SEQUELAE OF SEXUAL ASSAULT IN WOMEN WITH PTSD: PERITRAUMATIC DISSOCIATION, PROVOKED MEMORY, AND ORGANIZATION OF TRAUMA NARRATIVES

by

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES

GRADUATE COUNSELLING PSYCHOLOGY PROGRAM

We accept this thesis as conforming
to the required standard

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ABSTRACT

In the last 10 years there has been a good deal of research evidence indicating that traumatic memories are stored and accessed differently than non-traumatic memories. Brewin and his associates (1996, 1999, 2001, 2003) have developed a dual representation theory of posttraumatic stress disorder, whereby individuals have more difficulty with coherent, intentional recall of traumatic events (VAMs) and are more prone to involuntary, fragmented recollections with somatic and affective intensity (SAMs). It has also become increasingly apparent recently that peritraumatic dissociation is one of the best predictors of PTSD (Ozer, Best, Lipsey & Weiss, 2003). In this study of 29 female sexual assault survivors with PTSD, Brewin's dual processing model was employed to clarify the connection between PTSD and peritraumatic dissociation. SAMs were measured using the Traumatic Memory Inventory-Post Script Version (TMI-PS) and VAMs were assessed through the narrative organization reflected in the Trauma Scene Form (Hopper & van der Kolk, 2001). Script-driven symptom provocation as developed by Pitman, and his colleagues (1987, 1990) was used to trigger SAMs. Trauma narrative organization shown in the Trauma Scene Form was assessed using an adapted version of the Global Ratings of Essays About Trauma (GREAT) coding scheme (Klest & Freyd, in press). Measures of dissociation included the Peritraumatic Dissociative Experiences Questionnaire (PDEQ; Marmar, Weiss & Metzler, 1997); State Dependent Peritraumatic Dissociation (SDPD), and a new measure, the Current Dissociation Scale-7 (CDS-7). Support was found for the extension of Brewin's dual processing theory to peritraumatic dissociation. SDPD was negatively correlated with two Trauma Narrative Organization scores r_s = -.32 & -.39. There were also significant relationships demonstrated between a

number of TMI-PS subscales and dichotomous PDEQ scores, SDPD scores and CDS-7 scores. Of particular interest were the significant relationships between peritraumatic dissociation and olfactory sensory scores on the TMI-PS. While the relationship between peritraumatic dissociation and trauma memories was being examined in the course of this study, the influence of state dependent and current dissociation upon measurement of peritraumatic dissociation became apparent. Recommendations are provided for assessing and addressing these influences, and for future research and clinical practice.

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ACKNOWLEDGEMENTS

I would like to thank the women who volunteered for this study. It was through the sharing of their traumatic experiences and the gift of their time that this project became a reality. I would also like to express my sincere appreciation to my thesis supervisor, Dr. Rick Bradshaw, for his sharing of knowledge and encouragement to persevere. It was his ongoing belief in me, his patience and kindness, and support that was so integral to completion of this project. As well, I would like to thank my co-supervisor, Dr. Marvin MacDonald, for his humour, his challenge to extend myself even when I didn't think that was possible, and his clear focus on the shape the project would take. To my fellow team members who have been confidants, and who have been genuine sources of support, I am truly grateful. I want to express my deepest appreciation to my wife, Lynn. It has been through her solid support in our team ministry that I have fulfilled this dream. Finally, I would like to thank my Lord and Saviour, who has given me the strength to persevere. My sincerest desire is to continue to serve You with my life.

CHAPTER 1: INTRODUCTION

Violence against women is all too common in our society. It is reported that 14% to 20% of women will be raped at some time in their lives (Kilpatrick & Resnick, 1993), 25% to 28% will be physically abused in sexual-romantic relationships (Elliott & Briere, 2003) and 8% to 24% will be stalked by someone known to them or by total strangers (Sheridan, Blaauw & Davies, 2003). As well, it is likely that 25% to 35% of adult women have been sexually assaulted as children. When we consider all of these statistics, it becomes apparent that violence against women is an urgent social concern (Briere & Jordan, 2004).

Equally of concern is the link between such victimization and mental health concerns in women. Many forms of mental distress and disorder have been associated with interpersonal violence in women (Briere & Jordan, 2004). Everything from increased anxiety (Gleason, 1993), dissociation (Briere, Woo, McRae, Foltz & Sitzman, 1997), to substance abuse (Epstein, Saunders, Kilpatrick, & Resnick, 1998) posttraumatic stress (Astin, Lawrence, & Foy, 1993), debilitating psychological problems such as psychotic disorder (not otherwise specified), and borderline personality disorder (Goodman, Dutton & Harris, 1997; Cloitre, Tardiff, Marzuk, Leon, & Potera, 1996) and eating disorders (Wenninger & Heiman, 1998) have been associated with sexual and/or physical assaults.

Results of a number of studies indicate that specific characteristics of abusive events are associated with severity of subsequent psychological outcomes. Life threat, injury, substantial use of force, and invasive acts are associated with greater likelihood of

developing Posttraumatic Stress Disorder (PTSD) (Ozer, Best, Lipsey & Weiss, 2003; Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993).

Research seems to indicate that individuals who view their traumatic experiences as having been extremely negative are more at risk for the development of PTSD than those who view the event less negatively (APA, 2000). For instance, those who respond to traumas with greater fearfulness and/or negative thoughts, or dissociate during or after the event are more inclined to suffer more severe psychological concerns. The question remains, however, how individuals develop those peritraumatic responses? One apparent source of these severe peritraumatic responses, whether cognitive, affective, or somatic, seems, to be the victim's exposure to previous trauma (Briere & Jordan, 2004).

PTSD develops as a result of direct personal exposure to a traumatic event that involved actual or threatened death or serious injury to an individual, or to others who are directly observed. It causes considerable distress and impairs an individual's ability to function in a normal social or work environments. The diagnosis of PTSD was first introduced in the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition* (DSM III; APA, 1980) and there has been considerable research conducted on symptom patterns and characteristics since then. While there has also been research on treatment for PTSD, there is still much to be done in this area.

This study is one component of a larger research project (see Appendix A). The focus of this thesis is the examination of how memory is affected by traumatic events; specifically, exploring the fit with Brewin's dual process theory of memory (Brewin, Dalgleish, & Joseph, 1996). *Verbally Accessed Memories* (VAMs) and *Situationally Accessed Memories* (SAMs) constitute the two parallel processes for storing and

retrieving traumatic memories. VAMs are normal autobiographical memories that can be accessed voluntarily and provide a coherent recall of traumatic events. SAMs contain information that has been gained from lower level perceptual processing of the traumatic event. They are prone to involuntary recollections that are more affect and sensory-laden than normal memories (Brewin, 2001). These will be discussed further in the next chapter.

In this study, organizational patterns on the Traumatic Scene Form (TSF) constitute VAMs, and responses to script-driven symptom provocation on the Traumatic Memory Inventory (TMI-PS; Hopper & van der Kolk, 2001) constitute SAMs. Both sets of memory recollections were analyzed in light of peritraumatic (at the time of the trauma) and current dissociation.

Posttraumatic Stress Disorder (PTSD)

As defined by the *Diagnostic and Statistical Manual of Mental Disorders IV-Text Revision* (DSM–IV-TR; American Psychiatric Association, 2000), PTSD involves the development of a set of symptoms, following a traumatic event that involves direct personal experience. It can involve actual threatened death or serious injury, or the witnessing of an event that involves death, injury or threat to the physical integrity of another. Additional diagnostic criteria include the following:

1. The person's response to the traumatic event involved intense fear, helplessness, or horror.
2. Persistent reexperiencing of the traumatic event, in which one experienced intrusive thoughts, and images of the trauma.

3. Persistent avoidance of stimuli associated with the trauma, and dissociation or numbing of general responsiveness.
4. Persistent symptoms of increased arousal, such as sleep and concentration difficulties, irritability and hypervigilance.
5. Symptoms must be present for more than one month.
6. The resulting disturbance must cause clinically significant stress or impairment in several important areas of functioning (social, educational, occupational).

PTSD is not limited to any age group, and symptoms can typically begin to appear approximately 3 months after a traumatic event, although onset can also be delayed by months, or even years. Severity and duration of the trauma, and proximity of a person to the trauma, are some characteristics that determine the likelihood of developing this disorder (APA, 2000).

There is growing interest in clinical approaches that focus on early detection of PTSD. It is reasoned that as with many other mental health disorders, recovery from PTSD will be facilitated if intervention is begun as early as possible (Foa, Keane, & Friedman, 2000). Early detection of PTSD is important in therapeutic contexts because of the significant number of women who are raped and because of the number who subsequently develop PTSD after trauma exposure.

Almost 10 % of U.S. women will be raped at some time in their lives (Kessler, Sonega, Bromet, Hughes & Nelson, 1995), and statistics show that 1 in 4 Canadian women will be sexually assaulted during their lifetime (Brickman & Briere, 1984). The

probability of PTSD development after trauma exposure is 13% in women and 6.2% in men (Breslau, Kessler, Chilcoat, Schultz, Davis & Andreski, 1998).).

Gender differences in response to treatment have not been studied systematically, but lifetime prevalence rates for PTSD are twice as high for women as for men, and women are four times as likely to develop PTSD when exposed to the same trauma (Foa et al., 2000). Although Yehuda has noted that male/female differences disappear when the same trauma is investigated (Yehuda, 2002)

Studies on the epidemiological rates of PTSD show that 80% of lifetime PTSD patients suffer from depression, other anxiety disorders, or chemical abuse and/or dependency. The best treatment is one that is expected to improve both PTSD and its comorbid symptoms (Foa, et al. 2000).

Definition of Terms

Dissociation is considered to be the key pathogenic mechanism that gives rise to PTSD (van der Kolk & Fisler, 1995). French psychiatrist Pierre Janet (1907) observed that the inability to process traumatic memories was the main issue for severely traumatized victims. According to Janet's theory, peritraumatic dissociation suggests that the traumatic experience is not available at the conscious level. As a result, it cannot be processed over time but continues as a *stuck* thought that is separate from consciousness and distorts successive thoughts and actions (Birmes et al., 2005). Putnam (1989), and van der Kolk and van der Hart (1989) have provided an updated version of Janet's model of traumatic stress and dissociation. Janet viewed dissociation as a discontinuous phenomenon that was experienced solely by people with psychiatric disorders and was absent in normal individuals. Some of his contemporaries and later researchers have

generally ignored his assumption about the pathological nature of dissociation. Most contemporary scholars view dissociation as a continuum that ranges from everyday experiences such as daydreaming to disorders such as psychogenic amnesia or dissociative identity disorder (Bernstein & Putnam, 1986). Janet also viewed dissociation as a phenomenon that was particularly noticeable in the aftermath of traumatic experiences. Modern researchers note that dissociation sometimes also occurs during the trauma or immediately afterward (Birmes et al., 2005).

Dissociation refers to a temporary breakdown in the normal continuous processes of perception. It occurs both as a normal and a pathological experience. Daydreaming, losing track of time, and having our attention elsewhere as we drive a vehicle, constitute "normal" dissociative experiences (Brewin, 2003). This is a form of *numbing* or *blanking out*. As these innocuous transitory states become more intense and prolonged, they constitute increasing pathology.

Dissociative experiences such as *derealization* (feeling that things look unreal or staged) and *depersonalization* (feeling that one is in a daze, numb, unreal) are common, especially when people are anxious (Brewin, 2003). Dissociation is often considered a defence mechanism that protects a helpless person from overwhelming stress, with more extreme dissociative reactions such as the development of separate personalities, reflecting repeated threats to a person's integrity, usually during childhood (Brewin, 2003). When these symptoms occur in the course of, or in the immediate aftermath of, a traumatic event, they are referred to as peritraumatic dissociation (Ozer, et al., 2003).

Ozer et al. (2003) found that there was a link between peritraumatic dissociation and later development of PTSD. A summary table of studies showing the link between

PD and PTSD can be found in Appendix B and a summary table of studies indicating PTSD predictors can be found in Appendix C. It has also been discovered that verbal fluency is often impaired following traumas and triggered (re-experienced) traumas, so that people who are suffering from PTSD tend to have less organized VAMs and more SAMs (Brewin, 2003).

Research Questions

The rationale for this study is to determine which types of memories are accessed when an individual is experiencing high peritraumatic dissociation. Our hypothesis is that people will access VAMs in certain situations, and access SAMs in others. The challenge for researchers is to assess both memory systems and to keep them distinct. In one approach to traumatic memory assessment, VAMs are assessed to create scripts and these scripts are used to provoke SAMs. The paradox is that participants were asked to access SAMs through the VAMs generation of the TMI-PS. In light of the relationship between peritraumatic dissociation and subsequent development of PTSD the research questions are: Are high levels of peritraumatic dissociation associated with weaker organization of verbally accessed memories (VAMs)? Is high peritraumatic dissociation associated with higher intensity situationally accessed (SAMs) memories?

CHAPTER 2: LITERATURE REVIEW

Research to date has raised questions about the link between peritraumatic dissociation (PD) and the development of Post Traumatic Stress Disorder (PTSD). As well, there are questions regarding how peritraumatic dissociation impacts memory and affects recollections of traumatic events. In this chapter, the constructs of PTSD, PD and trauma memory will be explored through current literature. In the present study, there is a focus on the relationship between PD and trauma memory in sexual assault survivors. The following literature review encompasses both past and current research on PTSD, PD and trauma memory. There is a broad focus on research related to the development of PTSD in War Veterans, natural disaster victims, and terrorist attack survivors. There is also an examination of PTSD and PD relative to ethnicity. Research on the instruments used to assess PTSD, PD, and trauma memory is included in this review, with a particular focus on PTSD, PD, and trauma memory in sexual assault survivors. In particular, there is some exploration of disorganization in trauma memories, and difficulty experienced by participants recounting their traumatic assaults in written narratives.

With recent terrorist attacks, there has been a focus on the psychological impact of these events. Increased incidents of PTSD have been observed following significant terrorist attacks in the United States, as noted by Galea et al. (2002). These symptoms tend to diminish over time according to Silver, Holman, McIntosh, Poulin and Gil-Rivas (2002), but there are a number of those initially impacted who may develop chronic PTSD. The frequency of PTSD among terrorist attack survivors and the rate at which acute responses diminish with time has not been examined in controlled studies. With the

increasing occurrence of terrorist activities, this information is relevant to practitioners in the field.

Posttraumatic stress disorder is unique, relative to other anxiety disorders, in that a traumatic event needs to have occurred in order for the disorder to develop and be diagnosable. The condition runs a course that includes a series of stages (McFarlane, 2000). It does not begin immediately after the trauma. Rather, there is a critical phase during which some individuals will regulate the acute stress response, while others will experience progressive dysregulation. Once PTSD appears, it will eventually be resolved in about 60% of the cases. In order to predict the course of the disorder, a model of risk factors needs to consider both the contributors to the initial reaction, as well as moderator variables that reduce stress reactions. Factors to be considered include exposure to previous traumas, prior mental health issues, family mental health history, peritraumatic dissociation, acute stress response, neurobiological system changes, and autonomic hyperarousal. These risk factors contribute to both the emergence and the remission of the disorder. PTSD is often comorbid with disorders such as major depression, another anxiety disorder, or substance abuse. Research has demonstrated that rates of traumatic events are much higher among those who are mentally ill than among those in the general community. This comorbidity makes tracking the course of PTSD much more complex, and raises questions about the role of PTSD in the development of other mental disorders.

Several features of PTSD include the incompleteness and disorganization of traumatic memories, the re-experiencing of traumatic events in the form of spontaneous flashbacks, time distortion that is typical of flashbacks, the unpredictable duration of intrusive memories connected with traumas, and the sense of unreality that typically

surrounds these traumatic events (Brewin, 2001). Specifically, as we think about memory and how it relates to sexual assault the question of, “Are rape memories different?” has been raised. A study was conducted to answer that question (Tromp, Koss, Figueredo, & Tharan, 1995), and it was discovered that memory factors such as level of affect, intensity and frequency of re-experiencing, presence of non-visual sensory reactions, and level of memory clarity all significantly discriminated rape memories from other unpleasant recollections. Rape memories were found to be less vivid, less talked and thought about by the individual, less visually detailed and less likely to occur in an organized manner.

Factors Contributing to the Development of PTSD

PTSD research findings indicate that there are several major clusters of factors that may explain the development of PTSD. They include pretraumatic, peritraumatic and posttraumatic variables (Martin & Marchand, 2003). A summary table of studies showing the link between PD and the later development of PTSD can be found in Appendix B. Furthermore, a summary table of PTSD predictors can be found in Appendix C.

Pretraumatic Factors

Some of the pretraumatic factors that have been linked with PTSD development include genetic predisposition to low stress tolerance (Tomb, 1994), narcissistic or antisocial personality traits (Breslau, Davis, Andreski, & Peterson, 1991), past history of personal and familial mental health concerns (Breslau et al., 1991), current life stressors (Koopman, Classen, & Spiegel, 1994) and female gender (Bromet, Sennoga, & Kessler, 1998). Ethnicity may prove to be a pretraumatic factor, as evidenced by research findings

with police officers of different ethnic backgrounds (Pole, Best, Metzler, & Marmar, 2005).

Previous prospective studies of many potential predictors of PTSD have provided inconsistent results, with variables such as intrusive symptoms (McFarlane, 1992), social support (Perry, Difede, Musgni, Frances, & Jacobsberg, 1992), peritraumatic dissociation (Shalev, Peri, Canetti, & Schreiber,1996), irritability, and alcohol misuse (Blanchard, Hickling, Barton, Taylor, Loos, & Jones-Alexander, 1996) all being shown to partially predict PTSD.

Many trauma survivors recover spontaneously from PTSD symptoms. In contrast, individuals who continue to experience symptoms for a year seldom remit completely. Early recognition of these individuals is, therefore, critically important. Freedman, Brandes, Peri & Shalev (1999) studied potential predictors of PTSD one year post-trauma, as well as differences between predictors of PTSD at four months and one year. They found that depressive symptoms were the best predictors for development of PTSD at one year post-trauma, and symptoms of intrusion and peritraumatic dissociation were the best predictors for development of PTSD at 4 months post-trauma. Shalev and Freedman (2005) compared the rate of PTSD in 39 survivors of a terrorist attack with 354 survivors of motor vehicle accidents. They found that terrorist attack survivors had higher rates of PTSD than the motor vehicle accident survivors (37.5% in the former, versus18.7%in the latter). Results showed that the type of traumatic event did not contribute to the prediction of PTSD as measured by heart rate, peritraumatic dissociation, or early PTSD symptoms.

Peritraumatic Factors

Peritraumatic factors are present during, and immediately after, traumatic experiences. These include trauma severity (King, King, Keane, Foy, & Fairbank, 1999), perception of lethality (Green, 1994), dissociation (Marmar, Weiss, Metzler, Delucchi, Best, & Wentworth, 1999), negative emotions (Bernat, Ronfeldt, Calhoun, & Arias, 1998), and physical anxiety reactions (Tucker, Dickson, Pfefferbaaum, McDonald, & Allen, 1997).

The manner in which people respond to trauma exposure is crucial in determining whether they will either spontaneously recover or develop mental health symptoms. Frewen & Lanius (2006), in evaluating the neural correlates of dissociative experiences, have utilized van der Kolk's constructs of primary, secondary and tertiary dissociation. Primary dissociation refers to interruption of normal consciousness awareness by fragmented, somatic, and sensory level memories rather than verbal ones. In this research, approximately 70% of participants with PTSD demonstrated this profile in response to verbal cues of their specific traumas. Secondary dissociation involves a relived form of memory - a "mental leaving of the body" - that is often associated with peritraumatic dissociation. Tertiary dissociation is the development of ego identities that are pivotal to the splitting associated with dissociative identity disorder.

Research was conducted (Marmar et al., 1994) to determine whether there was a relationship between dissociative experiences during traumatic warfare and the later development of PTSD They found that the greater the dissociation during the traumatic combat experience, the greater the probability of developing PTSD.

A longitudinal study (Marmar, Weiss, Delucchi, Best, & Wentworth, 1999) was conducted with emergency services personnel who had been exposed to a traumatic event. Results showed that workers who had more traumatic exposure and those who dissociated more during the actual event were at greater risk for ongoing symptomatic distress 3 to 5 years after the experience.

Results of follow-up to an original mail survey used to assess early reactions to the World Trade Center disaster on September 11, 2001 showed that peritraumatic dissociation was not predictive of PTSD severity after controlling for baseline PTSD severity. As well, while exposure severity was significantly related with early dissociation and posttraumatic stress in the first survey, this relationship was no longer significant at follow-up one year later (Simeon, Greenberg, Nelson, Schmeidler, & Hollander, 2005).

Posttraumatic Factors

Posttraumatic factors are present after a traumatic event, and are significant variables influencing response to treatment, and duration of PTSD symptoms. These include social support (Joseph, Andrews, Williams & Yule, 1992), social reactions to the traumatic event (Meichenbaum, 1994), feeling of control and the perception of change as a challenge (King et al., 1999), and guilt (Henning & Frueh, 1997). (Simeon et al., 2005) found in follow-up research to the World Trade Center disaster that interim social support was a powerful factor for improvement in posttraumatic stress. Comorbid dissociation and less social support were related to lesser improvement in posttraumatic stress over the first year. Researchers of stress reactions of military personnel who are exposed to single, but potentially fatal, events (Berg, Greiger, & Spira, 2005) concluded that the

exposure of highly trained military personnel to life-threatening events might not result in high PTSD levels. Events prior to, and after, the life-threatening event may have more significance in the development of symptoms that follow disasters.

