REVIEW AND INQUIRE UP TO THREE EVENTS. IF MORE THAN THREE EVENTS ENDORSED, DETERMINE WHICH THREE EVENTS TO INQUIRE (E.G., FIRST, WORST, AND MOST RECENT EVENTS; THREE WORST EVENTS; TRAUMA OF INTEREST PLUS TWO OTHER WORST EVENTS, ETC.)

IF NO EVENTS ENDORSED ON CHECKLIST: *(Has there ever been a time when your life was in danger or you were seriously injured or harmed?)*

  IF NO: *(What about a time when you were threatened with death or serious injury, even if you weren't actually injured or harmed?)*

    IF NO: *(What about witnessing something like this happen to someone else or finding out that it happened to someone close to you?)*

      IF NO: *(What would you say are some of the most stressful experiences you have had over your life?)*

EVENT #1

What happened? *(How old were you? Who else was involved? How many times did this happen? Life threat? Serious injury?)*	*Describe (e.g., event type, victim, perpetrator, age, frequency):*
How did you respond emotionally? *(Were you very anxious or frightened? Horrified? Helpless? How so? Were you stunned or in shock so that you didn't feel anything at all? What was that like? What did other people notice about your emotional response? What about after the event -- how did you respond emotionally?)*	*A. (1)* Life threat? NO YES [self ___ other ___] Serious injury? NO YES [self ___ other ___] Threat to physical integrity? NO YES [self ___ other ___] *A. (2)* Intense fear/help/horror? NO YES [during ___ after ___] Criterion A met? NO PROBABLE YES

EVENT #2

What happened? *(How old were you? Who else was involved? How many times did this happen? Life threat? Serious injury?)*	*Describe (e.g., event type, victim, perpetrator, age, frequency):*
How did you respond emotionally? *(Were you very anxious or frightened? Horrified? Helpless? How so? Were you stunned or in shock so that you didn't feel anything at all? What was that like? What did other people notice about your emotional response? What about after the event -- how did you respond emotionally?)*	*A. (1)* *Life threat? NO YES [self ___ other ___]* *Serious injury? NO YES [self ___ other ___]* *Threat to physical integrity? NO YES [self ___ other ___]* *A. (2)* *Intense fear/help/horror? NO YES [during ___ after ___]* *Criterion A met? NO PROBABLE YES*

EVENT #3

What happened? *(How old were you? Who else was involved? How many times did this happen? Life threat? Serious injury?)*	*Describe (e.g., event type, victim, perpetrator, age, frequency):*
How did you respond emotionally? *(Were you very anxious or frightened? Horrified? Helpless? How so? Were you stunned or in shock so that you didn't feel anything at all? What was that like? What did other people notice about your emotional response? What about after the event -- how did you respond emotionally?)*	*A. (1)* *Life threat? NO YES [self ___ other ___]* *Serious injury? NO YES [self ___ other ___]* *Threat to physical integrity? NO YES [self ___ other ___]* *A. (2)* *Intense fear/help/horror? NO YES [during ___ after ___]* *Criterion A met? NO PROBABLE YES*

For the rest of the interview, I want you to keep (EVENTS) in mind as I ask you some questions about how they may have affected you.

I'm going to ask you about twenty-five questions altogether. Most of them have two parts. First, I'll ask if you've ever had a particular problem, and if so, about how often in the past month *(week)*. Then I'll ask you how much distress or discomfort that problem may have caused you.

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Criterion B. The traumatic event is persistently reexperienced in one (or more) of the following ways:

1. (B-1) recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions.
Note: In young children, repetitive play may occur in which themes or aspects of the trauma are expressed.

Frequency	*Intensity*	
Have you ever had unwanted memories of (EVENT)? What were they like? *(What did you remember?)* [IF NOT CLEAR:] *(Did they ever occur while you were awake, or only in dreams?)* [EXCLUDE IF MEMORIES OCCURRED ONLY DURING DREAMS] **How often have you had these memories in the past month** *(week)*? 0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day *Description/Examples*	**How much distress or discomfort did these memories cause you? Were you able to put them out of your mind and think about something else?** *(How hard did you have to try?)* **How much did they interfere with your life?** 0 None 1 Mild, minimal distress or disruption of activities 2 Moderate, distress clearly present but still manageable, some disruption of activities 3 Severe, considerable distress, difficulty dismissing memories, marked disruption of activities 4 Extreme, incapacitating distress, cannot dismiss memories, unable to continue activities *QV (specify)* _____	*Past week* *F* ____ *I* ____ *Past month* *F* ____ *I* ____ *Sx: Y N* *Lifetime* *F* ____ *I* ____ *Sx: Y N*

2. (B-2) recurrent distressing dreams of the event. **Note:** In children, there may be frightening dreams without recognizable content.

Frequency	*Intensity*	
Have you ever had unpleasant dreams about (EVENT)? Describe a typical dream. *(What happens in them?)* **How often have you had these dreams in the past month** *(week)*? 0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day *Description/Examples*	**How much distress or discomfort did these dreams cause you? Did they ever wake you up?** [IF YES:] *(What happened when you woke up? How long did it take you to get back to sleep?)* [LISTEN FOR REPORT OF ANXIOUS AROUSAL, YELLING, ACTING OUT THE NIGHTMARE] *(Did your dreams ever affect anyone else? How so?)* 0 None 1 Mild, minimal distress, may not have awoken 2 Moderate, awoke in distress but readily returned to sleep 3 Severe, considerable distress, difficulty returning to sleep 4 Extreme, incapacitating distress, did not return to sleep *QV (specify)* _____	*Past week* *F* ____ *I* ____ *Past month* *F* ____ *I* ____ *Sx: Y N* *Lifetime* *F* ____ *I* ____ *Sx: Y N*

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3. (B-3) acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur on awakening or when intoxicated). **Note:** In young children, trauma-specific reenactment may occur.

Frequency	Intensity	
Have you ever suddenly acted or felt as if (EVENT) were happening again? *(Have you ever had flashbacks about [EVENT]?)* [IF NOT CLEAR:] *(Did this ever occur while you were awake, or only in dreams?)* [EXCLUDE IF OCCURRED ONLY DURING DREAMS] **Tell me more about that. How often has that happened in the past month** *(week)***?** 0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day ***Description/Examples***	**How much did it seem as if (EVENT) were happening again?** *(Were you confused about where you actually were or what you were doing at the time?)* **How long did it last? What did you do while this was happening?** *(Did other people notice your behavior? What did they say?)* 0 No reliving 1 Mild, somewhat more realistic than just thinking about event 2 Moderate, definite but transient dissociative quality, still very aware of surroundings, daydreaming quality 3 Severe, strongly dissociative (reports images, sounds, or smells) but retained some awareness of surroundings 4 Extreme, complete dissociation (flashback), no awareness of surroundings, may be unresponsive, possible amnesia for the episode (blackout) ***QV (specify)*** ——————————————————	*Past week* F ____ I ____ *Past month* F ____ I ____ Sx: Y N *Lifetime* F ____ I ____ Sx: Y N

4. (B-4) intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event

Frequency	Intensity	
Have you ever gotten emotionally upset when something reminded you of (EVENT)? *(Has anything ever triggered bad feelings related to [EVENT]?)* **What kinds of reminders made you upset? How often in the past month** *(week)***?** 0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day ***Description/Examples***	**How much distress or discomfort did (REMINDERS) cause you? How long did it last? How much did it interfere with your life?** 0 None 1 Mild, minimal distress or disruption of activities 2 Moderate, distress clearly present but still manageable, some disruption of activities 3 Severe, considerable distress, marked disruption of activities 4 Extreme, incapacitating distress, unable to continue activities ***QV (specify)*** ——————————————————	*Past week* F ____ I ____ *Past month* F ____ I ____ Sx: Y N *Lifetime* F ____ I ____ Sx: Y N

5. (B-5) physiological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event

Frequency **Have you ever had any physical reactions when something reminded you of (EVENT)?** *(Did your body ever react in some way when something reminded you of [EVENT]?)* **Can you give me some examples?** *(Did your heart race or did your breathing change? What about sweating or feeling really tense or shaky?)* **What kinds of reminders triggered these reactions? How often in the past month** *(week)*? 0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day *Description/Examples*	*Intensity* **How strong were (PHYSICAL REACTIONS)? How long did they last?** *(Did they last even after you were out of the situation?)* 0 No physical reactivity 1 Mild, minimal reactivity 2 Moderate, physical reactivity clearly present, may be sustained if exposure continues 3 Severe, marked physical reactivity, sustained throughout exposure 4 Extreme, dramatic physical reactivity, sustained arousal even after exposure has ended *QV (specify)* ————————————————————	*Past week* F ____ I ____ *Past month* F ____ I ____ Sx: Y N *Lifetime* F ____ I ____ Sx: Y N

Criterion C. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three (or more) of the following:

6. (C-1) efforts to avoid thoughts, feelings, or conversations associated with the trauma

Frequency **Have you ever tried to avoid thoughts or feelings about (EVENT)?** *(What kinds of thoughts or feelings did you try to avoid?)* **What about trying to avoid talking with other people about it?** *(Why is that?)* **How often in the past month** *(week)*? 0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day *Description/Examples*	*Intensity* **How much effort did you make to avoid (THOUGHTS/FEELINGS/CONVERSATIONS)?** *(What kinds of things did you do? What about drinking or using medication or street drugs?)* [CONSIDER ALL ATTEMPTS AT AVOIDANCE, INCLUDING DISTRACTION, SUPPRESSION, AND USE OF ALCOHOL/DRUGS] **How much did that interfere with your life?** 0 None 1 Mild, minimal effort, little or no disruption of activities 2 Moderate, some effort, avoidance definitely present, some disruption of activities 3 Severe, considerable effort, marked avoidance, marked disruption of activities, or involvement in certain activities as avoidant strategy 4 Extreme, drastic attempts at avoidance, unable to continue activities, or excessive involvement in certain activities as avoidant strategy *QV (specify)* ————————————————————	*Past week* F ____ I ____ *Past month* F ____ I ____ Sx: Y N *Lifetime* F ____ I ____ Sx: Y N

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7. (C-2) efforts to avoid activities, places, or people that arouse recollections of the trauma

| *Frequency*
Have you ever tried to avoid certain activities, places, or people that reminded you of (EVENT)? *(What kinds of things did you avoid? Why is that?)* **How often in the past month *(week)*?**

0 Never
1 Once or twice
2 Once or twice a week
3 Several times a week
4 Daily or almost every day

Description/Examples | *Intensity*
How much effort did you make to avoid (ACTIVITIES/PLACES/PEOPLE)? *(What did you do instead?)* **How much did that interfere with your life?**

0 None
1 Mild, minimal effort, little or no disruption of activities
2 Moderate, some effort, avoidance definitely present, some disruption of activities
3 Severe, considerable effort, marked avoidance, marked disruption of activities or involvement in certain activities as avoidant strategy
4 Extreme, drastic attempts at avoidance, unable to continue activities, or excessive involvement in certain activities as avoidant strategy

QV (specify)
————————————————— | *Past week*

F ____

I ____

Past month

F ____

I ____

Sx: Y N

Lifetime

F ____

I ____

Sx: Y N |

8. (C-3) inability to recall an important aspect of the trauma

| *Frequency*
Have you had difficulty remembering some important parts of (EVENT)? Tell me more about that. *(Do you feel you should be able to remember these things? Why do you think you can't?)* **In the past month *(week)*, how much of the important parts of (EVENT) have you had difficulty remembering?** *(What parts do you still remember?)*

0 None, clear memory
1 Few aspects not remembered (less than 10%)
2 Some aspects not remembered (approx 20-30%)
3 Many aspects not remembered (approx 50-60%)
4 Most or all aspects not remembered (more than 80%)

Description/Examples | *Intensity*
How much difficulty did you have recalling important parts of (EVENT)? *(Were you able to recall more if you tried?)*

0 None
1 Mild, minimal difficulty
2 Moderate, some difficulty, could recall with effort
3 Severe, considerable difficulty, even with effort
4 Extreme, completely unable to recall important aspects of event

QV (specify)
————————————————— | *Past week*

F ____

I ____

Past month

F ____

I ____

Sx: Y N

Lifetime

F ____

I ____

Sx: Y N |

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9. (C-4) markedly diminished interest or participation in significant activities

Frequency	*Intensity*	*Past week*
Have you been less interested in activities that you used to enjoy? *(What kinds of things have you lost interest in? Are there some things you don't do at all anymore? Why is that?)* [EXCLUDE IF NO OPPORTUNITY, IF PHYSICALLY UNABLE, OR IF DEVELOPMENTALLY APPROPRIATE CHANGE IN PREFERRED ACTIVITIES] **In the past month *(week)*, how many activities have you been less interested in?** *(What kinds of things do you still enjoy doing?)* **When did you first start to feel that way?** *(After the [EVENT]?)* 0 None 1 Few activities (less than 10%) 2 Some activities (approx 20-30%) 3 Many activities (approx 50-60%) 4 Most or all activities (more than 80%) *Description/Examples*	**How strong was your loss of interest?** *(Would you enjoy [ACTIVITIES] once you got started?)* 0 No loss of interest 1 Mild, slight loss of interest, probably would enjoy after starting activities 2 Moderate, definite loss of interest, but still has some enjoyment of activities 3 Severe, marked loss of interest in activities 4 Extreme, complete loss of interest, no longer participates in any activities *QV (specify)* _____ *Trauma-related?* *1 definite 2 probable 3 unlikely* Current _____ Lifetime _____	F _____ I _____ *Past month* F _____ I _____ Sx: Y N *Lifetime* F _____ I _____ Sx: Y N

10. (C-5) feeling of detachment or estrangement from others

Frequency	*Intensity*	*Past week*
Have you felt distant or cut off from other people? What was that like? How much of the time in the past month *(week)* have you felt that way? When did you first start to feel that way? *(After the [EVENT]?)* 0 None of the time 1 Very little of the time (less than 10%) 2 Some of the time (approx 20-30%) 3 Much of the time (approx 50-60%) 4 Most or all of the time (more than 80%) *Description/Examples*	**How strong were your feelings of being distant or cut off from others?** *(Who do you feel closest to? How many people do you feel comfortable talking with about personal things?)* 0 No feelings of detachment or estrangement 1 Mild, may feel "out of synch" with others 2 Moderate, feelings of detachment clearly present, but still feels some interpersonal connection 3 Severe, marked feelings of detachment or estrangement from most people, may feel close to only one or two people 4 Extreme, feels completely detached or estranged from others, not close with anyone *QV (specify)* _____ *Trauma-related?* *1 definite 2 probable 3 unlikely* Current _____ Lifetime _____	F _____ I _____ *Past month* F _____ I _____ Sx: Y N *Lifetime* F _____ I _____ Sx: Y N

11. (C-6) restricted range of affect (e.g., unable to have loving feelings)

Frequency	*Intensity*	*Past week*
Have there been times when you felt emotionally numb or had trouble experiencing feelings like love or happiness? What was that like? *(What feelings did you have trouble experiencing?)* **How much of the time in the past month** *(week)* **have you felt that way? When did you first start having trouble experiencing (EMOTIONS)?** *(After the [EVENT]?)* 0 None of the time 1 Very little of the time (less than 10%) 2 Some of the time (approx 20-30%) 3 Much of the time (approx 50-60%) 4 Most or all of the time (more than 80%) *Description/Examples*	**How much trouble did you have experiencing (EMOTIONS)?** *(What kinds of feelings were you still able to experience?)* [INCLUDE OBSERVATIONS OF RANGE OF AFFECT DURING INTERVIEW] 0 No reduction of emotional experience 1 Mild, slight reduction of emotional experience 2 Moderate, definite reduction of emotional experience, but still able to experience most emotions 3 Severe, marked reduction of experience of at least two primary emotions (e.g., love, happiness) 4 Extreme, completely lacking emotional experience *QV (specify)* ─────────────────────────── ***Trauma-related?*** *1 definite 2 probable 3 unlikely* Current _____ Lifetime _____	F _____ I _____ *Past month* F _____ I _____ Sx: Y N *Lifetime* F _____ I _____ Sx: Y N

12. (C-7) sense of a foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span)

Frequency	*Intensity*	*Past week*
Have there been times when you felt there is no need to plan for the future, that somehow your future will be cut short? Why is that? [RULE OUT REALISTIC RISKS SUCH AS LIFE-THREATENING MEDICAL CONDITIONS] **How much of the time in the past month** *(week)* **have you felt that way? When did you first start to feel that way?** *(After the [EVENT]?)* 0 None of the time 1 Very little of the time (less than 10%) 2 Some of the time (approx 20-30%) 3 Much of the time (approx 50-60%) 4 Most or all of the time (more than 80%) *Description/Examples*	**How strong was this feeling that your future will be cut short?** *(How long do you think you will live? How convinced are you that you will die prematurely?)* 0 No sense of a foreshortened future 1 Mild, slight sense of a foreshortened future 2 Moderate, sense of a foreshortened future definitely present, but no specific prediction about longevity 3 Severe, marked sense of a foreshortened future, may make specific prediction about longevity 4 Extreme, overwhelming sense of a foreshortened future, completely convinced of premature death *QV (specify)* ─────────────────────────── ***Trauma-related?*** *1 definite 2 probable 3 unlikely* Current _____ Lifetime _____	F _____ I _____ *Past month* F _____ I _____ Sx: Y N *Lifetime* F _____ I _____ Sx: Y N

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Criterion D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:

13. (D-1) difficulty falling or staying asleep

Frequency	*Intensity*	*Past week*
Have you had any problems falling or staying asleep? How often in the past month *(week)*? When did you first start having problems sleeping? *(After the [EVENT]?)*	**How much of a problem did you have with your sleep?** *(How long did it take you to fall asleep? How often did you wake up in the night? Did you often wake up earlier than you wanted to? How many total hours did you sleep each night?)*	**F** ____ **I** ____
0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day	0 No sleep problems 1 Mild, slightly longer latency, or minimal difficulty staying asleep (up to 30 minutes loss of sleep) 2 Moderate, definite sleep disturbance, clearly longer latency, or clear difficulty staying asleep (30-90 minutes loss of sleep)	***Past month*** **F** ____ **I** ____ **Sx: Y N**
Sleep onset problems? Y N Mid-sleep awakening? Y N Early a.m. awakening? Y N Total # hrs sleep/night _____ Desired # hrs sleep/night _____	3 Severe, much longer latency, or marked difficulty staying asleep (90 min to 3 hrs loss of sleep) 4 Extreme, very long latency, or profound difficulty staying asleep (> 3 hrs loss of sleep) ***QV (specify)*** –––––––––––––––––––––––––––––––– ***Trauma-related?*** *1 definite 2 probable 3 unlikely* *Current* _____ *Lifetime* _____	***Lifetime*** **F** ____ **I** ____ **Sx: Y N**

14. (D-2) irritability or outbursts of anger

Frequency	*Intensity*	*Past week*
Have there been times when you felt especially irritable or showed strong feelings of anger? Can you give me some examples? How often in the past month *(week)*? When did you first start feeling that way? *(After the [EVENT]?)*	**How strong was your anger?** *(How did you show it?)* [IF REPORTS SUPPRESSION:] *(How hard was it for you to keep from showing your anger?)* **How long did it take you to calm down? Did your anger cause you any problems?**	**F** ____ **I** ____
0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day ***Description/Examples***	0 No irritability or anger 1 Mild, minimal irritability, may raise voice when angry 2 Moderate, definite irritability or attempts to suppress anger, but can recover quickly 3 Severe, marked irritability or marked attempts to suppress anger, may become verbally or physically aggressive when angry 4 Extreme, pervasive anger or drastic attempts to suppress anger, may have episodes of physical violence ***QV (specify)*** –––––––––––––––––––––––––––––––– ***Trauma-related?*** *1 definite 2 probable 3 unlikely* *Current* _____ *Lifetime* _____	***Past month*** **F** ____ **I** ____ **Sx: Y N** ***Lifetime*** **F** ____ **I** ____ **Sx: Y N**

15. (D-3) difficulty concentrating

Frequency	*Intensity*	*Past week*
Have you found it difficult to concentrate on what you were doing or on things going on around you? What was that like? How much of the time in the past month *(week)*? **When did you first start having trouble concentrating?** *(After the [EVENT]?)* 0 None of the time 1 Very little of the time (less than 10%) 2 Some of the time (approx 20-30%) 3 Much of the time (approx 50-60%) 4 Most or all of the time (more than 80%) *Description/Examples*	**How difficult was it for you to concentrate?** [INCLUDE OBSERVATIONS OF CONCENTRATION AND ATTENTION IN INTERVIEW] **How much did that interfere with your life?** 0 No difficulty with concentration 1 Mild, only slight effort needed to concentrate, little or no disruption of activities 2 Moderate, definite loss of concentration but could concentrate with effort, some disruption of activities 3 Severe, marked loss of concentration even with effort, marked disruption of activities 4 Extreme, complete inability to concentrate, unable to engage in activities *QV (specify)* ——————————————————— ***Trauma-related?*** *1 definite 2 probable 3 unlikely* *Current* _____ *Lifetime* _____	**F** ____ **I** ____ *Past month* **F** ____ **I** ____ *Sx: Y N* *Lifetime* **F** ____ **I** ____ *Sx: Y N*

16. (D-4) hypervigilance

Frequency	*Intensity*	*Past week*
Have you been especially alert or watchful, even when there was no real need to be? *(Have you felt as if you were constantly on guard?)* **Why is that? How much of the time in the past month** *(week)*? **When did you first start acting that way?** *(After the [EVENT]?)* 0 None of the time 1 Very little of the time (less than 10%) 2 Some of the time (approx 20-30%) 3 Much of the time (approx 50-60%) 4 Most or all of the time (more than 80%) *Description/Examples*	**How hard did you try to be watchful of things going on around you?** [INCLUDE OBSERVATIONS OF HYPERVIGILANCE IN INTERVIEW] **Did your (HYPERVIGILANCE) cause you any problems?** 0 No hypervigilance 1 Mild, minimal hypervigilance, slight heightening of awareness 2 Moderate, hypervigilance clearly present, watchful in public (e.g., chooses safe place to sit in a restaurant or movie theater) 3 Severe, marked hypervigilance, very alert, scans environment for danger, exaggerated concern for safety of self/family/home 4 Extreme, excessive hypervigilance, efforts to ensure safety consume significant time and energy and may involve extensive safety/checking behaviors, marked watchfulness during interview *QV (specify)* ——————————————————— ***Trauma-related?*** *1 definite 2 probable 3 unlikely* *Current* _____ *Lifetime* _____	**F** ____ **I** ____ *Past month* **F** ____ **I** ____ *Sx: Y N* *Lifetime* **F** ____ **I** ____ *Sx: Y N*

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17. (D-5) exaggerated startle response

Frequency **Have you had any strong startle reactions? When did that happen?** *(What kinds of things made you startle?)* **How often in the past month** *(week)***? When did you first have these reactions?** *(After the [EVENT]?)* 0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day *Description/Examples*	*Intensity* **How strong were these startle reactions?** *(How strong were they compared to how most people would respond?)* **How long did they last?** 0 No startle reaction 1 Mild, minimal reaction 2 Moderate, definite startle reaction, feels "jumpy" 3 Severe, marked startle reaction, sustained arousal following initial reaction 4 Extreme, excessive startle reaction, overt coping behavior (e.g., combat veteran who "hits the dirt") *QV (specify)* ———————————————————— *Trauma-related?* 1 definite 2 probable 3 unlikely Current _____ Lifetime _____	*Past week* F ____ I ____ *Past month* F ____ I ____ Sx: Y N *Lifetime* F ____ I ____ Sx: Y N

