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**The Role of Unsafe Schemas and Insecure Attachment
Responses in PTSD Symptomatology After Traumatic
Adulthood Experiences**

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ABSTRACT

The most common disorder resulting from trauma is posttraumatic stress disorder (PTSD). Empirical research affirms the effectiveness of several cognitive-behavioural therapies in treating PTSD symptomatology; however additional complications including interpersonal difficulties, treatment resistance and the simultaneous development of other disorders, such as depression and alcoholism, often impedes the effective treatment of PTSD. The aim of the present study was to provide a deeper understanding of specific cognitive-emotional schemas related to PTSD symptomatology. Unsafe schemas involving perceptions of severe threat regarding a person's sense of safety, control and invulnerability; and internal working models (IWMs) involving generalized attachment related perceptions and feelings regarding the self and others, were the schemas that were investigated.

Participants were volunteers from the general community, responding to written or verbal advertisements regarding the study. A total of 188 participants filled out four self-report questionnaires about their own psychological and behavioural responses to a past traumatic event. The questionnaires gathered demographic data, details about the traumatic event and information about the degree to which PTSD symptoms, unsafe schemas and IWMs were elicited.

The findings indicated that a threatened sense of control was the highest significant predictor for both intensity and length of time of PTSD symptoms. Although moderately strong significant correlations were found between PTSD symptomatology and the other unsafe schemas (threatened safety and threatened invulnerability) these variables did not predict intensity or length of time that PTSD symptoms were experienced.

Negative IWMs of others predicted both intensity and length of time of PTSD, whereas negative IWMs of the self predicted only intensity of PTSD symptoms. Positive IWMs did not significantly predict PTSD symptomatology.

Several other statistical comparisons confirmed that unsafe schemas and negative IWMs of others both appear to play a significant role in chronicity of post-traumatic symptomatology.

The findings generated several important practical implications for the treatment of traumatized individuals, which were discussed along with limitations of the study and directions for future research. Potential explanations for the findings of the research in relation to previous research findings were also proposed.

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CHAPTER 1

Trauma

1.1 Introduction

Rape, physical assault, combat, terrorism, accidents, terminal illnesses, life-saving surgery, natural disasters, suicide and the unexpected death of loved ones are all examples of potentially traumatic events which can induce disabling psychological symptoms. Such events not only affect those primarily involved, but friends and relatives of trauma victims, disaster workers, emergency response personnel and witnesses may also experience severe post-traumatic reactions (Ursano, Fullerton & McCaughey, 1994). With research suggesting that most people will experience at least one potential trauma during their lifetime (Breslau, Davis, Andreski & Peterson, 1991; Kessler, Sonnega, Bromet, Hughes & Nelson, 1995) and the knowledge that trauma can lead to long-term suffering and psychological disability (van der Kolk, 1996), it is critical that the effects of traumatic events are understood.

The author of the present study aims to learn about the immediate elicitation of cognitive-emotional schemas after a traumatic event. A cognitive-emotional schema is an abstract, generalized knowledge structure which acts as a framework for recording information, guiding perceptions and directing the experience of one kind of emotion over another (Janoff-Bulman, 1992; Jenkins & Oatley, 1998). It is hypothesized that the elicitation of specific cognitive-emotional schemas during and after trauma induces and maintains post-traumatic symptomatology.

Although trauma may elicit a variety of adverse psychological, emotional and behavioural consequences (Fairbank, Ebert & Caddell, 2001), research reveals that posttraumatic stress disorder (PTSD), as the most common trauma related disturbance (e.g. see McFarlane & Papay, 1992; Rothbaum & Foa, 1996), may mediate the relationship between trauma and mental health (Flett, Millar, Long & MacDonald, no date). In effect, further understanding of predominating cognitive-emotional schemas related to PTSD symptomatology may elucidate reasons as to why PTSD is highly comorbid with other disorders, including alcohol and drug abuse, mood disorders, conduct disorders, and other anxiety disorders such as agoraphobia, panic disorder, obsessive-compulsive disorder and specific phobia (Green, Lindy, Grace & Leonard, 1992; Kessler et al., 1995). Other commonly related problems not included in the diagnosis of PTSD such as self-hatred, aggressive behaviour towards the self and others, intimacy problems and difficulties experiencing pleasure or satisfaction (van der Kolk, 1996) may also be better understood by identifying specific cognitive-emotional schemas related to PTSD.