In research regarding factors contributing to posttraumatic panic symptoms in a group of survivors of sexual and non-sexual assault, it was found that posttraumatic panic was somewhat predicted by childhood sexual abuse, adult victimization, and crime variables (Nixon, Resick, & Griffin, 2004). Research on sexual assault survivors has focused on factors that may contribute to the development of PTSD. Morris (2001) found that the main pretraumatic factors and peritraumatic factors predictive of later development of PTSD were emotional distress, dissociation, and concerns about being harmed or killed. Boles (1995) found with female rape victims that peritraumatic dissociation and PTSD symptom severity were significantly related. Clum (1999), in her research on rape narratives of women, found that PTSD symptoms were significantly negatively correlated with insight, which was operationalized as one measure of cognitive processing in the trauma narratives. Morris (2001) in her research on women's peritraumatic responses found that women who had been raped often felt responsible for the rape, and felt that they should have resisted. Furthermore, others often blame rape survivors for failing to resist their attackers. It is therefore important for survivors, and for those who would support and assist them, to know that the evidence indicates that many women do not actively resist their attackers.

A review of over 2000 studies of PTSD stress (Ozer, Best, Lipsey, & Weiss, 2003) led to a meta-analysis of 7 predictors of PTSD: (a) prior trauma, (b) prior psychological adjustment, (c) family history of psychopathology, (d) perceived life threat

during the trauma, (e) posttraumatic social support, (f) peritraumatic emotional responses, and (g) peritraumatic dissociation. All 7 predictors yielded significant effect sizes, with peritraumatic dissociation being the largest. These outcomes suggest that psychological processes, not just prior characteristics, are the strongest predictors of PTSD. Peritraumatic dissociation is defined as "dissociative experiences during or in the immediate aftermath of the traumatic event" (Ozer et al., 2003, p. 55).

The relationship between peritraumatic dissociation and PTSD has been studied in war veterans, traffic accident survivors, and victims of disasters and violent assaults. Those who have reported higher levels of peritraumatic dissociation were at greater risk for development of PTSD (Birmes et al., 2003).

In a longitudinal study, Birmes, Carreras, and Charlet (2001) followed victims of stranger assault. Their research found that for crime victims, the more peritraumatic dissociation that occurred during the trauma, the greater the chance of victims meeting PTSD criteria (Birmes, Carreras, & Charlet, 2001). Thus, research has demonstrated that peritraumatic dissociation is a risk factor for the development of PTSD.

Mediating Variables between PTSD and Peritraumatic Dissociation

While there has been considerable research demonstrating the relationship between PD and PTSD, there is a need to evaluate how mediating variables may affect this relationship (Marx & Sloan, 2005). Some researchers have indicated that high levels of anxiety might contribute to the relationship between PTSD and PD (Marmar, Weiss, & Metzler, 1997). Gershuny, Cloitre, and Otto (2003) tested this hypothesis by examining the relationship between PTSD and PD. Their results show that these suggested mediators did, in fact, explain the variance in the relationship between PD and PTSD.

Traumatic event-related fears of death and loss of control explained the relation between PTSD severity and PD. Marshall and Schell (2002), in a prospective analysis, examined the relationship between PD and PTSD. While they did not explore anxiety as a contributing factor in the relationship between PD and PTSD, they did find that baseline PD did not predict subsequent PTSD symptomatology.

As these previous studies are reviewed, it appears that the nature and extent of the relationship between PD and PTSD is still unclear. In an effort to clarify this relationship, some researchers have suggested that dissociative behaviour is a form of experiential avoidance (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Experiential avoidance is defined as unwillingness to remain in contact with personal experiences that induce loathing or strong dislike (i.e., bodily sensations, emotions, thoughts, memories, behavioural predispositions), as well as the steps taken to change the nature or rate of recurrence of those events. In keeping with this definition, Wagner and Linehan (1998) proposed that the main purpose of PD is to control certain aspects of the trauma (e.g., aversive sensory and affective reactions) as they happen, in efforts to manage the experience. Other researchers have suggested that dissociation helps individuals to keep away from unwanted emotions, thoughts and memories (van der Kolk & Fisler, 1995).

Some have suggested that such attempts to avoid unwanted emotions, thoughts and memories may initially decrease the occurrence and intensity of private events, but will eventually lead to increases in the symptoms people are attempting to manage (Hayes, Strosahl, & Wilson, 1999). It is these attempts to remove oneself from these unwanted events that may actually lead to psychological difficulties (Marx & Sloan, 2002). In other words, psychological difficulties may be the outcome of attempts to

manage and/or suppress negative private events. It is in this context that PTSD symptomatology (i.e., re-experiencing, numbing and hyperarousal) may be the outcomes of experiential avoidance.

It has been suggested in previous research that PD may only be associated with the symptoms of PTSD through its connection with experiential avoidance. PD may, therefore, be a *proxy risk factor* for experiential avoidance. A correlate of a risk factor may be a risk factor for the same outcome even though the only relationship with the correlate and the outcome is rooted in the risk factor that is correlated with both. This kind of correlation is termed a "pseudocorrelation" or a "proxy risk factor" (Kraemer, Stice, Kazdin, Offord, & Kupfer, 2001, p.851). Since there has been no investigation regarding the relationship between PD, PTSD symptoms and experiential avoidance, Marx and Sloan (2005) investigated the idea that PD serves as a proxy risk factor for experiential avoidance in its relationship to PTSD. They found that only experiential avoidance was related to PTSD, 4 and 8 weeks post-trauma, demonstrating that PD is not a proxy risk factor for experiential avoidance.

Other factors may then be involved in the relationship between PD and PTSD. Ethnicity and acculturation may be mediating factors. Researchers have found that higher levels of acculturation were predictive of lower levels of PD among Latino survivors of community violence. These results suggest that less acculturated people are more likely to report experiencing dissociative reactions in the midst of traumas (Marshall & Orlando, 2002). However, according to some researchers (Zatzick, Marmar, Weiss, & Metzler, 1994) there has not been an analysis conducted of variation in ethnic groups of

dissociative responses to trauma. Results of their study showed that it is greater exposure to traumatic stress, rather than ethnicity that leads to more dissociative responses.

Hispanics in general may be more susceptible to PTSD. In research on a group of police officers, it would appear that one of the reasons the Hispanic officers had higher levels of PTSD is that their coping styles of wishful thinking and self-blame pose difficulties. Their passive approach appears to assume an external locus of control mindset (Pole, Best, Metzler, & Marmar, 2005).

Other researchers have raised questions regarding PD being a predictive factor in the subsequent development of PTSD. Within a prospective longitudinal study, Marshall and Schell (2002) examined the relationship between symptoms of PTSD and PD recollections in a male group of survivors of community violence. Correlations between PTSD and PD within each assessment period were large and statistically significant. In contrast, cross-lagged paths involving PTSD symptom severity and consequent PD recall were small and not significant. In addition, while there was a significant correlation between baseline dissociation and succeeding PTSD symptoms, this relationship did not hold after controlling for initial PTSD symptoms. These findings raise questions about the predictive importance of PD (Marshall & Schell, 2002).

PTSD risk factors in Motor Vehicle Accident (MVA) victims have included PD. Knowledge of the association between PTSD and PD in this population may assist therapists with early intervention in high-risk populations. Results from research on MVA-related PD showed that participants who were younger and had histories of chronic depression, were more likely to experience more peritraumatic dissociative symptoms (Fullerton et al., 2000).

Researchers have examined the gender-specific role of PD influencing the relationship between lifetime trauma and mental health concerns in a Palestinian community sample (Punamaki, Komproe, Qouta, Elmasri, & de Jong, 2005) Results showed that women who are exposed to lifetime trauma will tend to experience anxiety, somatoform and mood disorders, but this does not happen among men. The moderating effects of PD were evident for men and women. Women were more likely to express hostility, and men to experience depressive symptoms, when they were exposed to traumatic events.

Research assessing connections between PD and PTSD has involved both subjective self-report measures and objective measures of physiological changes (heart rate and skin conductance). In a group of female sexual assault survivors, results showed that there was suppression of autonomic physiological responses in the group that registered high dissociation levels. In addition, the high dissociation group tended to have more discrepancies between their self-reported and objective measures of distress. These findings highlight the importance of assessing PD in trauma survivors (Griffin, Resick, & Mechanic, 1997).

Further research on the role of peritraumatic panic for predicting later arousal was examined in a group of sexual assault survivors. It was found that prior history of PTSD, perception of life threat, and sexual assault trauma all predicted posttraumatic panic attacks, whereas prior trauma exposure and depression did not (Nixon et al., 2004).

Some researchers argue that most of the studies on the link between PD and PTSD are retrospective and longitudinal in design (Candel & Merckelbach, 2004). They feel that it is difficult, due to the weakness of these longitudinal studies, to be dogmatic

about peritraumatic dissociation being a risk factor for PTSD. Other researchers feel that much of the current research on the link between peritraumatic dissociation (PD) and PTSD have used cross-sectional research, with retrospective self-reports, and that it would be better to use a prospective longitudinal research design to provide a stronger empirical base for this causal link (Marshall & Schell, 2002). A prospective and longitudinal design was used to study victims of stranger assaults. Results confirmed that, with crime victims, the more PD that occurred during the assaults, the greater the chances of subsequently meeting PTSD criteria (Birmes, Carreras, & Charlet, 2001). Additionally, researchers prospectively sought to examine the strength of both PD and acute stress for predicting PTSD symptoms in a group of assault victims. Results indicated that PD and acute stress symptoms explained 33% of the variance in PTSD symptoms (Birmes et al., 2003). It is useful to consider both Acute Stress Disorder symptoms and PD when predicting PTSD symptom severity.

Acute Stress Disorder

PD has been defined as dissociation that occurs during a traumatic event and immediately after (Brunet et al., 2001). Persistent dissociation, on the other hand, includes symptoms that are still evident at the time of later assessments (Panasetis & Bryant, 2003). The DSM-IV-TR definition of Acute Stress Disorder (ASD) suggests that PD and persistent dissociation are closely linked. Panasetis and Bryant found that persistent dissociation was more closely linked with PTSD than PD. The persistent dissociation paradigm was designed to capture present state dissociative experiences of clients. Utilizing a modified PDEQ, the participants in this research were asked to

describe their reactions and experiences as were being experienced in the present tense (Panasetis & Bryant, 2003).

Research on measuring current dissociative states had been limited, until the Clinician Administered Dissociative States Scale (CADSS) was developed by Bremner, Krystal, Putnam, Southwick, Marmar, Charney et al. (1998). While an instrument such as the DES (Bernstein & Putnam, 1986) had been developed to measure dissociation, this instrument was not able to measure current dissociative states from both subjective and objective perspectives. The CADSS has a total of 27 items with 8 items scored by an observer and 19 items scored by a participant. The CADSS can assess present-state dissociative symptomatology and can be used as a repeated measure.

Research has demonstrated that ASD that develops after criminal victimization (Brewin, Andrews, Rose, & Kirk, 1999) and traffic accidents (Harvey & Bryant, 2000) is a predictor of PTSD. More than one researcher has expressed the suggestion that consideration should be given by both the DSM V committee and trauma researchers to the diagnostic overlap between ASD and PTSD when assessing victims of violence (Clayton, 2004). Specifically, Clayton addressed both the research of Lanius, Hopper and Menon (2003) and Brewin (2003). Lanius and Hopper responded to Clayton by stating that while diagnostic constructs such as PTSD and ASD can be helpful to some extent in assessing clients, these constructs have limitations (Lanius et al., 2003). In attempting to understand PTSD and ASD, we need to identify the limitations of diagnostic labels, recognize individual differences, and consider the functional significance of these influences (Lanius & Hopper, 2003). Rather than seeing all our clients as people with "typical" PTSD or ASD responses, we would do better to understand that these

diagnostic labels do not adequately address individual differences that clients express. Brewin responded to Clayton by stating that in trying to understand the processes of PTSD and ASD, researchers would benefit more from understanding the processes than from refining the diagnoses (Brewin, Andrews, & Rose, 2003).

ASD is the diagnosis that precedes PTSD and may predict later development of PTSD. ASD diagnosis includes stress reactions, and at least 3 of the following dissociative symptoms: (a) numbing and detachment; (b) reduction of awareness of surroundings; (c) derealization; (d) depersonalization; and (e) dissociative amnesia (i.e. inability to recall important details of the trauma). Duration of symptoms must be less than 4 weeks. If these symptoms continue, PTSD diagnosis is considered (DSM-IV, APA, 1994).

ASD was introduced in the DSM-IV (APA, 1994) to describe more immediate responses to traumatic stressors (i.e., those that occur within the first month after trauma). A PTSD diagnosis can be given only after a month has elapsed post trauma. The main differences between ASD and PTSD are duration of traumatic symptoms and ASD's focus on dissociative symptoms (Harvey & Bryant, 2002). There has been enthusiastic support for this diagnosis, as well as criticism. Harvey and Bryant have argued that ASD was a theoretically-based diagnosis, lacking a strong scientific basis. In a review and critique of ASD, they suggest that the theoretical and empirical support for ASD is unsound and challenge its ongoing use. Prospective studies indicate that there are factors in addition to dissociative symptoms that are at work in the development of PTSD. The roles of biological and cognitive processes also need to be considered, in terms of mediating variables in the development of PTSD. From a theoretical base, further

research is needed to identify the way in which biological, cognitive and dissociative phenomena interact in response to traumas.

Research was conducted to analyze the predictors of acute stress in young adults who had been injured in community violence (Jaycox, Marshall, & Orlando, 2003). Neuroticism, chronic depression, injury severity and PD were shown to be significantly related to the development of PTSD. Another study was conducted to assess the relationships between PD, ASD and the early development of PTSD in participants who had suffered from incidents of general crime. Results showed that high levels of PD and ASD following violent assaults are risk factors for early PTSD development (Birmes et al., 2001).

Researchers have also examined the influence of gender on the relationship between ASD and PTSD with motor vehicle accident patients. At six-month follow-up 57% of males and 92% of females who had met the criteria for ASD were diagnosed with PTSD. Females demonstrated more dissociative symptoms than males, which is an indication of ASD being a better predictor of subsequent PTSD development in females than males (Bryant & Harvey, 2002).

Post-traumatic Stress Disorder (PTSD) & Memory

PTSD involves recurring memories of a severe traumatic event that an individual has experienced. Individuals can lose a sense of the present context and, when triggered, feel that they are right back in the event, reliving it. It is very difficult for individuals suffering from PTSD to recall important aspects of the event. Often the memory structure is fragmented, creating confusion regarding important issues and order of events. There is evidence to link memory disorganization and PTSD development. Theorists have

attempted to answer two questions: First, how do disorganized trauma memories contribute to PTSD symptomatology? Second, why are trauma memories disorganized? (Halligan, Michael, Clark & Ehlers, 2003).

Some theorists have drawn on current theories of autobiographical memory to explain the link between disorganized trauma memories and PTSD symptomatology (Brewin et al., 1996). It is thought that autobiographical events are stored in an autobiographical memory base that relies on associations that are temporally and thematically related (Halligan et al., 2003). Trauma theorists explain that disorganized memories develop, as a result of the overwhelming nature of traumatic events, which impairs peritraumatic cognitive processing (Brewin et al., 1996); and PD is associated with disorganized trauma narratives. Dissociation is a complex concept, however and mechanisms such as depersonalization, derealization and emotional numbing need further elaboration in the study of disorganized trauma memories.

Ehlers and Clark (2000) proposed two cognitive processing systems to explain the unusual cognitive processing during traumas. First, it is proposed that people who engage in data-driven processing during trauma, are processing mainly at a surface level of sensory impressions. They do little elaboration of contextual elements, and are at greater risk for development of PTSD. Secondly, it is proposed that those who fail to establish a *self-referent perspective* (i.e., a perspective that involves processing experiences with respect to the self) will disrupt the integration of memory in the autobiographical memory base (Halligan et al., 2003).

Two studies were conducted to explore cognitive processing (dissociation, data-driven processing, self-referent processing) during traumas, including the influence of

deficits of recall in the development of PTSD. The results followed the hypotheses. All measures of peritraumatic cognitive processing were related to disorganization in trauma memory (Halligan et al., 2003).

Disorganization in trauma memories, which includes gaps in recall and difficulty producing coherent narratives, is typical of normal trauma memories (e.g., Tromp, Koss, Figueredo, & Tharan, 1995), and has been described by PTSD researchers, including Foa, Molnar and Cashman (1995), and Harvey and Bryant (1999). This disorganization may partially explain the tendency for PTSD patients in psychotherapy to progressively recall additional details of their traumatic experiences, so they produce longer narratives at the end than at the beginning of therapy (Foa et al., 1995). The structure of trauma narratives in PTSD clients is complex, however. Periods of strategic recall are interspersed with periods of intense distress where traumatized individuals spontaneously relive specific moments of the events in the form of flashbacks (Ehlers & Clark, 2000). During these moments a variety of dissociative responses have been described. The occurrence of dissociative responses is related to higher levels of fragmentation in narrative memories (Murray, Ehlers, & Mayou, 2002).

The hypothesis that peritraumatic dissociation may create disorganized and fragmented memories and may interfere with encoding of traumatic memories has been researched in at least two studies (Zoellner, Alvarez-Conrad, & Foa, 2002). Amir, Stafford, Freshman, and Foa (1998) investigated the clarity of words in trauma narratives to determine the degree of organization. They defined articulation (complexity) and fragmentation by markers of grade level and reading ease. They discovered that the degree of clarity in trauma narratives of recent assault victims was inversely related to

severity of PTSD 3 months later. Also using trauma narratives, Foa, Molnar, and Cashman (1995) investigated changes between the beginning and ending of therapy for traumatic memories, while participants were receiving exposure therapy. The narratives were coded using criteria such as organized and disorganized thoughts, repetition of utterances, negative feelings, sensations, and actions. Results indicated that length of narratives, percentage of thoughts and feelings, and level of organization increased with treatment. As well, decrease in fragmentation was related to reduction in PTSD symptoms. These results imply that fragmentation of trauma narratives is related to consequent posttrauma pathology.

Trauma narrative analysis provides an opportunity to evaluate the role that PD may have on traumatic memory. Zoellner, Alvarez-Conrad, and Foa (2002), in their study, examined the relationship between PD that was reported at the time of the event, trauma narrative structure at the beginning of PTSD interventions and the ensuing pathology following PTSD therapy. Trauma narratives from 28 female sexual and nonsexual assault victims who reported both high and low PD were evaluated. Three categories of physical structure, grade level and reading ease, and emotional content were used for coding the narratives. Results indicated that participants with high PD had higher-grade levels and a tendency toward lower reading ease than those with low PD. Both higher-grade levels and lower reading ease in the pre-threat sections of the narrative were connected with reliving and anxiety symptoms.

In order to explain these phenomena, a cognitive theory based on multiple memory systems was proposed by Brewin et al. (1996). According to his dual process theory, memories of personally experienced traumatic events can be of two distinct types,

stored in different representational formats. One type, *verbally accessible memories* (VAMs), supports ordinary autobiographical memories that can be retrieved automatically, or by using deliberate, strategic processes. They contain information that individuals have attended to before, during, and after their traumatic events, which has received sufficient conscious processing to be transferred to long-term memory storage, in forms that can later be deliberately retrieved. The emotions that accompany VAMs involve cognitive appraisals that occurred both during and after the trauma (Brewin, 2001).

The second memory format, *situationally accessed memories* (SAMs), supports specific trauma-related dreams and "flashbacks" that are particularly notable features of PTSD. In dual representation theory, it is proposed that the SAM system contains information that has been obtained from more extensive, lower-level perceptual processing of traumatic scenes (e.g., visuospatial information that has received little conscious processing) and of the person's bodily (e.g., autonomic, sensorimotor) responses to it. Because the SAM system does not use verbal coding, these memories are difficult to communicate to others and do not necessarily interact with other autobiographical knowledge. Emotions that accompany SAMs are restricted to those that were experienced during the traumas or in temporally contiguous subsequent moments of intense arousal. They consist mainly of fear, helplessness and horror, and may less often include emotional states such as shame (Grey, Holmes, & Brewin, 2000).

The distinction between declarative and nondeclarative, or explicit and implicit, forms of memory is important to bear in mind, even though they do not directly correspond to clinical observations of PTSD. Declarative memory involves

representations of facts and events that are subject to conscious recollection, verbal reflection, and explicit expression (Eichenbaum, 1997). A prime example is autobiographical memory.

Nondeclarative memory is thought to be expressed in a wide variety of phenomena, such as the acquisition of motor and cognitive skills, priming, and conditioning. It is usually characterised by its inaccessibility to deliberate, conscious recall, being automatically elicited under conditions that bear strong similarities to the conditions under which the original learning occurred. This means that memories are elicited in a rather inflexible way, by highly specific cues (Brewin, 2001).

Another memory taxonomy that has been developed that is similar to VAMs and SAMs is what have been termed *implicit*/*sensory memories* and *narrative*/ *autobiographical memories* (Briere, 2002). Implicit/sensory traumatic memories are re-experienced later in life on a sensory level as flashbacks. These memories are generally devoid of autobiographical material, and are often experienced as intrusions of unexpected sensations rather than as intentional remembering. They would also be considered SAMs.