> **Criterion E.   Duration of the disturbance (symptoms in Criteria B, C, and D) is more than 1 month.**

18. onset of symptoms

[IF NOT ALREADY CLEAR:] **When did you first start having (PTSD SYMPTOMS) you've told me about?** *(How long after the trauma did they start? More than six months?)*	_____ *total # months delay in onset* **With delayed onset (≥ 6 months)? NO** **YES**

19. duration of symptoms

		Current		Lifetime	
[CURRENT] **How long have these (PTSD SYMPTOMS) lasted altogether?** [LIFETIME] **How long did these (PTSD SYMPTOMS) last altogether?**	*Duration more than 1 month?* *Total # months duration* *Acute (< 3 months) or chronic* *(≥ 3 months)?*	*NO YES* _____ *acute chronic*		*NO YES* _____ *acute chronic*	

> **Criterion F.   The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.**

20. subjective distress

[CURRENT] **Overall, how much have you been bothered by these (PTSD SYMPTOMS) you've told me about?** [CONSIDER DISTRESS REPORTED ON EARLIER ITEMS] [LIFETIME] **Overall, how much were you bothered by these (PTSD SYMPTOMS) you've told me about?** [CONSIDER DISTRESS REPORTED ON EARLIER ITEMS]	0 None 1 Mild, minimal distress 2 Moderate, distress clearly present but still manageable 3 Severe, considerable distress 4 Extreme, incapacitating distress	*Past week* —— *Past month* —— *Lifetime*

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21. impairment in social functioning

[CURRENT] **Have these (PTSD SYMPTOMS) affected your relationships with other people? How so?** [CONSIDER IMPAIRMENT IN SOCIAL FUNCTIONING REPORTED ON EARLIER ITEMS] [LIFETIME] **Did these (PTSD SYMPTOMS) affect your social life? How so?** [CONSIDER IMPAIRMENT IN SOCIAL FUNCTIONING REPORTED ON EARLIER ITEMS]	0 No adverse impact 1 Mild impact, minimal impairment in social functioning 2 Moderate impact, definite impairment, but many aspects of social functioning still intact 3 Severe impact, marked impairment, few aspects of social functioning still intact 4 Extreme impact, little or no social functioning	*Past week* ____ *Past month* ____ *Lifetime* ____

22. impairment in occupational or other important area of functioning

[CURRENT -- IF NOT ALREADY CLEAR] **Are you working now?** IF YES: **Have these (PTSD SYMPTOMS) affected your work or your ability to work? How so?** [CONSIDER REPORTED WORK HISTORY, INCLUDING NUMBER AND DURATION OF JOBS, AS WELL AS THE QUALITY OF WORK RELATIONSHIPS. IF PREMORBID FUNCTIONING IS UNCLEAR, INQUIRE ABOUT WORK EXPERIENCES BEFORE THE TRAUMA. FOR CHILD/ADOLESCENT TRAUMAS, ASSESS PRE-TRAUMA SCHOOL PERFORMANCE AND POSSIBLE PRESENCE OF BEHAVIOR PROBLEMS] IF NO: **Have these (PTSD SYMPTOMS) affected any other important part of your life?** [AS APPROPRIATE, SUGGEST EXAMPLES SUCH AS PARENTING, HOUSEWORK, SCHOOLWORK, VOLUNTEER WORK, ETC.] **How so?** [LIFETIME -- IF NOT ALREADY CLEAR] **Were you working then?** IF YES: **Did these (PTSD SYMPTOMS) affect your work or your ability to work? How so?** [CONSIDER REPORTED WORK HISTORY, INCLUDING NUMBER AND DURATION OF JOBS, AS WELL AS THE QUALITY OF WORK RELATIONSHIPS. IF PREMORBID FUNCTIONING IS UNCLEAR, INQUIRE ABOUT WORK EXPERIENCES BEFORE THE TRAUMA. FOR CHILD/ADOLESCENT TRAUMAS, ASSESS PRE-TRAUMA SCHOOL PERFORMANCE AND POSSIBLE PRESENCE OF BEHAVIOR PROBLEMS] IF NO: **Did these (PTSD SYMPTOMS) affect any other important part of your life?** [AS APPROPRIATE, SUGGEST EXAMPLES SUCH AS PARENTING, HOUSEWORK, SCHOOLWORK, VOLUNTEER WORK, ETC.] **How so?**	0 No adverse impact 1 Mild impact, minimal impairment in occupational/other important functioning 2 Moderate impact, definite impairment, but many aspects of occupational/other important functioning still intact 3 Severe impact, marked impairment, few aspects of occupational/other important functioning still intact 4 Extreme impact, little or no occupational/other important functioning	*Past week* ____ *Past month* ____ *Lifetime* ____

Global Ratings

23. global validity

ESTIMATE THE OVERALL VALIDITY OF RESPONSES. CONSIDER FACTORS SUCH AS COMPLIANCE WITH THE INTERVIEW, MENTAL STATUS (E.G., PROBLEMS WITH CONCENTRATION, COMPREHENSION OF ITEMS, DISSOCIATION), AND EVIDENCE OF EFFORTS TO EXAGGERATE OR MINIMIZE SYMPTOMS.	0 Excellent, no reason to suspect invalid responses 1 Good, factors present that may adversely affect validity 2 Fair, factors present that definitely reduce validity 3 Poor, substantially reduced validity 4 Invalid responses, severely impaired mental status or possible deliberate "faking bad" or "faking good"

24. global severity

ESTIMATE THE OVERALL SEVERITY OF PTSD SYMPTOMS. CONSIDER DEGREE OF SUBJECTIVE DISTRESS, DEGREE OF FUNCTIONAL IMPAIRMENT, OBSERVATIONS OF BEHAVIORS IN INTERVIEW, AND JUDGMENT REGARDING REPORTING STYLE.	0 No clinically significant symptoms, no distress and no functional impairment 1 Mild, minimal distress or functional impairment 2 Moderate, definite distress or functional impairment but functions satisfactorily with effort 3 Severe, considerable distress or functional impairment, limited functioning even with effort 4 Extreme, marked distress or marked impairment in two or more major areas of functioning	*Past week* —— *Past month* —— *Lifetime* ——

25. global improvement

RATE TOTAL OVERALL IMPROVEMENT PRESENT SINCE THE INITIAL RATING. IF NO EARLIER RATING, ASK HOW THE SYMPTOMS ENDORSED HAVE CHANGED OVER THE PAST 6 MONTHS. RATE THE DEGREE OF CHANGE, WHETHER OR NOT, IN YOUR JUDGMENT, IT IS DUE TO TREATMENT.	0 Asymptomatic 1 Considerable improvement 2 Moderate improvement 3 Slight improvement 4 No improvement 5 Insufficient information

Complex Trauma Symptoms Questionnaire (CTSQ)

These are symptoms that people who exposed to trauma sometimes experience. Please check the box that is most true of you.

	Not at all	A little bit	Moderately	Quite a bit	Extremely
A chronic state of perceived current threat usually in the form of hypervigilance and mistrust of others					
1. I can't escape the feeling that something bad is about to happen	0	1	2	3	4
2. I feel a disaster could strike at any moment	0	1	2	3	4
3. I feel that I cannot let my guard down I the presence of other people or else they will intentionally hurt me	0	1	2	3	4
4. I constantly feel a need to hide to protect myself	0	1	2	3	4
5. I worry about being hurt or attacked	0	1	2	3	4
6. I am quite suspicious of other people's motives	0	1	2	3	4
7. It is only a matter of time before someone betrays me	0	1	2	3	4
Emotion dysregulation or difficulty managing a range of feelings (e.g., fear, anxiety, anger, sadness) that can include dissociative states					
8. When I am upset, it takes me a long time to calm down*	0	1	2	3	4
9. I react intensely to things that don't seem to affect other people*	0	1	2	3	4
10. My feelings tend to be easily hurt*	0	1	2	3	4
11. I have difficulty knowing what I feel*	0	1	2	3	4
12. I have difficulty describing what I feel to others*	0	1	2	3	4
13. I do things that other people have told me are dangerous or reckless (e.g., driving dangerously)*	0	1	2	3	4
14. I react to stressful situations by feeling far away or distant from the situation, or by feeling that I am not real, or that the world is not real*.	0	1	2	3	4
A disturbed sense of self marked by chronic feelings of being worthless, damaged, and different from others					
15. I feel worthless	0	1	2	3	4
16. I feel damaged	0	1	2	3	4
17. I feel disgusting	0	1	2	3	4

18. No one would want to be close to me if they know the real me	0	1	2	3	4
19. No one could love me if they saw my defects	0	1	2	3	4
20. I don't deserve to have good things happen to me	0	1	2	3	4
21. Even if good things happen to me, I am unable to feel good about myself	0	1	2	3	4
22. I feel like I deserve to suffer	0	1	2	3	4
23. I am fundamentally different from other people	0	1	2	3	4
24. I feel alienated from other people	0	1	2	3	4
25. I always feel on the outside of groups	0	1	2	3	4
26. I feel alone	0	1	2	3	4
Lack of Recognition and Agency					
27. My opinions thoughts and feelings don't matter to anyone	0	1	2	3	4
28. I feel invisible	0	1	2	3	4
29. I don't have any influence in how things turn out	0	1	2	3	4
30. I do not feel capable of getting by on my own in everyday life	0	1	2	3	4
31. I feel like a failure*	0	1	2	3	4
Interpersonal disturbances marked by difficulty in sustaining relationships or consistent feelings of positive engagement					
32. My relationships have extreme ups and downs	0	1	2	3	4
33. I keep finding myself in abusive relationships	0	1	2	3	4
34. I avoid relationships because they end up being too difficult or painful to have *	0	1	2	3	4
35. I find it hard to stay emotionally close to people	0	1	2	3	4
36. Relationships are not that important to me	0	1	2	3	4
37. I worry so much that people will leave me that I drive them away	0	1	2	3	4
38. When I feel someone pulling away from me, I get desperate	0	1	2	3	4
39. I worry that terrible things will happen to the people I care about	0	1	2	3	4

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Emotional blunting: emptiness, lack of awareness of feelings and difficulties in experiencing positive emotions					
40. I feel empty inside as if I ceased to exist	0	1	2	3	4
41. I feel distant from my own thoughts and behaviors	0	1	2	3	4
42. I feel shut down	0	1	2	3	4
43. I feel numb	0	1	2	3	4
44. Nothing gives me pleasure or joy	0	1	2	3	4
45. I have trouble knowing what other people feel	0	1	2	3	4
46. I tend to misjudge what other people feel and think	0	1	2	3	4
Lack of Meaning					
47. I feel my life is meaningless	0	1	2	3	4
48. I feel hopeless	0	1	2	3	4
49. I feel despair	0	1	2	3	4

Beck Depression Inventory-I

On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group that best describes the way you have been feeling the **past week, including today**. Circle the number beside the statement you picked. If several statements in the group seem to apply equally well, circle each one. **Be sure to read all the statements in each group before making your choice.**

1.   0   I do not feel sad.
          1   I feel sad.
          2   I am sad all the time and I can't snap out of it.
          3   I am so sad or unhappy that I can't stand it.

2.   0   I am not particularly discouraged about the future.
          1   I feel discouraged about the future.
          2   I feel I have nothing to look forward to.
          3   I feel that the future is hopeless and that things cannot improve.

3.   0   I do not feel like a failure.
          1   I feel I have failed more than the average person.
          2   As I look back on my life, all I can see is a lot of failures.
          3   I feel I am a complete failure as a person.

4.   0   I get as much satisfaction out of things as I used to.
          1   I don't enjoy things the way I used to.
          2   I don't get real satisfaction out of anything anymore.
          3   I am dissatisfied or bored with everything.

5.   0   I don't feel particularly guilty.
          1   I feel guilty a good part of the time.
          2   I feel quite guilty most of the time.
          3   I feel guilty all of the time.

6.   0   I don't feel I am being punished.
          1   I feel I may be punished.
          2   I expect to be punished.
          3   I feel I am being punished.

7.   0   I don't feel disappointed in myself.
          1   I am disappointed in myself.
          2   I am disgusted with myself.
          3   I hate myself.

8.   0   I don't feel I am any worse than anybody else.
          1   I am critical of myself for my weaknesses or mistakes.
          2   I blame myself all the time for my faults.
          3   I blame myself for everything bad that happens.

9.   0   I don't have any thoughts of killing myself.
          1   I have thoughts of killing myself, but I would not carry them out.
          2   I would like to kill myself.
          3   I would kill myself if I had the chance.

10.   0   I don't cry any more than usual.
          1   I cry more now than I used to.
          2   I cry all the time now.
          3   I used to be able to cry, but now I can't cry even when I want to.

11.   0   I am no more irritated now than I ever am.
           1   I get annoyed or irritated more easily than I used to.
           2   I feel irritated all the time now.
           3   I don't get irritated at all by the things that used to irritate me.

12.   0   I have not lost interest in other people.
           1   I am less interested in other people than I used to be.
           2   I have lost of my interest in other people.
           3   I have lost all of my interest in other people.

13.   0   I make decisions about as well as I ever could.
           1   I put off making decisions more than I used to.
           2   I have greater difficulty in making decisions that before.
           3   I can't make decisions at all anymore.

14.   0   I don't feel I look any worse than I used to.
           1   I am worried that I am looking old or unattractive.
           2   I feel that there are permanent changes in my appearance that make me look unattractive.
           3   I believe that I look ugly.

15.   0   I can work about as well as before.
           1   It takes an extra effort to get started at doing something.
           2   I have to push myself very hard to do anything.
           3   I can't do any work at all.

16.   0   I can sleep as well as usual.
           1   I don't sleep as well as I used to.
           2   I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
           3   I wake up several hours earlier than usual and find it hard to get back to sleep.

17.   0   I don't get more tired than usual.
           1   I get tired more easily than I used to.
           2   I get tired from doing almost anything.
           3   I am too tired to do anything.

18.   0   My appetite is no worse than usual.
           1   My appetite is not as good as it used to be.
           2   My appetite is much worse now.
           3   I have not appetite at all anymore.

19.   0   I haven't lost much weight, if any, lately.
           1   I have lost more than 5 pounds.
           2   I have lost more than 10 pounds.
           3   I have lost more than 15 pounds.
               I am purposely trying to lose weight by eating less. Yes __ No __

20.   0   I am no more worried about my health than usual.
           1   I am worried about physical problems such as aches and pains; or upset stomach; or constipation.
           2   I am very worried about physical problems and it's hard to think of much else.
           3   I am so worried about my physical problems that I cannot think about anything else.

21.   0   I have not noticed any recent changes in my interest in sex.
           1   I am less interested in sex than I used to be.
           2   I am much less interested in sex now.
           3   I have lost interest in sex completely.

The Centrality of Events Scale

Please think back upon the most stressful or traumatic event in your life and answer the following questions in an honest and sincere way, by circling a number from 1 to 5.

1. This event has become a reference point for the way I understand new experiences.	totally disagree 1 2 3 4 5 totally agree
2. I automatically see connections and similarities between this event and experiences in my present life.	totally disagree 1 2 3 4 5 totally agree
3. I feel that this event has become part of my identity.	totally disagree 1 2 3 4 5 totally agree
4. This event can be seen as a symbol or mark of important themes in my life.	totally disagree 1 2 3 4 5 totally agree
5. This event is making my life different from the life of most other people.	totally disagree 1 2 3 4 5 totally agree
6. This event has become a reference point for the way I understand myself and the world.	totally disagree 1 2 3 4 5 totally agree
7. I believe that people who haven't experienced this type of event think differently than I do.	totally disagree 1 2 3 4 5 totally agree
8. This event tells a lot about who I am.	totally disagree 1 2 3 4 5 totally agree
9. I often see connections and similarities between this event and my current relationships with other people.	totally disagree 1 2 3 4 5 totally agree
10. I feel that this event has become a central part of my life story.	totally disagree 1 2 3 4 5 totally agree
11. I believe that people who haven't experienced this type of event, have a different way of looking upon themselves than I have.	totally disagree 1 2 3 4 5 totally agree
12. This event has colored the way I think and feel about other experiences.	totally disagree 1 2 3 4 5 totally agree
13. This event has become a reference point for the way I look upon my future.	totally disagree 1 2 3 4 5 totally agree
14. If I were to weave a carpet of my life, this event would be in the middle with threads going out to many other experiences.	totally disagree 1 2 3 4 5 totally agree
15. My life story can be divided into two main chapters: one is before and one is after this event happened.	totally disagree 1 2 3 4 5 totally agree
16. This event permanently changed my life.	totally disagree 1 2 3 4 5 totally agree
17. I often think about the effects this event will have on my future.	totally disagree 1 2 3 4 5 totally agree
18. This event was a turning point in my life.	totally disagree 1 2 3 4 5 totally agree
19. If this event had not happened to me, I would be a different person today.	totally disagree 1 2 3 4 5 totally agree
20. When I reflect upon my future, I often think back to this event.	totally disagree 1 2 3 4 5 totally agree

Post-Traumatic Cognitions Inventory (PTCI)

This questionnaire lists different thoughts which people may have after a traumatic experience. In this questionnaire we are interested in the way that YOU thought, <u>IN THE LAST MONTH</u>, in regard to the traumatic event that you have experienced.

Please read each statement carefully and decide how much you have AGREED or DISAGREED with each statement during the last month.

For each of the thoughts, please show your answer by choosing the number from the scale below which BEST DESCRIBES HOW MUCH YOU AGREE WITH THE STATEMENT and placing the number next to that statement. People react in many different ways; there are no right or wrong answers to these statements.

1	2	3	4	5	6	7
Totally Disagree	Disagree Very Much	Disagree Slightly	Neutral	Agree Slightly	Agree Very Much	Totally Agree

__ 1. **My reactions since the event mean that I am going crazy.**

__ 2. **Somebody else would have stopped the event from happening.**

__ 3. **I feel like an object, not like a person.**

__ 4. **I have to be on guard all the time.**

__ 5. **Nothing good can happen to me anymore.**

__ 6. **I will not be able to control my anger and will do something terrible.**

__ 7. **The event happened to me because of the sort of person I am.**

__ 8. **The world is a dangerous place.**

__ 9. **I feel like I don't know myself any more.**

__10. **If I think about the event, I will not be able to handle it.**

__11. **People can't be trusted.**

__12. **My life has been destroyed by the event.**

__13. **Somebody else would not have gotten into this situation.**

__14. **I can't deal with even the slightest upset.**

__15. **I feel dead inside.**

__16. **People are not what they seem**

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PTCI (continued)

1	2	3	4	5	6	7
Totally Disagree	Disagree Very Much	Disagree Slightly	Neutral	Agree Slightly	Agree Very Much	Totally Agree

___17. I can't rely on myself.

___18. There is something wrong with me as a person.

___19. I will never be able to feel normal emotions again.

___20. I have to be especially careful because you never know what can happen next.

___21. My reactions since the event show that I am a lousy coper.

___22. I am inadequate.

___23. You can never know who will harm you.

___24. I feel isolated and set apart from others.

___25. I have no future.

___26. There is something about me that made the event happen.

___27. I have permanently changed for the worse.

___28. I can't rely on other people.

___29. I can't trust that I will do the right thing.

___30. I am a weak person.

___31. The event happened because of the way I acted.

___32. I used to be a happy person but now I am always miserable.

___33. I can't stop bad things from happening to me.

___34. I will not be able to tolerate my thoughts about the event, and I will fall apart.

___35. I will not be able to control my emotions, and something terrible will happen.

___36. You never know when something terrible will happen.

___37. I should be over this by now

Dissociative Experiences Scale II
(DES II)

Name: _____

Date: _____ Age: _____ Sex: M F _____

This questionnaire consists of 28 questions about experiences that you may have in your daily life. We are interested in how often you have these experiences. It is important, however, that your answers show how often these experiences happen to you when you **are not** under the influence of alcohol or drugs. To answer the questions, please determine to what degree the experience described in the question applies to you and circle the number to show what percentage of the time you have the experience.

Example:

0%	10	20	30	40	50	60	70	80	90	100%
(never)										(always)

1. Some people have the experience of driving or riding in a car or bus or subway and suddenly realizing that they don't remember what has happened during all or part of the trip. Circle a number to show what percentage of the time this happens to you.

    0%   10   20   30   40   50   60   70   80   90   100%

2. Some people find that sometimes they are listening to someone talk and they suddenly realize that they did not hear part or all of what was said. Circle a number to show what percentage of the time this happens to you.

    0%   10   20   30   40   50   60   70   80   90   100%

3. Some people have the experience of finding themselves in a place and having no idea how they got there. Circle a number to show what percentage of the time this happens to you.

    0%   10   20   30   40   50   60   70   80   90   100%

4. Some people have the experience of finding themselves dressed in clothes that they don't remember putting on. Circle a number to show what percentage of the time this happens to you.

    0%   10   20   30   40   50   60   70   80   90   100%

5. Some people have the experience of finding new things among their belongings that they do not remember buying. Circle a number to show what percentage of the time this happens to you.

    0%   10   20   30   40   50   60   70   80   90   100%

nferNelson
understanding potential

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6. Some people sometimes find that they are approached by people who they do not know who call them by another name or insist that they have met them before. Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

7. Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something and they actually see themselves as if they were looking at another person. Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

8. Some people are told that they sometimes do not recognize friends or family members. Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

9. Some people find that they have no memory for some important events in their lives (for example, a wedding or graduation). Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

10. Some people have the experience of being accused of lying when they do not think that they have lied. Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

11. Some people have the experience of looking in a mirror and not recognizing themselves. Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

12. Some people have the experience of feeling that other people, objects, and the world around them are not real. Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

13. Some people have the experience of feeling that their body does not seem to belong to them. Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

14. Some people have the experience of sometimes remembering a past event so vividly that they feel as if they were reliving that event. Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

Dissociative Experiences Scale II (DES II)   2

15. Some people have the experience of not being sure whether things that they remember happening really did happen or whether they just dreamed them. Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

16. Some people have the experience of being in a familiar place but finding it strange and unfamiliar. Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

17. Some people find that when they are watching television or a movie they become so absorbed in the story that they are unaware of other events happening around them. Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

18. Some people find that they become so involved in a fantasy or daydream that it feels as though it were really happening to them. Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

19. Some people find that they sometimes are able to ignore pain. Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

20. Some people find that they sometimes sit staring off into space, thinking of nothing, and are not aware of the passage of time. Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

21. Some people sometimes find that when they are alone they talk out loud to themselves. Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

22. Some people find that in one situation they may act so differently compared with another situation that they feel almost as if they were two different people. Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

23. Some people sometimes find that in certain situations they are able to do things with amazing ease and spontaneity that would usually be difficult for them (for example, sports, work, social situations, etc.). Circle a number to show what percentage of the time this happens to you.

0%   10   20   30   40   50   60   70   80   90   100%

24. Some people sometimes find that they cannot remember whether they have done something or have just thought about doing that thing (for example, not knowing whether they have mailed a letter or have just thought about mailing it). Circle a number to show what percentage of the time this happens to you.

       0%   10   20   30   40   50   60   70   80   90   100%

25. Some people find evidence that they have done things that they do not remember doing. Circle a number to show what percentage of the time this happens to you.