Although empirical research affirms the effectiveness of several cognitive-behavioural therapies in treating PTSD symptomatology, including prolonged exposure, stress inoculation training, cognitive processing therapy and eye movement desensitisation and reprocessing (see Foa & Meadows, 1998 for a review of research regarding the efficacy of these treatments), many patients remain symptomatic, with a minority continuing to meet criteria for PTSD, after treatment (Foa & Cahill, 2002). By ascertaining specific cognitive-affective responses associated with chronic PTSD symptomatology, clinicians and researchers may be assisted with fuller knowledge regarding why some individuals

remain symptomatic regardless of treatment. The triggering of specific cognitive-emotional schemas, or emotionally laden beliefs and perceptions, during PTSD may indeed play a role in causing particular factors which hinder successful recovery. These preventative factors include ongoing stress, low ability to function with every-day life, non-compliance with treatment demands and failure to complete the recommended number of treatment sessions (see Foa & Cahill, 2002 for a review of this literature).

Because the immediate post-trauma environment plays a vital role in recovery (Resick, 2001), identification of the specific cognitive-emotional schemas related to PTSD symptoms should help clinicians to provide quality education to families and friends of traumatized people, about imparting valuable post-trauma support. Indeed post-trauma support appears to play a fundamental role in alleviating PTSD symptoms. Barrett & Mizes (1988) for example, showed that high levels of social support was related to fewer PTSD symptoms in Vietnam veterans after the war. Low levels of perceived social support has been correlated with higher PTSD symptoms in a number of traumatized populations, including civil disaster workers, natural disaster survivors, rape victims, war veterans, (see Weaver, Resnick, Glynn & Foy, 1999 for review), body handlers (McCarroll, Ursano, Wright & Fullerton, 1993) and battered women (Kemp, Green, Hovanitz & Rawlings, 1995).

Detection of the particular cognitive-emotional schemas related to trauma may explain why trauma is related to interpersonal difficulties. For example, families affected by a severe bushfire in Australia, displayed higher levels of irritability, fighting and withdrawal, and lower levels of derived satisfaction from interpersonal activities, than families not involved in the fire (McFarlane, 1987). Increased marital problems,

interfamilial aggression and interpersonal violence was also noted in civilian survivors of the Armenia earthquake by Goenjian (1993). Additionally, research has shown that interpersonal difficulties are strongly related to degree of PTSD symptomatology. A study of New Zealand Vietnam War veterans showed that higher levels of PTSD was associated with higher levels of interpersonal difficulties (Vincent, 1994). Another study showed that American Vietnam War veterans with PTSD displayed higher levels of social maladjustment, more relationship problems globally, difficulties with expressiveness and self-disclosure, and more physical aggression with partners than Vietnam veterans without PTSD (Carroll, Rueger, Foy & Dohanoe, 1985 cited by Fairbank et al., 2001). Indeed, therapeutic programs which aim to minimize interpersonal difficulties by modifying particular trauma-related schemas may be a step in the right direction.

Identification of specific cognitive-emotional responses to trauma may also provide clues as to why treatment-resistance and treatment non-compliance is so common in traumatized individuals (van der Kolk, McFarlane & van der Hart, 1996), so that procedures may be developed to encourage earlier engagement in therapy and increase treatment adherence. The importance of early engagement in therapy was demonstrated in a review of 59 patients who had attended psychotherapy for PTSD. Burstein (1986) found that as time increased between trauma and initiation of treatment, non-compliance increased. The dropout rate was up to 81.8% for those entering treatment after the 40th post-trauma week.

Indeed research has shown that an early peak in PTSD symptoms after trauma, in contrast to a delayed peak in symptoms, does predict better recovery (Gilboa-Shechtman

& Foa, 2001). Such research supports Foa's (1997) emotional processing theory of PTSD by suggesting that recovery from PTSD must involve emotional engagement. Early peak levels of PTSD symptoms are considered to reflect high levels of emotional engagement, more attempts to process the event and therefore less avoidance; factors which not only predict successful recovery (Creamer, Burgess, & Pattison, 1992; Foa, Riggs, Massie et al., 1995 cited by Foa & Cahill, 2002) but are encouraged by therapy (Foa, 1997). Indeed deciphering the more common cognitive-affective schemas in sufferers of long-term or chronic PTSD may help to decipher why such victims often replace early engagement in therapy and therefore high emotional engagement, with high levels of cognitive, emotional and behavioural avoidance.

The importance of finding ways to increase attendance in therapeutic programs was demonstrated in a study by Tarrier, Pilgram & Sommerfield, et al. (1999, cited by Foa & Cahill, 2002). Of 62 patients who completed therapy for PTSD, 12 patients revealed an increase, rather than the expected decrease in PTSD symptomatology. Further analyses revealed that these patients who had deteriorated attended fewer therapy sessions, perceived treatment as less credible and appeared less motivated by therapists. Indeed recognizing the potential underlying perceptions which may be responsible for such problems may be an important step in helping chronic sufferers of PTSD.

Overall, the researcher's aim is to provide a more profound understanding of PTSD symptomatology so that more efficacious therapeutic procedures and programs may be developed to encourage swifter recovery after trauma and to help prevent long-term psychiatric deterioration. As will be discussed in the remainder of Chapter 1, traumatic experiences are surprisingly common in normal community populations thus

serving to reinforce the significance of discovering more about the psychological after-effects of trauma.