Narrative/autobiographical memories may be encoded at the explicit, verbally-mediated level. In this case, autobiographical memories and negative cognitions can be triggered by similar stimuli, which, in turn, activate negative emotional responses associated with memories. Clinical experience suggests that, for those who have experienced significant childhood traumas, autobiographically-encoded memories are particularly distressing mainly because they are able to activate related implicit memory intrusions. In other words, explicit, verbally-mediated memory material may be most

difficult to deal with because of its ability to activate associated nonverbal feelings. These memories would also be considered VAMs memories. Understanding the differences between SAMs and VAMs is helpful when providing psychotherapy for trauma survivors.

The Unique Effects of Psychotherapy with PTSD

Briere (2002) addressed the issue of balance in the process of effective psychotherapy. This was conceptualized, in part, as taking place in the context of the *therapeutic window*. This refers to the psychological location between overwhelming exposure and excessive avoidance. The psychotherapeutic process must proceed carefully in order to avoid overwhelming the client and reinforcing the use of additional avoidance responses that might further present barriers to therapeutic progress. In this regard, he talked about the *kindling* e*ffect*. Clients in therapy may get exposed to negative material in a session, but it doesn't seem to affect them. However, when they get home they have *emotional meltdowns*. The kindling sets off the metaphorical fire.

Part of this metaphorical fire can include verbal aphasia. When people have PTSD and are triggered, their verbal fluency is reduced. They have a hard time putting their experiences into words. This is thought to be associated with a portion of the brain known as Broca's Area. There is a reduction in regional cerebral blood flow in that area of the brain during triggering of traumatic material. Rausch et al. (1996) measured changes in regional Cerebral Blood Flow (rCBF) in PTSD patients between resting (non-triggered) states, and states in which they were "triggered" by the reading of individualized scripts of previous traumas they had encountered. Script-driven scans revealed marked lateralization of activity in the right hemisphere (limbic, paralimbic and visual cortex),

along with decreases in rCBF in the left inferior frontal (Broca's) area and the middle temporal cortex.

Recent neuroscience research findings also evidence interesting developments in terms of connections between olfactory sensory memory processing, and (a) the limbic system (particularly the amygdala and hippocampus), (b) paralimbic structures (particularly the anterior cingulate), and (c) the orbitofrontal cortex. Lledo, Gheusi and Vincent (2005) note a number of neurophysiological connections that facilitate associations between mechanisms for olfactory sensation and emotions:

1. The primary olfactory cortex (vomeronasal system) projects to the lateral nucleus of the amygdala, the thalamus, and the entorhinal area which in turn projects to the hippocampus. Savic (2005) suggests that these connections lead to emotional enhancement, and unique long term retention, of odour memories;
2. Projections of the olfactory bulb reach medial olfactory areas, including the piroform cortex, the cortico-medial nucleus of the amygdala, and ultimately the orbitofrontal cortex.

They also note that the olfactory system is the first to become active in newborns, and that activation of the amygdala immediately induces emotions and facilitates coding of memories. Savic (2005) suggests that immediate activation of the amygdala with passive perception of odours (essential for valence assessment and activation with intense stimuli) underlies the common experience that olfactory stimuli produce immediate recall of emotional valences related to sources of smell. Royet et al. (2000) noted that the data suggest a more potent activating effect of emotionally valenced olfactory cues over visual and auditory stimuli on the amygdala. They suggest that the primary olfactory cortex

serves as an associative memory system, which allows for the association of odour stimuli with memory traces of previously experienced events (implicit, unconscious memories). Schoenbaum, Chiba and Gallagher (1999) observed that basolateral amygdala neurons fired, based on the associative significance of odours, unconsciously and immediately. Zald and Pardo (1997) noted that negative, intense odours were associated with increased regional cerebral blood flow in the amygdala and the left orbitofrontal cortex. Winston, Gottfried, Kilner and Dolan (2005) stressed that although there are two fundamental dimensions of emotion (arousal/intensity and valence), the amygdala codes neither intensity nor valence per se, but a combination that reflects the overall emotional value of a stimulus. Together, these associations make olfactory sensations the predominant sensory inputs and outputs concomitant with traumatic memories.

As clinicians consider therapeutic interventions for PTSD clients it is important to be aware of the functioning of the brain as it is triggered both in assessment analyses and in treatment. While there are several types of interventions for trauma survivors, one of the processes often involved in therapy for PTSD includes writing about the traumas. There has been research on the relationship between writing about a severe trauma and its effects on an individual's physiological and psychological adjustments (Esterling, L'Abate, Murray, & Pennebaker, 1999). The investigators discovered that participants who wrote about their traumas experienced improvements in psychological functioning. Analysis of the writing showed that individuals who included both their feelings and the facts about their traumas had fewer health problems than those who included only the facts. A study of the setting in which the disclosure to others occurred revealed that

participants who revealed their traumas to others expressed less emotion while sharing than when alone (Brown & Heimberg, 2001).

Despite these important contributions, Pennebaker et al.'s findings have not been consistently replicated by others (e.g., Sharksy, 1997). One limitation is the inclusion of many types of traumas, many of which would not meet the DSM-IV criteria for PTSD (American Psychiatric Association, 1994). As well, none of these studies included standardized measures of psychopathology, and some included no post-disclosure assessment (Brown & Heimberg, 2001). A study was conducted using Pennebakers' paradigm with a sample of female students who had experienced at least one attempted or completed rape (Brown & Heimberg, 2001). The three hypotheses were that (a) rape victims who disclosed both facts and feelings would show greater improvement than those who only disclosed the facts, (b) victims who shared their stories in the presence of others would experience greater improvements than those who disclosed alone, and (c) the degree of disclosure in the narratives would be associated with symptom reduction. Degree of disclosure was measured by the number of words written in trauma narratives and number of self-references. Both number of words and number of self-references predicted improvement. These results revealed that victims who told someone about the rape during the follow-up period wrote significantly more words than those who told no one. Number of self-references in the essays was not significantly associated with the number of people told about the rape during the follow-up period. The number of self-references had a curvilinear relationship with symptom reduction. A moderate level of disclosure of personal information was associated with decreases in symptoms of social anxiety (Brown & Heimberg, 2001).

While there is research that seems to indicate that writing about traumatic memories in therapy leads to improvement there is other research that seems to indicate that some memories of past abuse are not true.

False memory debate. The issue of recall of childhood traumas such as sexual abuse has ignited considerable public debate about *repressed* and *recovered* memories. Criminal cases based on recently recalled (but previously forgotten) abuse have generated a great deal of attention to the possibility that such delayed memories of childhood abuse are false (Lindsay & Read, 1994; Loftus, 1993). The argument by some such researchers is that if memories recalled by individuals claiming abuse are not intentional they must be false. In other words, if any individual's originally recalled memories are not verbally-based, but rather somatically-based they must be false. There are other researchers, however (Williams, 1994; Kluft, 1999) who have challenged the conclusions of the *false memory group*. In one study, 129 women with previously documented histories of sexual victimization were interviewed and asked detailed questions about their abuse histories. They answered the question, "Do people actually forget traumatic events such as child sexual abuse, and if so, how common is such forgetting?" A large proportion of the women did not recall the abuse that had been reported 17 years earlier. Women who were younger at the time of the abuse and those who were molested by someone they knew were more likely to have no recall of the abuse. Implications of this research are that long periods with no memories of abuse should not be regarded as evidence that abuse did not occur (Williams, 1994).

Summary

Previous research has focused on the relationship between Peritraumatic Dissociation (PD) and Posttraumatic Stress Disorder (PTSD). As well the impact of PTSD and PD on traumatic memory has been studied. In order to research the role of PD on traumatic memories, Hopper and van der Kolk (2001) developed instruments to both retrieve the traumatic memory (the Traumatic Scene Form - TSF), and to assess the traumatic memory (the Traumatic Memory Inventory – Post-Script Version - TMI-PS). However, Hopper and van der Kolk (2001) did not explicitly address the impact of dissociation upon the process of completing the TSF. The fact that people dissociate while filling out the TSF was a confounding variable that Hopper and van der Kolk did not consider. They designed the TSF to be used in a script, for the purpose of provoking or triggering participants' traumatic memories. In the current study, in order to examine PD and its relationship with traumatic memory, the issue of current dissociation is explored.

Hypotheses

The first hypothesis is important because it is exploring people's experiences with PD. The intent was to examine the impact of PD on the writing trauma narratives in the TSF. If PD is high, people would be expected to have difficulty writing their TSF narratives. In order to assess difficulty of writing, the author adapted Jennifer Freyd's narrative coding scheme for assessing narrative organization.

In order to understand the memory process in the writing of these narratives, Brewin's dual processing model of VAMs and SAMs was considered. The VAMs portion of this dual processing model is useful for predicting whether participants would

have difficulty with VAMs. Could they remember and give clear verbal accounts of their traumatic experiences? Normal memory operates through VAMs, in which individuals are able to verbally recount their traumatic events.

The second hypothesis is important because it addresses the experiences of individuals who are actually reliving their memories. This is theoretically addressed through the SAMs portion of Brewin's dual processing model. This hypothesis addresses the portions of traumatic memories that involve reliving (i.e., when individuals feel they are actually reexperiencing their traumas). It is such overwhelming experiences that disrupt the consolidation of VAMs and it is likely that PD interrupts normal memory processes and leads to the formation of SAMs.

In light of the literature reviewed, the following hypotheses are proposed: If peritraumatic dissociation is high, participants will have (a) greater difficulty verbally recounting their stories (lower levels of Cohesion and Coherence), and (b) will use fewer words in recounting their stories, when compared to participants who report lower peritraumatic dissociation. If peritraumatic dissociation is high, participants will experience and report higher levels of intensity and reliving for somatic and affective aspects of their traumatic recollections (i.e., more SAMs triggering) in response to script-driven symptom provocation than those whose peritraumatic dissociation levels are low.

CHAPTER 3: METHODS

The goal of this study was to examine patterns of association between (a) verbally-mediated recollections of traumatic incidents (i.e., VAMs) and peritraumatic dissociation; and between (b) somatically-mediated recollections of traumatic incidents (i.e., SAMs) and peritraumatic dissociation. In observing these patterns it is hoped that, ultimately, participants will be assisted in their intentional recall of what was triggered, rather than only what was initially (intentionally, verbally) remembered.

The above generic, broad terms are operationalized in this study as follows: Verbally-mediated recollections (i.e., VAMs) are measured by word count and organization (coherence & cohesion) of the assault incident description on the TSF (Hopper & van der Kolk, 2001). Somatically-mediated recollections (i.e., SAMs) are measured by Intensity and Re-experiencing (Re-living) scores for somatic (visual, tactile, olfactory, auditory) and affective (fear, sadness, shame, anger) subscales of the TMI-PS (Hopper & van der Kolk, 2001). Peritraumatic dissociation was measured by the Peritraumatic Dissociative Experiences Questionnaire (PDEQ; Marmar, Weiss & Metzler, 1997).

Participants

Twenty nine female sexual assault survivors (see Appendix D for demographics) were assessed (see Appendix E for research assessment protocols) as experiencing PTSD symptoms such as peritraumatic dissociation were recruited through methods such as newspaper advertisements, newspaper articles, television presentations by the principal investigator, and posters. They all met the criteria for participation in the study (see study inclusion and exclusion criteria in Appendix F).

Convention requires power to be above .80 (80%). Given this sample size (29 cases) and a significance level of .05, a correlation of .43 can be detected with 80% power. With 50% power, only correlations above .30 (9%; medium effect size) will be considered statistically significant at the .05 level. To balance considerations of statistical power (due to the small sample size and the danger of false negative conclusions) and sampling error (due to random fluctuations in values due to multiple statistical tests and the danger of false positive conclusions), we did not make corrections to significance levels to allow for family-wise error rates. This strategy places additional emphasis on the need for replication of findings reported here.

Materials

Screening Instruments

Traumatic Antecedents Questionnaire (TAQ). The TAQ (van der Kolk, Spinazzola, & Hopper, 2001) is a 48-item self-report instrument to gather information regarding lifetime experiences. It was administered to screen out those individuals who had experienced severe childhood abuse, trauma, neglect and safety issue (see Appendixes G & H).

Dissociative Experiences Scale (DES). The DES (Carlson & Putnam, 1986) is a 28-item questionnaire was administered to assess for an individuals level of dissociation (see Appendix I). Individuals with a high level of dissociation (a score of 40 or greater) on the DES were excluded from the study. Since this study was only investigating brief therapy interventions, it would have been unethical to expose people experiencing high levels of dissociation to repeated script-driven symptom provocation.

Clinician-Administered PTSD Scale for DSM-IV (CAPS). The CAPS (Blake, Weathers, Nagy, Kaloupek, Charney, &. Keane, 1998) was administered, to assess whether participants met the DSM-IV-TR criteria for PTSD Individuals with a (study cutoff score: greater than 45; see appendix J) were included in the study. Weathers, Ruscio & Keane (1999) developed nine scoring rules for the CAPS. Of these, Orr (1997) developed a scoring rule termed the *total CAPS severity score*. This score involves frequency and intensity summed across all 17 PTSD symptoms. Orr established a total CAPS severity score of 45 as being the cut-off for physiological response to script-driven imagery in adult female survivors of childhood sexual abuse. For that reason, that score was used as the selection cut-off in this study.

Other Instruments

Traumatic Scene Form (TSF). The TSF (Hopper & van der Kolk, 2001; see Appendix L) is used to capture the details of traumatic events for symptom provocation procedures. As well as writing a narrative of the traumatic event, participants endorse (circle) words from a list of bodily sensations. From the TSF, an individualized script is created for each participant, portraying the most traumatic components of the experience for audio recording. Each tape is 45 to 50 seconds in duration. The TSF is not an independent instrument but a procedure for gathering trauma accounts from participants. The validity of the accounts received remains to be investigated.

Traumatic Memory Inventory – Post Script Version (TMI – PS). The TMI – PS (Hopper & van der Kolk, 2001; see Appendix M) is an instrument used to facilitate and record processing of script-driven traumatic memories. Included are intensity and reliving scores. With the intensity score participants are asked to rate the intensity of both their

sensory modality and affective memories, with *0* being not at all present and *10* being the most intense possible. With the reliving score participants were asked to rate whether they relived any of their sensory modality or affective memories as opposed to just remembering them. For example, for auditory memories they were asked if they felt like they were hearing the same sound or just remembering the sound. The TMI-PS was adapted for this study. This adaptation included the addition of 4 affective modalities: Fear/Horror; Sadness/Hurt; Shame/Humiliation; and Anger/Rage. This instrument is under development and preliminary information on validity and reliability is being gathered.

Peritraumatic Dissociative Experiences Questionnaire (PDEQ). The PDEQ (see Appendix N) is an instrument to measure level of dissociation at, or temporally contiguous to, the time of a traumatic event (Marmar, Weiss & Metzler, 1997). In this study, the PDEQ was used several times in the assessment protocol of the larger project. It was administered at the screening and pre-testing phase, at the second pre-treatment assessment and at the 3- month follow-up assessment (see appendix A). When the concern arose that participants did not fully understand the instructions regarding their responses to the PDEQ, a new set of instructions was read aloud for participants, as follows:

> You have completed many questionnaires during previous assessments in this study. It is very important that in your answers to this first questionnaire (1 page, 2-sided Immediate Reactions & Experiences), you think about what you experienced *at the time of the assault or during the hours or days immediately afterward*, <u>not</u> about what you have been experiencing recently.

A study was initially conducted to assess the reliability and validity of this measure of Peritraumatic Dissociation (Marmar et al., 1994). Included in this research were additional questions to determine whether there was a relationship between dissociative experiences during traumatic warfare and later development of PTSD. A total of 251 male Vietnam veterans were examined, to determine relationships between combat stress and reports of dissociation during the actual combat trauma. The accuracy of case classifications was described as strong (kappa = 0.63), demonstrating the reliability and validity of the PDEQ-Rater Version and supporting the theoretical linkage between trauma and dissociation.

Another study was conducted to evaluate the predictive validity of widely used instruments associated with PTSD (Shalev, Freedman, Peri, Brandes, & Sahar, 1997). Rather than examine individual characteristics of participants or aspects of specific traumas, the intent of the research was to assess the psychometric properties of, and correlations between, these measures. The Impact of Events Scale (IES; Horowitz et al., 1979) used to assesses stress-related symptoms, Speilberger's State Anxiety (SANX), and the Peritraumatic Dissociative Experiences Questionnairie (PDEQ) were administered to 239 individuals who had experienced a traumatic event one week previously. The IES, the SANX, the civilian version of the Mississippi Scale for Combat Related PTSD (MISS) and the Clinician Administered PTSD Scale (CAPS) were then administered one month, and four months, post-trauma. Results showed that all questionnaires used in the study performed better than chance in predicting later development of PTSD. Interestingly, the instruments used to measure PTSD symptoms (IES and MISS) were no

better at assessing PTSD risk immediately after the trauma than were the SANX or PDEQ. This pattern suggests that PTSD may take some months to develop.

Birmes et al. (2005) found that there were significant correlations between PDEQ and ASD and PTSD symptoms, indicating moderate to strong convergent validity. The researchers claimed it was the first published study to evaluate the detailed psychometric properties of the PDEQ-10 Item Self-Report Version (PDEQ-10SRV).

The PDEQ has also been used successfully with different ethnic groups (Zatzick, Marmar, Weiss, & Metzler, 1994). Three measures (War Zone Stress Exposure, PDEQ-RV and DES) were used to assess traumatic stress exposure and dissociation in male Vietnam theater veterans (African-American, Euro-American and Hispanic ethnic groups). They found that, after controlling for the effects of war zone stress exposure significant differences in both dissociative and peritraumtic dissociative responses across the three ethnic groups were no longer present. It was greater exposure to traumatic stress rather than ethnicity, that led to more dissociative responses.

State Dependent Peritraumatic Dissociation (SDPD). SDPD reflects perceptions of peritraumatic dissociation immediately after administration of the TSF. The TSF triggered emotional and dissociative responses in participants, modifying their recollections of dissociation at the time of the original sexual assaults. This measure of peritraumatic dissociation was administered at the screening and pre-testing assessment session for participants, along with the following measures: Traumatic Antecedent Questionnaire (TAQ; a measure of trauma history), Dissociative Experiences Scale (DES; a measure of recent dissociation), Clinician-Administered PTSD Scale (CAPS; a structured interview for PTSD symptoms), Trauma Scene Form (TSF; a written

recounting of the entire SA incident), and the Beck Depression Inventory (BDI II; a review of depression symptoms).

The impact of filling out other instruments prior to completing the PDEQ is illustrated by the following quote from a member of the research team observing one of the women:

> "…Completed the Traumatic Scene Form. Participant expressed she was already feeling her heart beat faster and her breathing restrict at the thought of recalling the assault. However, she also explained that she has had to write it out before so recalling and writing about it wouldn't be a problem. She did not pause a lot during the process but was visibly shaking once she stopped and needed a moment to calm down before proceeding with the BDI and the Immediate Reactions & Experiences Form" (the SDPD). (Melissa Warren, personal communication, May 16, 2006)

This comment by this researcher was not atypical of the reactions of participants completing the instruments and interviews in that first appointment, especially in response to the Trauma Scene Form. In contrast, other administrations of the PDEQ were both administered temporally contiguous to much less evocative questionnaires and interviews (Trauma-Related Guilt Inventory, Impact of Events Scale-Revised, Social Avoidance & Distress Scale, Dissociative Experiences Scale, and Beck Depression Inventory (see Figure 1).

The GREAT Coding Scheme (GCS). In order to assess the organizational quality of the TSF trauma narratives, Klest and Freyd's (in press) GREAT Coding Scheme for trauma narratives was adapted (see Appendix O). The dimension of Organization with

the elements of *coherence* and *cohesion* was selected from the Great Coding Scheme to assess trauma narratives written for the TSF. The GCS dimensions of Topic and Voice were not used in this study. The coherence codes reflect the degree to which individual trauma narratives had clear overall structure including an introduction, middle and ending. The cohesion score represented the degree to which there were smooth transitions in the narrative. Cohesion and coherence were selected from the GREAT coding scheme because they showed the strongest relationships with the more general construct of difficulty of writing, in development of the scheme (Klest & Freyd, in press; Klest & Freyd, 2004, November).

Current Dissociation Scale – 7 Items (CDS-7). The CDS-7 was a current dissociation scale developed for the present study. A description of the process of scale development is provided in Appendix P. The CDS-7 is an indirect measure of current dissociation. Several items on the scale are tied directly to the script driven symptom provocation procedure. The CDS-7 is a measure that was temporally contiguous with SAMs, and linked to the TMI-PS. Along with the TMI-PS administration during the Pre-Treatment Assessment, the CDS-7 was administered. This preliminary measure helped to identify the strength of dissociative patterns of response during the script-driven provocation procedures. The CDS-7 was developed for use in this study rather than the CADSS (Bremner et al., 1998) to take advantage of the brevity of the instrument. The CADSS has 27 items, as opposed to the 7 items of the CDS-7.