       0%   10   20   30   40   50   60   70   80   90   100%

26. Some people sometimes find writings, drawings, or notes among their belongings that they must have done but cannot remember doing. Circle a number to show what percentage of the time this happens to you.

       0%   10   20   30   40   50   60   70   80   90   100%

27. Some people sometimes find that they hear voices inside their head that tell them to do things or comment on things that they are doing. Circle a number to show what percentage of the time this happens to you.

       0%   10   20   30   40   50   60   70   80   90   100%

28. Some people sometimes feel as if they are looking at the world through a fog so that people and objects appear far away or unclear. Circle a number to show what percentage of the time this happens to you.

       0%   10   20   30   40   50   60   70   80   90   100%

Dissociative Experiences Scale II (DES II)   4

Appendix

Item Content of the Dissociative Experiences Scale—Taxon

Item numbers correspond to those of the Dissociative Experiences Scale.

3. Some people have the experience of finding themselves in a place and having no idea how they got there.

5. Some people have the experience of finding new things among their belongings that they do not remember buying.

7. Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something and they actually see themselves as if they were looking at another person.

8. Some people are told that they sometimes do not recognize friends or family members.

12. Some people have the experience of feeling that other people, objects, and the world around them are not real.

13. Some people have the experience of feeling that their body does not seem to belong to them.

22. Some people find that in one situation they may act so differently compared with another situation that they feel almost as if they were two different people.

27. Some people sometimes find that they hear voices inside their head that tell them to do things or comment on things that they are doing.

F39 – F64: POSTTRAUMATIC STRESS DISORDER CRITERIA

+ Questions on Auditory Pseudo-Hallucinations

F46a | "Have you been aware in the past week of a stream of thoughts that repeats a very similar message over **? - +** and over again inside your head? Sometimes the thoughts may just comment, or give instructions, or say if something is good or bad"

F46b | If Yes, ask for more details and then prompt "Do you experience this as a voice or as a stream of thoughts?"

F46c | If specifically identified as a voice, "How many different voices do you hear?" (Record details of up to 3 voices)

Voice 1

   a.   What is the gender of the voice?

   b.   Is it a voice you recognise?

   c.   How does the voice refer to you? (By *name, I, you, he, she, it, otherwise*)

   d.   How often do you hear the voice? (*Twice a week, several times a week, every day, many times a day*)

   e.   When did you first notice the voice? (*From childhood, post-trauma in adulthood*)

   f.   Is this voice related in any way to a past traumatic experience? (*Yes, No*)

   g.   What does the voice typically say to you?

   h.   Please rate the extent to which the voice seems real to you? (i.e. like someone is actually speaking to you) using a scale ranging from 0 (not at all) to 100 (very much so).

   i.   Please rate the effect of hearing the voice on a 5-point scale: 5 (felt much more positive), 4 (felt somewhat more positive), 3 (felt no effect either way), 2 (felt somewhat more negative), 1 (felt much more negative).

   j.   Please rate the extent to which you believe the voice using a scale ranging from 0 (not at all) to 100 (very much so).

   k.   Please rate the extent to which you can disagree with the voice using a scale ranging from 0 (not at all) to 100 (very much so).

   l.   Please rate the extent to which you can control the voice using a scale ranging from 0 (not at all) to 100 (very much so).

   m. Please rate the extent to which the following emotions describe the voice using a scale ranging from 0 (not at all) to 100 (very much so):

      - Encouraging
      - critical
      - happy
      - angry
      - rational
      - intimidating
      - supportive
      - strong

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Voice 2

a. What is the gender of the voice?

b. Is it a voice you recognise?

c. How does the voice refer to you? (By *name, I, you, he, she, it, otherwise*)

d. How often do you hear the voice? (*Twice a week, several times a week, every day, many times a day*)

e. When did you first notice the voice? (*From childhood, post-trauma in adulthood*)

f. Is this voice related in any way to a past traumatic experience? (*Yes, No*)

g. What does the voice typically say to you?

h. Please rate the extent to which the voice seems real to you? (i.e. like someone is actually speaking to you) using a scale ranging from 0 (not at all) to 100 (very much so).

i. Please rate the effect of hearing the voice on a 5-point scale: 5 (felt much more positive), 4 (felt somewhat more positive), 3 (felt no effect either way), 2 (felt somewhat more negative), 1 (felt much more negative).

j. Please rate the extent to which you believe the voice using a scale ranging from 0 (not at all) to 100 (very much so).

k. Please rate the extent to which you can disagree with the voice using a scale ranging from 0 (not at all) to 100 (very much so).

l. Please rate the extent to which you can control the voice using a scale ranging from 0 (not at all) to 100 (very much so).

m. Please rate the extent to which the following emotions describe the voice using a scale ranging from 0 (not at all) to 100 (very much so):

- Encouraging
- critical
- happy
- angry
- rational
- intimidating
- supportive
- strong

Voice 3

a. What is the gender of the voice?

b. Is it a voice you recognise?

c. How does the voice refer to you? (By *name, I, you, he, she, it, otherwise*)

d. How often do you hear the voice? (*Twice a week, several times a week, every day, many times a day*)

e. When did you first notice the voice? (*From childhood, post-trauma in adulthood*)

f. Is this voice related in any way to a past traumatic experience? (*Yes, No*)

g. What does the voice typically say to you?

h. Please rate the extent to which the voice seems real to you? (i.e. like someone is actually speaking to you) using a scale ranging from 0 (not at all) to 100 (very much so).

i. Please rate the effect of hearing the voice on a 5-point scale: 5 (felt much more positive),

2

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4 (felt somewhat more positive), 3 (felt no effect either way), 2 (felt somewhat more negative), 1 (felt much more negative).

j. Please rate the extent to which you believe the voice using a scale ranging from 0 (not at all) to 100 (very much so).

k. Please rate the extent to which you can disagree with the voice using a scale ranging from 0 (not at all) to 100 (very much so).

l. Please rate the extent to which you can control the voice using a scale ranging from 0 (not at all) to 100 (very much so).

m. Please rate the extent to which the following emotions describe the voice using a scale ranging from 0 (not at all) to 100 (very much so):

- Encouraging
- critical
- happy
- angry
- rational
- intimidating
- supportive
- strong

Appendix 2.0: Ethical Approval

20 April 2011

Dr Tim Dalgleish
Senior Scientist
MRC Cognition and Brain Sciences Unit
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Dear Dr Dalgleish

Study title:	Memory biases and impairments in clinical depression and posttraumatic stress disorder (PTSD): An examination of mechanisms and processes of change (MNEMONICS)
REC reference:	11/H0305/1

Thank you for your letter of 10 April 2011, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Ethical review of research sites

NHS sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at http://www.rdforum.nhs.uk.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	Version	Date
Non-NHS SSI for MRC 59417/174214/7/455/664/25/200134		15 December 2010
Investigator CV Tim Dalgleish		16 December 2010
Response to Request for Further Information from Dr Tim Dalgleish		10 April 2011
Participant Information Sheet	Version 2	11 February 2011
Advertisement	1	15 December 2010
Evidence of insurance or indemnity MRC	V1	October 2008
Referees or other scientific critique report MRC Committee review and scoring		
Protocol	Version 2	10 April 2011
Letter of invitation to participant	Version 2	23 February 2011
GP/Consultant Information Sheets	Version 2	02 April 2011
REC application 59417/174397/1/749		16 December 2010
Participant Consent Form	Version 2	12 February 2011
Covering Letter Dr. Tim Dalgleish, Dr. Anne-Marie Golden		16 December 2010
Letter from Sponsor MRC (Sponsor & Funder Letter)		14 December 2010
Non-NHS SSI for Herchel Smith Building for Brain and Mind 59417/173723/7/912/89348/199921 Sciences		14 December 2010
Paragraph Insertions for Each Study Stream	Version 2	23 February 2010
Letter of Contact to Participants	Version 2	16 December 2010

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Service website > After Review

You are invited to give your view of the service that you have received from the National

Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

The attached document *"After ethical review – guidance for researchers"* gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nres.npsa.nhs.uk.

11/H0305/1	Please quote this number on all correspondence

With the Committee's best wishes for the success of this project

Yours sincerely

pp *Jeanne Moden*

Dr Leslie Gelling
Chair

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Enclosures: "After ethical review – guidance for researchers"

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Appendix 3.0: Research paper: *Prevalence of Auditory Pseudohallucinations in Adult Survivors of Physical and Sexual Trauma with Chronic Post-Traumatic Stress Disorder (PTSD)*

Prevalence of auditory pseudohallucinations in adult survivors of physical and sexual trauma with chronic post-traumatic stress disorder (PTSD)

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ARTICLE INFO

ABSTRACT

Auditory Verbal Hallucinations (AVHs) are commonly associated with psychosis but are also reported in post-traumatic stress disorder (PTSD). Hearing voices after the experience of stress has been conceptualised as a dissociative experience. Brewin and Patel's (2010) seminal study reported that hearing voices is relatively common in PTSD, as hearing voices was associated with PTSD in half and two thirds of military veterans and survivors of civilian trauma, respectively. The authors conceptualised these voices as "auditory pseudohallucinations." To build upon this work, we administered Brewin and Patel' interview to adult survivors (n = 40) of physical and sexual trauma with chronic PTSD, and healthy controls (n = 39). In contrast to previous findings, only 5% (n = 2) of our PTSD sample reported recently hearing a voice that was consistent with an auditory pseudohallucination, with no reports in our control group. Thus, no support was provided for auditory pseudohallucinations as a significant symptom in this population.

1. Background

Auditory verbal hallucinations (AVHs) can be defined as the experience of hearing a voice in the absence of an appropriate external stimulus (Stanghellini & Cutting, 2003). However, the conceptualisation of AVHs and the extent to which hearing voices can be considered phenomenologically independent from other intrusive, unwanted and/or unintended cognitions, has been a matter of enduring academic and clinical debate (e.g., Aleman & Larøi, 2008; Slade & Bentall, 1988). AVHs are commonly associated with psychosis (American Psychiatric Association, 2013) and are recognised as a frequent source of distress and interference with functioning. As a result, AVHs are a major target of pharmacological interventions (Shergill, Murray, & McGuire, 1998) and psychological therapies (Thomas et al., 2014) for psychosis. However AVHs have also been identified in other disorders (Pilton, Verese, Berry & Bucci, 2015), where the experience of voices can impede therapeutic efficacy. Consequently, there are recommendations for tailoring existing therapeutic interventions (such as cognitive behaviour therapy; CBT) specifically for the treatment of AVHs (e.g. Smailes, Alderson-Day, Fernyhough, McCarthy-Jones, & Dodgson, 2015). Although other types of (pseudo)hallucinatory experiences, such as visual and olfactory hallucinations have been described in individuals with severe PTSD (e.g. Hamner, 1997; Hamner, Frueh, Ulmer, & Arana,

1999), the focus of the current study was on the experience of hearing voices.

In non-psychotic conditions, AVHs are most commonly reported in cases of combat-related Post Traumatic Stress Disorder (PTSD) (David, Kutcher, Jackson, & Mellman, 1999; Hamner et al., 1999; Seedat, Stein, Oosthuizen, Emsley, & Stein, 2003). Prevalence rates of AVHs in combat-related PTSD range from 20% to 58% (Brewin & Patel, 2010; David et al., 1999; Hamner et al., 1999; Ivezic, Bagariæ, Oruè, Mimica, & Ljubin, 2000; Seedat et al., 2003). Studies with civilian samples have been much less common. Anketell et al. (2010) evaluated a mixed sample of general psychiatric outpatients and those who had experienced conflict-related trauma and found that 50% of their sample with chronic PTSD reported AVHs. Similarly, Brewin and Patel (2010) suggested that AVHs are reported by a remarkable 67% of a civilian sample with PTSD.

This suggested preponderance of AVHs in sufferers of PTSD runs counter to clinical descriptions of the disorder. AVHs are not included as a criterion in the DSM-5 (American Psychiatric Association [APA], 2013) criteria for PTSD, nor are they included as a key focus of treatment in any of the current evidence-based interventions for PTSD (i.e., eye movement desensitisation and reprocessing [EMDR], trauma-focused CBT, prolonged exposure, and cognitive processing therapy [CPT]). If AVHs are indeed a common and central component of the

phenomenology of not only combat-related but civilian PTSD then this would have important nosological and therapeutic implications. Given this, the nature of AVHs in PTSD and the frequency of their experience in community PTSD samples is in need of further investigation and that is the focus of the present study.

A critical question is whether AVHs in PTSD are better conceptualised as pseudohallucinations linked to dissociative states, rather than as psychotic symptoms. Strong links between psychotic symptoms, including AVHs, and dissociative experiences have been demonstrated in a number of studies, in both clinical and non-clinical populations (see Moskowitz, Barker-Collo, & Ellson, 2004 for review). Allen, Coyne, and Console (1997) argued that dissociative detachment deprives individuals of "internal and external anchors". The absence of anchors is proposed to increase an individual's sense of feeling disconnected from the world, interpersonal relationships, and within their intrapersonal self, resulting in a sense of confusion and disorientation, and critically, in an impairment in reality-testing. In this way, Moskowitz and Corstens (2007) proposed that for individuals hearing voices when exposed to high levels of stress, AVHs should be conceptualised as dissociative experiences. Similarly, Longden, Madill, and Waterman (2012) proposed that voices could be conceptualised as dissociated or 'disowned components of the self', arising from the failure to integrate adverse and traumatic sensory and psychological experiences into the context of the self. Hallucinatory experiences might therefore reflect directly or indirectly dissociated traumatic content (e.g., the voice of an abuser) impinging on conscious awareness (e.g. Anketell et al., 2010), rather than a psychotic symptom.

Indeed, prior research has demonstrated a strong correlation in veterans with PTSD between hearing voices and other dissociative experiences both in the present and at the time the traumatic event occurred (Brewin & Patel, 2010). Wearne, Curtis, Genetti, Samuel, and Sebastian (2017) also showed that dissociative experiences (including depersonalisation and derealisation) were a better predictor of AVHs than a diagnosis of PTSD. Both theory and prior research therefore suggest that the experience of AVHs in PTSD may be better understood as a dissociative experience and thus conceptualised as 'pseudohallucinations' and we shall use this term for the rest of the current article. A focus of the present study was therefore on the association between the experience of such pseudohallucinations and other dissociative symptoms.

For those experiencing civilian PTSD this raises the question of whether particular types of trauma exposure or trauma history are more or less likely to be associated with the experience of pseudo-hallucinations, as we know that dissociation is differentially associated with particular profiles of trauma exposure (Briere, 2006). The experience of childhood sexual abuse, has been established as a predictor of pseudohallucinations in samples both with and without psychosis (Hammersley & Fox, 2006; McCarthy-Jones, 2011; Read, McGregor, Coggan, & Thomas, 2006; Wearne et al., 2017), although the properties of the voices in these populations do not appear to differ between those with and without CSA (e.g. Offen, Waller, & Thomas, 2003). For this reason, the present study focused on a civilian sample presenting with PTSD following sexual assault, abuse or violence either in childhood or adulthood. We reasoned that the predicted high incidence of dissociation in this population would mean that the clinical presentation should include pseudohallucinations if such experiences are indeed a prevalent symptom in civilian samples. This population also allowed us to elucidate putative associations between pseudohallucinations and trauma in childhood.

Hamner and colleagues (Hamner, 1997; Hamner et al., 1999) have also suggested that pseudohallucinations in PTSD might be best accounted for as a function of comorbid depression. Since depression is not typically associated with high levels of dissociation, Brewin and Patel (2010) proposed that finding high levels of pseudohallucinations in a depressed sample would argue against their being a dissociative phenomenon. In their study of civilians with PTSD, Brewin and Patel

(2010) collected an additional depressed sample without a primary diagnosis of PTSD. They found that 10% of the depressed sample reported the experience of pseudohallucinations and that these individuals scored in the low range on dissociative measures.[1] From this, Brewin and Patel (2010) concluded that pseudohallucinations were not a function of comorbid depression but likely to be an aspect of dissociation. However, showing that pseudohallucinations do not characterize individuals with depression is not the same as investigating the role of comorbid depression in those with PTSD. In the present study, we therefore evaluated the relationship between depression comorbidity and pseudohallucinations in our community PTSD sample.

In sum, using both a self-report measure of dissociative experiences and a semi-structured interview to assess pseudohallucinations in trauma survivors (Brewin & Patel, 2010), we sought to determine if the prevalence of pseudohallucinations in a British sample of adult survivors of repeated physical and sexual trauma was as high as reported in the two previous studies with civilian samples (Anketell et al., 2010; Brewin & Patel, 2010). We also aimed to determine whether the frequency of pseudohallucinations was associated with the experience of childhood versus adult trauma. Finally, we aimed to explore the nature of pseudohallucinations by determining if their experience was associated with other dissociative symptomatology and with the experience of comorbid depression.

2. Method

2.1. Participants

Ethics approval was obtained from the NHS National Research Ethics Service (reference 11/H0305/1). We recruited adults (aged 18–62) with a current diagnosis of chronic[2] PTSD ($n = 40$) according to the DSM-IV (APA, 2013), following a history of sexual, physical and/or emotional abuse (as Criterion A events), and a healthy control group with no history of disordered mental health ($n = 40$), as determined using the Structured Clinical Interview for the *DSM-IV* (SCID-I; First, Spitzer, Gibbon, Williams, & Janet, 1996). Fifteen of the PTSD participants were recruited from the Haven – A Sexual Assault Referral Centre (SARC) in Paddington. They were invited to take part following attendance at the Haven follow-up clinic or during an assessment for counseling or psychological therapy. Twenty-five of the PTSD participants and all of the control participants were recruited from the MRC Cognition and Brain Sciences Unit Volunteer Panels –databases of some 2000 community volunteers who have agreed to help with psychological research. Volunteers were recruited to the panels via advertisements in local newspapers.

According to the SCID-I, 35 (88%) of the PTSD group were exposed to between two and 'too many to count' past traumatic experiences ('Criterion A traumas'). Nineteen (47.5%) reported that they experienced trauma prior to the age of 18, with the remaining 52% having only experienced trauma during adulthood (allowing us to compare AVHs between those with and without childhood trauma histories). Thirty eight percent of the total sample had experienced sexual assault during adulthood. All participants met DSM-IV criteria for chronic PTSD occurring as a result of these traumatic experiences. Sixteen (40%) had a comorbid diagnosis of Major Depressive Disorder (MDD), as determined by the SCID-I. One control participant met criteria for Obsessive Compulsive Disorder and was excluded.

2.2. Procedure and measures

Participants completed the measures in a single session, individually

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[1] Below 30 on the Dissociative Experiences Scale-II (DES-II; Carlson & Putnam, 1993).

[2] duration of symptoms is 3 months or more (APA, 2013).

and face-to-face with the experimenter, in a quiet testing room. All participants completed the SCID-I, to derive diagnoses of PTSD and other Axis I disorders and to determine that criteria for Schizophrenia Spectrum and Other Psychotic Disorders were not met. In addition, participants completed the Beck Depression Inventory (BDI-I; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961 [3]) to assess current depression symptomatology, along with two measures of hearing voices – the Dissociative Experiences Scale II (DES-II; Item 27 focuses on hearing voices), and a semi-structured interview to assess hearing voices (Brewin & Patel, 2010).

Dissociative Experiences Scale-II (DES-II; Carlson & Putnam, 1993). The Dissociative Experiences Scale (DES-II) is a 28-item self-report instrument and widely used clinical tool to measure dissociation. The DES-II has good validity and reliability, and good psychometric properties (Carlson et al., 1993; Carlson & Putnam, 1993). Hearing voices is included as Item 27 on the DES-II: *"Some people sometimes find they hear voices inside their head that tell them to do things or comment on things they are doing. Circle a number (0–100) to show what percentage of time this happens to you."* This item is part of a subset of DES-II items (the Dissociative Experiences Scale-II Taxon; DES-T; comprising items 3, 5, 7, 8, 12, 13, 22 and 27) that differentiate individuals with pathological dissociation from those showing normal variation in dissociative experiences (Waller, Putnam, & Carlson, 1996).

Auditory Pseudohallucinations Interview (Brewin & Patel, 2010). The Auditory Pseudohallucinations Interview was administered to all PTSD and control participants. This measure was taken from prior evaluations of pseudohallucinations (Brewin & Patel, 2010). To our knowledge, this measure has not been used in any other published studies. We administered the semi-structure interview in its entirety, as used by Brewin and Patel (2010).

The interview asked *"Have you been aware in the past week of a stream of thoughts that repeats a very similar message over and over again inside your head? Sometimes the thoughts may just comment, or give instructions, or say if something is good or bad".* If participants responded yes, they were asked *"Do you experience this as a voice or as a stream of thoughts?*[4]*"* If identified as a voice, details of up to three separate voices were recorded, including gender, whether it was a voice they recognised, how the voice referred to them, how often they currently heard the voice, when they had first noticed the voice, whether the voice related in any way to a past traumatic experience and the extent to which the voice seemed real (i.e., like someone was actually speaking to them). Participants described what the voice typically said and rated the effect of hearing the voice on a five-point scale for the extent to which they a) believed the content, b) could disagree with the voice, and c) could control the voice. Finally, again using five-point scales, they were asked to rate the extent to which *encouraging, critical, happy, angry, rational, intimidating, supportive,* and *strong* described each voice.

3. Results

Demographic and symptom data are presented in Table 1. We observed the expected between-group difference in BDI-I scores. The control group were younger and more educated than the PTSD group, thus these variables were covaried in analyses. All results remained the same when the participants who had only experienced one trauma (n = 5) were removed from analyses, and data were re-analysed including only those who had experienced repeated traumas. The relationship between the number of experienced traumatic events and the

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[3] The first version of the BDI was used for legacy reasons to do with the Department volunteer panels.

[4] The wording of this question was changed from *'Do you experience this as a voice or just as a stream of thoughts'* by removing the word *'just'* as we were concerned that keeping it in implied that one was more important than the other.

key outcome measures is presented in Fig. 1.

DES-II data. DES scores across groups are also displayed in Table 1. As can be seen from the table, ANCOVAs including age and education as covariates comparing the PTSD and control groups revealed significant group differences on the DES-II, DES-T and DES Item 27, with the PTSD group scoring significantly higher on all indices. Scores on Item 27 were strongly correlated with the sum of the remaining DES-T items, $r(38) = 0.68$, $p < .001$.

Within the PTSD sample, 13/40 (32.5%) answered positively (reported hearing voices > 10% of the time) to Item 27. This contrasts with 48.4% of Brewin and Patel's (2010) veteran sample. None of the controls endorsed this item.

Those within the PTSD group reporting childhood trauma (n = 19) scored significantly higher on the DES-II (M = 33.31, SD = 22.52), $t(36) = 2.32$, $p = .03$, and on the DES-T (M = 27.04, SD = 23.33), $t(36) = 2.08$, $p = .05$, than those reporting trauma only in adulthood (n = 21; DES-II: M = 19.55, SD = 12.57; DES-T: M = 14.47, SD = 12.22). However, critically, there was no support for a difference between groups on Item 27 (childhood: M = 11.58, SD = 25.44; adulthood: M = 11.05, SD = 22.08), $t(36) = 0.07$, $p = .95$, d = 0.02, where the effect size was trivial (Cohen, 1992).

There were positive significant correlations between the DES-T scores and the total score on the CTSQ, $r(38) = 0.64$, n = 40, $p < .001$ and the BDI, $r(38) = 0.45$, n = 40, $p = .004$) for the PTSD group.