1.2 Prevalence of Trauma

Epidemiological studies reveal large numbers of people who have experienced traumatic events throughout life. Large scale United States studies, for example, have revealed that experience of trauma within civilian non-clinical populations range from 55% to 78% (Kessler, et al., 1995; Norris, 1992; Stein, Walker, Hazen & Forde, 1997). In addition many civilians who indicate having experienced trauma, often report two or more traumatic encounters (Kessler et al., 1995). Figures estimating how many people have experienced specific types of trauma illustrate the degree to which trauma is evident. For example, United States studies have estimated that 16.4 million people have experienced a homicidal death of a loved one (Amick-McMullan, Kilpatrick & Resnick, 1991); while completed sexual assault is estimated to have been experienced by at least a quarter, perhaps up to one third, of all women (Resick, 2001). Indeed the United States National Women's Study (Resnick, Kilpatrick, Dansky, Saunders & Best, 1993) revealed that of the women surveyed, around 13% had experienced completed rape, 14% had experienced molestation or attempted rape and 10% had been physically assaulted.

Accidents affect millions of individuals every year including the psychological wellbeing of relatives and friends who suffer as a consequence of injury to loved ones (Malt, Blikra & Hoivik, 1982 cited by Malt, 1994). Over 8 million individuals are estimated to be non-fatally injured every year within the United States (Munoz, 1984), while in Britain over

13,000 beds are occupied by accident victims every day (Malt, 1994). Every year in the United States approximately 40,000 people die from gunshot wounds, 13,000 people die from falls and 4,200 people die from burns and fire-related injuries (Trauma Statistics, no date).

Approximately 13 million people are victims of crime every year (U.S. Crime Statistics Total and by State, 2001). In the United States crime accounts for more death, injuries and loss of property than all natural disasters combined (U.S. Crime Statistics Total and by State, 2001). Internationally, Latin American and African countries have revealed the highest rates of criminal victimization, with approximately 74% of participants reporting victimization within a five year period. In addition Western Europe, Asia, New World, African and Latin American populations reveal high rates of violent victimization - 10%, 10.8%, 16.4%, 20.5% and 21.8% respectively - within the last five years (van Dijk, 1997 cited by Resick, 2001). In the United States 6 million people were estimated to be violently victimized in 1984 alone (Holloway & Fullerton, 1994) with 1.8 million women battered each year (Statistics of Domestic Violence Victims, no date). In South Africa an interpersonal violence-related death occurs every 26 minutes and incidents of rape or attempted rape towards women occurs every 11 minutes (Statistics Trauma Facts, no date).

World-wide, the number of people traumatized by war, including those suffering from combat trauma, prisoners of war, victims of torture and refugees fleeing from war-torn countries, is incomprehensibly large (Resick, 2001). Estimates reveal that 40 million people alone are likely to have been killed in wars since WWII (International Federation of Red Cross and Red Crescent Societies, 1993 cited by Resick, 2001) leaving many more traumatized at the death of a loved one.

Natural disasters including floods, earthquakes, avalanches, tornadoes and hurricanes affect millions of people world-wide every year. The International Federation of Red Cross and Red Crescent Societies (1993 cited by McFarlane & de Girolamo, 1996) reported that between 1967 and 1991 natural disasters killed 7 million people and affected a further 3 billion people world-wide.

Indeed some traumatic events are more common than others. Results from the National Comorbidity Study (Kessler, et al., 1995), which included populations from 48 American states revealed that the most frequently reported traumatic experiences were witnessing someone being killed or badly hurt (35.6% of men and 14.5% of women); participation in a fire, flood or natural disaster (18.9% of men and 15.2% of women); and involvement in a life-threatening accident (25% of men and 13.8% of women). Unexpected death of a loved one was most frequently reported in a study of Detroit residents (Breslau et al., 1998 cited by Fairbank, Ebert & Caddell, 2001).

Men and women tend to differ in the types of traumatic events encountered. Men report more experiences of witnessing injury or death, participation in natural disasters or life-threatening accidents and involvement in physical attacks and combat exposure. In contrast, women report more exposure to rape, sexual molestation and childhood physical abuse (Kessler et al., 1995).

Although the above numbers encompass only a handful of the thousands of statistics available on the frequency of traumatic events, such statistics help to exemplify the scope of trauma, while making evident the need for theoretical reasoning and testing regarding specific cognitive and emotional consequences of traumatic events. Bearing in mind that

within epidemiological studies, respondents who do not report traumatic encounters may have yet to experience one, the frequency of trauma exposure within normal community populations is remarkably high. It may be easy to assume that the high prevalence of trauma overseas is due to seemingly higher rates of criminal activity, war or natural disasters. However, as a recent community-based study by Flett et al. (no date) revealed, New Zealand civilian populations are not immune from experiencing similar rates of trauma exposure. Approximately two thirds of the participants in the study by Flett et al. (no date) revealed past traumatic encounters. As will be discussed next, the frequency and types of traumatic events experienced in New Zealand are similar to those experienced in other countries.