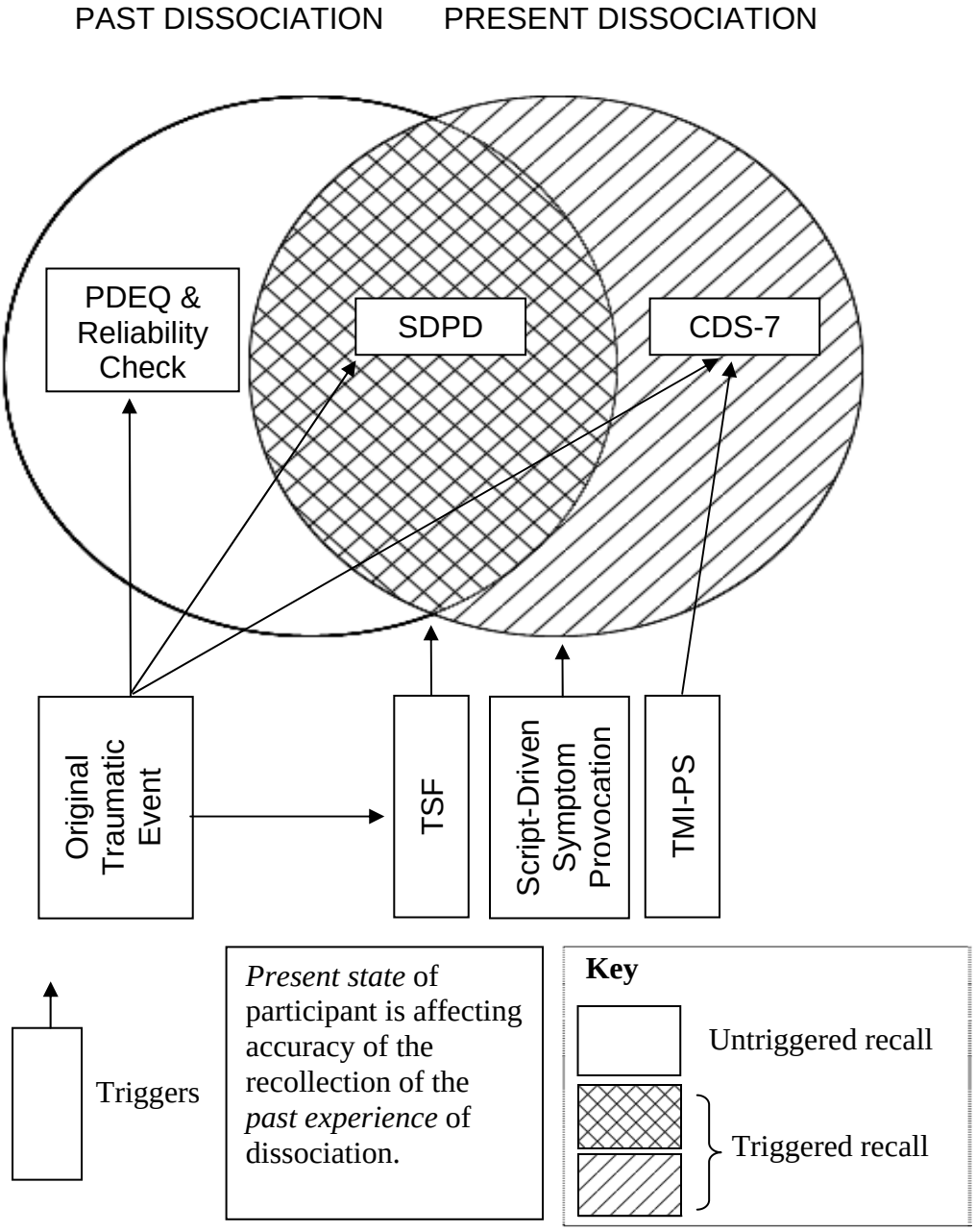

Figure 1. Diagram of the sequence of triggering events influencing responses on the PDEQ, the SDPD, and the CDS-7. PDEQ = Peritraumatic Dissociative Experiences Questionnaire; SDPD = State Dependent Peritraumatic Dissociation; CDS-7 = Current Dissociation Scale – 7 items; TMI-PS = Traumatic Memory Inventory – Post-Script Version; TSF = Trauma Scene Form.

Procedures

Once the clients had been screened, accepted into the study and had read and signed the informed consent (see Appendix K) then they completed the TSF (see Appendix L). This involved writing an account of their recollection of their sexual assault. In addition, they were to circle a group of bodily sensations that they had experienced during their assault. Once this was completed the author of this thesis then drafted a version of the account provided in the TSF, including description of some of the bodily sensations experienced during the assault. This script was designed to reflect the most emotionally intense part of the assault.

Script Driven Symptom Provocation Paradigm

After the narrative account had been shortened it was recorded onto an audio tape of 45 to 50 seconds in duration. This tape was then played several times throughout the study during brain wave assessments. The Script-Driven Symptom Provocation paradigm procedure was developed by Lang and his colleagues (Lang, Levin, Miller, & Kozak, 1983; Levin, Cook, & Lang, 1982). Their research focused on their bioinformational theory of emotion and the original research technique was devised to help access emotion networks.

Application of this approach to PTSD (in healthy individuals vs. Vietnam War veterans with PTSD) was first validated in a study by Pitman and colleagues (Pitman, Orr, Forgue, de Jong, & Claiborn, 1987) and extended to other anxiety disorders (Pitman, Orr, Forgue, Altman, de Jong, & Herz, 1990). More recently, it has been extended and applied in PTSD treatment outcome studies and in research examining the neurobiological correlates of traumatic memory in participants with PTSD (Hopper &

van der Kolk, 2001; Lanius et al., 2001). Results showed lower levels of brain activation participants with PTSD (when compared with participants without PTSD) in the thalamus, the medial frontal cortex and the anterior cingulate gyrus (Lanius et al., 2001). There has been research on brain activation underlying the dissociative responses to script-driven imagery in sexual abuse-related Posttraumatic Stress Disorder (PTSD). Results showed that approximately 70% of participants relived their traumatic experiences and showed increases in heart rate while recalling their traumatic memories. The remaining 30% of participants had Dissociative responses with no concurrent heart rate increases (Austin, 2003; Grace, 2003; Lanius et al., 2002).

Immediately after the TSF was administered in the present study the SDPD was administered (see Appendix A). Following the pre-testing during the pre-treatment phase the TMI-PS was administered several times. Somatic, affective and cognitive characteristics of the memories were assessed using a brief structured interview, as follows: Immediately after a memory was provoked by the script-driven provocation tape, the TMI-PS was administered. First, participants were asked a free-recall question: “When you remembered the traumatic experience today, listening to the tape and /or during the imaging phase, how did you remember it?” Next, they were asked to report whether or not their experience included affective or somatic characteristics (visual, etc.) and if so, what they experienced. Then, participants were asked to go back and provide intensity/vividness (reliving, re-experiencing) ratings for each dimension, sense and emotion. Participants were then asked to rate the intensity of each aspect of the memory, with 0 being *not at all present* and 10 being *as intense or vivid as the original event*. Following that, three questions were posed related to fragmentation and narrative

incoherence. As a validity check, participants were then asked, “Were you thinking about, or remembering anything else while listening to the tape and or/during the imaging phase?” (Hopper & van der Kolk, 2001).

Clinically speaking, the reliving element of participants’ experiences is dependent on the extent to which participants lose connection with the present environment. When individuals are in full-blown flashbacks, they think they are actually back in the situation and lose touch with the room and the investigator. Closely associated with reliving is the intensity element. Intensity has to do with the extent to which participants feel the past situation in the present moment. If participants selected values of 0, this indicated that they did not feel intensity when thinking about the situation.

In order to assess narrative organization of the TSF’s the GREAT coding scheme was adapted and utilized. Four raters were trained in the use of the organization section of the GREAT coding scheme. Using preliminary versions of the adapted code, they rated 10 TSF narratives from a previous trauma studies (Austin, 2003; Grace, 2003). As training progressed, the GREAT coding scheme was adapted. Specifically, the instructions for coding coherence and cohesion were supplemented. Items were added to behavioural anchors for the ratings to facilitate application of the scheme effectively to TSF narratives. These adaptations were revised with inter-rater consultation. Such adaptation was necessary because the Klest and Freyd (2005) study had been applied to trauma narratives using different instructions than those for the TSF. As well, participants in the Oregon study were recruited based on their experiences with chronic pain and/or chronic health problems. In contrast, in the present study participants were suffering from PTSD as a result of sexual assaults.

CHAPTER 4: RESULTS

Preliminary Analyses

Often parametric and non-parametric correlations are reported separately, in order to minimize confusion. However, in this study both sets of analyses were conducted depending on unimodality or bimodality of the distributions of measures. These analyses were performed because both patterns (bimodal and continuous distributions) were evident in this data set. The parametric - non-parametric distinction is not emphasized in this study because the small sample size prevents detailed exploration of distribution properties. Results suggest that both discrete and continuous distributions of dissociation measures should be considered in future research. For the present analyses, the strength of observed relationships will be highlighted.

In exploratory data analysis, it is important to keep both Type I and Type II errors in mind. If our focus remained solely upon significance levels, one would be in danger of exaggerating Type II errors. Due to the small sample size, power will generally be low for most tests. The results report both significance levels and effect size statistics. In this study both medium and large effect sizes have been noted. For Pearson product-moment correlation coefficients, r^2 is reported. For Spearman's Rho (r_s) correlation coefficients, the terms *medium strength* and *large strength* relationships are used descriptively, because there are no widely accepted effect size measures reported for non-parametric correlations.

The Kolmogorov-Smirnov test of normality was conducted and all forms of the PDEQ satisfied the assumption of normality ($p > .05$). Test-retest reliability between the reliability-check version of PDEQ and SDPD was .63; Test retest reliability between the reliability-check version of PDEQ and the main PDEQ was .76. Internal consistency

reliability was assessed for all instruments designed to measure peritraumatic dissociation. Cronbach's Alpha for the reliability-check version of the PDEQ was .85. Cronbach's Alpha for the SDPD was .78 and for the PDEQ was .84.

Inter-rater reliability was calculated for the trauma narratives using the adapted GREAT--TSF Codes as noted above. The percentage of agreement for cohesion was 55% and the percentage of agreement for coherence was 59%. This scheme constituted the operationalization of the construct of difficulty writing in Hypothesis I. Less than 20% disagreement in ratings is within the acceptable range for established coding procedures. While the adapted version of the GREAT Coding Scheme, as applied to the TSF instrument, was not as reliable as hoped, it was sufficient for exploratory examination of ways that the GREAT Coding Scheme can be validly applied to TSF narratives.

No test-retest reliability administration of the TMI-PS was conducted. This was decided based on the consideration that it did not seem ethically justifiable to have clients endure additional script-driven symptom provocation and TMI-PS interviewing merely for the purpose of obtaining additional reliability statistics.

Experiment-wise error rates were considered. However, the overall proportion of significant tests for the current analysis was 19%, as substantially larger proportion than the established significance level ($p < .05$) used in this study. Thus, Type I error rates were not a major confound in this study.

Hypotheses

Hypothesis I

As shown in Table 1, the first hypothesis was not supported in that there was not a significant relationship demonstrated between PDEQ and Trauma Narrative Scores. Correlations of the PDEQ with Trauma Narrative Scores indicated small to medium strength relationships, but these correlations were not statistically significant at the $p <$ .05 level for this small sample. To extend these results, the relationship of the SDPD with Trauma Narrative Scores was also explored. Results in Table 1 indicate that the SDPD was negatively correlated with two of the Trauma Narrative Scores. Carry-over state dependent effects due to trauma triggering during the initial screening and pre-testing of participants (TSF) is likely what coloured the self-reports of peritraumatic dissociation during the SDPD, and contributed to this difference in associations. Two of the three Trauma Narrative Scores, Coherence and Cohesion, demonstrated medium strength relationships with the SDPD but Word Count was unrelated.

Table 1

Correlations between Peritraumatic Dissociation Measures and Trauma Narrative Scores

Trauma Narrative Scores	PDEQ Correlation	*p*	SDPD Correlation	*p*
Coherence[a]	-.16	.447	-.32	.044*
Cohesion[a]	-.20	.349	-.39	.019*
Word Count[b]	-.28	.171	-.16	.399

Note. $N = 29$ cases. PDEQ = Peritraumatic Dissociative Experiences Questionnaire; SDPD = State Dependent Peritraumatic Dissociation.

[a]Spearman correlations (r_s). [b]Pearson product-moment correlations (r).

*$p < .05$, one-tailed test.

Hypothesis II

As shown in Table 2, the second hypothesis was supported. There were significant relationships demonstrated between a number of TMI-PS subscales and dichotomous PDEQ scores. The PDEQ was significantly correlated with the TMI-PS sensory subscales for Olfactory Intensity, Olfactory Reliving, and Auditory Reliving. The only affective modality scores related to PDEQ were Sad Intensity and Sad Reliving. Generally, PDEQ scores showed bimodal distribution patterns. Quantitative PDEQ scores were also examined to extend our investigation of relationships with the TMI scores. The relationship between the quantitative version of PDEQ and Sad Reliving (r = .40) constituted a large effect size (.16). A strong relationship was demonstrated between the quantitative version of PDEQ and Sad Intensity (r_s = .54). Unlike the other sensory and affective modalities, TMI Sad affective modality scores tended to show stronger relationships with the quantitative form of the PDEQ than with the dichotomized form of the PDEQ.

As shown in Table 3, there were statistically significant correlations between TMI-PS scores and SDPD scores. Statistically significant relationships were observed between TMI-PS sensory subscales for Olfactory Intensity and Olfactory Reliving, with both SDPD and PDEQ scores. In contrast, the SDPD did not show statistically significant relations with TMI-PS scores for Sad Intensity, Sad Reliving, or Auditory Reliving. As shown in Figure 2, these comparisons reflect commonalities in the Olfactory Sensory modality and masking effects of state dependent dissociation for Sad affective and Auditory sensory modalities.

Table 2

Correlations between TMI-PS subscales and dichotomous PDEQ scores

TMI - PS Subscale	Correlation Coefficient	*p*
Visual Intensity	.10†	.314
Visual Reliving	.21	.163
Tactile Intensity	-.02†	.457
Tactile Reliving	-.05†	.414
Olfactory Intensity	.35†	.043*
Olfactory Reliving	.44	.015*
Auditory Intensity	.31†	.068
Auditory Reliving	.41	.020*
Fear Intensity	.08†	.345
Fear Reliving	.10	.319
Sad Intensity	.43†	.015*
Sad Reliving	.24	.123
Shame Intensity	.20†	.166
Shame Reliving	.23	.131
Anger Intensity	.29	.080
Anger Reliving	.32	.059

Note. N = 25 cases. TMI-PS = Traumatic Memory Inventory – Post Script Version; PDEQ = Peritraumatic Dissociative Experiences Questionnaire.

†Spearman correlations (r_s). Other coefficients are biserial coefficients (r_b).

*$p < .05$, one-tailed.

Table 3

Correlations between TMI-PS subscales and quantitative SDPD scores

Subscale	Correlation Coefficient	*p*
Visual Intensity	.01†	.489
Visual Reliving	-.06	.389
Tactile Intensity	-.20†	.147
Tactile Reliving	-.24†	.101
Olfactory Intensity	.32†	.047*
Olfactory Reliving	.36	.026*
Auditory Intensity	.07†	.361
Auditory Reliving	.12	.264
Fear Intensity	-.07†	.365
Fear Reliving	-.02	.468
Sad Intensity	-.03†	.445
Sad Reliving	-.00	.491
Shame Intensity	-.21†	.139
Shame Reliving	-.22	.122
Anger Intensity	.18	.182
Anger Reliving	.08	.339

Note. N = 29 cases. TMI-PS = Traumatic Memory Inventory – Post Script Version; SDPD = State Dependent Peritraumatic Dissociation.

†Spearman correlations (r_s). Other coefficients are biserial coefficients (r_b).

*$p < .05$, one-tailed test.

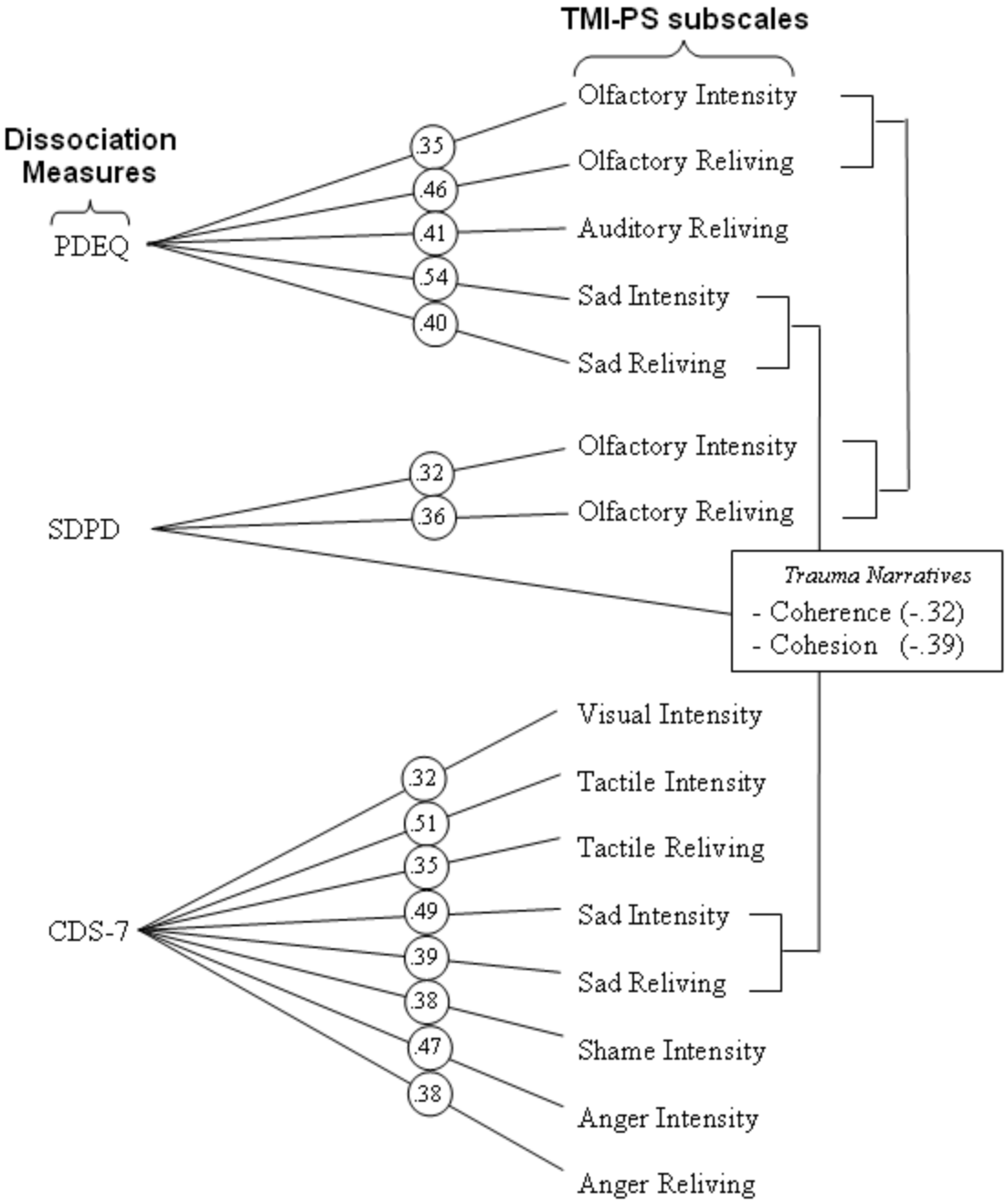

Figure 2. Visual summary of significant correlations among dissociation measures, provoked trauma memories and trauma narratives. PDEQ = Peritraumatic Dissociative Experiences Questionnaire, SDPD = State Dependent Peritraumatic Dissociation, CDS-7 = Current Dissociation Scale–7 item version, TMI-PS = Traumatic Memory Inventory – Post-Script Version.

Post hoc Tests - Correlations

The CDS-7 assessed state dissociation during the TMI-PS assessment process. The influence of dissociation on TMI-PS reports could vary, depending on modalities. As shown in Table 4, quantitative CDS-7 scores were correlated with TMI-PS sensory subscales for Tactile Intensity and Tactile Reliving. TMI-PS affective subscale scores that were significantly related to CDS-7 scores included Sad Intensity, Sad Reliving, Anger Intensity and Anger Reliving. Interestingly, a medium strength relationship was also demonstrated between the dichotomous version of the CDS–7 and the affective subscale score for Shame Intensity (r_s = 38, p = .021). Other TMI-PS subscales that were significantly ($p < .05$) correlated with the quantitative version of CDS-7 included Tactile Intensity (r_s = .51), Tactile Reliving (r_s = .35), and Sad Intensity (r_s = .49), constituting medium to large strength relationships. Medium and large effect sizes were demonstrated for Sad Reliving (r = .39, r^2 = .15), Anger Intensity (r = .47, r^2 = .22) and Anger Reliving (r = .38, r^2 = .14). This is evidence for selective enhancement of remembrance dimensions, depending on the emotions or physical sensations being triggered.

Summary

The relationships between TMI-PS subscales, trauma narrative organization, and dissociation measures shows ways in which trauma measures are impacted by trauma experiences. As shown in Figure 2, the pattern of relationships shown in these results involves a number of important variables. The global pattern is that peritraumatic dissociation is related to trauma memory. As the relationship between peritraumatic dissociation and trauma memory was being examined, we found that current dissociation needs to be considered.