Sixteen (40%) participants with PTSD also had a diagnosis of MDD. Scores on the DES-II did not significantly differ between those with (DES-II: M = 28.48, SD = 17.20; DES-T: M = 23.52, SD = 17.97; Item 27: M = 11.25, SD = 26.05) and without (DES-II: M = 25.67, SD = 20.31; DES-T: M = 20.05, SD = 20.50; Item 27: M = 14.17, SD = 25.35) comorbid MDD on the DES-II, $t(38) = 0.46$, $p = .65$, DES-T, $t(38) = 0.55$, $p > .05$, or Item 27, $t(38) = -0.35$, $p = .73$ and effect sizes were trivial (0.11 for DES-II, 0.12 for DES-T and 0.10 for Item 27) (Cohen, 1992).

Semi-structured interview. In response to the interview, 18/40 (45%) participants with PTSD reported having experienced a stream of thoughts in the past week. Of these, 11 (61.1%) had an MDD diagnosis and eight (44.4%) reported experiencing childhood trauma. However, only two (11.11%) of those participants reported hearing repetitive thoughts in the form of a voice speaking to them. Each had PTSD following childhood trauma (one had experienced sexual and one physical childhood abuse). This contrasts starkly with Brewin and Patel's (2010) finding of 67% of a heterogeneous civilian PTSD sample reporting voices on the same interview measure. Both participants here regarded the voice as a manifestation of their own thoughts (a "pseudohallucination", Brewin & Patel, 2010). Each reported hearing one voice, which they recognised. One participant identified the voice as her father, who referred to her by name, and the other was identified as the female participant's own voice, which referred to them as *'stupid bitch'* and was described as *'talking to me like someone else would'*. In both cases, the voice was heard *'many times a day'*. The effect of the voice was described as positive in one case (own voice) and negative in the other (father's voice). Both participants described the voice as having been present since childhood.

In the control group, 3/39 (8%) participants reported having experienced a stream of thoughts, but none identified these as a voice.

4. Conclusions

In this study, we sought to determine if the prevalence of auditory pseudohallucinations in a British sample of adult survivors of physical and sexual trauma with chronic PTSD was as high as reported in the two previous studies with civilian samples (Anketell et al., 2010; Brewin & Patel, 2010). We also aimed to determine whether the frequency of auditory pseudohallucinations was associated with the experience of childhood versus adult trauma. Finally, we aimed to explore

Table 1
Mean (standard deviation) clinical Characteristics of PTSD Participants and Controls.

	PTSD Group ($n = 40$)	Control Group ($n = 39$)	Statistical Test	Effect Size (d)
Years in Education	14.15 (2.54)	17.03 (1.90)	$t(70.37) = 5.78, p < .001$	
Age (in years)	34.40 (12.35)	28.95 (8.22)	$t(67.39) = 2.33, p = .02$	
Beck Depression Inventory score	27.10 (12.59)	3.46 (6.16)	$t(55.39) = 10.42, p < .001$	
Dissociative Experiences Scale[a] (DES-II) score	26.80 (18.95)	5.41 (6.04)	$F(1, 75) = 22.03, p < .001$	0.54
DES-II Item 27 (hearing voices) score	13.00 (25.34)	0.00 (0.00)	$F(1, 75) = 6.36, p = .01$	0.29
DES-T score	21.44 (19.36)	1.85 (3.33)	$F(1, 75) = 19.57, p < .001$	0.51

[a] DES-II analyses covaried age and education.

the nature of auditory pseudohallucinations by determining if their experience was associated with other dissociative symptomatology and with the experience of comorbid depression.

In our PTSD sample, 32.5% answered positively (reported hearing voices > 10% of the time) to Item 27 of the DES-II. When this question was presented within a semi structured interview, 45% of the PTSD group endorsed such experiences. However, when probed as to whether they experienced this *"as a voice or a stream of thoughts"*, only 2/40 (5%) of our sample of survivors of physical and sexual trauma reported recently hearing *"a voice"* that was consistent with an auditory pseudohallucination. This is significantly lower than the 67% of Brewin and Patel's (2010) PTSD sample, using the same semi-structured interview approach, and than the 50% reported by Anketell et al. (2010). None of our healthy control participants endorsed hearing voices on the interview measure nor on item 27 of the DES-II.

We also sought to evaluate the relationship of the experience of childhood trauma and of comorbid depression with the experience of hearing voices. However, as only two participants endorsed hearing voices, meaningful analyses were not possible. Of note, however, we found no support for differential endorsement of the relevant items on the DES for those with PTSD as a function of childhood trauma, or for those with PTSD and comorbid depression.

There are a number of factors which may have contributed to the discrepancy in endorsement of voices on the DES-II relative to the interview. A key difference between these measures is that during the interview the individual is required to explicitly distinguish between the endorsed experience being either a) a voice talking to them or b) a stream of thoughts, and the majority (all bar two) of the participants reported that it was a stream of thoughts. It is possible that the DES-II may capture rumination and internal self-talk, and thus the more fine-grained evaluation provided by the interview question may account for why the incident reduced from that reported in the DES-T. Of course, there is also the possibility that participants did not want to discuss the voice face-to-face with a clinician for fear of negative evaluation or discomfort, and thus more readily reported hearing voices in the self-report format but we feel this is unlikely given that participants had consented to take part in the study knowing that this was a focus. These issues will need to be addressed in future studies.

In our sample of adults with a history of repeated physical and sexual trauma, we therefore found no evidence to support the previously reported high prevalence rates of auditory pseudohallucinations in other PTSD samples assessed using similar interview measures. The question of course is raised as to why there should be such a discrepancy between our findings and previous work. One possibility is that auditory pseudohallucinations are not a feature, specifically, of PTSD populations who have experienced repeated sexual or physical interpersonal trauma. However, given the previous literature linking such trauma exposure to higher levels of dissociation (Briere, 2006) and to the experience of auditory pseudohallucinations in individuals with and without psychosis (Hammersley & Fox, 2006; McCarthy-Jones, 2011; Read, van Os, Morrison, & Ross, 2015; Wearne & Genetti, 2015), one would have predicted *a priori* a higher prevalence of AVHs in the present sample relative to a heterogeneous community sample of the kind evaluated by Brewin and Patel (2010). Another possibility is

although auditory pseudohallucinations have been conceptualised in the literature as a distinct psychological symptom, they should instead be considered as an artefact of recurrent intrusive memories and the auditory re-experiencing of traumatic events. We found that 18/40 of our PTSD group reported having experienced a stream of thoughts but only two reported this was a voice speaking to them when probed by a clinician with extensive experience of working with complex PTSD populations. Perhaps only these two participants had found the metaphor of "hearing voices" to be a helpful way of explaining a recurrent intrusion.

A recent review (Steel, 2015) explored the relationship between hallucinations (including AVHs) and stressful or traumatic life events, with the reviewed studies indicating that there was a 12–40% overlap in the content of pseudohallucinations and traumatic memories The largest phenomenological survey of AVHs to date involved interviewing 199 voice hearers (McCarthy-Jones et al., 2014). Of these, 12% reported that they heard voices, which were identical replays of memories of previous conversations, whilst 31% reported that the relationship was similar but not identical. Similarly, studies reviewed by Steel (2015) suggested the presence of thematic links between prior trauma and the content of hallucinations. Steel (2015) concluded that the relationship between hallucinations and past traumatic experiences remains elusive, and thus is in need of further investigation. If AVHs *are* the auditory re-experiencing of past traumatic events then this has important implications for treatment; for example, the content of AVHs may represent hotpots that require rescripting in trauma-focused CBT and other similar interventions.

Limitations of this study include the specific focus on individuals with a chronic history of multiple incidences of sexual, physical and/or emotional abuse, rather than a broader inclusion of other, non-interpersonal traumatic experiences. As is common when working with survivors of repeated traumas, it was difficult to distinctly separate out different trauma types and their timing, especially with those who had experienced childhood trauma, and this therefore represents a methodological limitation. Our control and PTSD groups were also not matched for age and education level, although this turned out to be moot as there was minimal difference in our core construct of interest – endorsement of hearing voices in a semi-structured clinical interview. An additional limitation of the study was not including a formal measure of PTSD severity, such as the Clinician-Administered PTSD Scale (CAPS; Blake et al., 1995), although all participants did meet criteria for the Chronic PTSD specifier on the SCID.

In summary, in contrast to our predictions we found no support for a significant presence of auditory pseudohallucinations in a civilian sample of adults with chronic PTSD following sexual and/or physical interpersonal trauma. Our results suggest that prior reports of high prevalence of auditory pseudohallucinations in civilian samples are in need of further replication.
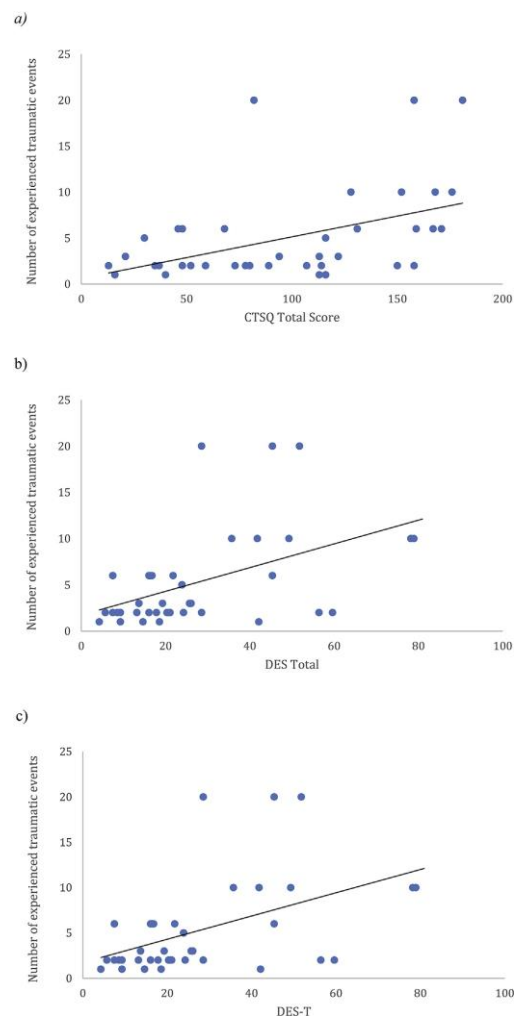
Acknowledgements

Fig. 1. a) Relationship between the Number of Experienced Traumatic Events and the Complex Trauma Symptoms Questionnaire (CTSQ) Total Score for the PTSD Group (n = 40). b) Relationship between the Number of Experienced Traumatic Events and the Dissociative Experiences Scale (DES-II) Total Score for the PTSD Group (n = 40). c). Relationship between the Number of Experienced Traumatic Events and the Dissociative Experiences Scale Taxon (DES-T) for the PTSD Group (n = 40).

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Appendix 4.0: Research paper: *Developing an Emotion- and Memory-Processing Group Intervention for PTSD with complex features: a group case series with survivors of repeated interpersonal trauma*

CLINICAL RESEARCH ARTICLE   👌 OPEN ACCESS   ⓡ Check for updates

Developing an Emotion- and Memory-Processing Group Intervention for PTSD with complex features: a group case series with survivors of repeated interpersonal trauma

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ABSTRACT

Individuals who experience repeated interpersonal trauma exposure often present with posttraumatic stress disorder (PTSD) with more complex features. There is currently no consensus regarding whether current evidence-based interventions for PTSD need to be tailored to better account for these complex features. However, one recommended adaptation is to adopt a phase-based or sequenced approach involving three phases, each with a distinct function. This paper describes the development of a 12-session Emotion- and Memory-Processing Group Programme, adapted from Cloitre's Skills Training in Affective and Interpersonal Regulation (STAIR) phase-based treatment protocol. A single case series provided a preliminary examination of the group-based intervention's efficacy for three groups of women with a history of repeated interpersonal trauma and PTSD with complex features (*N* = 15; age 19–46 years) at The Haven Sexual Assault Referral Centre in London. Results revealed significant reductions in: PTSD, complex features of PTSD, and depression, along with improvements in process measures of maladaptive cognitions and emotion processing. Results from this case series demonstrate that an Emotion- and Memory-Processing Group Programme holds promise for treating individuals with a history of interpersonal trauma in outpatient settings, and provides evidence to warrant the completion of a feasibility trial.

Desarrollo de una Intervención Grupal de Procesamiento de Emoción y Memoria para el TEPT con Características Complejas: series de grupos de casos con sobrevivientes de traumas interpersonales repetidos

Las personas que experimentan una exposición al trauma interpersonal de manera repetida a menudo presentan un Trastorno de Estrés Postraumático (TEPT) con características más complejas. Actualmente, no hay consenso respecto a la necesidad de adaptar las intervenciones para el TEPT basadas en la evidencia disponible, con el fin de considerar mejor estas características complejas. Sin embargo, una adaptación recomendada es adoptar un abordaje basado en fases, o secuenciado, que involucra tres fases, cada una con una función distinta. Este artículo describe el desarrollo de un Programa Grupal de Procesamiento de Emociones y Memoria de 12 sesiones, adaptado del protocolo de tratamiento basado en fases del Entrenamiento de Habilidades en Regulación Afectiva e Interpersonal (STAIR) de Cloitre. Una serie de casos únicos proporcionó un examen preliminar de la eficacia de la intervención basada en grupos para tres grupos de mujeres con una historia de trauma interpersonal repetido y TEPT con características complejas (*N* = 15, edades 19 años-46 años) en el Centro de Derivación de Agresión Sexual de Haven en Londres. Los resultados revelaron reducciones significativas en: TEPT, características complejas del TEPT, y depresión, junto con mejoras en medidas de procesos de cogniciones desadaptativas y procesamiento de emociones. Los resultados de esta serie de casos demuestran que el Programa de Grupo de Procesamiento en Emoción y Memoria es prometedor para tratar individuos con una historia de trauma interpersonal en contextos ambulatorios, y proporciona evidencia para garantizar la realización de un ensayo de viabilidad.

针对具有复杂特征的PTSD开发的情绪和记忆加工团体干预：重复人际创伤幸存者的团体病例系列

反复经历人际创伤暴露的个体经常出现具有复杂特征的创伤后应激障碍（PTSD）。目前还没有一致的结论确认是否需要针对这些复杂特征修订PTSD的循证干预措施。尽管如

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ⓑ Supplemental data for this article can be accessed here.

此，受到建议采用的调整方法是使用阶段式或循序干预的方法，其中包括三个功能各异的阶段。本文描述了一个12期的情绪和记忆加工团体干预项目的开发，该干预项目是根据Cloitre的情感和人际调节技能阶培训（STAIR）的阶段性治疗大纲改编。在伦敦的Haven 性侵转诊中心（Haven Sexual Assault Referral Centre）招募了三组有反复人际创伤和复杂 PTSD 的女性（N = 15，年龄19岁-46岁），作为一个案例系列提供了对该团体干预有效性的初步检验。结果显示了PTSD、复杂PTSD和抑郁的显著减轻，伴随着适应不良的认知和情绪加工的改进。本案例系列的结果表明，情绪和记忆加工团体干预项目有望在门诊治疗具有人际创伤史的个体，同时还提供了证据保证可行性试验的完成。

1. Introduction

Individuals presenting with posttraumatic stress disorder (PTSD) are not a homogenous group. Those who experience repeated interpersonal trauma, such as sexual and domestic violence, and abuse in childhood often present with PTSD with more complex features (Karatzias et al., 2017; Powers et al., 2017) than individuals exposed to single-incident traumas (Herman, 1997). Proposed diagnostic criteria for Complex PTSD (CPTSD) in the ICD-11 (due to be published in 2018) include the defining criteria of PTSD (re-experiencing, avoidance, numbing, and hyperarousal), in addition to the presence of at least one symptom in each of three self-organization features: affect dysregulation, negative self-concept, and interpersonal disturbance. The affective domain problems are characterized by emotion dysregulation, including alterations in attention and consciousness (e.g. dissociation, depersonalization, and derealization). Negative self-concept criteria include persistent beliefs about oneself as diminished, defeated, or worthless, and interpersonal disturbances are defined by persistent difficulties in sustaining relationships (Briere, Kaltman, & Green, 2008; Cloitre, Garvert, Brewin, Bryant, & Maercker, 2013; Cloitre et al., 2009).

There is contention in the literature regarding whether PTSD and CPTSD can be conceptualized as different disorders (see Resick et al., 2012, for discussion), and there is currently no consensus regarding whether tailoring current evidence-based interventions for PTSD (e.g. eye movement desensitization and reprocessing [EMDR], trauma-focussed cognitive behavioural therapy [CBT]) for complex features will improve treatment outcomes (Cloitre et al., 2012; Van Minnen, Harned, Zoellner, & Mills, 2012). A number of authors propose that trauma-focused treatments can be offered to those who have experienced repeated interpersonal trauma without any major modifications (e.g. Cook, Schnurr, & Foa, 2004; Resick, Nishith, & Griffin, 2003; Van Minnen et al., 2012). Others propose that outcomes for complex presentations can be improved using a phase-based or sequenced approach involving three phases, each with a distinct function (e.g. Cloitre et al., 2012). Phase one focuses on ensuring the individual's safety, reducing symptoms, and increasing important emotional, social, and psychological competencies. Phase

two focuses on processing the unresolved aspects of the individual's memories of traumatic experiences. Phase three involves consolidation of treatment gains to facilitate engagement in relationships, work or education, and community life. At present, there is no clear evidence-base to demonstrate consistently superior treatment effects for the use of a standard or phase-based approach to treating complex features (e.g. Wagenmans, Van Minnen, Sleijpen, & De Jongh, 2018; Bongaerts, Van Minnen, & De Jongh, 2017; Van Minnen et al., 2012).

Other elements of treatment format are also in need of further examination, including the use of group-based delivery. There are a number of advantages to offering group-based treatment, including a shared focus on resolution of symptoms through psychoeducation and skills training, which can be effective in terms of both time and cost. Relative to individual therapy, group interventions may be particularly useful for survivors of repeated interpersonal trauma, to normalize symptoms, foster social support, and enable observational learning (Dorrepaal et al., 2012; Zlotnick et al., 1997). Group therapy can provide an opportunity for individuals to experience, explore, and work through individual difficulties with others perceived to be in some way similar to oneself (e.g. Foy et al., 2000), and help them to make sense of their own experiences and responses to trauma (Klein & Schermer, 2000). In turn, this can reduce self-blame and feelings of disconnection or isolation from others (e.g. Johnson & Lubin, 2000).

Group therapy for PTSD is not currently included in any treatment guidelines (e.g. Forbes et al., 2010). However, the group-based format is commonly used in health care settings (e.g. Foy et al., 2000), and a recent meta-analysis demonstrated its efficacy, relative to wait-list control, in reducing PTSD symptoms ($d = 0.56$; Sloan, Feinstein, Gallagher, Beck, & Keane, 2013). Indeed, group-based cognitive processing therapy (CPT) yields superior treatment effects for both PTSD and depression symptoms, relative to a present-focused group therapy (Resick et al., 2015) and combined individual and group treatment for adults with childhood sexual trauma (Chard, 2005), with some evidence of a significant effect on complex features (e.g. reductions in dissociation following combined individual and group therapy; Chard, 2005). Other group treatments have

also demonstrated promising effects on both core PTSD symptoms (e.g. Sikkema et al., 2007) and the negative affect cluster of symptoms for samples with complex trauma histories (group therapy for incarcerated women; Bradley & Follingstad, 2003; trauma-focussed group therapy; Classen et al., 2011).

However, the majority of group-based interventions have adopted an education and supportive counselling or traditional cognitive-behavioural approach and not explicitly addressed the complex features of CPTSD. This is a vital need within the field, as meta-analysis suggests that current group-based treatments produce smaller effect sizes for indiviudals with more complex trauma histories (e.g. repeated interpersonal trauma; Sloan et al., 2013), compared to mixed trauma samples, suggesting that it may be necessary to explicitly address complex features to maximize therapeutic gains for this group. Dorrepaal et al. (2013) conducted the first study evaluating enhanced PTSD treatment in group format with a specifically CPTSD population: a randomized controlled trial of a 20-week stabilization-focussed cognitive behavioural treatment (CBT) for child-abuse-related CPTSD. The protocol included sessions on psychoeducation, skills training to target the negative affect domain of complex symptoms (learning to tolerate negative emotions and decrease avoidance), and cognitive restructuring. The results demonstrated significant improvements in symptoms of PTSD and CPTSD. We aimed to move beyond this initial study by more explicitly addressing all three symptom domains of CPTSD, with a greater emphasis on memory processing work, and in a shorter-time frame (three rather than five months) that can more easily fit within the time constraints of clinical services.

Here we describe the development and preliminary evaluation of a group intervention for individuals who have experienced repeated interpersonal trauma: an Emotion- and Memory-Processing Group Programme. Developing an efficacious group treatment for PTSD requires careful consideration of the process of intervention, as well as its content (e.g. Foy et al., 2000; Hickling & Blanchard, 1999; Resick & Schnicke, 1993). To implement the phase-based approach, we based our group programme on the Skills Training in Affective and Interpersonal Regulation (STAIR; Cloitre, Cohen, & Koenen, 2006) protocol. STAIR is a phase-based, sequential treatment that was specifically developed to treat women (in individual therapy) who had experienced childhood sexual abuse (Cloitre, Koenen, Cohen, & Han, 2002). The treatment first emphasizes skills training in affective and interpersonal regulation (STAIR) to improve daily life functioning, while the second module (Narrative Story Telling; NST) focuses on the re-appraisal of trauma memories. In NST, patients are asked repeatedly to imagine and then retell the details of their traumatic experiences, which can be difficult to facilitate effectively in a group format due to the risk of trauma narratives triggering responses among fellow group members. Prior research has addressed in a variety of ways, including asking group participants to write their trauma narrative and complete imaginal exposure either while in the group (Beck, Coffey, Foy, Keane, & Blanchard, 2009) or as homework (Castillo et al., 2016). We therefore required participants to complete exposure at home by writing out a narrative of the trauma between sessions, to retain elements of NST from the original protocol. However, we did not ask participants to share a full account of their traumatic experiences within the group sessions.

To facilitate group-based delivery, therefore, we replaced the NST phase of the STAIR programme with a number of different mnemonic control techniques. Given the key role of memory characteristics in predicting prognosis, we aimed to include greater emphasis (relative to STAIR) on memory-processing work, in line with existing evidence-based treatments (e.g. Ehlers & Clark, 2000; Ehlers, Clark, Hackmann, McManus, & Fennell, 2005). Trauma-focused interventions typically involve processing and 'updating' trauma memories (e.g. Ehlers & Wild, 2015), and these techniques can be easily implemented in a group format. The second phase of treatment thereby included identifying triggers to traumatic memories and describing the associated meanings, emotions and physiological sensations, cognitive/narrative restructuring, and imagery rescripting. In sum, the final protocol consisted of a skills in affective and interpersonal regulation phase, a memory processing phase, and a skills consolidation phase, delivered over 12 group-based sessions.

We completed a three-group case series of the Emotion- and Memory-Processing Group Programme for complex features of PTSD with female survivors of rape or sexual assault. Guidance on the development of complex interventions (e.g. Medical Research Council [MRC], 2000) recommends that novel clinical techniques are first piloted in small studies, such as case series that serve to establish the promise of a new approach, and are important in refining an intervention (through use of clinician and participant feedback) prior to commencement of trials. The key focus of this study was to develop the novel treatment manual to the point that it may be evaluated in a future feasibility trial, and to provide a preliminary, uncontrolled estimate of any effects of the intervention.