1.3 Trauma in New Zealand

In a study of 1500 New Zealand participants, Flett et al. (no date) found that 961 participants (64%) had experienced at least one traumatic event during life. From those 961 trauma victims, 424 (41%) had experienced one type of trauma, 242 (23%) had experienced two types of trauma and 141(14%) had experienced three types of trauma. One hundred and fifty four respondents (14.8%) reported experiencing from four to nine different traumas. Of all participants reporting past trauma, just under half (427) described enduring some form of violence. Other frequently experienced traumas included violent or unexpected death of loved ones, secondary trauma (i.e., assault, accident, or injury of loved ones), motor vehicle accidents, other accidents and child sexual abuse.

Flett et al's (no date) New Zealand based community study also revealed that individuals who had experienced previous traumatic experiences had significantly lower levels of physical and psychological health, than individuals who had not experienced traumatic events (Flett, Millar, Long & MacDonald, no date). Indeed the link between past traumatic experiences and current mental health has been revealed in a number of studies (for an extensive review see O'Brien, 1998). Flett et al's (no date) research exemplifying the scope of trauma within New Zealand and the link between trauma and psychological health, implies that psychologists and mental health professionals in New Zealand should give more acknowledgement to patients' trauma histories with the recognition that past trauma may be affecting current psychological well-being. Prevention of long term psychological deterioration immediately after traumatic experiences is also an important goal. By identifying which unhelpful cognitive-affective schemas are related to PTSD symptoms, current therapeutic techniques deemed efficacious in treating PTSD, such as prolonged exposure therapy and stress inoculation training (see Foa & Meadows, 1998 for literature review on treatments of PTSD) can be improved. A deeper understanding of the consequences of trauma on the belief system should assist professionals who come into contact with victims immediately after trauma to provide valuable emotional support to victims, while educating the victims' family and friends on how best to nurture the victim.

The present research report focuses on traumatic experiences of people in New Zealand, and the immediate elicitation of specific cognitive-affective responses and psychological symptoms. Only by further understanding the psychological nature of trauma will long term mental health problems be prevented through the development of more effective, immediate post-trauma clinical assistance and social support, with modification towards

more efficacious therapeutic programs for trauma survivors.

1.4 What is a Traumatic Event?

Defining the criteria for a 'traumatic event' is not easy and has been the focus of some controversy within the literature over the years (O'Brien, 1998). Uncontrollable, unpredictable events, involving actual or potential for injury or death, while evoking fear-provoking visual imagery have been defined as 'traumatic' enough to induce PTSD (Joseph, Williams & Yule, 1997). Norris (1990) defined 'traumatic events' as sudden or extreme violent confrontations with people, nature or technology. In accordance with this definition, reviews (e.g. O'Brien, 1998) have revealed that rape, and events involving violent loss, physical injury, exposure to grotesque death and threat to one's life are associated with higher risk of PTSD. Often 'traumatic events' are defined as being extreme or disastrous. Resick (2001), for example, describes a 'traumatic event' as being so unpredictable, sudden and threatening, that natural biological responses shift to "survival mode" with automatic preparations for fight, flight, freeze and/or dissociation. Although the connotation of 'trauma' automatically elicits images of severe threat to survival, normative events which clearly do not meet the above descriptions of trauma, such as 'normal' bereavement, marital difficulties and children's behavioural problems have also been known to induce traumatisation (Burstein, 1985). Indeed some researchers argue that if an event is shocking to an individual, then the event is 'traumatic' regardless of its form (e.g., Breslau & Davis, 1987). Individualistic responses to events highlight the significance of trauma as being 'meaning driven' and for even normative events to have traumatogenic potential, depending on previous

experience, context and expectations (Speckhard, 1997).

As Table 1 details, PTSD is an officially recognized psychological disorder which must involve exposure to a traumatic stressor. Recognizing the struggle to define a 'traumatic event' successfully has meant that the eliciting stressor criterion for PTSD has been modified with each formal revision of the *Diagnostic and statistical manual of mental disorders* (DSM-III, DSM-III-R and DSM-IV) (O'Brien, 1998). Defining the stressor criterion for PTSD however, has involved much debate and disagreement (O'Brien, 1998). The nature of the stressor criterion has shifted away from the idea of objectively defined extreme or disastrous situations, to focus more on the perceptions and experiences of victims. Currently, DSM-IV states that exposure to a traumatic event for a diagnosis of PTSD must involve the victim a) experiencing, witnessing or being confronted with situation/s that involve actual or threatened death or serious injury; or threat to physical integrity to self or others and b) responses of intense fear, helplessness or horror (American Psychiatric Association, 1994).