Table 4

Correlations between TMI-PS subscales and quantitative CDS - 7 Scores

Variable	Correlation Coefficient	*P*
Visual Intensity	.32†	.047*
Visual Reliving	.31	.052
Tactile Intensity	.51†	.002*
Tactile Reliving	.35†	.031*
Olfactory Intensity	.03†	.432
Olfactory Reliving	.08	.347
Auditory Intensity	.16†	.200
Auditory Reliving	.13	.256
Fear Intensity	-.03†	.449
Fear Reliving	.04	.418
Sad Intensity	.49†	.003*
Sad Reliving	.39	.019*
Shame Intensity	.29†	.064
Shame Reliving	.28	.070
Anger Intensity	.47	.005*
Anger Reliving	.38	.021*

Note. N = 29 cases. TMI-PS = Traumatic Memory Inventory – Post Script Version; CDS-7 = Current Dissociation Scale – 7 Items.

†Spearman correlations (r_s); Other coefficients are biserial coefficients (r_b).

*$p < .05$, one-tailed test.

CHAPTER 5: DISCUSSION

This investigation explores relationships between traumatic memory and dissociation for women with PTSD who have been sexually assaulted. At the beginning of therapy, correlational relationships emerge between the PDEQ and VAMs (organization of trauma narratives, SDPD) and between the PDEQ and SAMs (PDEQ, SDPD, CDS-7). Higher peritraumatic dissociation was correlated with lower coherence in trauma narratives, and with more intense and vivid trauma recollections in response to script-driven provocation. Although the small sample size limits the statistical power available for analysis, the strengths of the associations obtained were substantial enough to warrant continued investigation.

Clinical experience suggests that dissociation can influence even those assessment procedures designed to gauge dissociation and traumatic memory processes. Research on traumatic memories has been challenged by the presence and impact of dissociation during research procedures themselves. The substantive focus of identifying VAMs and SAMs in research on traumatic memory is being advanced through the development of procedures like the TSF and TMI-PS. Dissociation processes emerged in several ways in the research procedures. In this chapter, the results are examined in greater detail and discussed in connection with previous literature. The implications of these processes for research and clinical assessment are explored.

Results Overview

The first hypothesis received mixed support, in that while there was not a significant relationship demonstrated between peritraumatic dissociation (PDEQ) and level of organization of participants' narratives, there was a significant relationship with

State Dependent Peritraumatic Dissociation (SDPD). There was a significant negative relationship between SDPD and level of organization in trauma narratives. Organization included the elements of Coherence (overall structure of narratives) and Cohesion (ease with which narratives transitioned between sentences, topics and ideas). As SDPD increased, participants appeared to have greater difficulty writing coherent and cohesive accounts of their traumas. These perceptions of past dissociation, when coloured by present triggers, are associated with disruption of narrative organization in trauma accounts. In previous research, Klest and Freyd (2005) found that narrative organization scores from trauma essays were correlated with improvements in physical and mental health, and marginally related to decreases in dissociation.

As participants were recounting their past traumas, some of them were being triggered to dissociate in the present. Upon reflection, the research team became aware that there was an unintentional carry-over effect of the trauma assessment process (TSF). As participants were recounting their past memories of traumatic events and of peritraumatic dissociation during those events, they were being triggered to dissociate in the present moment. The SDPD scores seem to reflect this carryover effect of triggered recollections in that lower levels of narrative organization were associated with higher levels of perceived dissociation at the time of the sexual assault. Since narrative organization of the TSF responses was not as strongly associated with PDEQ assessed in another session, the SDPD seem to reflect dissociative states at that time.

The second hypothesis was also supported. There were significant relationships demonstrated between sensory and affective dimensions of trauma memories and peritraumatic dissociation. Peritraumatic Dissociation (PDEQ) was significantly

correlated with sensory modality subscales for Olfactory Intensity, Olfactory Reliving, and Auditory Reliving. What that meant for most participants was that as peritraumatic dissociation increased, so did the intensity and vividness of triggered sensory memories regarding their traumatic events. In other words, participants may not have been able to verbalize their memories, but when they were triggered, they were able to give clear pictures of the sensations they had experienced during their traumas. In their recollections of sensory memories, they often had very intense, vivid recollections of the events, similar to reliving, or re-experiencing, the events.

These findings are similar to those from Hopper and van der Kolk's (2001) research on traumatic memories. While their participants may not have been able to give clear verbal details of their traumas in the pre-treatment phase of the research, they were able to experience and share somatosensory and affective components of memories when triggered. They found that their participants did not report olfactory sensations, but did report visual, auditory, affective and bodily sensations.

Additional dissociation measures were explored to further clarify and elaborate this pattern of results. During recall of trauma memories, it was discovered that participants were not only recounting dissociation that they had experienced during the sexual assaults, but they were also dissociating during their recollections. To better assess the presence of current dissociation, a measure more temporally contiguous to the script-driven symptom provocation procedure was developed, based on observations during the research process that had been useful during clinical experience with trauma therapy. This new assessment procedure helped to understand patterns of current dissociation impacting the assessment and research procedures. Other than the CADSS (Bremner et

al., 1998) no other measures, even those being used widely in trauma research, have systematically accounted for the influence of dissociation during assessment procedures themselves.

There was overlap in association of affective modalities of sensory memories with the three measures of dissociation (PDEQ, SDPD and CDS-7). Specifically, sadness (intensity and reliving) was correlated with both the Peritraumatic Dissociation measure and Current Dissociation measures. The Current Dissociation scale was able to detect overlap in the affective modalities, particularly with Sad affect. Interestingly, several sensory and affective modalities were uniquely detected by the CDS-7: Visual Intensity, Tactile Intensity, Tactile Reliving, Shame Intensity and Anger Intensity and Anger Reliving (see Figure 1).

In previous research (Panasetis & Bryant, 2003), a current measure of dissociation using the items of the PDEQ was termed *persistent dissociation*. They found that persistent dissociation was more significantly associated with Acute Stress Disorder (ASD) severity and with intrusive symptoms than was peritraumatic dissociation. Examining relationships among peritraumatic dissociation responses, patterns of persistent dissociation over time, and dissociative states at various points in time will benefit from increasing collaboration between researchers and clinicians in the field.

The connection between the olfactory sense perceptions and PD is also of interest. In previous research (Buchanan, Tranel & Adolphs, 2003; Schoenbaum, Chiba, & Gallagher, 1999;), it has been shown that the human amygdala is directly involved in the emotional processing of olfactory stimuli. Zald & Pardo (1997) in their study of

participant's exposure to a highly aversive odorant found that the human amygdala plays a significant role in olfaction.

If olfactory modality sense impressions are imprinted through emotionally-aroused states (as seemed to occur for some women in this study who were sexually assaulted), it makes sense that affective connections to olfactory stimuli are strong given the important role of the amygdala in the limbic system. Emotional intensity can be more clearly associated with the sense of smell than with the modalities of sight, hearing, touch or taste (e.g., Savic, 2005).

If replicated, knowledge of the amygdala-olfactory connection could be very useful in treatment. If we know that clients' levels of emotional intensity are more closely linked with the olfactory sense than any of the other senses this can help in exploring possible past and current triggers. And therapists could avoid inadvertently triggering the client with negative odour cues.

Dissociation & Traumatic Memory Research

Throughout the current study, participants were triggered in several ways. Firstly, they were triggered by writing descriptions of their traumas in the Trauma Scene Form (TSF). It was through this process that we observed an unintentional carry over-effect in trauma assessment. Participants were already experiencing a dissociative state before they even got to the assessment of peritraumatic dissociation. This dissociative state evidently influenced the State Dependent Peritraumatic Dissociation (SDPD) scores, shaping the recall of peritraumatic dissociation.

Secondly, participants were systematically triggered through the use of script-driven symptom provocation. Listening to tapes describing their trauma evoked SAMs.

After the provocation procedure, participants were asked to recall what they experienced during the provocation in their responses to the TMI-PS. Thirdly, participants were triggered by the TMI-PS procedures themselves. That phenomenon was evident in results for the CDS-7 measure, which provides an observational assessment of current dissociation.

As these women were being triggered the researchers had not expected the extent of carry-over effects that emerged. Brewin's (2003) distinction between VAMs and SAMs helps to partially explain the memory processes emerging during the research. "What is it like to be experiencing VAMs and SAMs simultaneously?" Brewin indicated that a person could experience these two types of trauma memory concurrently. He states that in his research there seem to be times when people who are writing about their trauma memories also appear to be reliving the events. Participants did not have problems distinguishing *ordinary memory passages* from *reliving passages* in their trauma narratives. Reliving sections of the traumatic memory recollections involved more bodily movements, breathing shifts, and facial changes.

Brewin, Dalgleish, and Joseph (1996) acknowledge that the symptoms of emotional numbing and dissociative reactions are not examined comprehensively in their dual representation theory. Similar to van der Kolk and Fisler (1994), their perspective is that emotional numbing appears to be an automatic response that protects traumatized individuals from intense arousal. Dual processing theory suggests that both emotional numbing and dissociative responses can be linked with SAMs recollections.

Clinical Implications

Understanding the presence of current dissociation in a counselling setting has several implications for clinical work. When working with trauma survivors therapists should assess peritraumatic dissociation, and should be aware that current dissociation may affect both assessment and treatment processes. If dissociation was present at the time of assessment, therapeutic interventions that act on subcortical processes of emotion regulation (van der Kolk, 2002) such as OEI or EMDR might be utilized rather than strictly cognitive behavioural approaches. EMDR has reportedly produced changes on a more significant level for sexual abuse survivors (Edmond, Sloan, & McCarty, 2004). For clinicians, it is important to be aware of current dissociation, because clients who appear to be lucid can, in fact, be experiencing real difficulty. For instance, some clients may be so heavily dissociating that they cannot integrate their memories and therefore cannot process them well.

Researchers have proposed that PTSD is essentially an affect arousal regulation disorder (Frewin & Lanius, 2006). Specifically, an individual who is suffering from PTSD typically does not have the capacity to control or regulate the symptoms of fear, sadness, and anxiety that are present. Within this model, the concept of reexperiencing is viewed as deficient control over emotional arousal. Conversely, dissociation is viewed as enhanced suppression or inhibition of emotional arousal. Therefore, therapists who are treating traumatized individuals need to be cognizant of the fact that if a client is reliving or reexperiencing a trauma he or she needs to be grounded and stabilized in the present. Otherwise, these individuals will be left more traumatized than when they started the psychotherapeutic interventions (van der Kolk, 2002). As well, clinicians need to be

aware that while dissociation can serve a protective function during the trauma, it can also function as a barrier to progress, in terms of integration of the traumatic event.

There are a number of problems that PTSD sufferers experience in terms of affect regulation. These include the inability to control anger, chronic self-destructive and suicidal behaviours, difficulties with modulating sexual activity, and risk-taking behaviours. These individuals do not have the capacity to self-calm or self-soothe. Therefore, it is of paramount importance that highly dissociative clients be given stabilization and emotion regulation skills prior to receiving trauma focused therapy. Charlesworth (2005) outlines, in his stress management work as a therapist, stabilization techniques such as relaxation, deep breathing, and autogenics to help bring clients into calm states.

Early in the parent study, a battery of stabilization techniques were taught, to help participants self-calm when emotional arousal related to traumatic memories became too intense. We used standard stabilization techniques such as deep breathing, relaxation, autogenics, imagery, and grounding in this study.

Clinically, clinicians often observe that people get worse before they get better. One reason for that is that prior to treatment they are going along in their daily lives dissociated from their traumas so they look fine until they are triggered. The triggering could be a daily life situation (e.g., the backfiring of a car, the smell of cologne). The triggering could also come from scientific research as was done in the overall project with symptom provocation protocol. The results presented here suggest that as the levels of PD increase, so do some modalities of SAMs. As people are triggered in therapy, they may begin to shift from remembering their traumas in VAMs to reliving elements of the

traumatic events that emerge in SAMs. Clinically, this may emerge in a shift from a verbal retelling of their story to an account that is more focused on sensory and emotional components. Clients may become much more aware of their feelings and what their body is feeling or sensing as they become more dissociated, numbed or removed from the ability to be able to remember the trauma (e.g., Feuer, Nishith, & Resick, 2005). Thus, in therapy, clients may need to "break through the dissociative wall" to process their memories (R.A. Bradshaw, personal communication, September 20, 2006). As the dissociative barrier is breeched and integration of memories occurs, healing follows (e.g., Edmond, Sloan & McCarty, 2004).

Limitations and Future Research

Limitations of the study include the small sample size resulting in low power and less confidence in the replicability of all results. As a result, important associations between variables may not have been detected and a few relationships might not generalize well to other groups. A test-retest reliability assessment was not conducted on the TMI-PS due to the stress of the script-driven symptom provocation procedure particularly prior to administration of treatments. Some participants may not be able to consistently differentiate between reliving and intensity dimensions of their triggered recollections. Nonetheless, this study drew upon standard instruments currently used widely in the field.

In a previous study Austin (2003) recommended ways to enhance the intensity ratings on the TMI-PS. In order to help respondents make the distinction between intensity and reliving, it is recommended that in future investigators ask respondents "Did you loose track of the room?" If answered affirmatively, that would qualify as "reliving."

If participants indicated “I lost track of the room. I could no longer feel or hear,” that would constitute a strong indicator that they were reliving the trauma. This recommendation can be supported by the results of the present study.

A further recommendation for future research would be the use of video-taping of the recounting of the traumatic event. Video recording of the account before the TSF is completed would assist researchers in assessing reliving versus remembering. Once the video was recorded researchers could then later replay the story placing marks on the TSF account (Resick & Schnicke, 1993), noting verbal and non-verbal intensity markers that could then be used to more accurately assess whether the participant is remembering or reliving the event.

The CDS- 7 has been a useful innovation for this study by supplementing self-report with indirect strategies for assessing current dissociation. Further investigation is needed to develop this measure and cross-validate it with the CADSS on a new sample.

Conclusion

While there has been significant research on the relationship between peritraumatic dissociation and its predictive role for later development of PTSD, there appears to be little systematic investigation on the role of dissociative states in shaping response patterns during research procedures themselves. Clinicians on the other hand have to address the emergence of dissociation during therapy and assessment on a regular basis. In light of the findings in this study, further investigation is warranted into carry-over effects of dissociation in script-driven provocation research.

The focus of this thesis was to assess correlational relationships between PD, provoked memory retrieval, and organization in trauma narratives. Close attention to

procedures of script-driven provocation now suggest that dissociative states can emerge when filling out the TSF, and while answering questions on the Traumatic Memory Inventory. The development of a new instrument to measure current dissociation, the CDS-7, naturally emerged from this kind of close attention, as informed by the clinical insights of the principle investigator of the larger project, Dr. Richard Bradshaw. Continuing collaboration between researchers and clinicians can help improve our understanding of how current dissociation can impact on measurement of peritraumatic dissociation, trauma narratives, traumatic memory, and PTSD.

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APPENDIX A
Diagram of Research Design for the Overall Project

Sexual Assault and PTSD in Women:
A Comparative Experimental Study of Treatment Approaches

Flow of Events Moves from the Bottom of the Page Toward the Top

Post Treatment Assessment #2

OEI THERAPY	OEI THERAPY	COGNITIVE THERAPY
OEI PSYCHOED	OEI PSYCHOED	COGNITIVE PSYCHOED

6-Month Follow-up Assessment & Pre-Treatment Assessment #2

3-Month Follow-up Assessment (PDEQ)

Post-Treatment #1

COGNITIVE THERAPY	DELAYED TREATMENT CONTROL GROUP	OEI THERAPY
COGNITIVE PSYCHOED	RSMBG	OEI PSYCHOED

Pre-Treatment Assessment (CDS-7, TMI-PS, PDEQ Reliability Check)

Relaxation, Stress Management, Breathing & Grounding Group Training

Screening (TAQ, DES, CAPS) & Pre-Testing of Participants (TSF, SDPD)

Key:

Assessments included in the current study (thesis)

APPENDIX B
Associations between Peritraumatic Dissociation & Posttraumatic Stress Disorder

Author(s)	Year	*N*	Sample	Associations with PD	Time Since Trauma
Koopman et al.	1994	187	Survivors of CA Firestorms	Highly stressful life events occurring before & after the trauma[a, b]	Initial Assessment: 3 weeks; Follow up Assessment 7 – 9 months
Pole, Best, et al.	2005	668	Police officers	Hispanic ethnicity[a, b]	NA
Shalev et al.	1996	51	Injured Mixed Trauma Survivors	Higher IES Avoidance scores[a, b]	Assess: 1 wk & 6 months after trauma
Marmar et al.	1999	322	Rescue Workers	Higher Catastrophic Exposure & Peritraumatic Dissociation[a, b]	1.9 years initial 3.5 years follow up
Bernat et al.	1998	937	College Students	Extreme fear states and panic reactions at time of trauma[a, b]	NA

Note. NCS = National Comorbidity Study; IES = Impact of Event Scale.

[a]Simple positive correlation between Peritraumatic Dissociation and later development of Posttraumatic Stress Disorder.

[b]Differential association between PD and PTSD, with higher levels of additional variables increasing the positive association between Peritraumatic Dissociation and Posttraumatic Stress Disorder.

APPENDIX C
Predictors of Posttraumatic Stress Disorder

Author(s)	Year	*N*	Sample	PTSD Predictors	Time Since Trauma
Breslau, Davis, Andreski, Peterson	1991	1,007	Members of a health maintenance organization	Antisocial behaviour Family history of psychiatric disorders	
Bromet, Sonnega, Kessler	1998	5,877	General population (NCS)	Female gender	
McFarlane	1992	290	Firefighters	Intensity of Recurring Memories	Assess: 4, 11, & 29 months after disaster
Perry, Difede, Musngi, Frances, Jacobsberg	1992	51	Burn patients	Less perceived social support shortly following trauma predicted PTSD	Assess 1 week after injury then 2, 6, 12 months
Blanchard, Hickling, Barton, Taylor, Loos, Jones-Alexander	1996	132	Motor Vehicle Accident Survivors	Alcohol Abuse	1 – 4 months after MVA, then 6 & 12 months
King, King, Foy, Keane, Fairbank	1999	1,632	Male & Female Vietnam Veterans	Trauma Severity	24 to 35 years after the event

Predictors of Posttraumatic Stress Disorder (continued)

Author(s)	Year	*N*	Sample	PTSD Predictors	Time Since Trauma
Tucker, Dickson, Pfefferbaum, McDonald, Allen	1997	86	Oklahoma City Bombing Survivors	Presence of Physiological Reactions during the trauma	6 months after the event
Joseph, Andrews, Williams, Yule	1992	23	Jupiter Cruise Ship Disaster Survivors	Higher Levels of Crisis Support result in better outcome	Within 3 months and 3 years after the event
King, King, Foy, Keane, Fairbank	1999	1,632	Male & Female Vietnam Veterans	Resilience – Hardiness Sense of Control & viewing change as challenge (PTSD only)	24 to 35 years after the event
Henning, Frueh	1997	40	Male Veterans	Combat Guilt and Shame positively correlated	

Note. NCS = National Comorbidity Study.