This case series details the delivery of the programme, and provides a preliminary examination of acceptability, feasibility, and potential efficacy of the intervention in reducing symptoms of PTSD, along with measures of complex features, namely emotion dysregulation, dissociation, and interpersonal difficulties. We also looked at changes in posttraumatic cognitions, and depression. Hypotheses for our

primary outcomes were: (1) The intervention would show promising acceptability and feasibility, determined by an average attendance of at least eight of the 12 sessions and completion of at least 50% of homework tasks[1]; (2) Participants would show a reduction in core symptoms of PTSD and associated complex features from pre- to post-treatment. Hypotheses for our secondary outcomes were: (3) Participants would show a reduction in associated symptoms of depression and anxiety from pre- to post-treatment; (4) Participants would show a reduction in scores on process measures of maladaptive cognitions and emotion processing associated with the onset and maintenance of PTSD (Dalgleish, 2004).

2. Method

2.1. Participants

We conducted three intervention groups in London in 2012–2014. Participants were 15 women aged 19–46 years (M = 27.93; SD = 6.86). Five women participated in the first group, six in the second group (although one dropped out as she was hospitalized due to suicide risk after the initial assessment, before group began, and her data were set aside) and five in the third group.

Inclusion criteria were that participants experienced complex features of PTSD, had been raped or sexually assaulted in the 12 months prior to the group, and had also experienced at least one prior interpersonal trauma in their lives. Exclusion criteria were insufficient knowledge and understanding of English and current substance dependence. No participants were excluded on this basis.

We operationalized CPTSD by cross-referencing participants' scores on the Complex Trauma Symptoms Questionnaire (CTSQ; Mendelsohn et al., unpublished). The CTSQ items index the ICD-11 criteria for CPTSD, providing a measure of perceived threat, emotion regulation difficulties, sense of self, self-recognition and agency, interpersonal difficulties, emotional blunting, and meaning attached to the trauma. Responses to each item on the CTSQ ranged from 0 (not at all), 1 (a little bit), 2 (moderately), 3 (quite a bit) and 4 (extremely). Eleven participants met criteria for at least one symptom on each of the domains (affect, negative self-concept and relational disturbance), determined by a score of two or more on the CTSQ. Three participants met criteria for at least one symptom on two out of three of the domains. One participant described mild complex features, scoring one on a number of criteria on each of the subscales.

Participants were recruited following assessment at The Haven (Sexual Assault Referral Centre) (n = 11); by the Sexual Offences Investigative Team (n = 1); by the Sexual Health Psychology service (n = 2); from the Praed Street Project (supporting women in the sex industry; n = 1); from Eaves (a voluntary sector organization supporting female victims of violence; n = 1). The group programme was offered as an adjunct to treatment as usual, which involved one or two follow-up medical review and/or support sessions with nurses/support workers at The Haven.

2.2. Measures

2.2.1. Symptom and clinical impact measures

PTSD was diagnosed with the Clinician-Administered PTSD Scale (CAPS; Blake et al., 1995). The CAPS is a semi-structured interview which assesses the PTSD diagnostic criteria defined by the Diagnostic and Statistical Manual of Mental Disorders (4th ed; DSM-IV; American Psychiatric Association, 1994[2]). The CAPS includes standardized questions to determine frequency and intensity of each symptom in the preceding month. A total severity score for is determined by summing scores for the 17 core symptoms.

The CAPS has good psychometric properties (Weathers, Keane, & Davidson, 2001) and is a sensitive and specific measure of PTSD (Hovens et al., 1994). Inter-rater reliability is high ('Frequency' r = .92–1.00; 'Intensity' r = .93–.98; 'Severity' r = .89; Hovens et al., 1994). Test-retest reliabilities range from .77 to .96 for the three symptom clusters and from .90 to .98 for the 17-item core symptom scale (Blake et.al., 1995). Internal consistency for the severity score was high in the current sample (α = .82).

The Complex Trauma Symptoms Questionnaire (CTSQ; Mendelsohn et al., unpublished) is a 49-item assessment measure intended to assess CPTSD symptoms and has been used in previous evaluation of a phase-based approach for treating PTSD in women with a history of interpersonal violence (Cloitre et al., 2014). Internal consistency was high in the current sample (α = .97).

Comorbid Axis I diagnoses were determined using the Structured Clinical Interview for DSM-IV disorders (SCID-I; First, Spitzer, Gibbon, & Williams, 2002). The SCID-I assesses DSM-IV diagnostic criteria. The interview takes 45–90 minutes to complete. It is divided into six self-contained modules that can be administered in sequence. The reliability and validity of the SCID-I for DSM-IV is well established and has been reported in several published studies (e.g. Lobbestael, Leurgans, & Arntz, 2011; Zanarini et al., 2000).

The Beck Depression Inventory (BDI-I; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) indexed

symptoms of depression using 21 questions about how the subject has been feeling in the last week. Internal consistency was high in the current sample ($\alpha = .81$). The BDI-I was used for legacy reasons to provide comparability across studies within the research unit.

2.2.2. Process measures

The Post-Traumatic Cognitions Inventory (PTCI; Foa, Ehlers, Clark, Tolin, & Orsillo, 1999) is a 33-item measure of negative and dysfunctional post-trauma cognitions about the self and world. Cognitive models of PTSD emphasize these dimensions as foci of change in cognitive-behavioural interventions (Dalgleish, 2004). The three factors have good test-retest reliability and discriminate well between traumatized individuals with and without PTSD (Foa et al., 1999). Internal consistency was high in the current sample ($\alpha = .96$).

The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a 36-item self-report measure designed to measure emotion dysregulation. Items focus on lack of emotional awareness, lack of emotional clarity, non-acceptance of negative emotions, lack of strategy building, lack of control of impulsive behaviors, and inability to behave in accordance with goals under negative emotions. The DERS has good test-retest reliability, and adequate construct and predictive validity (Gratz & Roemer, 2004). Internal consistency was high in the current sample ($\alpha = .91$).

2.3. Description of the intervention

The 12-session group programme comprised: one session involving an introduction to the group and an overview of the subsequent sessions; three sessions focused on emotional awareness and regulation, identifying and labelling feelings, emotion management, distress tolerance and acceptance of feelings, and experiencing positive emotions; two sessions focused on navigating interpersonal problems, exploration and revision of maladaptive schemas, effective assertiveness, awareness of social context (including exploration of other people's reactions to rape and sexual assault), and flexibility in interpersonal expectations and behaviours; one session for psychoeducation focused on symptoms of PTSD and the impact of trauma on memory; four sessions focused on exposure and mnemonic techniques to better manage trauma memories, identifying triggers to and re-conditioning flashbacks, imagery and nightmare rescripting, narrative restructuring, and the method of loci (Dalgleish et al., 2013; Werner-Seidler & Dalgleish, 2016); and one session for summary and review (see Supplementary materials for an outline of the final 12 session Emotion- and Memory-Processing Group Intervention).

As noted, exposure was not a mandatory part of the group programme. Although we focused on techniques of memory restructuring, such as imagery and nightmare rescripting exercises which involved an element of exposure, we did not facilitate an in-the-moment reliving sessions as a group but, similar to Beck et al. (2009), set an exposure exercise for homework by asking participants to write out a narrative of their traumatic experience(s).

Minor modifications were made following each of the groups in the case series, in line with case series development (MRC, 2000), based on both reflections of the facilitators and specific feedback provided by group members. We offered sessions corresponding to each of the recommended phases for complex presentations of PTSD. Although the initial presentation of the phases was in the linear order originally proposed, development of the manual throughout the case series saw that in Groups 2–3, the phases became more integrated. In particular we continued to use elements of stabilization work in the trauma-processing stage, as group members reported difficulties in practising the regulation of emotions and management of distress before any trauma-focused processing had taken place.

We therefore re-ordered the group sessions to alternate between processing/managing memories and then regulating/coping with the distress, rather than having distinct, linear phases. Facilitators observed ambivalence towards and avoidance of homework tasks and therefore dedicated more time to addressing the reasons for avoidance and included more frequent re-iteration of the importance of between-session exercises. Facilitators also modified the session on 'interpersonal schemas' to focus more generally on interpersonal difficulties following a traumatic event as the former was difficult to facilitate in a group within a single session.

The first group was facilitated by a Senior Clinical Psychologist and a Trainee Clinical Psychologist; the second and third groups were facilitated by a Senior Clinical Psychologist and a Mental Health Independent Sexual Violence Advisor. Participants were asked to attend all 12 group sessions, each of which was two hours long, including a 20 minute break. The sessions comprised a combination of clinician-led teaching, group discussions, group exercises, and discussion of homework tasks. Each session began with a review of the homework tasks, an update for any of the group members who had not been present, and then an overview of the current session. Each session ended with a description of the homework tasks for the following week.

2.4. Procedure

Ethics approval was obtained from the NHS National Research Ethics Service (reference 11/H0305/1). During pre- and post-intervention assessments, participants

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completed the study measures individually and face-to-face in a quiet testing room. Following provision of informed consent, participants completed the CAPS and the SCID-I with the assessor, then the self-report questionnaire symptom and process measures. Group sessions took place on a weekly basis in a room in St. Mary's Hospital, London, UK.

3. Results

3.1. Description of the sample

The socio-demographic, trauma history, and diagnostic information of the study participants is presented in Table 1 and pre- and post-treatment scores on symptom and process measures are presented in Table 2.

All participants presented with complex features of PTSD, including emotion regulation difficulties, interpersonal problems, impulsive and/or self-destructive behaviour, high levels of dissociation, substance-related problems, and somatic symptoms. Fourteen of the 15 met criteria for DSM-IV PTSD on the CAPS at baseline. The participant who did not meet criteria for PTSD on the CAPS at baseline presented with PTSD symptoms of avoidance and physiological arousal. However, she did not present with reliving symptoms at that time due to very high levels of dissociation and disconnection from her emotions.

All participants had been raped or sexually assaulted in the 12 months prior to the group and had also experienced at least one prior

Table 1. Sociodemographic, trauma history, and diagnostic information of study participants.

	Group 1	Group 2	Group 3	Total
	(n = 5)	(n = 5)	(n = 5)	(n = 15)
Sociodemographic				
Employed (full- or part-time)	3	1	3	7
Full-time Study	0	3	2	5
Education[1]	2/3/0/0	1/1/2/1	0/0/3/2	3/4/5/3
Married/Co-habiting	0	0	0	0
Children	1	1	0	2
Ethnicity[2]	4/1/0/0	1/2/1/1	4/1/0/0	9/4/1/1
Trauma History				
Abuse in Childhood[3]	1/1/1	1/2/1	2/0/2	4/3/4
Abuse in Adulthood[4]	3/5/2	2/5/2	2/5/1	7/15/5
Adulthood Road Traffic Accident	0	0	1	1
Adulthood Natural Disaster	0	1	0	1
Current Axis I Comorbidities				
Major Depressive Disorder	3	3	1	7
Eating Disorder	0	1	0	1
Obsessive Compulsive Disorder	0	0	1	1
Panic Disorder[5]	1	1	2	4

[1] Secondary Education/College/Further Education – Undergraduate/Further Education – Postgraduate
[2] White/Black/Asian/Mixed
[3] Sexual/Physical/Emotional
[4] Domestic Violence/Rape or Sexual Assault/Physical Assault
[5] Secondary to PTSD Diagnosis

Table 2. Pre- and post-treatment scores for symptom and process measures.

	Pre-		Post-			
	M	SD	M	SD	t (15)	d
CAPS Severity	72.92	16.00	56.31	17.28	2.70*	1.18
DERS	116.46	23.42	93.54	16.49	3.97**	1.13
Beck Depression Inventory	26.62	9.06	16.23	4.71	5.82***	1.44
CTSQ Total Score	100.38	43.54	63.92	31.76	4.12**	0.96
Chronic State of Perceived Threat	17.15	6.99	12.38	6.42	2.63	0.71
Emotion Dysregulation	16.85	5.51	12.77	5.72	2.32	0.73
Disturbed Sense of Self	25.92	13.36	16.54	11.58	3.54**	0.75
Lack of Recognition and Agency	9.54	6.05	4.15	3.89	4.46**	1.06
Interpersonal Disturbances	13.15	7.40	10.08	7.27	1.50	0.42
Emotional Blunting	12.38	6.89	6.62	3.64	3.47**	1.05
Lack of Meaning	5.38	3.48	1.38	1.66	4.76***	1.47
PTCI Total Score	171.77	40.83	128.08	29.71	4.41**	1.22
Negative Cognitions about the Self	4.49	1.31	3.28	0.88	3.79**	0.48
Negative Cognitions about the World	5.11	1.29	4.29	1.00	4.37**	0.47
Self-blame	4.15	1.03	2.80	1.19	3.90**	0.52

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

interpersonal trauma in their lives. Participants reported being exposed to between two and *too many to count* past traumatic experiences, as measured by the SCID-I. Seven of the 15 participants had experienced *too many to count* past traumatic experiences due to prolonged abuse in childhood or an adult relationship. Baseline severity on the CAPS was comparable with levels reported in a high dissociation sample of victims of childhood sexual and/or physical abuse (Cloitre et al., 2012), victims of childhood sexual abuse (Chard, 2005), and rape victims with a childhood sexual abuse history (Resick et al., 2003).

3.2. Group attendance and homework adherence

The main adherence outcomes of interest were mean number of group sessions completed and percentage of homework tasks completed. There was only one drop out from the intervention (one member of the first group was hospitalized due to suicide risk) and data are presented for the remaining 15 group completers. Participants attended an average of 9.07/12 sessions (SD = 2.99; range 2–12). An average of 8.8 sessions were attended in the first group, 8.0 in the second group, and 10.2 in the third group. Across groups, participants completed between five and 28 homework tasks in total (out of 32 tasks set) (M = 15.14, SD = 8.11). An average of 17.2 homework tasks were completed for the first group, 9.4 for the second group, and 19 for the third group. Overall, eight of the 15 group participants (53%) wrote out a narrative of their traumatic experience in between sessions eight and nine (four in the first group, one in the second group, and three in the third group).

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Figure 1. Pre- and post-scores on the CAPS, CTSQ, and PTCI.

3.3. Clinical outcomes

The main clinical outcomes of interest were the effect sizes for the symptom and process measures. Prior to the group intervention, 14 participants met DSM-V criteria for PTSD on the CAPS. This reduced to five post-treatment. Table 2 shows the inferential statistics and effect sizes assessing change from pre- to post-treatment on CAPS severity score, the CPTSD measure (CTSQ), BDI, PTCI, and DERS for the three groups combined. Figure 1 presents pre- and post- scores for each participant on the CAPS, CTSQ, and PTCI. Analyses were Bonferroni corrected for multiple testing ($\alpha = .05/15 = .003$).

As can be seen, there were medium to large effect sizes (Cohen, 1977) for improvement on all clinical and process outcomes. Although traditional statistical significance was not the focus of this case series, it is worth noting that these effects reached statistical significance (albeit uncorrected for multiple comparisons) for the CAPS, BDI, PTCI, DERS, and the majority of the subscales of the CPTSD measure.

3.3.1. Calculation of reliable change

Reliable change (Christensen & Mendoza, 1986) indexes whether participants changed sufficiently enough to ensure that the change is unlikely to be due to simple measurement unreliability. The formula for the standard error of change is: $SD1\sqrt{2} \times \sqrt{(1-rel)}$, where SD1 is the initial standard deviation and rel indicates the test-retest reliability of the measure. The formula for criterion level, based on change that would happen less than 5% of the time by unreliability of measurement alone, is: $1.96 \times SD1\sqrt{(2)} \times \sqrt{(1-rel)}$. Using this calculation, reliable change was observed for four participants on the CAPS, nine on the BDI, seven on the DERS, and six on the PTCI (see Table 3).

3.3.2. Calculation of clinically significant change

Clinically significant change indexes whether the participant's score on a given measure has shifted from a score typically associated with the presence of clinical problems to a score typical of the healthy population. On the BDI, clinically significant change was defined

Table 3. Reliable change and clinically significant change for combined groups.

	Test-retest Reliability	SE of Change	Reliable Change		Clinically Significant Change	
			Criterion	n (%)	Criterion	n (%)
CAPS – Severity	0.83	9.47	18.55	4 (27)	15 point change	6 (40)
Beck Depression Inventory	0.89	4.25	8.33	9 (60)	18% decrease	10 (75)
Difficulties in Emotion Regulation Scale	0.88	11.47	22.49	7 (47)		
Post-Traumatic Cognitions Inventory	0.82	24.50	48.02	6 (40)		

n = number of participants who met the change criterion.

as an 18% reduction in total score (Button et al., 2015). On the CAPS, a 15-point change indicates clinically significant change (Weathers et al., 2001). Clinically significant change was observed for six participants on the CAPS and 10 on the BDI (see Table 3).

4. Discussion

This case series has demonstrated initial evidence for the feasibility, acceptability, and efficacy of the Emotion- and Memory-Processing Group Intervention. Our primary aim was to determine feasibility and acceptability of the intervention. There was only one drop out from treatment – who was admitted to hospital – and participants attended an average of 9.07 of 12 sessions and completed an average of 15.14 of the 32 homework tasks set. These outcomes provide initial support for the intervention being feasible and broadly acceptable to participants, although a more in-depth qualitative assessment is now indicated.

We also aimed to explore treatment efficacy. Results demonstrated medium to large effect-size improvements on all clinical and process outcomes. Interestingly, effect sizes for change in emotion regulation, a core element of CPTSD, and change in depression symptoms, perhaps as an index of the negative mood component of CPTSD, were in fact larger than overall severity of PTSD symptoms. For the CAPS, BDI, PTCI, DERS, and the majority of the subscales of the CPTSD measure, these reached traditional statistical significance despite the modest sample size. Furthermore, at post-treatment all three groups demonstrated a reduction in the number of participants who met criteria for PTSD, with nine of 14 participants no longer having a PTSD diagnosis post-treatment. Forty percent of participants demonstrated clinically significant change and 27% demonstrated reliable change on the CAPS. A large effect size ($d = 1.18$) for pre-to-post-treatment change in CAPS symptom severity was superior to the moderate effect size reported in meta-analysis of within-group effects of existing group treatments (Standardized mean gain = 0.55) for survivors of repeated sexual violence (as experienced by our sample) (Sloan et al., 2013). Together, these results suggest that the Emotion- and Memory-Processing Group Intervention shows promise for reducing symptoms of PTSD, other complex features of PTSD, and depression in clients with a history of repeated interpersonal trauma.

There are a number of potential strengths of this protocol. The intervention incorporated elements of the phase-based treatment model into a single group programme. We integrated techniques such as imagery- and nightmare-rescripting to help facilitate the processing of trauma memories, along with sessions focused on the consolidation of treatment gains, including 'emotionally engaged living', 'interpersonal emotion regulation', and the 'method of loci' (Dalgleish et al., 2013; Werner-Seidler & Dalgleish, 2016). This study addresses a research gap by examining the effectiveness of a trauma-focused intervention for clients with a history of interpersonal trauma and complex features of PTSD in a group setting, by incorporating the use of mnemonic control techniques and exposure-based interventions. This Emotion- and Memory-Processing Group Programme has promising outcomes as a resource-limited trauma-focused intervention for clients with a history of repeated interpersonal trauma. NICE guidelines currently recommend individual trauma-focused therapy for individuals with PTSD but, as part of a stepped-care approach with limited time and resources available, there is promise for this group intervention.

4.1. Limitations and future research

This case series was an important first step in evaluating the clinical utility of the programme, however, there were some limitations to the study. As recommended for early-stage work to explore clinical efficacy (Medical Research Council, 2000), we utilized a small sample size, which limits confidence in the conclusions drawn from the results. Two participants did experience an increase in PTSD symptoms from pre- to post-treatment, however, the small sample size limited evaluation of potential participant characteristics or moderators which may have influenced treatment effects. Finer examination of patient-level change will be an important aspect of future, larger studies. Further, absence of an established diagnostic criteria and psychometric measures for CPTSD limited the availability of rigorous measures with which in index our outcomes. In addition, not all patients met diagnostic criteria for PTSD and although all participants had experienced at least two past interpersonal traumas, only seven participants had experienced prolonged abuse in childhood or an adult relationship. Variation of treatment effects within different trauma-exposed samples thereby warrants further consideration. Other limitations include the lack of follow-up to measure the long-term effects of the intervention and no personality disorder assessments were performed. Moving forward, the increasing emphasis on CPTSD in clinical literature will ensure the availability of sound clinical measures that can be used in future research. As group processes such as peer support, or the normalization of experiences, are likely to contribute to improvement in symptoms, comparison against a control group will be an important next

step in developing the intervention. Future studies will need to explore the facilitation of the group programme with a greater number of participants, against control groups.

Further refinement of a treatment protocol is a key aim of a case series, and we identified potential areas in which the intervention may be further developed. Due to concerns identified in the research literature (Beck et al., 2009), direct exposure was not a mandatory part of the group programme. Although we focused on techniques of memory restructuring which involved an element of exposure due to participants being asked to describe their trauma memories (e.g. imagery rescripting), we did not facilitate an in-the-moment reliving session as a group, which would be valuable to consider moving forward.

Avoidance difficulties are a fundamental part of the PTSD presentation and a direct target of trauma-focused interventions. It is difficult to address avoidance in a group setting and to ensure that group participants actually complete homework tasks, such as practicing imagery rescripting or writing out a trauma narrative. Fewer than half of the participants wrote a trauma narrative for homework and, of those who did, it was difficult to determine to what extent they had been *emotionally* engaged with the task at the time. This will thereby need further exploration, as engagement in homework may need to be enhanced to improve treatment effects. Finally, although the group intervention focused specifically on 'emotion regulation' and 'interpersonal emotional regulation', and achieved good outcomes on a standardized measure of emotion regulation – the DERS – the programme nevertheless only included two-hour sessions focused specifically on each. Group participants had a history of repeated interpersonal trauma and all had some difficulties in emotion regulation and social relationships, and may have benefitted from further intervention in this area.

4.2. Conclusion

This study represents an important initial step for building knowledge about effective group-based interventions for individuals who present with complex features of PTSD following a history of interpersonal trauma. Group-based treatments are a practical, cost-effective, and efficacious treatment approach for many psychological disorders, and here we have presented preliminary evidence for a group-based treatment approach, which includes elements (e.g. exposure, memory rescripting) essential to effective treatment for trauma survivors. Evidence from this case series provides a solid platform for future completion of a controlled trial of treatment efficacy, as this protocol presents a novel and promising group-based treatment.

Notes

1. 75% attendance was the rule used within the clinical service from which the participants were recruited, for continuation of psychological treatment. Based on our clinical experience, with this client group, we considered 50% of homework tasks to be the minimum someone could complete and still engage satisfactorily between sessions.
2. The CAPS for DSM-IV was used as the CAPS for DSM-V was not available when the first group started.

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Appendix 5.0: Emotion- and Memory-Processing Group Intervention for PTSD with Complex Features: Manual

Number of Sessions: 12
Number of Clients: 6-8

Overview

Each week consists of a 2 hour group session, with a 20 minute break. There is a different topic considered each week, along with different skills. In keeping with theories of learning, the main focus should be on developing self-efficacy in using the skills, as well as providing group members with information and explanations about problems and symptoms. Experience of running the groups has shown that key skills and concepts need to be demonstrated and practiced in the group on a weekly basis for them to be used effectively by clients. There also has to be strong emphasis on the importance of practice, encouragement to use the key techniques and frequent discussions identifying the ways in which participants have found the techniques useful as well as difficulties that prevent the use of particular techniques.