Bearing in mind that some potentially traumatic events may not involve actual or perceived threat to physical well-being of the self or others (Burstein, 1985), trauma generally does involve intense fear, helplessness or horror. This suggests however that the definition of a 'traumatic event' depends entirely upon the responses of an individual. As O'Brien (1998) points out, an individual involved in an earthquake may see himself as lucky to have survived, whereas a person who develops a fatal long-term illness may become traumatized. Instead of objectively measuring the possible intensity of an event, traumatic events may need to be measured on multi-dimensional levels, with quality and subjective meaning of the event being accounted for too (O'Brien, 1998). Clearly then,

Table 1: DSM-IV Diagnostic Criteria for Posttraumatic Stress Disorder (APA, 1994)

-
- A. The person has been exposed to a traumatic event in which both of the following were present:
- (1) the person experienced, witnessed or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others
 - (2) the person's response involved intense fear, helplessness or horror. **Note:** in children this may be expressed instead by disorganized or agitated behavior.
- B. The traumatic event is persistently reexperienced in one (or more) of the following ways:
- (1) recurrent and intrusive distressing recollections of the event, including images, or perceptions. **Note:** in young children, repetitive play may occur in which themes or aspects of the trauma are expressed
 - (2) recurrent distressing dreams of the event. **Note:** in children, there may be frightening dreams without recognizable content
 - (3) acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations and dissociative flashback episodes, including those that occur upon awakening or when intoxicated). **Note:** in young children, trauma-specific reenactment may occur.
 - (4) intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event.
 - (5) physiologic reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event
- 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:
- (1) efforts to avoid thoughts, feelings, or conversations associated with the trauma
 - (2) efforts to avoid activities, places, or people that arouse recollections of the trauma
 - (3) inability to recall an important aspect of the trauma
 - (4) markedly diminished interest or participation in significant activities
 - (5) feeling of detachment or estrangement from others
 - (6) restricted range of affect (e.g., unable to have loving feelings)
 - (7) sense of a foreshortened future (e.g., does not expect to have a career, marriage, children or a normal life span)
- D. persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:
- (1) difficulty falling or staying asleep
 - (2) irritability or outbursts of anger
 - (3) difficulty concentrating
 - (4) hypervigilance
 - (5) exaggerated startle response
- E. Duration of the disturbance (symptoms in criteria B, C, and D) is more than 1 month.
- F. The disturbance causes clinically significant distress or impairment in social, occupational or other important areas of functioning.

Specify if:

Acute: if duration of symptoms is less than 3 months

Chronic: if duration of symptoms is 3 months or more

Specify if:

With delayed onset: onset of symptoms at least 6 months after the stressor.

accurate definitions of 'traumatic events' require more subjective, rather than objective lines of measurement.

If a 'traumatic event' is recognized after identification of elicited emotional responses, then asking participants to fill out questionnaires about past 'traumatic events' may be expected to reveal accurate accounts of trauma. However with no clear restrictions or guidelines for defining the 'traumatic event', researchers may be left with a variety of traumatic experiences which are too heterogeneous to study as a group. Consequently, while admitting to the possibility that some traumatic experiences may be neglected or overlooked, the current research required a definition for 'traumatic event'. A 'traumatic event' was defined as actual or perceived threat to the physical well-being of the self or others. To study psychological responses to traumatic experiences, the current research asked individuals to refer to one traumatic event in their lives which occurred over the age of 18 years which followed similar guidelines to DSM-IV criteria for a PTSD eliciting stressor. The event had to meet the following two criteria: a) the event involved actual or potential for own or others physical injury or death; or beliefs that physical well-being of self or others was threatened and b) the event created feelings of fear, shock, helplessness and/or horror. While some potentially traumatizing events such as marital and family problems (Flett et al., no date) may be excluded from the study, the first criterion incorporates '...beliefs that physical well-being of self or others were threatened'. Consequently participants' subjective perceptions relating to degree of threat should be more important than 'objective reality' and traumatic, yet normative events, might still be included. As will be discussed in Chapter 2, trauma can have a wide variety of psychological consequences, depending on a variety of factors relating to both the person and the traumatic event.