APPENDIX D
Demographic Background of Study Participants

Descriptives			Remarks
Age:	Mean	42.3	
	St. Dev	10.9	
	Lowest	22.2	
	Highest	68.3	
Ethnicity:	Caucasian	27	
	Indo-Canadian	1	
	Mulatto/Mix race	1	Caribbean / mixed-race bg
Medication(major)	Antidepressants	#P.	SSRI (citalopran hydrobromide)
	Celexa	2	SSRI (fluoxetine HCL)
	Prozac	2	SSRI (paroxetine)
	Paxil	1	SSRI (citalopram hydrobromide) : also
	Celexa	1	SNRI (venilafaxine)
	Effexor	5	(bupropion)
	Wellbutrin	3	(triazolopyridine)
	Trazodone	2	
	TOTAL	16	Please note: some participants were using more than two prescribed drugs.
	Antipsychotics	#P.	
	Seroquel	1	Participant also takes Prozac.
# of Part. Taking antidepressants:		10	
#of Part. Taking antipsychotics:		1	
History of Substance Abuse		11	But all clean for at least one year prior to assessments
Prior Psychotherapy:		27	
Time Since Trauma:	Mean	18.1	In cases when a participant had more than one trauma, the date of the most recent trauma was used for calculations.
	St. Dev	14.4	
	Most recent	1.20	
	Longest ago	51.40	
Number of Sexual Assaults	Trauma	#P.	
	1	26	
	2	3	
	3		

APPENDIX E
Research Assessment Schedule (Parent Study)

Screening and Pre-Testing

1. Clinician-Administered PTSD Scale (CAPS)
2. Dissociative Experiences Scale II (DES-II)
3. Traumatic Antecedents Questionnaire (TAQ)
4. Informed Consent
5. Beck Depression Inventory II (BDI-II)
6. Traumatic Scene Form (TSF)
7. State-Dependent Peritraumatic Dissociation (SDPD; due to TSF Preceding)

Pre-treatment Assessment, Session A (phase 1)

1. Adult Attachment Interview
2. PTSD Coping Interview (four qualitative questions)
3. Trauma-Related Guilt Inventory (TRGI)
4. Impact of Events Scale-Revised (IES-R)
5. Social Avoidance and Distress Scale (SADS)
   (Mixed Gender-MG and Cross Gender-CG versions)
6. Dissociative Experiences Scale II (DES-II)
7. Beck Depression Inventory II (BDI-II)
8. Peritraumatic Dissociative Experiences Questionnaire (PDEQ)

1st psycho-education session

1. Breathing, Relaxation, Autogenics, Imagery & Grounding (B.R.A.I.N.)
2. Credibility of Treatment Questionnaires (CoTQs)

Pre-treatment Assessment, Session B (phase 1)

1. Trauma-Related Guilt Inventory (TRGI)
2. Impact of Events Scale-Revised (IES-R)
3. Social Avoidance and Distress Scale (SADS)
   (Mixed Gender-MG and Cross Gender-CG versions)
4. Quantitative Electroencephalograms (qEEG), Traumatic
   Memory Inventory – Post Script Version(TMI-PS) and Glasgow Coma Scale
5. Current Dissociation Scale – 7 Items (CDS-7)

2nd psycho-education session

1. B.R.A.I.N. (control group)
2. CPT (treatment group)
3. OEI (treatment group)
4. Credibility of Treatment Questionnaires (CoTQs)

Post-Treatment Assessment (phase 1)

1. *Clinician-Administered PTSD Scale (CAPS)*

2. Trauma-Related Guilt Inventory (TRGI)
3. Dissociative Experiences Scale II (DES-II)
4. Impact of Events Scale-Revised (IES-R)
5. Social Avoidance and Distress Scale (SADS)
   (Mixed Gender-MG and Cross Gender-CG versions)
6. Beck Depression Inventory II (BDI-II)
7. Myers-Briggs Type Indicator (MBTI)
8. Qualitative Interview of Therapeutic Effects
9. PTSD Coping Interview (four qualitative questions)
10. Quantitative Electroencephalograms (qEEG) and Traumatic
    Memory Inventory – Post Script Version(TMI-PS)

3-month Follow-up Assessment (phase 1)

1. Clinician-Administered PTSD Scale (CAPS)
2. Peritraumatic Dissociative Experiences Questionnaire (PDEQ)
3. Trauma-Related Guilt Inventory (TRGI)
4. Dissociative Experiences Scale II (DES-II)
5. Impact of Events Scale-Revised (IES-R)
6. Social Avoidance and Distress Scale (SADS)
   (Mixed Gender-MG and Cross Gender-CG versions)
7. Beck Depression Inventory II (BDI-II)
8. Qualitative Interview - Therapy Change, Extra-Therapeutic Factors and Quality of Life

6-month follow-up (phase 1) and Pre-Treatment Assessment (phase 2)

1. Clinician-Administered PTSD Scale (CAPS)
2. Peritraumatic Dissociative Experiences Questionnaire (PDEQ)
3. Trauma-Related Guilt Inventory (TRGI)
4. Dissociative Experiences Scale II (DES-II)
5. Impact of Events Scale-Revised (IES-R)
6. Social Avoidance and Distress Scale (SADS)
   (Mixed Gender-MG and Cross Gender-CG versions)
7. Beck Depression Inventory II (BDI-II)
8. Credibility of Treatment Questionnaires (CoTQs) – 6-Month
9. Quantitative Electroencephalograms (qEEG) and Traumatic
   Memory Inventory – Post Script Version(TMI-PS)

Post-Treatment Assessment (phase 2)

1. Credibility of Treatment Questionnaires (CoTQs) – Final
2. Clinician-Administered PTSD Scale (CAPS)
3. Trauma-Related Guilt Inventory (TRGI)
4. Dissociative Experiences Scale II (DES-II)
5. Impact of Events Scale-Revised (IES-R)
6. Social Avoidance and Distress Scale (SADS)
   (Mixed Gender-MG and Cross Gender-CG versions)
7. Beck Depression Inventory II (BDI-II)
8. Myers-Briggs Type Indicator (MBTI)(12-Month Test-Retest)
9. Quantitative Electroencephalograms (qEEG) and Traumatic
   Memory Inventory – Post Script Version(TMI-PS)
10. Final Interviews – Relative Effectiveness Comparison

Note. A three-month and six-month assessment follow up sessions were conducted for the second phase of the project.

APPENDIX F

Study Participation Criteria

FOR RAPE & SEXUAL ASSAULT: An Experimental Comparison of Three Treatments for Posttraumatic Stress Disorder

A number of recent studies have documented neurological changes in the brain as a result of exposure to traumatic events. Three therapies have been found to be effective in reducing the symptoms of Posttraumatic Stress Disorder (PTSD) when compared with no-treatment control groups. One treatment is called "One Eye Integration" (OEI) another is called "Cognitive Processing Therapy" (CPT) and a third "Grounding & Relaxation Techniques" (GRT). These approaches need to be compared with each other, and assessed more formally through observation of brainwave patterns prior to, and following, application of these techniques.

An experimental comparative study is proposed, and 40 adult research subjects are needed. Since both the study and the duration of treatment to be provided are short-term, we are seeking individuals who have been (and are currently) experiencing the symptoms of Posttraumatic Stress Disorder listed below, but did *not* experience *significant ongoing* trauma (including continuous abuse or neglect) in childhood or adolescent years. Research participants will receive at least 3 free sessions of psychotherapy (1 hour each) from an experienced masters level counselling (that would normally cost $150). Ideally, participants should be at least 1 year post-rape/sexual assault, have had no more than 2 rape incidents, and be free of substance (alcohol or drug) abuse for at least one year.

Symptoms of PTSD

A. Exposed to traumatic event involving both of the following:

(1) Experienced, witnessed or confronted with an event that involved actual or threatened death or serious injury or threat to the physical integrity of self or others;

(2) Your response involved intense fear, helplessness or horror.

B. The traumatic event is reexperienced in a distressing manner;

C. You are persistently avoiding reminders of the event;

D. You have persistent symptoms like sleep disturbance; irritability or anger, intensified startle response or difficulty concentrating;

E. You have had the symptoms for longer than 1 month; and

F. The disturbance causes clinically significant distress and/or impairment in social, occupational or other areas of functioning.

If you believe you meet these criteria and you are interested in participating in the study,

please contact Heather Bowden or Wendy Dobson at (604) 513-2164

APPENDIX G

Traumatic Antecedents Questionnaire (TAQ)

Name:_____ Date:_____

Age:_____ Sex:____ Marital Status:_____ Education:_____

Occupation:_____

Instructions This questionnaire asks you to describe experiences you may have had as a young child (ages 0 to 6), as a school age child (ages 7 to 2), as an adolescent (ages 13 to 16), and as an adult. For each item, indicate the degree to which the statement describes your experience at each different age period. The scale has both frequency and intensity words; please choose the highest applicable number. If there are any age periods for an item that you are unable to answer, please indicate this by choosing DK ("don't know").

Use the highest applicable number

0 = *never or not at all*
1 = *rarely or a little bit*
2 = *occasionally or moderately*
3 = *often or very much*
DK = *don't know*

	AGE	INTENSITY / FREQUENCY
1. I generally felt safe and cared for.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
2. Someone made sure I got up in the morning and went to school.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
3. I was really good at something (like sports, a hobby, school, work, or some creative activity).	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
4. I had good friends.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
5, I felt close to at least one of my brothers and sisters.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK

Use the highest applicable number	0 = *never or not at all* 1 = *rarely or a little bit* 2 = *occasionally or moderately* 3 = *often or very much* DK = *don't know*	
	AGE	INTENSITY / FREQUENCY
6. Somebody in my family had so many problems that there was little left for me.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
7. I felt that nobody cared whether I lived or died.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
8. I had someone to talk with outside my family when something was bugging me at home.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
9. There were secrets in my family that I was not supposed to know about	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
10. My parents confided things in me that made me feel uncomfortable.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
11. My parents were divorced or separated.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
12.1 lived with different people at different times (like different relatives, or foster families).	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
Use the highest applicable number	0 = *never or not at all* 1 = *rarely or a little bit*	

2 = *occasionally or moderately*
3 = *often or very much*
DK = *don't know*

	AGE	INTENSITY / FREQUENCY
13. Somebody close to me died.	0-6	NO YES
	7-12	NO YES
	13-18	NO YES
	adult	NO YES
14. I had a serious illness and/or had to be hospitalized for a medical problem.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
15. Someone I was close to was very sick, or, in an accident for which they needed to be hospitalized.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
16. I received news that someone close to me had been seriously injured or violently killed during an accident, a fight, or a crime.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
17. In my parents eyes, nothing I did was ever good enough.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
18. People in my family called me insulting names.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
19. The rules in my family were unclear and inconsistent.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK

Use the highest applicable number

0 = *never or not at all*
1 = *rarely or a little bit*

2 = *occasionally or moderately*
3 = *often or very much*
DK = *don't know*

	AGE	INTENSITY/ FREQUENCY
20. The punishments I received were unfair.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
21. My parents hurt each other physically when they argued and fought.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
22. 1 spent time out of the house and no one knew where I was.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
23. People in my family were out of control.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
24. Nobody knew what really went on in my family.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
25. I witnessed physical violence in my family.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
26. Someone in my family got medical attention because of violence.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK

Use the highest applicable number

0 = *never or not at all*
1 = *rarely or a little bit*

2 = *occasionally or moderately*
3 = *often or very much*
DK = *don't know*

	AGE	INTENSITY! FREQUENCY
27. Someone in my family had a problem with alcohol and/or drugs.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
28. I abused alcohol and/or drugs.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
29, My caregivers were so into alcohol or drugs that they couldn't take care of me.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
30. I was beaten, kicked or punched by someone close to me.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
31. I was in a situation in which I was convinced that I would be physically injured or lose my life.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
32, Someone outside my family attacked me.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
33, I saw dead bodies.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK

Use the highest applicable number

0 = *never or not at all*
1 = *rarely or a little bit*
2 = *occasionally or moderately*
3 = *often or very much*
DK = *don't know*

	AGE	INTENSITY / FREQUENCY
34. I was involved in a serious accident	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
35. I was in a natural disaster.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
36. I saw sexual things that scared me.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
37. Someone (older) touched me sexually, against my wishes or tried to make me touch them.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
38. Someone forced me to have sex against my will.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
39. Someone threatened me with physical harm unless I did something sexual.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
40. I believe that one of my brothers or sisters was sexually molested.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK

Use the highest applicable number

0 = *never or not at all*
1 = *rarely or a little bit*
2 = *occasionally or moderately*
3 = *often or very much*
DK = *don't know*

	AGE	INTENSITY / FREQUENCY
41. I have had another very frightening or traumatic experience where I felt intense fear helpless, or horrified.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK
42. Something terrible happened to me that still remains a mystery to me.	0-6	0 1 2 3 DK
	7-12	0 1 2 3 DK
	13-18	0 1 2 3 DK
	adult	0 1 2 3 DK

	INTENSITY
43. How upsetting was it to answer these questions?	1 2 3 DK

APPENDIX H
TAQ Information

The TAQ is a 48-item self-report instrument to gather information re: lifetime experiences in 2 positive or adaptive domains (Safety & Competence) and 9 negative or traumatic domains (Neglect, Separations, Family Secrets, Emotional Abuse, Physical Abuse, Sexual Abuse, Witnessing Violence, "Other Traumas" (natural disaster/serious accident/medical crises), and Exposure to Drugs). The positive and negative experiences are rated on 3-point scales (frequency and severity) across 4 age groups: 0-6; 7-12; 13-17; and Adult. The instrument allows for calculation of summary scores for each of the 11 domains, and each of the developmental periods. High scores indicate exposure to adverse events for the 9 negative scales, and experiences of support & safety on the 2 positive scales. Psychometric properties of the TAQ have not yet been established but preliminary results of research are promising (Luxenberg, Spinazzola & van der Kolk, 2001). TAQ scores were significantly related to PTSD and Complex PTSD symptom intensity, and the presence of the positive factors was associated with better treatment outcomes (the absence of those factors was predictive of treatment resistance and non-response to briefer therapies, i.e., more serious pathology):

"Although not yet empirically demonstrated, extensive clinical use of this measure at an outpatient trauma clinic suggests that particular indicators of concern are (a) low scores on early childhood measures of competence and/or safety; and (b) presence of multiple forms of trauma during the birth to 6 year developmental period..."

"...In a study examining data from 70 consecutive admissions to an outpatient trauma center, scores on the TAQ were significantly related to symptoms of PTSD as well as to symptoms of Complex PTSD, or Associated Features of PTSD. Specifically, data from this study indicated that developmental period acted as a strong predictor of complex PTSD, and that, in particular, trauma during the Birth to 6-year period was significantly associated with scores on all domains of impairment assessed. Significant results were also found for specific types of trauma, with Sexual Abuse, Physical Abuse, Emotional Abuse, and Other Traumas as the domains most associated with symptoms of complex PTSD, and Other Traumas as most strongly associated with PTSD" (p.1).

Van der Kolk, B., Spinazzola, J., & Hopper, J. (2001). Traumatic Antecedents Questionnaire (TAQ) and scoring manual. (Available from The Trauma Center, 1269 Beacon Street, Brookline, MA 02446) or Website www.traumacenter.org.

APPENDIX I
Dissociative Experiences Scale (DES)

DES

Eve Bernstein Carlson, Ph .D. Frank W. Putnam, M. D.

DIRECTIONS

This questionnaire consists of twenty-eight 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 mark the line with a vertical slash at the appropriate place, as shown in the example below.

Example:

0% I ---------- /----------I 100%

Date_____ Age _____ Sex: M F _____

1. Some people have the experience of driving a car and suddenly realizing that they don't remember what has happened during all or part of the trip. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 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. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

3. Some people have the experience of finding themselves in a place and having no idea how they got there. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

4. Some people have the experience of finding themselves dressed in clothes that they don't remember putting on. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

5. Some people have the experience of finding new things among their belongings that they do not remember buying. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

6. Some people sometimes find that they are approached by people that they do not know who call them by another name or insist that they have met them before. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 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. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

8. Some people are told that they sometimes do not recognize friends or family members. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

9. Some people find that they have no memory for some important events in their lives (for example, a wedding or graduation). Mark the line to show what percentage of the important events in your life you have no memory for.

0% I ----------I 100%

10. Some people have the experience of being accused of lying when they do not think that they have lied. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

11. Some people have the experience of looking in a mirror and not recognizing themselves. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

12. Some people have the experience of feeling that other people, objects, and the world around them are not real. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

13. Some people have the experience of feeling that their body does not seem to belong to them. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 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 Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

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. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

16. Some people have the experience of being in a familiar place but finding it strange and unfamiliar. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 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. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 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. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

19. Some people find that they sometimes are able to ignore pain. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

20. Some people find that that they sometimes sit staring off into space, thinking of nothing, and are not aware of the passage of time. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

21. Some people sometimes find that when they are alone they talk out loud to themselves. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 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. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 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.). Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

24. Some people sometimes find that they cannot remember whether they have done something or have just thought about doing that (for example: not knowing whether they have just mailed a letter of have just thought about mailing it). Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

25. Some people find evidence that they have done things that they do not remember doing. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

26. Some people sometimes find writings, drawings, or notes among their belongings that they must have done but cannot remember doing. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 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. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 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. Mark the line to show what percentage of the time this happens to you.

0% I ----------I 100%

APPENDIX J
CLINICIAN ADMINISTERED PTSD SCALE (CAPS)

National Center for PTSD

CLINICIAN-ADMINISTERED PTSD SCALE FOR DSM-IV

Name: _____ *I.D. #:* _____

Interviewer: _____ *Date:* _____

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

Behavioural Science Division – Boston VA Medical Center
Neurosciences Division – West Haven VA Medical Center

Revised July 1998

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 other (2) the person's response involved intense fear, helplessness, or horror. Note: In children, this may be expressed instead by disorganized or agitated behaviour

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 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?

ADMINSTER 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). A. (1) Life threat? No YES (self_____ other____) Serious injury? No YES
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?	(self_____ other____) Threat to physical integrity? NO YES (self___ other___) A. (2) Intense fear/help/horror? NO YES (self____ other___) 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? 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?	Describe (e.g. event type, victim, perpetrator, age, frequency). 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 (self____ other___) Criterion A met? NO PROBABLE YES

EVENT # 3

What happened? (How old were you? Who else was involved? How many times did this	DES cribe (e.g. event type, victim, perpetrator, age, frequency). A. (1)

happen? Life threat? Serious injury? 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?	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 (self____ other___)
	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.

Criterion B. The traumatic event is persistently re-experienced 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 is expressed.

Frequency	*Intensity*	*Past Week*
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?)	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?	F _____ I _____ Past Month

[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	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)	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 Have you ever had unpleasant dreams about the (EVENT)?DES cribe 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	*Intensity* 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?) 0 None 1 Mild, minimal distress or	F _____ I _____ F_____ I _____ Sx: Y N

	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)	F _____ I _____ Sx: Y N

3. (B-3) acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucination, and Dissociative flashback episodes, including those that occur on awakening or when intoxicated). **Note:** In young children; trauma-specific reenactment may occur.

Frequency Have you ever suddenly acted or felt as if (EVENT) were happening again? (Have you ever had flashbacks about [EVENT}?) (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	*Intensity* 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?) What did you do while this was happening? How long did it last? (Did other people notice your behaviour? 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,	*Past week* F _____ I _____ Past month F _____ I _____ Sx: Y N Lifetime F _____ I _____

4 Daily or almost every day	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)	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 Have you ever gotten emotionally upset when something reminded you of (EVENT)? (Has anything 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	*Intensity* How much distress or discomfort did these reminders cause you? How long did it last? 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.	*Past Week* F _____ I _____ Past Month F_____ I _____ Sx: Y N Lifetime F _____ I _____ Sx: Y N

	QV (specify)	

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 physical reactions when something reminded you of the (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 your breathing change? What about feeling really intense 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 in 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, and conversations associated with the trauma

Frequency Have you ever tried to avoid thoughts or feelings about (EVENT)? (What kind of thoughts or feelings did you	*Intensity* How much effort did you make to avoid (THOUGHTS/FEELINGS/ CONVERSATIONS)? (What kinds of things did	*Past Week* F_____ I_____

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	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 No physical reactivity 1 Mild, minimal reactivity 2 Moderate, physical reactivity clearly present, may be sustained in 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 Month F_____ I_____ Sx: Y N Lifetime F_____ I_____ Sx: Y N

7. (C-2) efforts to avoid activities, places, or people that arouse recollections of the trauma

Frequency Have you ever had physical reactions when something reminded you of the (EVENT)? (Did your body ever react in some way when something reminded you of [EVENT]? Can you give	*Intensity* How strong were (PHYSICAL REACTIONS)? How long did they last? (Did they last even after you were out of the situation?)	*Past Week* F _____ I _____ Past Month

me some examples? (Did your heart race or your breathing change? What about feeling really intense 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	0 No physical reactivity 1 Mild, minimal reactivity 2 Moderate, physical reactivity clearly present, may be sustained in exposure continues 3 Severe, marked physical reactivity, sustained throughout exposure 4 Extreme, dramatic physical reactivity, sustained arousal even after exposure has ended QV (specify)	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 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day	*Intensity* How much difficulty did you have recalling important part of the (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 _____

Description /Examples		Sx: Y N

9.(C-4) markedly diminished interest or participation in significant activities

Frequency Have you been 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, 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 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 was your loss of interest? (Would you enjoy [ACTIVITIES] once you got started?) 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) _____ 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

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 felt that way? When did you first start to feel that way? (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	How strong were your feelings of being distant or cut off from others? (Who do your 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 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?)	*Intensity* How much trouble did you have experiencing (EMOTIONS)? (What kinds of feelings were you still able to experience?) [INCLUDE	*Past Week* F _____ I _____ Past Month

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 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day Description /Examples	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 _____ Sx: Y N Lifetime F _____ I _____ Sx: Y N

12. (C-7) sense of foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span)

Frequency Have there been times when you felt there was 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	*Intensity* How strong was this feelings 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 foreshortened future 1 Mild, slight sense of a	*Past Week* F _____ I _____ Past Month F _____ I _____

you felt that way? When did you first start to feel that way? (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	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 _____ Trauma related? 1 definite 2 probable 3 unlikely Current_____ Lifetime_____	Sx: Y N Lifetime F _____ I _____ Sx: Y N

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 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 ?] 0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day	*Intensity* 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? 0 No sleep problems 1 Mild, slightly longer latency, (up to 30 minutes loss of sleep)	*Past Week* F _____ I _____ Past Month F _____ I _____ Sx: Y N

Description /Examples	2 Moderate, definite sleep disturbance, clearly longer latency, or clear difficulty staying asleep (30-90 minutes loss of sleep) 3 Severe, much longer latency, or marked difficulty staying asleep (90 min to 30 hrs loss of sleep) 4 Extreme, very long latency, or profound difficulty staying asleep (3 hrs loss of sleep) QV 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 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) have you felt that way? When did you first start feeling that way? (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 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 for you to calm down? Did your anger cause you any problems? 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	*Past Week* F_____ I_____ Past Month F_____ I_____ Sx: Y N Lifetime

	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 _____ Trauma related? 1 definite 2 probable 3 unlikely Current_____ Lifetime_____	F_____ I_____ Sx: Y N

15. (D-3) difficulty concentrating

Frequency 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 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 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 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	*Past Week* F _____ I _____ *Past Month* F _____ I _____ Sx: Y N *Lifetime* F _____

	primary emotions (e.g., love, happiness) 4 Extreme, completely lacking emotional experience QV Trauma related? 1 definite 2 probable 3 unlikely Current_____ Lifetime_____	I _____ Sx: Y N

16. (D-4) hypervigilance

Frequency Have you been especially alert or watchful, even when there was no real need to be? (Have you felt constantly as if you were 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 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 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 or 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	*Past Week* F _____ I _____ Past Month F _____ I _____ Sx: Y N Lifetime F _____ I _____ Sx: Y N

	and may involve extensive safety/checking behaviours, marked watchfulness during interview QV _____ Trauma related? 1 definite 2 probable 3 unlikely Current_____ Lifetime_____	

17. (D-5) exaggerated startle response

Frequency Have you had any strong startle reactions? When did this happen? (What kinds of things made you startle?) How often in the past month (week)? When did you first start having 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 behaviour (e.g., combat veteran who 'hits the dirt') QV _____ 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 month?	_____ total # of months delay in onset With delayed onset (> 6 months?) NO YES

19. Duration of symptoms

[CURRENT] How long have these (PTSD SYMPTOMS) lasted altogether? [LIFETIME] How long did these 9PTSD SYMPTOMS) last altogether?	Duration more than 1 month? Total # months duration Acute (<3 month) or chronic (> 3 months)	Current No YES _____ Acute Chronic	Lifetime NO YES _____ Acute Chronic

Criterion F. The disturbance causes clinically significant distress of 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 SYMTOMS) 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

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 SYMTOMS) affect your social life? How so? [CONSIDER IMPAIRMENT IN SOCIAL FUNCTIONING 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

22. impairment in occupational or other important areas 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 CHILDHOOD TRAUMAS, ASSESS PRE-TRAUMA	0 No adverse impact 1 Mild impact, minimal impairment in occupational/ other important functioning 2 Moderate impairment, definite impairment, but many aspects of occupation/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

SCHOOL PERFORMANCE AND POSSIBLE PRESENCE OF BEHAVIOUR 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 of 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 CHILDHOOD TRAUMAS, ASSESS PRE-TRAUMA SCHOOL PERFORMANCE AND POSSIBLE PRESENCE OF BEHAVIOUR 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?		