Assessment Measures: *At assessment and at the end of the group*

Screening & PTSD Measures

a) Clinician- Administered PTSD Scale (CAPS)

b) SCID-I for Mood Disorders; Anxiety and Other Disorders (excl. PTSD)

c) Posttraumatic Cognitions Inventory (PCTI; Foa et al., 1999)

d) Beck Depression Inventory (BDI-I; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961)

e) The Global Assessment of Functioning (GAF)

Complex Trauma & Emotion Regulation Measures

f) Complex Trauma Symptoms Questionnaire (CTSQ; Cloitre et al.)

g) Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004)

Memory Measures

h) Autobiographical Memory Questionnaire (Rubin et al., 2003)

i) Trauma Memory Modality Questionnaire (TMMQ; Meiser-Stedman, Smith, Yule & Dalgleish, 2003)

Symptom Monitoring: *Throughout the group sessions*

- Flashback/intrusion diary (frequency, nowness & distress ratings)
- Adherence Monitoring (Session adherence & Homework adherence)

Weekly Session Plan

Session 1: Introduction to the Group

Session 2: Emotional Awareness

Session 3: Psychoeducation - PTSD and Memory

Session 4: 'Rape' – Meaning, Myths & Other People's Reactions

Session 5: Emotion Regulation

Session 6: Emotionally Engaged Living

Session 7: Interpersonal Emotion Regulation

Session 8. Flashbacks – Identifying Triggers and Re-Conditioning

Session 9: Imagery & Nightmare Rescripting

Session 10: Narrative Restructuring & Nightmare Rescripting

Session 11: Method of Loci

Session 12. Summary & Review

Session 1. Introduction to the Group

- Introductions

    - Ask each group member to say their name and one thing about themselves
    - Icebreaker exercise

- Group Outline

    - Housekeeping
    - An outline of what the group will involve: Phase 1 – Psychoeducation, Emotion Regulation & Interpersonal Difficulties; Phase 2 – Memory Control
    - Expectations of group members (attendance, participation in activities where possible, notes taken in sessions to read at home, homework to complete, symptoms to monitor throughout)
    - Action/contingency planning in case of difficulties (e.g. making contact outside the group, speaking to facilitators at the end)

- Group Rules

    - Group members asked to come up with rules for the group, which will be written up (contact when not attending, confidentiality, anonymity, respect for each other's views and opinions, listening when others are speaking, emotional expression, leaving the room etc.)

- Overview of the Weekly Session Plan and the Core Focus of the Group

    - Hand out a weekly session plan and provide an overview of what each of the sessions will involve. Ensure that group members understand what is to be included in the group programme and answer any questions that arise
    - Go over/check dates (accounting for bank holidays, annual leave etc.)

- Identify Goals for the End of the Group Sessions

    - Ask each of the group members to identify hopes/expectations/goals for the end of the group and write these up
    - Discuss what is reasonable to expect given the length of the programme and limitations of the group format
    - Emphasise the importance of adhering to therapeutic techniques/suggestions and the collaborative approach for symptomatic improvement

Session 1 Handout: Weekly Session Plan

Session Number	Session Topic	Date
Session 1	Introduction to the Group	
Session 2	Emotional Awareness	
Session 3	Psychoeducation - PTSD and Memory	
Session 4	'Rape' – Meaning, Myths & Other People's Reactions	
Session 5	Emotion Regulation	
Session 6	Emotionally Engaged Living	
Session 7	Interpersonal Emotion Regulation	
Session 8	Flashbacks – Identifying Triggers and Re-Conditioning	
Session 9	Imagery & Nightmare Rescripting	
Session 10	Narrative Restructuring & Nightmare Rescripting	
Session 11	Method of Loci	
Session 12	Summary & Review	

My hopes/expectations/goals for the end of the group sessions are:

_____

_____

_____

<u>Session 2: Emotional Awareness</u>

- Introduce Concept of Emotion Regulation

  - Ability to identify, label, modulate and effectively express feelings
  - Learned/developed through monitoring of feelings & practicing the specific skills of identifying and labelling feelings
  - Discuss difficulties in emotion regulation: how were feelings managed in group members' families? Family script of emotional inhibition?
  - If possible, put together a collective formulation for the group
  - Why it's important to understand and manage emotions following traumatic experiences

- Awareness and Monitoring of Feelings

  - How has the rape influenced feelings?
  - Brainstorming session (flipchart) exploring more specifically the <u>emotions</u> that group members have experienced
  - Grouping these emotions according to emotions felt *at the time* of the rape/sexual assault and the emotions that have been felt/experienced since then
  - How have past experiences of how emotions were/are managed in group members' families impacted on how they feel about the rape?
  - Provide rationale for self-monitoring and understanding feelings: adaptive living (Psychoeducation re the 'function' of emotions)

- Using Elements of Emotion to Name Feelings

  - Generate a list of physiological changes & link them to thoughts and feelings
  - Causal relationship between thoughts, feelings (sensations & physical reactions) and behaviours
  - Discrimination among different kinds of feelings
  - Use example: <u>The Body's Response to Fear</u>
  - Explore group members' understanding of what happens in their bodies when they are afraid/fearful. Discuss non-traumatic examples (e.g. fear of heights/spiders)
  - Why do our bodies respond in this way when we are faced with something that we find fearful?
  - Explore group members' understanding of the *Fight, Flight, Freeze* response. Why have we evolved to respond in this way? How is it adaptive for survival (example of animals in the wild, rabbit in headlights)?
  - What might have happened if they hadn't responded in the way they did (usually by freezing)? Could it have resulted in a worse outcome? Why might the way they *did* respond be considered to be more adaptive?
  - Were they *physically able* to respond in a different way?

- Self-monitoring of Feelings Form

  - Practice in session together
  - Emphasise the importance of regular practice

- Summarise the Goals of the Session and Plan Between-session Exercises

- Provide group members with the Self-Monitoring of Feelings Form (Handout 11.2) and a copy of the other forms (Handouts 11.1, 11.3 and 11.4) for the group members' review
- If they feel able to, ask group members to put together a more personal formulation for homework

Session 2 Handout: 11.1

The Impact of Childhood Abuse on Emotion Regulation

For many people, abuse experiences have a powerful impact on emotional functioning in adulthood. Good parenting provides children with emotion regulation skills, which include the ability to identify feelings, understand their sources, and manage them for optimal functioning. Sexual or physical abuse elicits a range of powerful and confusing feelings. Often childhood abuse survivors have been raised in a family context where caregivers—whether or not they are the abusers—offer poor soothing during times of distress and poor guidance in modulating feelings. Many abuse survivors feel overwhelmed by their emotions or, in contrast, feel numb and unable to experience many or all emotions.

TYPES OF EMOTION REGULATION DIFFICULTIES

Difficulties in emotion regulation vary by person and sometimes by situation. Some people have trouble labeling and identifying their feelings. They may feel either "bad" or "okay," and have little sense of differences between their emotions (e.g., anxiety vs. sadness). Other people lack an understanding of what triggers their feelings. It may seem that their emotions randomly come "out of the blue" and make no sense. Many people can learn to recognize a "triggering situation," but will have more difficulty knowing what to do with the intense feelings that emerge. Such feelings may be experienced as overwhelming or even dangerous, and people often feel ill equipped to handle them.

THE ROLES OF FEELINGS

Learning how to modulate and attend to feelings is a critical skill, because feelings once managed, serve important roles in effective living. One role of emotions is to serve as guides for action. For example, a feeling of fear should guide us to leave an unsafe situation and take steps to ensure safety. Anxiety can be adaptive, but when chronic and excessive, it floods the ability to differentiate feeling states. It causes people to overreact to situations, or to underreact because they are trying so hard not to overreact.

Feelings also contribute to effectively communicating how one feels and what one needs from others. Some people who have PTSD or have experienced sustained childhood trauma are chronically anxious, angry, or sad, or are so numbed that they cannot use this kind of information. By working on attending to your feelings and modulating them, you will be able to make better use of information from your feelings and to express them more effectively.

Lastly, feelings can be used to inform you about your preferences (likes and dislikes) and to help guide you in the selection of valued life goals. Awareness of feelings includes awareness of positive feelings and, in combination with emotion modulation skills, can enhance your experience of life, your creativity, and your appreciation of yourself.

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SELF-MONITORING OF FEELINGS

One way to begin learning how to identify feeling states and their triggers is to monitor your feelings in different situations. Using the Self-Monitoring of Feelings Form, you will practice labeling your feelings and identifying the situations and thoughts that trigger those feelings. With your therapist, you will review your completed copies of this form to increase your skills in identifying feelings and their triggers and to build your awareness of the patterns in your feelings. The completed copies of the form will also serve as important data for developing new coping strategies.

Session 2 Handout: 11.2

Self-Monitoring of Feelings Form

Feeling	Intensity (0–10)	Trigger	Thoughts	Response/coping strategy

HANDOUT 11.3

List of Words You Can Use to Describe a Feeling

Affectionate	Glad	Relaxed
Afraid	Gloomy	Relieved
Amused	Grateful	Resentful
Angry	Great	Resigned
Annoyed	Guilty	Sad
Anxious	Happy	Safe
Apathetic	Hateful	Satisfied
Apprehensive	Helpless	Secure
Ashamed	Hopeless	Sexy
Bitter	Horrified	Shy
Bored	Hostile	Silly
Calm	Impatient	Strong
Capable	Inadequate	Stubborn
Cheerful	Inhibited	Stuck
Comfortable	Irritated	Supportive
Competent	Isolated	Sympathetic
Concerned	Jealous	Tearful
Confident	Joyful	Tender
Confused	Lonely	Terrified
Contemptuous	Loved	Threatened
Controlled	Loving	Thrilled
Curious	Loyal	Touchy
Defeated	Manipulated	Trapped
Dejected	Manipulative	Troubled
Delighted	Melancholy	Unappreciated
Depressed	Miserable	Uncertain
Desirable	Misunderstood	Understood
Despairing	Muddled	Uneasy
Desperate	Needy	Unfulfilled
Determine	Nervous	Unimportant
Devastated	Numb	Unloved
Disappointed	Out of control	Upset
Discouraged	Outraged	Uptight
Disgusted	Overwhelmed	Used
Disillusioned	Panicky	Useless
Distrustful	Passionate	Victimized
Embarrassed	Peaceful	Violated
Enraged	Pessimistic	Vulnerable
Excited	Pleased	Withdrawn
Frantic	Powerful	Wonderful
Frightened	Prejudiced	Worn out
Frustrated	Pressured	Worried
Fulfilled	Proud	Worthwhile
Furious	Provoked	Wronged
Generous	Put down	Yearning

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Session 2 Handout: 11.4

Feelings Wheel
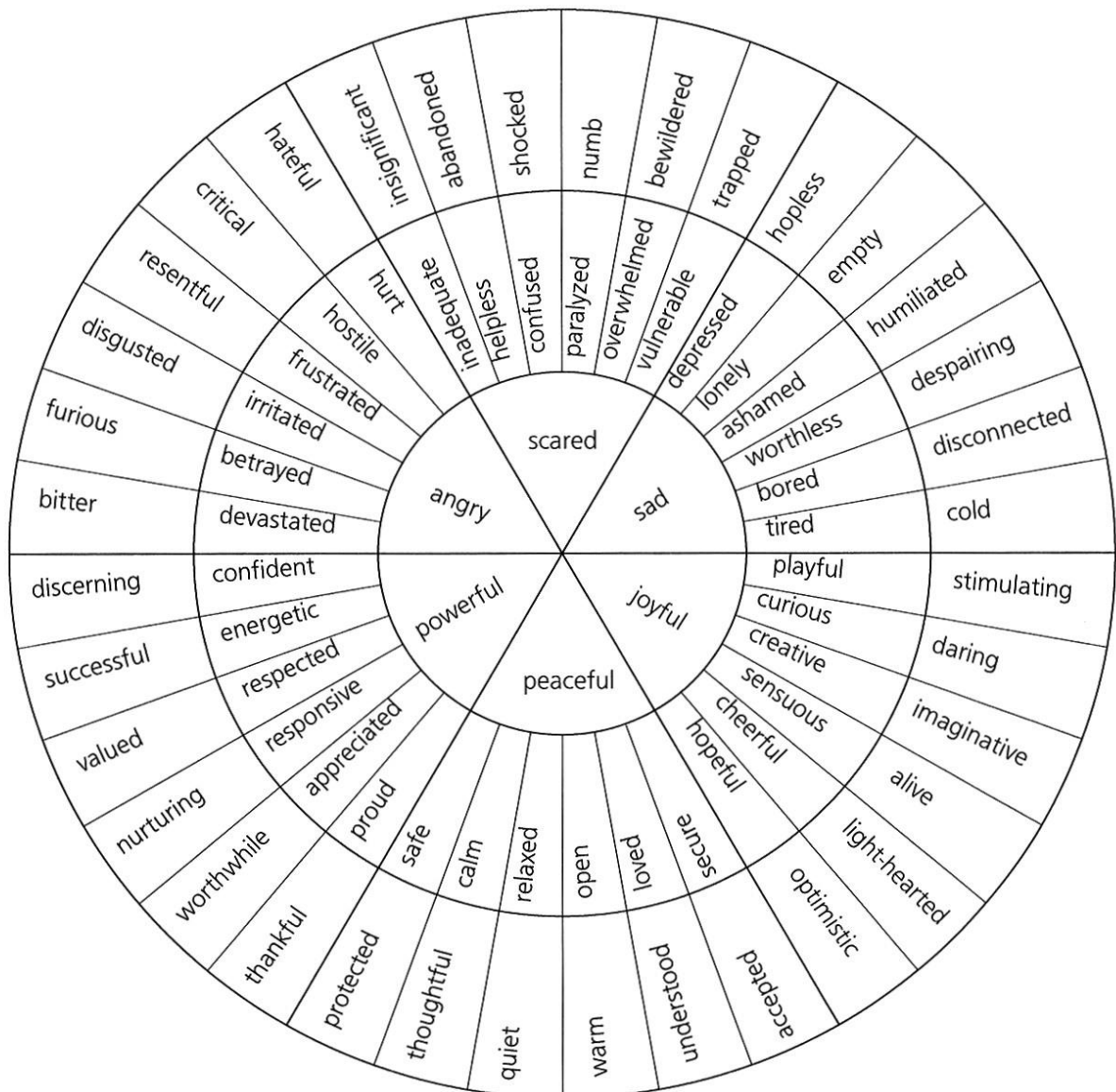
Session 2 Handout: Why do we get anxious?

Why do we get anxious?

Anxiety is our natural reaction to events that make us feel in danger or unhappy about something we have done. We can feel in danger because of:

- Something happening in the outside world that puts us in danger
- Thinking about something where we think we have done wrong
- Remembering something frightening from the past.

Our mind responds to frightening things happening outside of us, or frightening memories in the same way.

What happens when we get anxious?

When we get anxious many things happen in our bodies (see other handout). These things happening (pain, being unable to breathe) can make us feel even more anxious and scared, as we think there is something wrong with us. This can then make us feel more anxious.

ONCE WE FEEL SCARED OR ANXIOUS IT CAN TAKE OUR BODIES A LONG TIME BEFORE THE FEEL OF ANXIETY GOES.

What to do to feel less anxious?

Breathing – sitting and breathing for a few minutes can help

Listening to the relaxation CD – Practising listening to the relaxation CD can help to understand when we feel anxious and how to recognise the signs.

Talking to someone you trust – this can help make us feel better as we can feel safer and maybe forget for a little bit the thing we are worrying about.

Coping statements – writing some statements on cards and keeping them with you can help:

- I am feeling scared, but I know this will pass
- Worrying will not help the situation, it will only make me feel worse.
- I am feeling scared and anxious and need to take some time to do something nice for me.

Making a worry plan - Worrying does not always help situations, making an action plan can help a bit more.

- Write down what you are worrying about: -
- Write down a plan of what you can do to help with the situation. (E.g. get advice, talk to someone about it)
- If there is nothing else you can do to help the situation, ask yourself if worrying will really change the situation and write down something else you can do instead.

ANXIETY CYCLE

TRIGGER
- **Internal (e.g. images, sensations)**
- **External (e.g. reminders)**

$\downarrow$

FEAR / ANXIETY

THOUGHTS
e.g.:
- "I'm having a heart attack"
- "I can't cope"
- "I'm going mad"
- "I'm going to faint"
- "I'm going to die"

PHYSICAL SENSATIONS
e.g.:
- Heart pounding
- Tight chest
- Breathlessness
- Sweating
- Dizziness
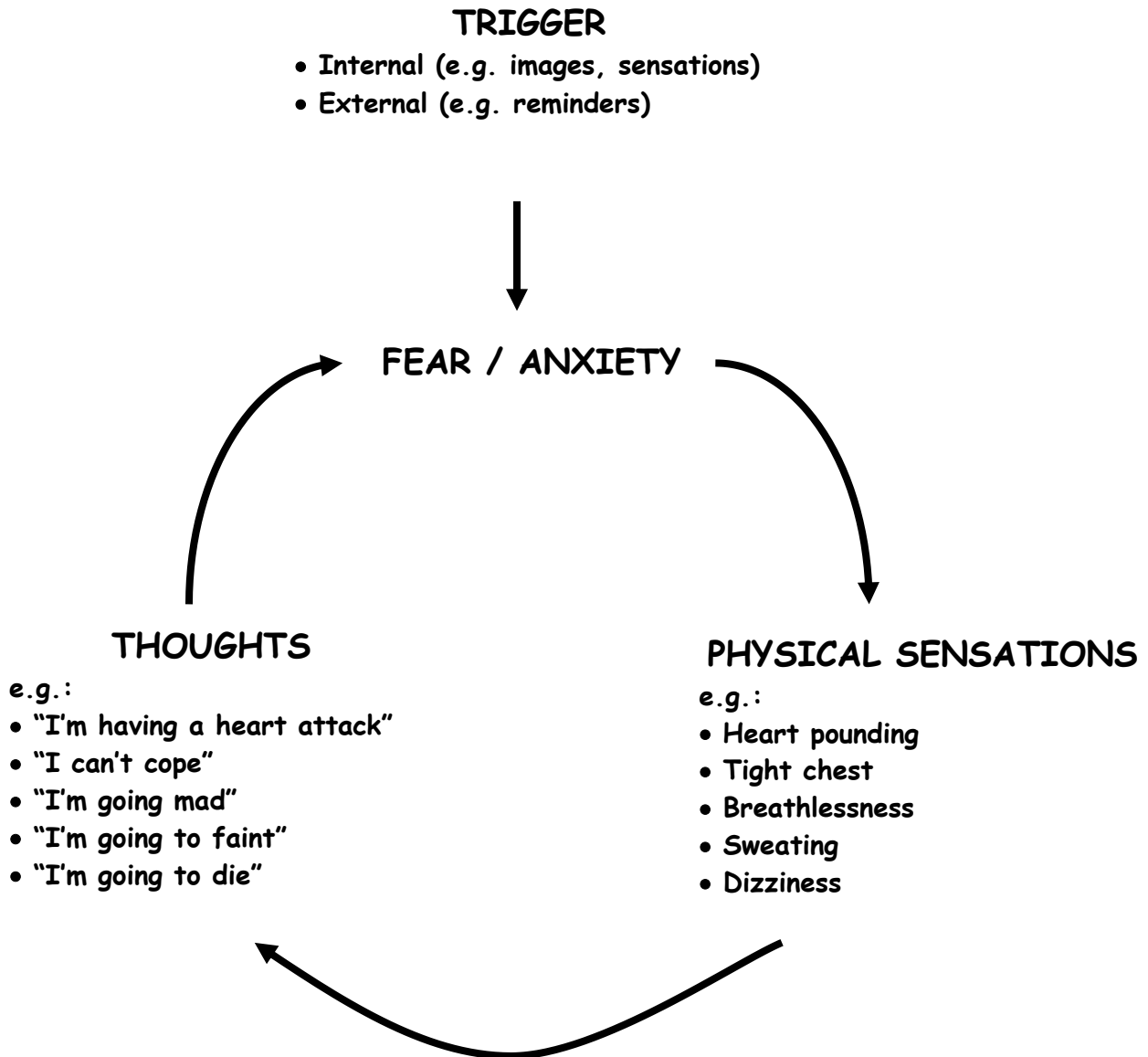
Session 2 Handout: The Body's Reaction to Stress
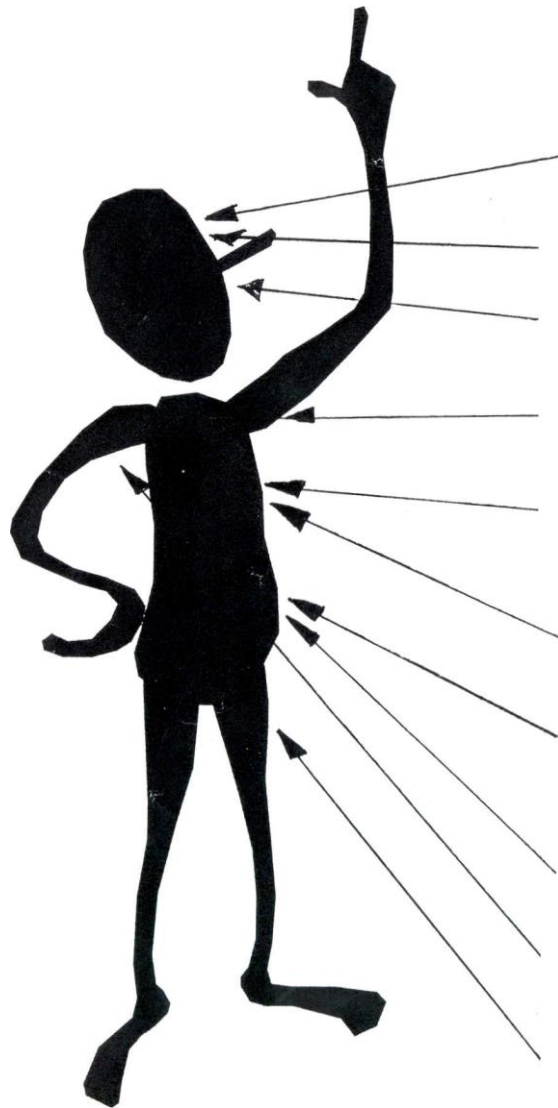
THE BODY'S REACTION TO STRESS

BIOLOGICAL REACTION	SYMPTOMS YOU FEEL
The brain sends a biochemical message to the pituitary gland, which releases a hormone which triggers the adrenal gland to release adrenalin. Pupils dilate.	Headache, dizziness, light-headed. Blurred vision.
Mouth becomes dry.	Difficulty swallowing, dry throat
Back and shoulder muscles tense – large skeletal Muscles contract ready for action.	Aching neck and backache.
Breathing becomes faster and shallower supplying more oxygen to the muscles.	Chest pains, tingling, Palpitations, asthma, trouble catching breath
Heart pumps faster and blood pressure rises	Pounding heart
Liver releases stored sugar to provide fuel for quick energy. Adrenalin and noradrenalin are released.	Indigestion.
Digestion slows down or ceases as blood is diverted away from the stomach.	Nausea, indigestion, butterflies in stomach
The body cools itself by perspiring: blood vessels and capillaries move closer to the skin surface. Muscles at opening of anus and bladder are relaxed.	Excess sweating, blushing, feel hot. Frequent urination, diarrhoea

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<u>Session 3. Psychoeducation - PTSD and Memory</u>

- Review Homework

  - Check progress with the Self-Monitoring of Feelings Form (Handout 11.2) and personal formuation exercise. Did anything new come up? Any surprises?
  - Check understanding of Handouts 11.1, 11.3 and 11.4. Any questions?