CHAPTER 2

Psychological Reactions to Trauma

2.1 Introduction

Although a lucid causal relationship between trauma and post-traumatic illness is generally assumed, research has not revealed a precise link between traumatic events and their psychological effects (O'Brien, 1998). There is no clear relationship between prevalence of trauma and incidence of post-traumatic illness; nor is there a threshold of experienced trauma which, when reached, triggers posttraumatic illness in everybody (O'Brien, 1998). Traumatic incidences alone then, are insufficient to cause severe post-traumatic illnesses. While some research has shown how specific peritraumatic variables (i.e. variables occurring during the trauma) may be related to severity of psychological response (e.g. Ehlers, Clark, Dunmore, Jaycox, Meadows & Foa, 1998); other research has placed more emphasis on pre-trauma variables such as pre-existing vulnerability to psychiatric illness (McFarlane, 1989). Studies about vulnerability and resiliency to post-traumatic illness, highlight the significance of previous experience, traumatic context and the post-traumatic environment on psychological responses to trauma (see Resick, 2001 for a comprehensive literature review). Indeed Speckhard (1997) claims that virtually any experience can create a traumatic impact given the appropriate context and distinctively necessary priming experience. As will be discussed, research has revealed that both short- and long-term psychological responses to trauma are related to a comprehensive array of pre-trauma, peritraumatic and post-trauma variables which incorporate both the traumatic event and the victimized person.

2.2 Influencing Factors in Psychological Responses to Trauma

Researchers have identified a number of pre-trauma variables that influence psychological responses to trauma. For example, vulnerability to post-traumatic illness may be influenced by pre-existing personality, genetic predisposition to anxiety (McFarlane, 1989), history of trauma (Zaidi & Foy, 1994), adverse early family environment (Davidson, Hughes, Blazer & George, 1991), personal or family history of psychiatric problems (Helzer, Robins & McEvoy, 1987; Breslau & Davis, 1992) and ineffective coping styles (Resick, 2001). High trait-anxiety, which has been associated with interpretive biases and distortions such as the tendency to impose threatening interpretations on ambiguous stimuli (Mineka & Gilboa, 1998), may also create pronounced risk for PTSD. Overall, poor pre-trauma psychological functioning creates risk for developing PTSD after a traumatic event (Ruch & Leon, 1983 cited by Foa & Meadows, 1998). Demographic variables, such as being younger at the time of trauma (Norris, 1992; Davidson, Hughes, Blazer & George, 1991; Kessler et al., 1995), or being female (Breslau et al., 1991; Kessler et al., 1995) are also considered risk factors in the development of PTSD.

Peritraumatic variables are factors evident during trauma. Interpersonal victimization (e.g. rape, violent crime) (Resnick, Kilpatrick, Dansky, Saunders & Best, 1993), serious injury (e.g. Kilpatrick, Saunders, Amick-McMullan & Best, 1989), high degree of exposure (e.g. Breslau & Davis, 1987), dissociation (Bremner, Southwick, Brett, Fontana, Rosenheck & Charney, 1992), 'mental defeat' or giving up all autonomy, will power and sense of identity while accepting or willing death (Ehlers, Clark, Dunmore, Jaycox, Meadows & Foa, 1998) are peritraumatic variables associated with increased

psychological distress after trauma.

Post-trauma variables or factors evident after trauma that are related to high levels of distress, include avoidance type coping and withdrawal (Bryant & Harvey, 1995), internal, global and stable attributional style, self-blame (McCormick, Taber & Kruegelbach, 1989; Resick & Schnicke, 1992), lack of social interaction and inadequate social support (Davidson, Hughes, Blazer & George, 1991). Increased risk of pathology has also been related to extreme feelings of anger or guilt during the post-trauma period (Riggs, Dancu, Gershuny, Greenberg & Foa, 1992).

The relationship between trauma and post-traumatic distress therefore, depends upon the unique and complex interaction of variables relating to the individual, the traumatic event and the post-traumatic environment. However, the elicitation and maintenance of adverse cognitive-emotional schemas which threaten a person's fundamental sense of safety and survival, and damage perceptions about the self and others, are suggested to be the common underlying factors linking these risk factor variables to post-traumatic distress. Such schemas, proposed to underlie PTSD, will be detailed later in Chapters 3 and 4. To form the basis for understanding how cognitive-emotional schemas may play a role in post-traumatic distress, the immediate and long-term psychological consequences of trauma are detailed and discussed in the following sections.

2.3 Immediate Reactions to Trauma

Traumatic events typically evoke adverse emotions, thoughts, physical reactions and behaviours. Most trauma survivors, regardless of long-term psychological consequences, immediately experience high levels of distress and require a period of adaptation and adjustment (O'Brien, 1998). Forster (1992) has charted the universal course of post-trauma psychological adjustment and indicates that what may appear like a 'disorder' is essentially a natural adaptive reaction to an extremely stressful situation. Symptoms such as anxiety, insomnia, hyperarousal, mild depression, flashbacks and nightmares are all considered to be normative responses to trauma. The adjustment process as described by Forster (1992) is as follows.