Global Ratings

23. global rating

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 MINIMISE SYMPTOMS.	0 No clinically significant symptoms, no distress and no functional impairment 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 IMPAIRMENT, OBSERVATIONS OF BEHAVIOURS IN INTERVIEW, AND JUDGMENT REGARDING REPORTING STYLE.	0 No clinically significant symptoms, no distress, and no functional impairment. 1 Good, minimal distress or functional impairment but functions satisfactorily with effort 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	Past week Past month Lifetime

	functioning	

25. global improvement

RATE 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 PF CHANGE, WHETHER OR NOT, IN OUR JUDGMENT, IT IS DUE TO TREATMENT.	0 Symptomatic 1 Considerable improvement 2 Moderate improvement 3 Slight improvement 4 Insufficient information

Current PTSD symptoms

Criterion A met (traumatic event)? NO YES

_____ # Criterion B sx (> 1)? NO YES

_____ # Criterion C sx (> 3)? NO YES

_____ # Criterion D sx (> 2)? NO YES

Criterion E met (duration >1 month)? NO YES

Criterion F met (distress/impairment)? NO YES

CURRENT PTSD (Criterion A-F met)? NO YES

IF CURRENT PTSD CRITERIA ARE MET, SKIP TO ASSOCIATED FEATURES.

IF CURRENT CRITERIA ARE NOT MET, ASSESS FOR LIFETIME PTSD.

IDENTIFY A PERIOD OF AT LEAST A MONTH SINCE THE TRAUMATIC EVENT IN WHICH SYMPTOMS WERE WORSE.

Since the (EVENT), has there been a time when these (PTSD STMPTOMS) were a lot worse than they have been in the past month? When was that? How long did it last? (At least a month?)

IF MULTIPLE PERIODS IN THE PAST: When were you bothered the most by these PTSD (SYMPTOMS)?

IF AT LEAST ONE PERIOD INQUIRE ITEMS 1-17, CHANGING FREQUENCY PROMPTS TO REFER TO WORST PERIOD: During that time, did you (EXPERIENCE SYMPTOMS)? How often?

Lifetime PTSD symptoms

Criterion A met (traumatic event)? NO YES

_____ # Criterion B sx (> 1)? NO YES

_____ # Criterion C sx (> 3)? NO YES

_____ # Criterion D sx (> 2)? NO YES

Criterion E met (duration >1 month)? NO YES

Criterion F met (distress/impairment)? NO YES

LIFETIME PTSD (Criteria A-F met)? NO YES

Associated features

26. guilt over acts of commission or omission

Frequency	*Intensity*	*Past Week*
Have you ever felt guilty about anything you did or didn't do during (EVENT)? Tell me more about that. (What do you feel guilty about?) How much of the time have you felt that way in the past month (week)? 0 None of the time 1 Very little of the time 2 Some of the time 3 Much of the time (approx 20-30%) 4 Much of the time (approx 50-60%) 5 Most or all of the time (more than 80%) Description /Examples	How strong were these feelings of guilt? How much stress or discomfort did they cause? 0 No feelings of guilt 1 Mild, slight feelings of guilt 2 Moderate, guilt feelings definitely present, some distress but still manageable 3 Severe, marked feelings of guilt, considerable distress 4 Extreme, pervasive feelings of guilt, self-condemnation regarding behaviour, incapacitating distress QV	F_____ I_____ Past Month F_____ I_____ Sx: Y N Lifetime F_____ I_____

	Trauma related? 1 definite 2 probable 3 unlikely Current_____ Lifetime_____	Sx: Y N

27. survivor guilt (APPLICABLE ONLY IF MULTIPLE VICTIMS)

Frequency	*Intensity*	*Past Week*
Have you felt guilty about surviving (EVENT)? Tell me more about that. (What do you feel guilty about?) How much of the time have you felt that way in the past month (week)? 0 None of the time 1 Very little of the time 2 Some of the time 3 Much of the time (approx 20-30%) 4 Much of the time (approx 50-60%) 5 Most or all of the time (more than 80%) *Description* /Examples	How strong were these feelings of guilt? How much stress or discomfort did they cause? 0 No feelings of guilt 1 Mild, slight feelings of guilt 2 Moderate, guilt feelings definitely present, some distress but still manageable 3 Severe, marked feelings of guilt, considerable distress 4 Extreme, pervasive feelings of guilt, self condemnation regarding behaviour, incapacitating distress QV 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

28. a reduction in awareness of his or her surroundings (e.g., ‘being in a daze)

Frequency	*Intensity*	*Past Week*
Have there been times when you feel out of touch with	How strong was this feeling of being out of touch or in a	F_____

things going on Around you, like you were in a daze? What was that like? [DISTINGUISH FROM FLASHBACK EPISODES] How often has that happened in the past month (week)? [IF NOT CLEAR:] (Was it due to an illness or the effects of drugs or alcohol?) When did you first start feeling that way? (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	daze? (Were you confused about where you actually were or what you were doing at the time?) How long did it last? (Did other people notice your behaviour? What did they say?) Intensity? How strong was this feeling of being out of touch or in a daze? (Were you confused about where you actually were or what you were doing at the time?) How long did it last? (Did other people notice your behaviour? What did they say?) 0 No reduction in awareness 1 Mild, slight reduction in awareness 2 Moderate, definite but transient reduction in awareness, may report feeling 'spacy' 3 Severe, marked reduction in awareness, may persist for several hours 4 Extreme, complete loss of awareness of surroundings, may be unresponsive, possible amnesia for the episode (blackout) QV Trauma related? 1 definite 2 probable 3 unlikely Current_____ Lifetime_____	I_____ Past Month F_____ I_____ Sx: Y N Lifetime F_____ I_____ Sx: Y N

29. derealisation

Frequency	*Intensity*	*Past Week*

Have there been times when things going on around you seemed unreal or very strange and unfamiliar? [IF NO:] (What about times when people you knew suddenly seemed unfamiliar?) What was that like? How often has that happened in the past month (week)? [IF NOT CLEAR:] (Was it due to an illness or the effects of drugs or alcohol?) When did you first start feeling that way? (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	How strong was (DEREALISATION)? How long did it last? (Did other people notice your behaviour? What did they say?) 0 No derealisation 1 Mild, slight derealisation 2 Moderate, definite but transient derealisation 3 Severe, considerable derealisation, marked confusion about what is real, may persist for several hours 4 Extreme, profound derealisation, dramatic loss of sense of reality or familiarity QV 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

30. depersonalization

Frequency Have there been times when you felt as if you were outside your body, watching yourself as if you were another person? [IF NO:] (What about times you're your body felt strange or unfamiliar to you, as if it had changed in some way?) What was that like? How often has that happened in the past month (week)? [IF NOT CLEAR:] (Was it due to an illness or the effects of	*Intensity* How strong was (DEPERSONALISATION) ? How long did it last? What did you do while this was happening? (Did other people notice your behaviour? What did they say?) 0 No depersonalisation 1 Mild, slight depersonalisation 2 Moderate, definite but transient depersonalisation	*Past Week* F _____ I _____ Past Month F_____ I _____ Sx: Y N

drugs or alcohol?) When did you first start feeling that way? (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	3 Severe, considerable depersonalisation, marked sense of detachment from self, may persist for several hours 4 Extreme, profound depersonalisation, dramatic sense of detachment from self QV Trauma related? 1 definite 2 probable 3 unlikely Current_____ Lifetime_____	Lifetime F _____ I _____ Sx: Y N

Scoring Summary

Insure that the client meets Criterion A:

The person has been exposed to a traumatic event in which both of the following were present: a) 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 other, and b) the person's response involved intense fear, helplessness, or horror. Note: In children, this may be expressed instead by disorganized or agitated behaviour.

Criterion B: The client needs to re-experience at least one of the symptoms in questions 1– 5. Add the frequency and intensity scores together (for the time period selected) for questions 1 – 5. These will then be added at the end for the total overall CAPS score.

Criterion C: The client needs to experience at least three of the symptoms in questions 6–12 (Avoidance and numbing symptoms). Add the frequency and intensity scores together (for the time period selected) for questions 6 – 12. These will then be added at the end for the total overall CAPS score.

Criterion D: The client needs to experience at least two of the symptoms in questions 13–17 (Hyperarousal symptoms). Add the frequency and intensity scores together (for the time period selected) for questions 13–17. These will then be added at the end for the total overall CAPS score.

To obtain the overall CAPS score add together the frequency and intensity scores for criterion B, C and D, for the time period selected.

Criterion E: The duration of the disturbance must be at least one month.

Criterion F: The client needs to experience at least one of the symptoms in questions 20–22 (Significant distress or impairment in functioning).

PTSD diagnosis: Assess whether all criteria are met and specify whether there was a delayed onset (> 6 months), an acute onset (<3 months) or a chronic onset (>3 months).

Global rating: Responses from questions 23, 24 and 25 will give you the global validity, global severity and global improvement of the client's answers.

Associated features: Questions 26–30 will give the intensity and frequency of the clients; guilt over acts of commission or omission; survivor guilt; reduction in awareness of surroundings; derealisation and depersonalisation.

APPENDIX K
Informed Consent

January 7, 2005
Application of One Eye Integration Techniques for Trauma:
A Comparative Experimental Study

For Answers to Questions or Clarifications Regarding this Study, Contact:

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The intent in the proposed study is to compare the effectiveness of three different psychotherapies for relieving post-traumatic symptoms. One of these therapies involves eye movements, including alternate exposure of eyes to light (referred to as One Eye Integration, or OEI) and the others do not. One of the therapies involves a good deal more talking than the other (Cognitive

Therapy, or CT). The third therapy involves mainly physical and mental relaxation. All three therapies have been effective in previous comparisons with no-treatment control groups, but no studies have yet been done to compare the effectiveness of these three approaches.

Your participation in this study will require 5 hours of your time for each block of assessments (questionnaires, checklists, interviews and brainwave recording sessions). These will be completed at the start of the study, and every 2-3 months until completion of the study (a total of 5 assessment blocks over 10-12 months). In addition, at the beginning of the study, at the half-way point, and at the conclusion of the study there will be 1½ -2 hours of additional interviews. Depending on the group to which you are assigned, you may be provided with a 30-minute audio recording of relaxation & calming exercises and asked to play it once per day during half the length of the study. Also depending on which group you are assigned to, you will complete 2 hours of group training in emotional containment & "grounding" techniques, 2 hours of psychoeducation regarding the rationales for (and likely mechanisms of) OEI and/or CT, and three to six 1-hour individual psychotherapy sessions, with a competent Masters level clinician. At current B.C. rates, this would cost over $500, but this treatment is being provided free of charge to compensate you for the time involved in the study. Short journal entries will be requested of participants between individual and/or group sessions they receive.

Apart from listening to the audio recording daily, the total time requirements for participation in this study (assessments and treatments) will be approximate a 40-hour work week, spread over 10-12 months. A psychologist or counsellor will provide up to 3 additional sessions, if necessary, to alleviate any additional distress which may have been caused or aggravated by participation in the study. It is reasonable to alleviate *some* of the intensity of PTSD in 3-6 sessions, but participants should not expect *all* of their symptoms to be gone in 3-6 sessions if they have had a *number* of previous traumatic experiences.

In this study, you will be asked to recall a particular event (sexual assault or rape experience) which is still disturbing for you to think about. Researchers will help you develop a short description of the event that will be read onto an audiotape by one of the investigators. That tape will be played back, and your brainwaves will be monitored and recorded, along with your levels of reaction (to sounds, pictures, body sensations, smells, emotions and thoughts you experience). Those short audiotapes will be played just prior to treatment, after all 3 treatment sessions, at the time of the 3- and 6-month follow-up assessments, and at the time of the final post-treatment assessment.

In order to measure electrical activity in the brain before and after treatments, an EEG electrode cap will be placed on your head. This is a relatively painless procedure. During psychotherapy sessions you will also be videotaped, to allow later correlation between therapeutic procedures and brainwave activity. You will periodically be asked by the investigators to rate your level of distress on a scale from 0 to 10 (with "0" indicating no distress or intensity, and 10 indicating the worst you have ever experienced).

All information you share in written and oral form will be carefully collected and stored in locked file cabinets, accessible only to the individuals named at the end of this consent form (and a professional transcriptionist) to ensure confidentiality. In addition, once the data is collected, numbers (rather than names) will be used to identify individuals on all written forms and interview protocols. This will prevent inadvertent disclosure of identifiable personal information.

As with any research project involving assessment or treatment of trauma, you will likely experience psychological distress at some points, as you recall events, people and situations that

traumatized you. You will be randomly assigned to one of three groups in this study: One group will receive Cognitive Therapy, one will receive One Eye Integration Therapy, and one will receive stress reduction, relaxation and calming exercises for home use, with an audio recording. In the second half of the study, all participants will receive a second therapy (one of the three approaches mentioned earlier in this Consent Form.

One of the two psychotherapy approaches considered in this study for relief from PTSD symptoms is "Experimental" because there are currently no published studies in refereed professional journals attesting to the effectiveness of the procedures. For this reason, some additional information about that set of techniques is necessary. In the last 8 years, a series of clinical procedures has been developed and used to reduce posttraumatic stress symptoms. This series of techniques has been referred to as "One Eye Integration".

During One Eye Integration (one of three treatment approaches used in this study), people sometimes experience transient symptoms such as headaches, visual distortions and stomach or chest tension. These generally fade within 30 minutes, and more often within 5 minutes. In addition, it is possible that recall of traumatic incidents will trigger dissociative symptoms, such as drowsiness, light-headedness, numbness or difficulty speaking. Again, such symptoms normally subside within 30 minutes, and more commonly within 5 minutes. As in any research study of new clinical procedures, there may be harms that we don't yet know about.

Based on clinical experience and 2 studies (1 controlled) with One Eye Integration techniques, these procedures appear to provide significant, rapid relief from the major symptoms of Posttraumatic Stress Disorder (PTSD). The therapy proceeds one memory at a time, and recollection of each traumatizing event, person or situation is desensitized to the point where it is no longer disturbing to recall. For a given memory, this normally occurs within 60-180 minutes.

It is reasonable to alleviate *some* of the intensity of PTSD in 3 sessions, but you should not expect *all* your symptoms to be gone in 3 sessions if you have had a number of previous traumatic experiences.

Alternative therapies to One Eye Integration, for PTSD symptoms, include:

- Prolonged Exposure (spending time in situations associated with distress and focusing on them until intensity subsides);

- Imaginal Exposure (thinking or writing or talking about the distressing situation or event until the intensity subsides);

- Cognitive Behavioural Therapies, such as Cognitive Processing Therapy --- CPT (changing thoughts & beliefs about yourself, and the people, events or situations that are traumatic for you to think about); or

- Eye Movement Desensitization & Reprocessing (combining Cognitive-Behavioural Therapy with bilateral stimulation – eye movements, hand-taps or sounds – while thinking about distressing events or situations or people).

All completed written questionnaires, audiotapes, videotapes and psychophysiological data will be kept for 5 years from the completion date for the study and then erased or destroyed, unless

you give written permission to retain records longer or specifically request (in writing) destruction of your data sooner.

As with any counselling or psychotherapy, confidentiality is also limited by:

- Threat to self (suicide risk)
- Threat to other (homicide risk and duty to warn)
- Suspicion of child abuse
- Intention to drive a motor vehicle while intoxicated by alcohol or drugs
- Intention to have unprotected sexual contact or share IV drug needles, when infected by HIV and/or diagnosed with AIDS
- Subpoenas or special legal warrants in which portions of participant files are requested

One very important condition of participation in this study is that you try to refrain from mental health consultations other than those provided in this study (seeing counsellors, psychologists or psychiatrists for treatment of your symptoms of distress, apart from those associated with this study, except in a crisis). The reason this condition is important is that if you receive other mental health treatments during the study we will not be able to clearly determine the sources of any changes in symptoms.

Finally, participants are asked to inform the principal investigator if your medical treatment (especially changes in medications or dosages) is changed in any way for the duration of this study. Again, this is so that we may accurately attribute changes in symptoms to the treatments provided during the study rather than to changes in treatments (including medications) provided *outside* the study

NOTE: Even *after* you consent to participate in this study by signing below, you may refuse to participate or withdraw at any time without consequence.

If you have any questions about *ethical issues* involved in this project, you may contact Ms. Sue Funk in the Office of Research at (604) 513-2142.

☐ I have read and understood the description of the study, and I willingly consent to participate in this study.

_____ _____

(Participant Signature) (Date)

_____ _____

Parent or Guardian Signature (if under 19 yrs. of age) (Date)

APPENDIX L

Traumatic Scene Form[1] (TSF)

We would like you to write a description of the most traumatic event you have experienced in your life. We may ask you more detail about this experience later.

If you find it difficult to think of something to write, it may help to close your eyes and imagine yourself back in the situation. Try to generate the same sensations and feelings that you experienced at the time. While the image is vivid in your memory, jot down the details of the scene and the sensations you experienced at the time. Also, on the next page are bodily experiences you may have had;
please circle any that apply.

Describe the traumatic situation. Include such details as <u>when</u> it happened (age and date), <u>where</u> you were, <u>who</u> was there (names), <u>what</u> you were doing, how things looked, what you heard, what you were feeling, etc. <u>Please do not guess</u> or include anything about which you are not <u>positive</u>.

Please write things in the order they happened, and include bodily sensations from the next page at the appropriate times (turn the page to that first). Continue your description on the reverse side of this page if necessary.

[1] From: James Hopper & Bessel van der Kolk (2001). Retrieving, assessing and classifying traumatic memories: A preliminary report of three case studies of a new standardized method. *Journal of Aggression, Maltreatment & Trauma, 4*(2), 33-71.

Listed below are a number of bodily sensations that people may experience in various situations. Please circle all of the responses that you experienced in the situation you described, and include several in your description.

heart stops

heart pounds

heart beats slower

heart skips a beat

heart races

heart quickens

feel sweaty

palms are clammy

beads of perspiration

sweat pours out

feel warm

nauseous

stomach is in a knot

butterflies in stomach

cramps in stomach

constriction in chest

breath faster

breath slower

pant

shallow breathing

laboured breathing

gasping for air

feel tense all over

feel relaxed all over

tension in forehead

clenched fist

tension in back

grit my teeth

clenched jaw

tension in the arms

tightness in the face

hands trembling

whole body shakes

eye twitches

eyes burn

eyes wide open

eyes water

body feels heavy

feel hot all over

blood rushing to head

arms and legs warm and relaxed

flushed face

head pounds

feel restless

jittery

calm

APPENDIX M
Traumatic Memory Inventory – Post-Script Version (TMI-PS) (Adapted)
(Hopper & van der Kolk, 2001)

Subject ID: _____ Interviewer: _____ Date of Assessment: __/__/__

When you remembered the traumatic experience today, how did you remember it?

(Listen for subject's report, and write below)
(Ask follow-up clarifying questions sparingly, and record them as well)

Memories can have a variety of components. They may include visual images, physical sensations, sounds, etc. The next questions are about these possible components of your memory.