  Reiterate the phased approach for the group: Phase one to explore and better manage post-traumatic emotions and Phase two to focus more specifically on traumatic memories

  - Summary of skills and techniques learnt in first phase of group and how these can be used in the second phase (awareness; regulation; tolerance; meaning → emotion)
  - Re-introduce rationale for memory control phase of the group sessions
  - Link to model for 'Memories and their regulation' (memory → meaning → emotion) – on Flipchart & Handout

- Psychoeducation: PTSD and Memory

  - What kinds of symptoms do people experience following traumatic events? – Brainstorm on flip-chart and group into three categories (reliving, avoidance & physiological)
  - Introduce the 'Brain' (dual processing) model of the development of PTSD and use to illustrate:

    - *Verbal vs. Non-verbal memories*
    - *Voluntary vs. Involuntary memories: why trauma memories intrude and dominate (<u>Memory</u>)*
    - *The centrality of trauma memories*
    - *How memory and emotion are intimately linked, through meaning*
    - *Maladaptive Appraisals knotted in the trauma narratives (<u>Meaning</u>)*
    - *Avoidance and Suppression; Suppression Exercise (<u>Regulation</u>)*

- Introduce Memory Control Techniques for better management of memories:

  - Recap session plan for second phase
  - Monitoring and increasing awareness of memories – e.g. notebooks, diaries *(<u>Awareness</u>)*
  - Processing memories – e.g. writing a narrative, sharing accounts *(<u>Regulation</u>; <u>Tolerance</u>)*
  - Updating memories and appraisals – e.g. challenging & rescripting, changing perspective, imagery *(<u>Meaning</u>)*

- Summarise the Goals of the Session and Plan Between-session Exercises

  - Ask group members to complete the 'Motivation for confronting memories of the trauma' handout
  - Ask group members to complete the 'Monitoring Intrusive Memories Diary' & go through example

Memories and their regulation

Memory → Meanings → Emotions

Change meanings

Control

- Avoid memory and/or cues
- Monitor memory
- Change memory
  - *Imagery rescripting*
  - *Narrative updating*
- Enhance access to positive memories

- Be aware of emotions
- Regulate emotions
- Tolerate distress

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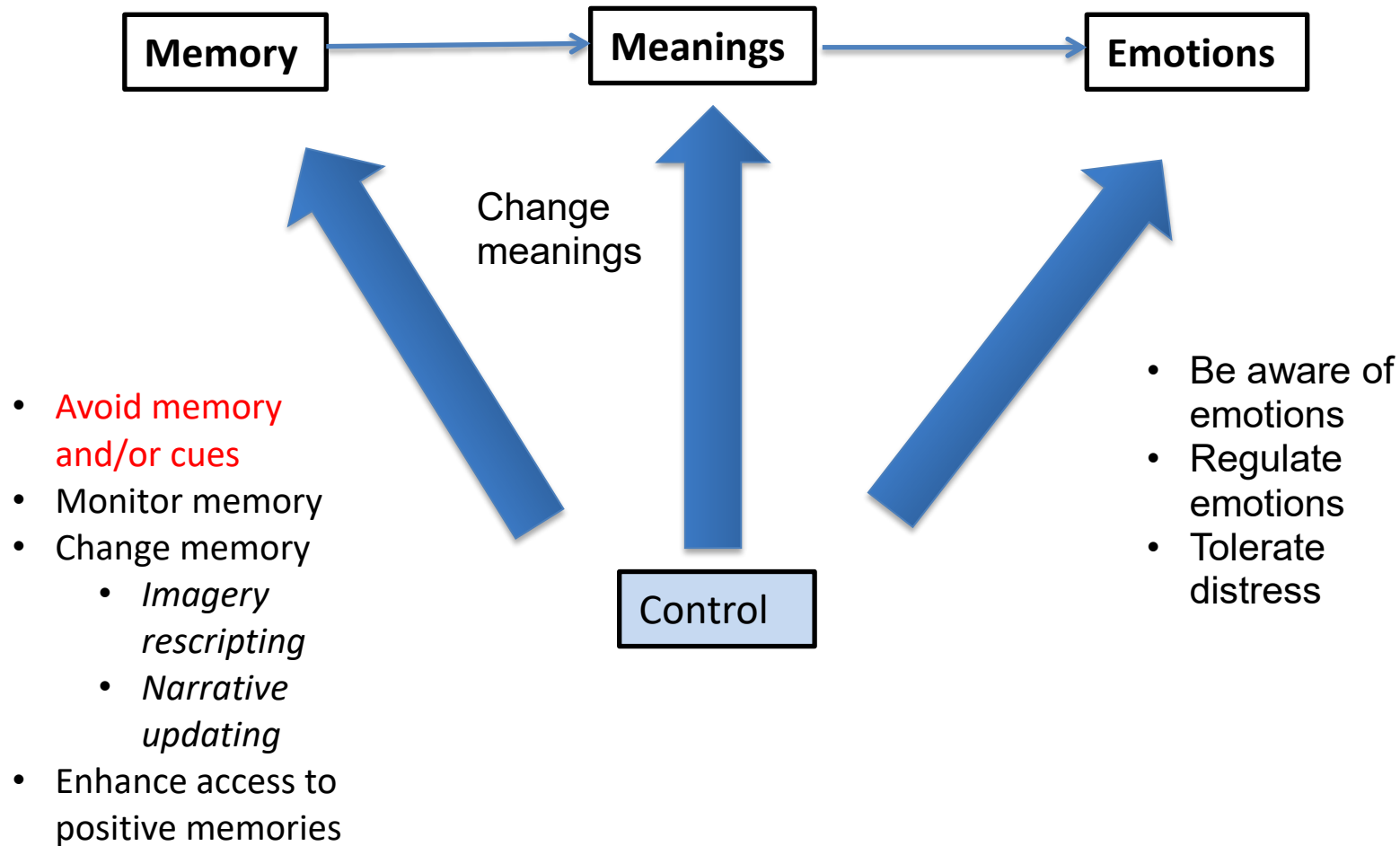
Session 3 Handout: Post-Traumatic Stress Disorder (PTSD)

POST-TRAUMATIC STRESS DISORDER

What is PTSD?

PTSD is the name we use to describe the problems people experience after a traumatic event. The problems people may report are grouped under three types of symptoms.

1. Re-experiencing symptoms – this is where people remember what happened during the trauma

- Intrusive thoughts/reminders of the traumatic event
- Nightmares about the event
- Flashbacks – images, sounds, smells, sensations
- Very upset/emotional when reminded of event
- Body alert and anxious at reminders of the event

2. Avoidance symptoms – this is where people try to avoid remembering what happened

- Avoiding talking/thinking about the incident
- Avoiding activities/places/people who remind you of the incident
- Being unable to remember important parts of the event
- Loss of interest/pleasure in previously enjoyed activities
- Feeling numb
- Feeling distant or cut off from people around you
- Having a marked sense that your future will somehow be cut short

3. Symptoms of increased physiological arousal – This is the increased level of anxiety or feeling scared that people might feel.

- Difficulty sleeping
- Feeling angry and/or irritable
- Difficulty concentrating
- Feeling in danger/unsafe
- Being jumpy/easily startled in response to loud noises

Why do people get PTSD?

These experiences are all NORMAL REACTIONS TO ABNORMAL EVENTS. Sometimes people feel like they might be going mad, but they're not. Instead it's just what our minds do in trying to help us to deal with the terrible things we might have experienced. We understand that these things happen because of how our mind works during traumatic events:

- During trauma, our mind doesn't work the same as it does normally. It does this because we are very scared. Because of this, traumatic memories are stored in a different way in the mind. This means that they:

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- - Can come as nightmares, intrusive memories or flashbacks
  - Have no sense of time (feels like they are happening now, not in the past)
  - Can include images, sounds, smells, emotions and pain of traumatic event
  - Can be triggered by things that remind us of the traumatic event (e.g. feeling scared, seeing the colour red, seeing people in uniform).

- We remember them so often because our minds are trying to help us to process and make sense of them.

- Because the reminders are so scary and unpleasant, we try to push them away. But this just means they keep coming back…

- Our mind is a bit like a cupboard. Traumatic memories are like stuffing a duvet into a cupboard in a rush and shutting the door. Because of the way the duvet has been stored, like the memories, it keeps pushing the door open and falling out of the cupboard (like nightmares and flashbacks). Treatment is like taking the duvet out of the cupboard, taking time to fold it back neatly and then putting it back in the cupboard. Then it is possible to take the duvet out of the cupboard when you want to rather than it falling out when you do not expect it (therefore having more control over the memories).

- Treatment involves talking about the past in a slow controlled way.

- Talking about the traumatic memory is like treating a wound that has become infected. The wound is painful to touch (like talking about a traumatic memory), so we don't want to touch it. But if we do not treat it, it will remain infected. By treating the wound, it can begin to heal.

Everything is linked

Sometimes it feels like what is happening is unpredictable and there is nothing that can be done to make it better. But there are some basic things for you to understand that can help:

- Everything is linked – Our thoughts, feelings, memories and what goes on in our world are all linked. For example, if you are worried about being responsible in some way for what happened, you will probably think more about what happened and then feel more frightened and upset.

- You can have some control over your thoughts and feelings – You cannot stop memories coming back completely, but once they come back, it can help to do something relaxing or something that helps you to feel safe.

- Thinking about things over and over doesn't always help – Sometimes we can't help but worry about things, but worrying too much can make us feel upset and bad. Also thinking over and over doesn't help change a situation. Doing something relaxing can help.

Session 3 Handout: Motivation for confronting memories of the trauma

It is common and very understandable to have mixed feelings about confronting your memories of the trauma. It can be a hard and daunting process to start. For this reason, it is important to clarify the specific reasons why you want to do this, to help you assess how motivated you are to engage in this phase of treatment.

Many people also find it helpful to clarify what fears they have about confronting memories, and what may hold them back. Often, what holds people back are fears of what they think might happen if they bring on memories of the traumatic event.

We recommend that you use this sheet to clarify the advantages and disadvantages (pros and cons) of changing the way you confront and process the memory of the trauma, versus leaving things as they are (staying the same).

Whilst you are completing these questions, it's important to consider your values and goals during this exercise. If you manage to confront this memory and tolerate the distress that comes along with it, what goals will it help you achieve? How will it bring you closer to what's important to you?

What are the possible advantages of changing the way you deal with the memory?	What are some possible disadvantages of changing the way you deal with the memory?
What are some disadvantages of staying the same?	What are some advantages of staying the same?

Motivation levels can also fluctuate during treatment. If you notice your level of motivation to change the way you process your memories reduces over the coming weeks, come back to this sheet, and consider the things that may be holding you back.

Session 3 Handout: Monitoring Intrusive Memories Diary

Situation *What happened /triggered the intrusive memory?*	Intrusive Memory *Image / Emotion / Sensation?*	'Nowness' *To what extent did it feel like it was happening again now? (0-100)*	Distress *How distressed did you feel? (0-100)*	Meaning *What does the intrusive memory mean / say about you?*	Coping *What did you do?*

Session 4. 'Rape' – Meaning, Myths & Other People's Reactions

- Review Homework

    - Review the 'Motivation for confronting memories of the trauma' handout: pros and cons identified? Any difficulties?
    - Review the 'Monitoring Intrusive Memories Diary': anyone willing to share an example?

- Meaning of the word 'Rape'

    - Link to model (Session 3: event → meaning → emotion)
    - Brainstorm session on what thoughts/images/meanings the word brings to mind

- Beliefs (personal vs. myths & stereotypes) re rape victims

    - Have these beliefs about 'rape victims' changed since the rape/sexual assault? If so, how did the group members' beliefs differ before and after?
    - Where did/do these belies come from? (other people, the media)

- Maladaptive Appraisals - Blame & responsibility

    - Since the rape/sexual assault, do group members' have particular negative beliefs about themselves? (ie. beliefs related to blame and responsibility)
    - If so, where do these beliefs come from?
    - Are these beliefs related to pre-existing interpersonal schemas/family scripts re responsibility for example? (Box 14.2 Psychoeducation: What are Interpersonal Schemas?) Other maladaptive meanings?
    - Have these beliefs been influenced by the reactions/responses of others?

- Projection of knowledge/beliefs in long-term memory onto new experience

    - Identifying and discussing the link between past experiences/memories and new experiences and emotions

- Introduction to Narrative Restructuring – idea of building a new memory

    - How to we begin to challenge/update these beliefs?
    - Beliefs challenged through psychoeducation about and challenging/updating of trauma memories (focus of the second half of the group programme)

- Summarise the Goals of the Session and Plan Between-session Exercises

    - Ask group members to continue with the 'Monitoring Intrusive Memories Diary' and the 'Self-Monitoring of Feelings Form'.

Session 4 Handout: Monitoring Intrusive Memories Diary

| Situation
What happened /triggered the intrusive memory? | Intrusive Memory
Image / Emotion / Sensation? | 'Nowness'
To what extent did it feel like it was happening again now? (0-100) | Distress
How distressed did you feel? (0-100) | Meaning
What does the intrusive memory mean / say about you? | Coping
What did you do? |
|---|---|---|---|---|---|
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Session 5: Emotion Regulation and Distress Tolerance

- Review Homework

  - Review the 'Monitoring Intrusive Memories Diary' and the Self-Monitoring of Feelings Form: anyone willing to share an example?

- Psychoeducation on Emotion Regulation

  - Elaborate on concept of emotion regulation & link to session 2
  - Introduce 'Emotions and their Regulation' as simple framework for group sessions (Illustrate on flipchart & Handout)

- Identify and Discuss Problematic Emotions

  - Identify and discuss problematic emotions that have arisen from the homework
  - Psychoeducation on specific emotional responses: Anxiety (state of arousal that signals danger); anger (adaptive when it prepares us for active coping); depression (sustained state of absence of pleasure or excitement); dissociation (escape from the pain or intensity of an emotion that is unbearable, continuum)
  - Disgust (physical & psychological exclusion of something abhorrent), shame (dishonour, disgrace, or condemnation; as seen by others), guilt (responsibility for a particular act viewed as a violation of values)

- Introduce Idea of Distress Tolerance

  - *'Distress tolerance is the ability to endure pain or hardship without resorting to actions or behaviours that are damaging to yourself or others'* (related to emotion regulation & accepting/sitting with feelings)
  - Why should we learn to recognise and tolerate distress?: distress is a catalyst; avoiding distress saps energy, restricts positive feelings, interferes with achieving desired goals, contributes to PTSD symptoms.

- Identify Distress Tolerance Skills

  - Identify successes (e.g. exam performance, sharing feelings)
  - Identify maladaptive strategies: externalising behaviours (alcohol, drugs, self-injurious behaviour, binge eating and purging, unsafe, violent or aggressive behaviours); avoidance (link to Emotion Regulation model)

- Maladaptive Strategies and avoidance

  - What is the function of these maladaptive strategies?
  - What is the function of avoidance?
  - Address ambivalence re avoiding distressing emotions rather than recognising and working through them (use specific examples from the group sessions so far)

- Summarise the Goals of the Session and Plan Between-session Exercises

  - Ask group members to complete the 'Motivation for confronting difficult emotions' handout
  - Continue with the 'Self-Monitoring of Feelings' Form
  - Continue with the 'Monitoring Intrusive Memories' Diary

Emotions and their

Event → Meanings → Emotions

Change meanings

Control

- Avoid certain events
- Schedule new (positive) events

- Be aware of emotions
- Regulate emotions
- Tolerate distress
- Savour and elaborate positive emotions

Session 5 Handout: Motivation for confronting the difficult emotions associated with your traumatic experience

It is common and very understandable to have mixed feelings about confronting the emotions associated with your traumatic experience. It can be a hard and daunting process to start. For this reason, it is important to clarify the specific reasons why you want to do this, to help you assess how motivated you are to engage in this phase of treatment.

Many people also find it helpful to clarify what fears they have about confronting their emotions, and what may hold them back. Often, what holds people back are fears of what they think might happen if they start processing the emotions associated with their traumatic experience.

We recommend that you use this sheet to clarify the advantages and disadvantages (pros and cons) of changing the way you confront and process your emotions, versus leaving things as they are (staying the same).

Whilst you are completing these questions, it's important to consider your values and goals during this exercise. If you manage to confront your emotions and tolerate the distress that comes along with it, what goals will it help you achieve? How will it bring you closer to what's important to you?

What are the possible advantages of confronting your difficult emotions?	What are some possible disadvantages of confronting your difficult emotions?
What are some disadvantages of staying the same?	What are some advantages of staying the same?

Motivation levels can also fluctuate during treatment. If you notice your level of motivation to change the way you process your emotions reduces over the coming weeks, come back to this sheet, and consider the things that may be holding you back

Session 5 Handout: 11.2

Self-Monitoring of Feelings Form

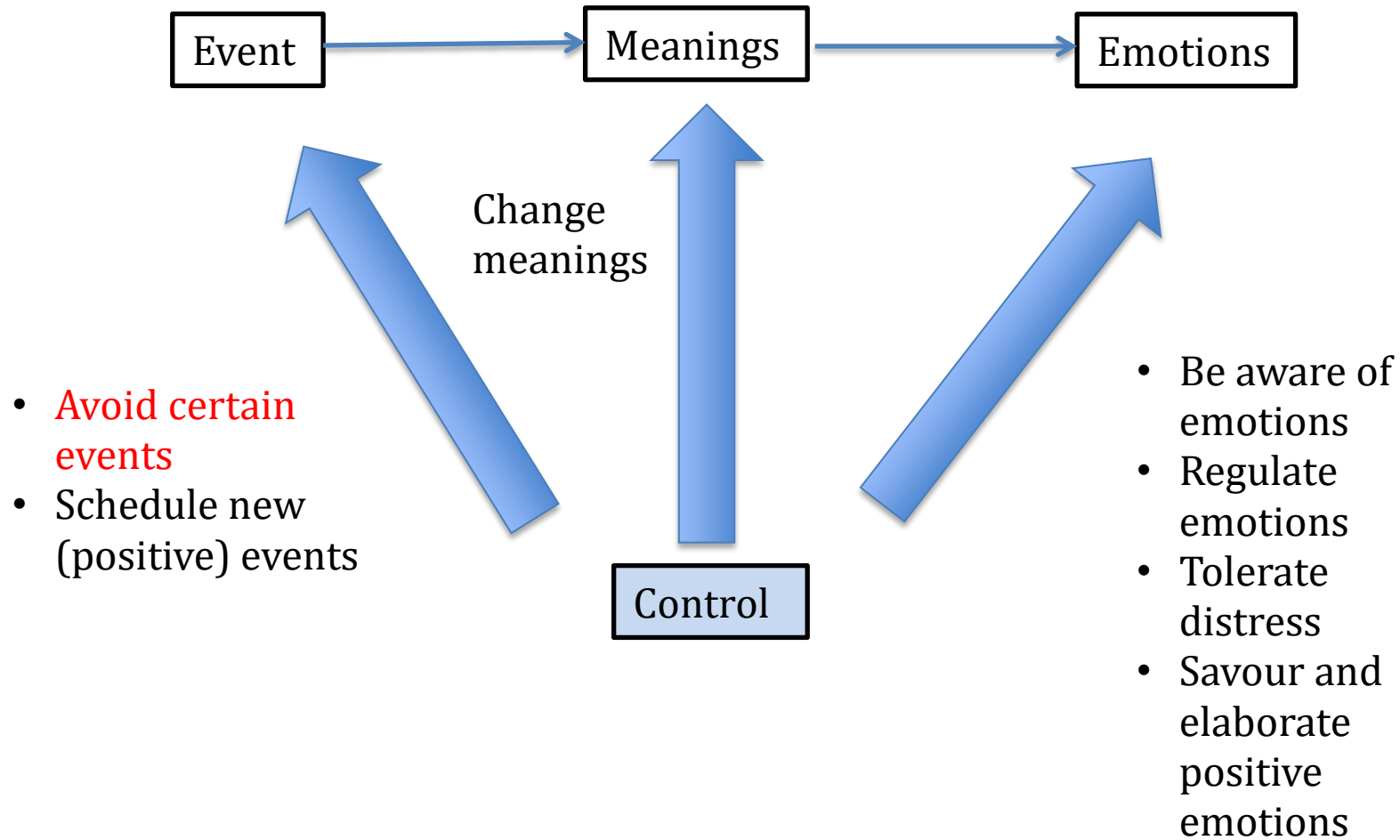| Feeling	Intensity (0–10)	Trigger	Thoughts	Response/coping strategy

Session 5 Handout: Monitoring Intrusive Memories Diary

Situation *What happened /triggered the intrusive memory?*	Intrusive Memory *Image / Emotion / Sensation?*	'Nowness' *To what extent did it feel like it was happening again now? (0-100)*	Distress *How distressed did you feel? (0-100)*	Meaning *What does the intrusive memory mean / say about you?*	Coping *What did you do?*

Session 6: Emotionally Engaged Living

- Review Homework

    - Check progress with the 'Motivation for confronting difficult emotions' & Self-Monitoring of Feelings Form. Any difficulties? Any surprises with homework?
    - Review the 'Monitoring Intrusive Memories Diary': anyone willing to share an example?

- Emotion Regulation Skills

    - Identify and evaluate group members' current emotion regulation skills: elicit examples of modulation strategies (*"what do you do to make yourself feel better when you feel bad?"*)
    - Connect coping strategies to the three channels of emotional responding (physiological, cognitive & behavioural)
    - Identify timing of strategies (At the time vs. Later once overwhelmed)

- Identify and Practice Adaptive Emotion Regulation Strategies

    - Physiological Strategies: focused breathing, progressive muscular relaxation, meditation (Emotions) ~ group exercise
    - Cognitive Strategies: attention shifting, positive self-statements, positive imagery, reappraisal, perspective broadening (Meanings)
    - Behavioural Strategies: Grounding, Time-out, Replacement behaviours (Event)

- Introduce Positive Emotions and Plan Pleasurable Activities

    - Review reasons to engage in pleasurable activities: as a reward for distress reduction efforts; a form of distress management; to direct action; to enhance motivation and a sense of future possibilities; to produce greater self-awareness and connection to others
    - Identify pleasurable or positive activities

- Connect Distress Tolerance to Individual Goals

    - Identify/revisit specific treatment goals (may have developed/changed since the first session)

- Present and Practice Method of Assessing Pros and Cons

    - Is it worth tolerating distress to reach a goal?: Identify goal, evaluate the necessity for distress, identify pros and cons

- Distress Reduction Strategies

    - General strategies: self-care, getting adequate rest, eating a well-balanced diet, moderating alcohol intake, exercising regularly, addressing medical issues, managing money responsibly etc.
    - Applying negative mood regulation strategies in specific situations in order to meet desired goals
    - Acceptance of negative feelings in everyday life; acceptance of intense feelings and moods

- The Role of Positive Feelings in Pursuing Goals

    - Experiences of positive emotions can *enhance* functioning (link to work on pleasurable activities in session 3)

- Summarise the Goals of the Session and Plan Between-session Exercises
  - To continue with the Self-Monitoring of Feelings Form (Handout 11.2) and this time include the 'Response/coping strategy'
  - Three coping strategies for emotion regulation to be identified & practised
  - Pleasant Event Scheduling (Handout 12.2)
  - Continue with the 'Monitoring Intrusive Memories Diary'

Session 6 Handout: 11.2

Self-Monitoring of Feelings Form

Feeling	Intensity (0–10)	Trigger	Thoughts	Response/coping strategy

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Session 6 Handout: Adaptive Emotion Regulation Strategies

For homework, I am going to practice the following emotion regulation strategies:

Emotion Regulation Strategy	How I will practice	When I will practice
1.		
2.		
3.		