1. Response Phase
 - a) outcry
 - b) repair and early recovery

2. Adaptation Phase
 - a) intrusive
 - b) alternating intrusion and denial
 - c) denial and avoidance predominate

3. Recovery

The outcry phase involves initial phases of alarm (Forster, 1992). During this period of perceived danger, the autonomic nervous system becomes activated and prepares the

body for flight or fight. Biological reactions increase blood pressure, respiration, heart rate and muscle tone, while releasing stored sugar and heightening awareness. When fleeing or fighting is not adaptive, freezing or dissociating may occur to enhance chances of survival. Freezing may accomplish avoidance of a predator's attention, while dissociation which involves a sense of unreality and detachment, may be the defence of last resort (Resick, 2001).

Repair and early recovery involves mobilization to respond effectively and appropriately to the catastrophe. During this stage anxiety, fear, denial, anger, withdrawal and/or psychomotor retardation may also be more evident (Forster, 1992). Indeed in a study of rape victims responses of anger, humiliation, depression, exhaustion, guilt, restlessness, ruminations and withdrawal were more common two to three hours after the assault, than during the assault (Veronen, Kilpatrick & Resick, 1979). It is probable that once the danger is over, this early recovery period allows for increased thoughts and awareness regarding the event, thus evoking a wider range of adverse symptoms such as guilt and depression. Depending on the circumstances, the early recovery period may continue for hours or days, until signs of the adaptation phase become evident (Forster, 1992)

The adaptation phase typically takes longer and occurs well after the catastrophe. Initially, overwhelming intrusive emotions, thoughts and memories relating to the trauma are experienced (Forster, 1992). This reexperiencing of traumatic memories is considered to be an adaptive mechanism, functioning to alleviate trauma-related emotions and enhance tolerance for the content of memories (Horowitz, 1979). Reexperiencing of past events may in fact be a natural part of dealing with any emotional

material. Philippot & Rime (1998) have found that individuals not only recurrently and spontaneously think about traumatic experiences, but that mental rumination is strongly evident after non-traumatic experiences. They postulate a continuum in which the perceived emotional intensity of an event is associated with frequency, duration and intensity of a person's mental ruminations. Philippot & Rime (1998) would explain that the intense level of emotion felt during trauma is the reason why most people who experience traumatic stressors will experience some degree of preoccupation with involuntary intrusive memories (van der Kolk & McFarlane, 1996).

Within the second phase of trauma adaptation, avoidant symptoms such as emotional numbing, denial and behavioural avoidance of reminders of the trauma become evident and act to prevent the survivor from becoming overwhelmed with intrusive symptoms (Forster, 1992). Horowitz (1979) describes this period as the 'working through' phase, explaining that as avoidant and intrusive symptoms alternate, traumatic material is accepted and processed gradually to prevent emotional or mental exhaustion. As traumatic material is eventually accepted and synthesized, involuntary recollection of the event subsides and the person returns to psychological states similar to those experienced before the trauma (Horowitz, 1979). Forster (1992) would term the subsiding of intrusive and avoidant symptoms as the final phase in adjustment to trauma: the recovery phase.

2.4 Long-Term Responses to Trauma

After exposure to a traumatic event, most adults are able to cope with the phases of trauma adjustment without developing long-term psychological problems or major impairments in day to day functioning (van der Kolk & McFarlane, 1996). Some however, are unable to deal effectively with the adaptation process and may be chronically affected by symptoms relating to a range of psychological disorders. When post-traumatic ailments persist or become more intense over time, symptoms are no longer determined to be normal (Resick, 2001). Trauma victims may experience affective disorders, adjustment disorders, substance abuse disorders, somatic ailments, functional impairment and a range of anxiety disorders including panic disorder, generalized anxiety disorder, obsessive compulsive disorder, specific phobia and posttraumatic stress disorder (PTSD) (Foa, Kean & Friedman, in press cited by Fairbank, Ebert & Caddell, 2001; Hyams, Wignall & Rosall, 1996 cited by Fairbank Ebert & Caddell, 2001).

PTSD, as outlined by the *Diagnostic and statistical manual of mental disorders* (DSM-IV; APA, 1994) and shown in Table 1, is the disturbance most commonly noted after a traumatic experience (Rothbaum & Foa, 1996). As explained above, intrusive symptoms are typically elicited after trauma and gradually subside as memories are integrated into existing cognitive schemata. Traumatic memories that are not accepted and synthesized over time however, remain dissociated from normal memory systems and continue to impinge on consciousness in images, feelings, behaviours and physiological states, feeding into a cycle of reexperiencing, avoidance and anxiety-related symptoms typical of PTSD (van der Kolk & McFarlane, 1996). Recent studies suggest that these typical

PTSD-associated symptoms may actually mediate the relationship between some traumatic experiences and later health/mental health outcomes (Flett, Millar, Long & McDonald, no date), which may be why PTSD is highly co morbid with mood, dissociative and anxiety disorders, substance abuse and character pathology (van der Kolk & McFarlane, 1996 reviews literature about comorbidity). With this mediational model in mind, along with the recognition that severe traumatisation typically involves symptomatology associated with PTSD (Horowitz, 1979), the current research aims to explore PTSD symptomatology and their relationship to specific cognitive-emotional schemas.