Int	**Re**	
___	___	Were there visual images? Y N (Visual)What did you see? _____
		_____
		_____
___	___	Were there physical sensations? Y N(Physical)What did you feel in your body? _____
		_____
		_____
___	___	Were there smells? Y N(Olfactory)What did you smell? _____
		_____
		_____
___	___	Were there sounds? Y N(Auditory)What did you hear? _____
		_____
		_____
___	___	Were there emotions? Y N(Affective)How did you feel emotionally? ____
		_____
		_____
Y	N	Were there thoughts about the situation? (Cognitive)What did you remember thinking? _____
		_____
		_____
Y	N	Components together? Of those components present, did you remember all of them at the same time? _____
		_____
		_____
Y	N	As a story? (Narrative) Could you tell it so someone as a coherent story? ___
		_____
		_____
Y	N	Would you be able to talk about what happened today, without being interrupted by associated feelings or perceptions? Explain _____
		_____

I'm going to ask you two questions about some components of the memory. First, I will ask you to rate their <u>intensity</u>, with 0 being not at all present, and 10 being the most intense possible.

Now, I'm going to ask you whether you <u>re-lived</u> any images, sensations, etc., as opposed to just remembering them. For example, you may have felt like you were hearing the <u>same</u> sound <u>all over again</u>, or just <u>remembering</u> hearing that sound. Do you understand the difference?

Summary:	**Intensity**	**Reliving**	**4 Affective Modalities (Adaptation)**
	_____ Visual	_____	
	_____ Tactile	_____	Fear/ Horror _____
	_____ Olfactory	_____	Sadness/Hurt _____
	_____ Auditory	_____	Shame/Humiliation _____
	_____ Affective	_____	Anger/Rage _____
	Y N Cognitive		*Both intensity and reliving affective ratings were separately obtained*
	Y N Components Together		
	Y N Narrative		
	Y N Without Interruptions		

Was your response to the memory today a typical response for you, or was it different than how you usually respond to a strong reminder?

Typical **Not Typical** **How?**

(Listen for subject's report, and write below)
(Ask follow-up clarifying questions sparingly, and record them as well)

Were you thinking about or remembering anything else while listening to the tape and/or during the post-tape remembering phase?

(Listen for subject's report, and write below)
(Ask follow-up clarifying questions sparingly, and record them as well)

APPENDIX N

Peritraumatic Dissociative Experiences Questionnaire – Self Report Version (PDEQ)

Instructions: Please complete the items below by circling the choice that best describes your experiences and reactions **during the _____ and immediately afterward**. If an item does not apply to your experience, please circle "Not at all true."

1. I had moments of losing track of what was going on I "blanked out", or "spaced out" or in some way felt that I was not part of what was going on.

1	2	3	4	5
Not at all true	Slightly true	Somewhat true	Very true	Extremely true

2. I found that I was on "automatic pilot"- I ended up doing things that I later realized I hadn't actively decided to do.

1	2	3	4	5
Not at all true	Slightly true	Somewhat true	Very true	Extremely true

3. My sense of time changed- things seemed to be happening in slow motion.

1	2	3	4	5
Not at all true	Slightly true	Somewhat true	Very true	Extremely true

4. What was happening seemed unreal to me, like I was in a dream or watching a movie or play.

1	2	3	4	5
Not at all true	Slightly true	Somewhat true	Very true	Extremely true

5. I felt as though I were a spectator watching what was happening to me, as if I were floating above the scene or observing it as an outsider.

1	2	3	4	5
Not at all true	Slightly true	Somewhat true	Very true	Extremely true

6. There were moments when my sense of my own body seemed distorted or changed. I felt disconnected from my own body, or that it was unusually large or small.

1	2	3	4	5
Not at all true	Slightly true	Somewhat true	Very true	Extremely true

7. I felt as though things that were actually happening to others were happening to me- like I was being trapped when I really wasn't.

1	2	3	4	5
Not at all true	Slightly true	Somewhat true	Very true	Extremely true

8. I was surprised to find out afterward that a lot of things had happened at the time that I was not aware of, especially things I ordinarily would have noticed.

1	2	3	4	5
Not at all true	Slightly true	Somewhat true	Very true	Extremely true

9. I felt confused; that is, there were moments when I had difficulty making sense of what was happening.

1	2	3	4	5
Not at all true	Slightly true	Somewhat true	Very true	Extremely true

10. I felt disoriented; that is, there were moments when I felt uncertain about where I was or what time it was.

1	2	3	4	5
Not at all true	Slightly true	Somewhat true	Very true	Extremely true

Adapted from Marmar C. R., Weiss, D. S., & Metzler, T. J. (1997). The peritraumatic dissociative experiences questionnaire. In J. P. Wilson et al. (Eds.), *Assessing psychological trauma and PTSD* (pp. 412-428). NY: Guildford Press.

APPENDIX O
GREAT–TSF Coding Outline
Global Ratings of Essays About Trauma (GREAT; Klest & Freyd, in press)

applied to the Traumatic Scene Form (TSF; Hopper & van der Kolk, 2001)

December 2006 Draft

This document is a selection and adaptation of Klest & Freyd's (in press) GREAT coding manual for application to TSF narratives. For further information on the GREAT coding scheme, see http://dynamic.uoregon.edu/~jjf/ and bklest@dynamic.uoregon.edu.

General Instructions for Using Global Ratings of Essays About Trauma (GREAT)

Holistic scoring is based upon the reader's overall impression of the effectiveness of a piece of writing. The scoring guide defines the characteristics of effective writing and makes it possible for the reader to score the writing on objective criteria. In order to receive a particular score on a particular dimension, a piece of writing should objectively meet the criteria set by the scoring guide. It is impossible to encompass the exact content of all possible essays with one scoring guide. Frequently, an essay will not match *all* of the criteria for any score. In this case, it is up to the reader to determine which score most closely represents an essay. It is important to attempt not to confound one element of the essay with others when scoring using a scoring rubric. A paper may be generally well written but off topic, or may be disorganized but have strong voice.

Instructions addendum for applying the GREAT code to TSF narratives: This adaptation can benefit trauma research by fostering direct connections between the trauma research programs of Freyd and her colleagues and of Hopper, van der Kolk, and their colleagues. As a strategy for assessing dissociative experiences triggered while gathering accounts of trauma experiences in research, the GREAT code has strong potential for bridging clinical observations, research procedures, and theoretical accounts of dissociation. And because models of dissociation have direct bearing on evaluations of the adequacy of assessment procedures, this kind of application may help clarify conflicting results in the literature. For the purposes of the present project, two dimensions of the GREAT coding scheme were selected, both reflecting organization of trauma narratives: *Coherence* and *Cohesion*. The remaining dimensions of the GREAT coding scheme were *not* used in the present project (*Topic, Self-Relevance, Relationship, and Voice*).

Summary of GREAT code applications to TSF accounts by sexual assault survivors

Topic: 5 - The event is clearly disturbing or distressing.
Self-Relevance: 5 - The writer wrote about something that happened to her.
Relationship: → closeness of the rapist may vary for sexual assault survivors

ORGANIZATION: selected dimensions of ratings for assessing the impact of dissociation on accounts of trauma reported on the TSF.
Coherence -supplementary coding descriptions required for TSF application
Cohesion -supplementary coding descriptions required for TSF application

Voice: Engagement with the writing process can also be impacted by dissociation; potential for adaptation of voice ratings to TSF investigation is also promising, but not included in this project.

Note on Dissociative Experiences while Reliving & Remembering Trauma: The instructions for the TSF ask a respondent to write about "the most traumatic event you have experienced in your life." Clinical experience in trauma therapy supports the importance of distinguishing between remembering and reliving trauma. Recounting one's trauma in therapy may well evoke the same reactions as writing about one's trauma on the TSF. Thus it is helpful to distinguish between reliving dissociation in the present and remembering past dissociation while writing about a traumatic event. The reliving-remembering distinction requires a clear differentiation between past experience of dissociation (at the time of the traumatic event, "peritraumatic dissociation") and current dissociation (while describing the event on the TSF form; see Figure 1, p. 55). As formulated by Brewin's (2003) dual process model, reliving a past trauma in the present is reflected in current dissociation experiences. It is possible to relive a trauma (SAM) and to remember peritraumatic dissociation experienced at the time of a trauma (VAM) simultaneously. The TSF task asking people to describe a trauma may well trigger dissociation or reliving of the trauma *in the present* (SAM). In coding trauma narratives for the presence of dissociation, it may be possible to distinguish between the recall of peritraumatic dissociation (the recall of dissociation at the time of the trauma) and triggered dissociation (the experiencing of dissociation in the present while fulfilling the TSF task). Other contextual factors can also shape the narrative structure of accounts provided on the TSF. The criteria presented below draw upon clinical experience and coding features of the GREAT code with the intent of increasing sensitivity of ratings to current and past dissociation while filling out the TSF. As noted below, ratings of 2 or 3 are used when triggered dissociation is detected in the TSF narratives. Ratings of 4 suggest that the TSF account did not trigger current dissociation or re-experiencing of the trauma even if peritraumatic dissociation is evident in the account. The following features of trauma accounts can help distinguish reliving from remembering.

1. *Emotional intensity*: High levels of present emotional intensity in the TSF account that disrupt narrative organization are scored as a 2 or 3, while accounts clearly reflecting only high intensity of peritraumatic dissociation are scored 4 even if minor features of narrative disorganization are evident.

2. *Numbing*: Reports of clearly stated peritraumatic numbing are scored 4 even if they result in some minor narrative disorganization. Narrative disorganization shown in the TSF account that reflects present numbing is scored 2 or 3.

3. *Two events*: When an associated event emerges in the TSF form, mention of a second event is scored as presently intrusive (2 or 3) when it is unclear how the intrusion occurred, but mention of a second event is scored as a 4 when the connection between events is explicitly stated in the TSF narrative.

4. *Drugs:* Narrative disorganization reflecting the peritraumatic impact of drugs or alcohol can be rated as a 4 when the gaps are directly described. The lack of clear distinctions between present and past gaps is scored a 2 or 3, suggesting the presence of intrusion of emotional intensity or numbing in the TSF account.

Narrative organization is evaluated in the *Coherence* and *Cohesion* dimensions of the GREAT code. Overall, the ratings of narrative organization reflect the degree to which the dissociation hinders the remembering process. Although reliving and remembering can be experienced simultaneously, reliving may not interfere with the narrative coherence of remembering. Additions to the GREAT coding instructions are drawn largely from the practices of clinical training in trauma therapy.

Organization Ratings – *adapted for TSF narratives*

SECTION 1: Coherence: How good is the overall plan or structure of the essay? Does the story progress logically, with a beginning, middle, and conclusion?

If the reader is able to determine a beginning, middle, and end to the story that is the main focus of the essay, the essay is coded a 3 or higher. If not, it is a 2 or lower. *[Beginning = give a context, an orientation to what happened. Middle = what happens, in some detail; is there a 'mismatch' or 'flip' in the description? e.g., an emotional non sequitur; e.g., a temporal digression or 'flip' suggesting an intrusion in the story—sometimes, this is shows up as inconsistent use of past and present verb tense; End = closure or resolution to the events (e.g., NOT avoidance or self-medication as a 'resolution'; temporal resolution or 'coming together' in a story using past tense coherently; ending a story in the present tense would often be a counter example reflecting reliving] Coding Strategy: Many TSF accounts are close to a '3' rating and limited variability would result if these descriptors are used too narrowly. The impact of current dissociation shows up in coherence patterns that are evident especially in "emotional non sequiturs" or incongruities or 'flips' in an account. Thus the reading of the TSF narrative has to draw on an empathic indwelling of the account as a whole, an instance of "reflective practice" based on direct personal experience with survivors of trauma. [Training note: Training of primary raters requires repeated practice with sample material while employing several co-raters in succession.]*

1	2	3	4	5
Not enough was written to code this essay, or the essay is not understandable to the reader.	Possible evidence of attempted structure, but structure is hard to infer. The story focuses on more than one event, none of which have enough detail to give the story a clear focus, or there is not much detail provided about the focus event. Organization is rough, though it may not be completely absent.	Has basics of structure, including a roughly defined beginning, middle, and end. Has one main focus but also includes less important events/details that do not add to the reader's understanding, or, fails to provide important details that would add to the reader's understanding Frequently gets off topic.	*Has good structure, including a beginning, middle and end in logical order.* Tells about one specific event in detail with only minor digressions. Once or twice includes less important details that do not add to the reader's understanding.	*Has good structure, including a beginning, middle and end in logical order.* Tells about one specific event in detail. Does not make digressions.
TSF ADDITIONS FOR COHERENCE RATINGS				
	Reliving is fairly disruptive: Coherence of any of the beginning, middle, or end is absent from account; *gaps* are shown by omission of content; mixed event accounts; shift or loss of time; *flips* can be shown by emotional mismatch, time intrusion, &c.	*Reliving is mildly disruptive*: No *flips*, but there may be 'distancing' or 'numbing' as experienced in the event; separate, unconnected events, with a focus in at least one of them; present dissociation in recounting a drug story; OR, It is unclear whether gaps are due to drug effects or to dissociation in the event itself	*Remembering with little disruption:* Explicit labelling of all *flips* is rated as a "4" two events: only if both are clear and connection is stated drug context is clear: i.e., stated that drugs caused a gap; clearly identifying modalities (visual, auditory, kinaesthetic, affective, cognitive)	Absence of emotional non sequiturs; explanation of drug stories; two connected events, e.g., "I have to tell you another event to understand my story"; recall process is distinguished from current experiencing &/or current dissociation

SECTION 2: Cohesion: How well does the essay transition sentence-to-sentence and topic-to-topic? Is the essay choppy or does it flow easily? *[Moment to moment flow]*

1	2	3	4	5
Not enough was written to code this essay, or the essay is not understandable to the reader.	Many sentences do not flow easily one to the next. Transitions are usually hard to follow. The reader can only understand the progression of ideas by making inferences. Writing is generally choppy.	Some sentences flow easily one to the next. At times transitions are easy to follow, at times they are not. Ideas sometimes follow one another logically, and sometimes do not. Writing is not particularly choppy, but not particularly easy to read.	Many sentences flow easily one to the next. Most transitions are easy to follow. The reader may, rarely, have to make inferences to understand why one idea follows another. Generally easy to read.	Sentences flow easily one to the next, with only one or two exceptions. Transitions are easy to follow. The reader does not have to make inferences to understand the progression of ideas. Can be read quickly and effortlessly.
TSF ADDITIONS FOR COHESION RATINGS				
	Reliving is fairly disruptive: Incomplete sentences are common; coder has to make inferences; "It seems like…," "I wonder if…"; statements can intrude	*Reliving is mildly disruptive*: A sequence is recognizable, but clear *shifts* are also present that yield a sense of choppiness; verb tenses can be "mixed"; drug 'recounting' can show *shifts*	*Remembering with little disruption:* There is an absence of major disparities; verb tenses are all "in context;" accounts of drug impact are smooth	

Reminder: Current dissociation was evidenced by the degree of choppiness in the narratives

Klest, B., & Freyd, J. J. (2004, November). *Global coding of trauma essays: Correlations with health outcomes*. Poster presented at the annual meeting of the International Society for Traumatic Stress Studies, New Orleans, LA. Retrieved September 15, 2005, from http://dynamic.uoregon.edu/~jjf/istss04/kfISTSS04.pdf [contact information: bklest@dynamic.uoregon.edu]

Klest, B. K., & Freyd, J. J. (in press). Global ratings of essays about trauma: Development of the GREAT code, and correlations with physical and mental health outcomes. *Journal of Psychological Trauma*.

Hopper, J. W., & van der Kolk, B. A. (2001). Retrieving, assessing, and classifying traumatic memories: A preliminary report on three case studies of a new standardized method. *Journal of Aggression, Maltreatment, & Trauma, 4*, 33-71. http://www.jimhopper.com/pdfs/Hopper_&_van_der_Kolk_(2001).pdf http://www.trauma-research.org/Hopper_2001.pdf

GREAT-TSF Coding Scheme

Summary Descriptions of Cohesion and Coherence Ratings in TSF Trauma Narratives: Reliving &/or Remembering A Specific Trauma

Coherence (for Ratings 2 to 5)

2 - The narrative is lacking in coherence in the logical progression of a beginning, middle, or end of the story. This lack of coherence is due to the participant possibly reliving the story and this is evidenced in several ways. There may be gaps or omissions of detail in the account. There may be two or more events mixed together in unclear ways or there could be a loss of time that is puzzling or that does not seem to fit with the account. There can be *flips* or *gaps* created by emotional mismatches (including incongruous expressions or wording) or the intrusion of different time periods.

3 – The narrative has enough structure to observe a progression from beginning, to middle and to an end. There are no flips, but there is some evidence of an emotional distancing, numbing or "blanking out" as reflected in the description of the event. For instance, there may be some elements of reliving as shown in comments about separate, unconnected events. Whether traumatic or not, these secondary events are distinguished from the events of the focal trauma being described, but the connections between the primary and secondary events may be blurred. Current dissociation or reliving may be evident in recounting a drug story with some gaps. On the other hand, it may be unclear as to whether gaps in the account are due to drug effects or to peritraumatic dissociation at the time of the event itself (accurate remembering).

4 – The narrative retelling has good structure with a clear beginning, middle, and end. The participant is very lucid in giving explicit labelling of all flips and therefore the narrative is rated as a 4. The event may be remembered as in the past with no indication that the client is reliving that event. The telling of two events is still considered coherent remembering as long as both events are clear and the connection between the two is stated. For example, if a person is retelling one event and then says, "That reminds me of an earlier event," this would be a clear example of remembering. In this level of coherent narration, the drug context is clear in that the participant is aware when the drugs caused gaps in remembering. In retelling there may be some re-experiencing of sensory modalities, affective states, or cognitions that were experienced in the event as long as these relived elements are not disruptive to the remembering process.

5 – The narrative has good structure with no digressions. There is an absence of emotional mismatches with the story being a remembrance rather than a current reliving. A clear explanation of the drug stories or secondary events is clearly integrated as two connected events. For instance the narrator will say "I have to tell you another event for you to understand my story." The recall process of remembering the trauma clearly distinguishes the account from current reliving and re-experiencing of the past event.

APPENDIX P
Current Dissociation Scale – 7 (CDS-7)

The CDS-7 is an indirect measure of current dissociation. Several items on the scale are tied directly to the script driven symptom provocation procedure and also the TMI-PS. This measure helped to understand patterns of response *during triggering* that could not be provided by only the PDEQ measure. The reliability statistics for CDS-7 are: Cronbach's Alpha (.708), Cronbach's Alpha Based on Standardized Items (.719) and number of items (7). The mean for the CDS-7 is (3.21), variance (3.456), and standard deviation (1.859).

CDS-7 ITEMS: For item #1: Subjective Percent of Time "Spaced Out" (Dichotomized with 10 or less scored as zero and greater than 10 is scored as 1); For items numbered 2 through 6, 0 = No and 1 = Yes; For item #7: Concentration Inconsistency (an item from the TMI-PS in which participants were asked, "Were you thinking about or remembering anything else while listening to the tape and/or during the post-tape remembering phase?" Two researchers read participant responses and had to reach a consensus concerning whether or not the response constituted dissociation/ avoidance).

Table P1

Item statistics for CDS-7 Items

Item	*M*	*SD*
Subjective Percent of Time "Spaced Out" (Banded)	1.38	.49
Subjective Dissociation- Lightheaded or Dizzy	.17	.38
Subjective Dissociation – Visual Distortion	.31	.47
Subjective Dissociation – Numbness or Tingling	.45	.51
Observed Dissociation – Delayed Response	.14	.35
Observed Dissociation – Glazed Eyes	.14	.35
Concentration Inconsistency	.62	.49

Table P2

Inter-Item Correlation Matrix for CDS-7 Items

	1	2	3	4	5	6	7
1. Subjective Percent of Time "Spaced Out" (Banded)	-	.40	.09	.15	.10	.31	.32
2. Subjective Dissociation-Lightheaded or Dizzy		-	.09	.32	.35	.35	.36
3. Subjective Dissociation – Visual Distortion			-	.30	.38	.38	.37
4. Subjective Dissociation – Numbness or Tingling				-	.24	.24	.13
5. Observed Dissociation – Delayed Response					-	.13	.31
6. Observed Dissociation – Glazed Eyes						-	.31
7. Concentration Inconsistency (Banded)							-

Table P3

Inter-Item Covariance Matrix for CDS-7 Items

	1	2	3	4	5	6	7
1. Subjective Percent of Time "Spaced Out" (Banded)	-	.08	.02	.04	.02	.05	.08
2. Subjective Dissociation- Lightheaded or Dizzy		-	.02	.06	.05	.05	.07
3. Subjective Dissociation – Visual Distortion			-	.07	.06	.06	.09
4. Subjective Dissociation – Numbness or Tingling				-	.04	.04	.03
5. Observed Dissociation – Delayed Response					-	.02	.05
6. Observed Dissociation – Glazed Eyes						-	.05
7. Concentration Inconsistency (Banded)							-

Table P4

Item-Total Statistics for CDS-7 Items

	Corrected Item Total Scale Correlation	Cronbach's Alpha if Item Deleted
Subjective Percent of Time Spaced Out" (Banded)	.35	.69
Subjective Dissociation – Lightheaded or Dizzy	.50	.66
Subjective Dissociation – Visual Distortion	.42	.67
Subjective Dissociation – Numbness or Tingling	.36	.69
Observed Dissociation – Delayed Response	.41	.68
Observed Dissociation – Glazed Eyes	.47	.67
Concentration Inconsistency	.48	.66