Session 6 Handout: Controlled Breathing
How to do 'controlled breathing'

- Let your shoulders drop and relax your body as much as you can.

- Inhale slowly and deeply through your nose into the bottom of your lungs, filling them.

- You should try to keep your mouth shut.

- Your belly should move out as you breathe in. Your chest should move only very slightly.

- When you have taken in the full breath pause for a brief moment and then exhale slowly through your mouth.

- Keep your breathing slow and smooth and calm and even, without gulping or grasping.

- The aim is to take about 8 to 12 breaths in a minute. In and out counts as one breath.

- Keep this going for a couple of minutes, concentrating fully on the breathing

- If you feel breathless or need to gasp for air this is a sign that you need to breathe even more slowly and gently.

Helpful tips for controlled breathing

- Sometimes it can help to imagine a balloon in your belly. As you breathe in through your nose the balloon should inflate and your belly rise up. As you breathe out the balloon deflates and your belly falls down. You can check this by putting a hand on your belly.

- Whilst practising this kind of breathing people first feel that they aren't getting enough air and want to take gulps. However with practice you will find that this slower rate of breathing is more comfortable and will reduce anxiety and other physical feelings.

- As you use controlled breathing thoughts are likely to come into your mind. That is just the way the mind works. Try not to push them away particularly but to keep going back to your breathing. Concentrate on the air going in and out regardless of the thought.

- It is very important to practise this skill. It will only become a good habit if it is rehearsed time and time again. It is easier to practise when you

are feeling less stressed, in the same way that you would learn to swim in a small pool rather than the ocean.

- It is important to practise for, say, two or three minutes at a time, two or three times a day. It can help to remind yourself by leaving a little note or some sign for yourself that maybe only you know about. Some people put a small marker on their watch so that every time they look at it they are reminded to practise the breathing for a few moments.

- When you first practise sit in a comfortable chair, relax your body as much as you can, and let your shoulders drop. Sit upright; if you are slouched forward your chest muscles are constricted and you will not be able to fill your lungs properly.

- Once you feel confident about doing this kind of breathing when sitting comfortably you can also try it just walking around, when sitting on the tube or waiting at the bus-stop. Gradually it will become easier to do when you are feeling more anxious.

- As an emergency if you are feeling panicky and not confident enough to take control of your breathing you can use a paper bag to breathe into. Cover your nose and mouth and breathe as naturally as possible into the bag for a few moments until the feelings pass.

Session 6 Handout: Progressive Muscular Relaxation

How to do progressive muscular relaxation?

The following exercise recommends a particular sequence of relaxing your body. This sequence starts with your head and ends at your feet. You will be asked to tense separate muscle groups, to hold the tension for about ·five seconds and then to let it go. The idea of this exercise is to learn the difference between how your muscles feel when they are tense and how they feel when they are relaxed. So you can identify tension when it occurs in your body and take the relevant action. Some people find certain muscles more difficult to relax than others, for example the muscles in the neck. Don't worry about this for the moment - extra practice is all that's needed.

First of all spend a little time getting comfortable. Loosen any tight clothing, take your shoes off, find a comfortable position with your legs and arms slightly apart. Now close your eyes. Now tense every muscle in your body. Tense the muscles in your jaw, your eyes, your arms, your hands, your chest, your stomach, your back, your legs, your feet, feel the tension all over your body. Hold it - and then let it go. Now take a deep breath. As you breathe out say silently' to yourself: relax. Try and appreciate the difference between how your body felt when it was tense and how it feels now.

As we continue you will be asked to tense different parts of your body. You will become aware of the feeling of tension in each part, and then of the different feeling of relaxation. Keeping the rest of your body relaxed, wrinkle up your forehead. Really feel the tension, hold it, and then let it go. Feel the tension slipping away. Now take a deep breath and as you breathe out say to yourself: relax, relax. Now screw up your eyes as if it was very windy. Feel the tension, hold it, and then let it go. Now take a deep breath and as you breathe out say to yourself: relax. Feel the relief.

Now open your mouth as wide as you can. Feel the tension, hold it, and then let it go. Now take a deep breath and as you breathe out say to yourself: relax. Now hold your tongue against the roof of your mouth. Feel the tension in your tongue, hold it, and then let it go. Feel the tension slip away. Now take a deep breath and as you breathe out say to yourself relax, relax.

Now clench your jaw. Feel the tension, and then let it go. Then take a deep breath and as you breathe out say to yourself: relax. Think about the top of your head, your forehead, your eyes, your cheeks, and your jaw. Make sure they're all relaxed, just let go of the tension. The tongue is relaxed, the forehead is soft and smooth, and your neck and head are getting more and more relaxed. Your head feels as if it could roll from side to side.

Shrug up your shoulders, try to touch your ears with them, feel the tension, hold it, and then let it go. Feel them join the relaxed part of your body. Take a deep breath and as you breathe out say to yourself: relax. Now stretch out your arms,

make a fist with your hands, feel the Tension, hold it, and then let it go. Let it slip away. Take a deep breath. As you breathe out say to yourself: relax, relax.

Now bend your arms up to your shoulder as if you were showing off your muscles. Feel the tension under your arms, hold it, and then let it go. Relax. Now take a deep breath and as you breathe out say to yourself: relax, relax.

Now we're going to move on to relaxing your chest. Begin by taking in a breath than totally fills your lungs. Notice the tension around your ribs and let it go. Take a deep breath and as you breathe out say to yourself: relax, relax. Now arch your back, hold it, and let it go. Feel the relief. Take a deep breath and as you breathe out say to yourself: relax, relax.

Feel the relaxation in your face, your shoulders, down your back, arms, your chest, all relaxing more and more. Breathing in and out and getting more and more relaxed. Now tighten your stomach muscles, feel the tension, hold it, and then let it go. Feel the relief. Take a deep breath and as you breathe out say to yourself: relax, relax. Now push out your stomach as far as you can, feel the tension, hold it and then let it go. Now take a deep breath and as you breathe out say to yourself: relax. Now check your face again. If any areas are tense, relax them. Your chest, your back, relaxes them. Now we move on to your hips and legs.

Press down on the heels of your feet, really feel the tension, hold it and then let it go. Take a deep breath and as you breathe out say to yourself: relax. Now tighten your calf muscles, feel the tension, and let it go. Take a deep breath and as you breathe out say to yourself: relax. Now curl your toes downwards, try to touch the bottom of your feet with them; hold it and let it go. Now take a deep breath and as you breathe out say to yourself: relax, relax. Now bend your toes the other way right up to your knees. Hold it, and let it go. Feel the relief. Take a deep breath and as you breathe out say to yourself: relax.

Feel your whole body becoming more and more relaxed. Each time you breathe out you become more and more relaxed. Now clear your mind and imagine you are lying in a poppy field. It's a sunny day. You can see the clouds moving across in the sky. You can hear a stream in the distance, rustling grass, the birds singing, a: child laughing, you can smell the grass and flowers and fresh air. The sun feels warm against your skin; you can feel a gentle breeze. It feels very nice. As you look around you can see the poppies gently swaying in the breeze.

Now I am going to count to four and you will open your eyes and sit quietly. One, two, three, four

Session 6 Handout: 12.2

Suggestions for Pleasurable Activities: Regulation of Positive Feelings

Emotion regulation includes not only the capacity to reduce overwhelming distress, but also the capacity to enhance positive feelings. Below are some activities that may help you experience and enjoy positive feelings.

Aromatherapy
Bike riding
Browsing in a bookstore
Camping
Cooking
Creating a scrapbook
Dancing
Decorating your living space
Drawing
Exercising
Exploring on the Internet
Gardening
Getting a massage
Getting hair or nails done
Going for a drive
Going hiking
Going on a picnic
Going to a library
Going to a museum
Going to a play or concert
Having lunch/dinner with
 a friend
Jogging

Journal writing
Lifting weights
Lighting candles
Listening to music
Making a collage
Meditating
Painting
"People watching"
Photography
Playing music
Playing with pets or children
Reading
Relaxing in the park
Riding a bus
Singing
Sitting in a coffee shop
Taking a long hot bath
Taking a walk
Taking an interesting class
Talking on the phone with
 a friend
Viewing beautiful scenery
Visiting friends

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
6-7 a.m.							
7-8 a.m.							
8-9 a.m.							
9-10 a.m.							
10-11 a.m.							
11-12 a.m.							
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2-3 p.m.							
3-4 p.m.							
4-5 p.m.							
5-6 p.m.							

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1-2 a.m.							
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5-6 a.m.							

Session 6 Handout: Monitoring Intrusive Memories Diary

Situation *What happened /triggered the intrusive memory?*	Intrusive Memory *Image / Emotion / Sensation?*	'Nowness' *To what extent did it feel like it was happening again now? (0-100)*	Distress *How distressed did you feel? (0-100)*	Meaning *What does the intrusive memory mean / say about you?*	Coping *What did you do?*

Session 7: Interpersonal Emotion Regulation

- Review Homework

    - Check progress with the 'Monitoring Intrusive Memories Diary' and 'Self-Monitoring of Feelings Form', including the 'Response/coping strategy'. Anyone willing to share an example? Did people identified & practise three coping strategies? Pleasant Event Scheduling
    - Any difficulties? Any surprises with homework?

- Relationship Patterns: Interpersonal Schemas/Family Scripts

    - Link to model (Session 3: event → meaning → emotion in interpersonal domain)
    - Can group members identify a particular pattern of emotional inhibition/emotional intolerance within their families? (link to Sessions 2: formulation exercise)
    - Do these identified patterns repeat themselves in situations/relationships with other people?

- Difficulties in Relationships with other People

    - Brainstorm: What difficulties have group members experienced in their relationships with other people since the rape/sexual assault? How have relationships with other people changed? (emotional, physical, sexual)
    - How can we make sense of the changes in relationships with other people?
    - Is there anything that we can do to improve these relationships? What are the barriers to this?

- Agency in Relationships: Communication, Assertiveness and Control

    - Psychoeducation: what is assertiveness?
    - Identify specific problems with assertiveness and control (discuss *function* of rape as being exerting power and control and therefore disempowering the victim)
    - Clarify the historical basis for the group members' assumptions about assertiveness & emotional expression
    - Review basic assertiveness techniques: 'I' messages, making requests, saying no
    - Are there any benefits to increasing communication with other people?

- Prepare for Transition to the Next Phase of Treatment

    - Acknowledge the end of Phase 1 and review progress in building emotion regulation and interpersonal skills
    - How will these skills be utilised in the next phase of treatment?
    - Address questions/anxieties about beginning the work on memory control

- Summarise the Goals of the Session and Plan Between-session Exercises

    - Continue with the 'Monitoring Intrusive Memories Diary'
    - Pleasant Event Scheduling (Handout 12.2)

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Session 7 Handout: 12.2

Suggestions for Pleasurable Activities: Regulation of Positive Feelings

Emotion regulation includes not only the capacity to reduce overwhelming distress, but also the capacity to enhance positive feelings. Below are some activities that may help you experience and enjoy positive feelings.

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Dancing

Decorating your living space

Drawing

Exercising

Exploring on the Internet

Gardening

Getting a massage

Getting hair or nails done

Going for a drive

Going hiking

Going on a picnic

Going to a library

Going to a museum

Going to a play or concert

Having lunch/dinner with
   a friend

Jogging

Journal writing

Lifting weights

Lighting candles

Listening to music

Making a collage

Meditating

Painting

"People watching"

Photography

Playing music

Playing with pets or children

Reading

Relaxing in the park

Riding a bus

Singing

Sitting in a coffee shop

Taking a long hot bath

Taking a walk

Taking an interesting class

Talking on the phone with
   a friend

Viewing beautiful scenery

Visiting friends

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5-6 a.m.							

Session 7 Handout: Monitoring Intrusive Memories Diary

Situation *What happened /triggered the intrusive memory?*	Intrusive Memory *Image / Emotion / Sensation?*	'Nowness' *To what extent did it feel like it was happening again now? (0-100)*	Distress *How distressed did you feel? (0-100)*	Meaning *What does the intrusive memory mean / say about you?*	Coping *What did you do?*

<u>Session 8. Flashbacks – Identifying Triggers and Re-Conditioning</u>

- Review Homework

    - Review the 'Monitoring Intrusive Memories Diary': anyone willing to share an example?
    - Check progress with pleasant events scheduling. Any difficulties? Any surprises with homework?

- Identify triggers to Intrusive memories

    - Refer to 'Memories and their regulation' model (Triggers → Memory → Meanings → Emotion)
    - Use of 'Monitoring Intrusive Memories Diary' to identify particular triggers to flashbacks/intrusive memories
    - Share and group triggers on flip-chart (people, places, activities, words etc.)

- Coping with Intrusive memories

    - Re-iterate idea of monitoring as a form of control; overturning avoidance (backfiring attempts to suppress)
    - What coping strategies have people used/identified in the diary? What makes things better/worse (short & longer-term)
    - Link back to Distress Reduction Strategies

- Re-Conditioning – Linking Cues with non-threatening words/images

    - Associating the triggers with different memories (Triggers → Memories → Different meanings → Different emotions)
    - Discuss ideas

- Summarise the Goals of the Session and Plan Between-session Exercises

    - Ask group members to continue with the 'Monitoring Intrusive Memories Diary'
    - Ask group members to write out a narrative / a small part of the narrative of what happened and identify the most frequently occurring / vivid / distressing images and associated meaning(s) - to be updated in the following two sessions (Visual → Verbal memory)
    - Any other ideas re processing memories? Opportunities to talk through what happened with other people?
    - Pleasant Event Scheduling (Handout 12.2)

Session 8 Handout: Monitoring Intrusive Memories Diary

Situation *What happened /triggered the intrusive memory?*	Intrusive Memory *Image / Emotion / Sensation?*	'Nowness' *To what extent did it feel like it was happening again now? (0-100)*	Distress *How distressed did you feel? (0-100)*	Meaning *What does the intrusive memory mean / say about you?*	Coping *What did you do?*

-

Session 8 Handout: 12.2

Suggestions for Pleasurable Activities: Regulation of Positive Feelings

Emotion regulation includes not only the capacity to reduce overwhelming distress, but also the capacity to enhance positive feelings. Below are some activities that may help you experience and enjoy positive feelings.

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Getting hair or nails done

Going for a drive

Going hiking

Going on a picnic

Going to a library

Going to a museum

Going to a play or concert

Having lunch/dinner with
   a friend

Jogging

Journal writing

Lifting weights

Lighting candles

Listening to music

Making a collage

Meditating

Painting

"People watching"

Photography

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Playing with pets or children

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Relaxing in the park

Riding a bus

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Taking an interesting class

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Viewing beautiful scenery

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<u>Session 9: Imagery & Nightmare Rescripting</u>

- Review Homework

    - Review the 'Monitoring Intrusive Memories Diary': anyone willing to share an example?
    - Check progress with pleasant events scheduling. Any difficulties? Any surprises with homework?
    - Review progress with writing out a narrative and identifying particular images and associated meanings

- Psychoeducation: Imagery

    - Define what an image is and how images are different to verbal thoughts, with stronger emotional intensity (link to 'Brain model').
    - Ask group members to practice imagining a memory (neutral): Imagine walking into Paddington Station – what do they see, hear, feel, think and believe? (use to check understanding of what an image is)

- Psychoeducation: Imagery & Nightmare Rescripting

    - Different kinds of perspective – across time, within a mental space
    - The need to use perspective to do something different (Image → New Image; Image → Verbal; Verbal → New Verbal)
    - How to create perspective – introduce some ideas

- Imagery or Nightmare Rescripting Exercise

    - Ask group members to identify / share a particular traumatic image or nightmare (or unrelated to traumatic experience if too distressing)
    - Group exercise to explore options for modifying this image to increase sense of mastery & control – do this for each group member
    - Ask group members to write down the rescript

- Positive Imagery / 'Safe place' exercise

    - Ask one group member to share a memory of a place where they felt safe and relaxed and practice positive imagery / 'safe place' exercise as a technique to use when overwhelmed by negative intrusive memories
    - Ask all group members to write down their own positive/safe image in notebooks

- Summarise the Goals of the Session and Plan Between-session Exercises

    - Ask group members to practice modifying/updating the images they identified
    - Ask group members to complete the 'Monitoring Intrusive Memories Diary II' (go through additional columns)
    - Ask group members to practice using their positive/safe image
    - Pleasant Event Scheduling (Handout 12.2)

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Session 9 Handout: Monitoring Intrusive Memories Diary II

Situation *What happened /triggered the intrusive memory?*	Intrusive Memory *Image / Emotion / Sensation?*	'Nowness' *To what extent did it feel like it was happening again now? (0-100)*	Distress *How distressed did you feel? (0-100)*	Meaning *What does the intrusive memory mean / say about you?*	Rescript *How did you change the memory/image to change the meaning?*	Distress *How distressed did you feel after the rescripting? (0-100)*

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
6-7 a.m.							
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5-6 a.m.							

Session 10: Narrative Restructuring

- Review Homework

  - Review the 'Monitoring Intrusive Memories Diary II': anyone willing to share an example?
  - Review progress with rescripting images/nightmares – any change in distress levels? Positive/safe image helpful?
  - Check progress with pleasant events scheduling. Any difficulties? Any surprises with homework?

- Psychoeducation re Narrative Restructuring

  - Recap psychoeducation on memory: brain model (meaning), appraisals knotted into narrative, memory reactivating threat system, leading you to *believe* the memory's real
  - Link to session on *meaning* of 'rape': e.g. beliefs around blame and responsibility
  - Outline example of *'It's my fault because I didn't fight back'* & challenge with fight, flight, freeze response

- Updating memories/'hotspots'

  - Time perspective – 'time-tagging' memories
  - Integration of what is known now into memory
  - Integration of grounding statements
  - Inserting new memory/image/understanding into old intrusive memory

- Narrative Restructuring Exercise

  - Ask group members to identify / share a particular traumatic nightmare or image (or unrelated to traumatic experience if too distressing)
  - Group exercise to explore integration of what is known now into the memory
  - Ask group members to help each other and write down the updates

- Narrative Restructuring Techniques

  - Flashcards with grounding statements
  - Diary of memories & 'here and now' update
  - Nightmare Protocol

- Summarise the Goals of the Session and Plan Between-session Exercises

  - Ask group members to continue with the 'Monitoring Intrusive Memories Diary II'
  - Ask group members to practice the narrative restructuring by writing out a narrative of what happened and then a new narrative with 'updates' re what they know now
  - Ask group members to use the 'Nightmare Protocol'
  - Ask group members to continue practicing using their positive/safe image
  - Pleasant Event Scheduling (Handout 12.2)

Session 10 Handout: Monitoring Intrusive Memories Diary II

Situation *What happened /triggered the intrusive memory?*	Intrusive Memory *Image / Emotion / Sensation?*	'Nowness' *To what extent did it feel like it was happening again now? (0-100)*	Distress *How distressed did you feel? (0-100)*	Meaning *What does the intrusive memory mean / say about you?*	Rescript *How did you change the memory/image to change the meaning?*	Distress *How distressed did you feel after the rescripting? (0-100)*

Session 10 Handout: Nightmare Protocol

Nightmare Protocol

Complete this and keep it by your bed for when you wake up after a nightmare:

If I wake up in the night feeling_____
(write in the emotion e.g. frightened, fearful, anxious)

I will be sensing in my body_____
(write in at least three feelings in your body, e.g. tension, heart racing)

Because I will be remembering_____
(name the trauma by title only - no details - e.g. the assault)

At the same time, I will look around where I am now in_____
(the current year e.g. 2014)

Here in _____
(name the place where you are e.g. in my bedroom in London)

And I will see _____
(describe some of the things that you can see when you wake up)

And I will refocus my attention/'ground' myself by_____

_____
(e.g. smelling perfume, playing a game on my phone, stroking my cat..)

And say to myself_____
(e.g. 'I am strong', 'I have survived', 'I can get through this'..)

And so I will know that <u>it was just a nightmare</u> and _____
(name trauma)

Is not happening anymore.

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
6-7 a.m.							
7-8 a.m.							
8-9 a.m.							
9-10 a.m.							
10-11 a.m.							
11-12 a.m.							
12-1 p.m.							
1-2 p.m.							
2-3 p.m.							
3-4 p.m.							
4-5 p.m.							
5-6 p.m.							

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
6-7 p.m.							
7-8 p.m.							
8-9 p.m.							
9-10 p.m.							
10-11 p.m.							
11-12 a.m.							
12-1 a.m.							
1-2 a.m.							
2-3 a.m.							
3-4 a.m.							
4-5 a.m.							
5-6 a.m.							

Session 11: Method of Loci

- Review Homework

    - Review the 'Monitoring Intrusive Memories Diary II': anyone willing to share an example?
    - Review progress with narrative restructuring – any change in the quality of the trauma memories/distress levels?
    - What helps: flashcards, positive self-talk, nightmare protocol, writing things down?
    - Check progress with pleasant events scheduling. Any difficulties? Any surprises with homework?

- Psychoeducation on Method of Loci

    - Introduce use of Method of Loci as a mnemonic aid
    - Ask group members to go through example of walk from Paddington Station to the group room in order to remember 5 items on a shopping list
    - Practice going through & problem-solve

- Use of Method of Loci to summarise useful techniques learnt in group sessions

    - Ask group members to derive a list of 10 helpful/positive things they have learnt in the group: 10 coping strategies, techniques, positive statements, useful pieces of information or memories
    - Draw out a map/plan of a familiar route/building & problem-solve (safer inside? Good to incorporate their 'safe place'?)
    - Write a word/phrase or draw a picture to represent each of the 10 things identified
    - Ask each group member to imagine and talk through their route

- Summarise the Goals of the Session and Plan Between-session Exercises

    - Ask group members to practice using the Method of Loci
    - Ask group members to complete a 'Blueprint' for the final Review/Summary session
    - Pleasant Event Scheduling (Handout 12.2)

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
6-7 a.m.							
7-8 a.m.							
8-9 a.m.							
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10-11 a.m.							
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4-5 a.m.							
5-6 a.m.							

<u>Session 12. Summary & Review</u>

- Review Homework

    - Review the 'Method of Loci'
    - Check progress with pleasant events scheduling. Any difficulties? Any surprises with homework?

- Blueprint

    - Go through a summary of what each of the sessions has covered
    - Ask group members to talk about what has been helpful and what has been less helpful
    - Action plan for the future – set longer-term goals

- Feedback

    - Feedback forms (Haven)
    - Any feedback re improvements for future groups? Anything they think should be included that wasn't?
    - Questionnaire Measures (to take home and complete before end of group assessment)

- Ending

    - Talk about thoughts and feelings re the group ending
    - Acknowledge/normalise anxieties
    - Provide information re additional help/support if needed
    - Arrange end of group assessments