The attempts to more thoroughly understand PTSD-related symptomatology is by no means a claim that other trauma-related psychopathology is less significant, or less damaging, to the victim. Trauma may affect every level of a person's functioning: biological, psychological, social and spiritual (van der Kolk & McFarlane, 1996). Depression, phobias, uncontrolled anger, severe shame and guilt, suicidal preoccupation and other evoked responses are all very common (Resick, 2001). Despite this, the potential mediating influence of PTSD on the relationship between traumatic events and mental health (Flett et al., no date) indicates that an enhanced understanding about associated cognitive-emotional schemas, should create fundamental knowledge about how and why other mental health problems become evident after trauma.

2.5 Posttraumatic Stress Disorder

PTSD is estimated to be experienced by approximately 5% of men and 11% of women with at least one third of sufferers experiencing PTSD as a chronic condition lasting many years (Solomon & Davidson, 1997). As depicted in Table 1, DSM-IV outlines six criteria that must be fulfilled for a person to be diagnosed with PTSD.

Criterion A defines determinants of the traumatic stressor (APA, 1994). As discussed in Chapter 1, criteria for a PTSD eliciting stressor has progressed throughout DSM revisions and is currently more encompassing. With increased emphasis placed on victims' perceptions, rather than characteristics of the stressor, a wider range of events can now be accepted as eliciting PTSD (O'Brien, 1998). Two elements constitute a traumatic stressor in the DSM-IV. First, encounters need to have involved threats to the physical wellbeing of self or others; or actual or potential for death/serious injury of one's self or others. Secondly, responses to the stressor needs to have involved extreme fear, horror or helplessness. Unlike previous DSM versions outlining criteria for PTSD-eliciting stressors, the traumatic event no longer needs to be abnormal, dramatic or catastrophic (O'Brien, 1998).

Criterion B defines re-experiencing and intrusive symptomatology. Because traumatic memories and associated emotions are unintegrated and not acknowledged as something belonging in the past, reexperiencing of the trauma occurs as a contemporary experience (van der Kolk & McFarlane, 1996). Reexperiencing involves nightmares, flashbacks, intrusive images or thoughts and intense psychological distress or physiological reactivity when exposed to internal or external reminders of the trauma. To meet Criterion B, at

least one re-experiencing symptom must be recurrently and repeatedly causing distress (APA, 1994)

Criterion C involves avoidance symptoms. The role of avoidance in coping after trauma appears ambiguous. Avoidance may impede emotional processing and therefore interfere with recovery, but also serve to protect traumatized individuals from becoming overwhelmed (Joseph, Williams & Yule, 1997). However, affective avoidance and the blocking of emotional responses may be less adaptive than behavioural and cognitive avoidance (Joseph, Williams & Yule, 1997). To fulfil this criterion, three avoidance symptoms must be persistently experienced (APA, 1994) which indicates that too much avoidance becomes maladaptive. Research (e.g. Foa, Riggs, & Gershuny, 1995; Taylor, Kuch, Koch, Crockett & Passey, 1998) has classified avoidant symptoms into effortful avoidance and numbing/dissociation. Effortful avoidance incorporates symptoms involving conscious avoidance of thoughts, emotions, conversations, activities or places and people that stimulate traumatic reminders. Numbing or dissociation consist of inability to remember parts of the traumatic event; decreased interest or participation in meaningful activities; feeling detached or estranged from others; or experiencing a limited range of affect. DSM-IV also lists a sense of foreshortened future which does not fit either of these two avoidant categories (Resick, 2001).

Criterion D defines symptoms of physiological arousal which reflect hyperarousal and anxiety. These included concentration difficulties, hypervigilance, irritability, problems falling asleep and staying asleep and exaggerated startle reactions. PTSD sufferers not only present with exaggerated startle reactions, but unlike others, do not habituate to repeated presentations of the same stimuli (Resick, 2001). This overreaction to even

minor stimuli involves complex psychological and biological feedback processes in which chronic anticipation of threat causes difficulties with concentration, narrowing of attention to sources of potential threat and, subsequently, further overreaction to neutral stimuli (van der Kolk & McFarlane, 1996). The generalization of threat to all situations is a distressing consequence of the hyperarousal symptoms (van der Kolk & McFarlane, 1996). Furthermore, anxiety itself may trigger reminders of the trauma, generating unwanted memories and related sensations of the traumatic event (van der Kolk, McFarlane & van der Hart, 1996). To meet Criterion D, two symptoms of physiological arousal must be experienced.

To meet Criterion E, all reexperiencing, avoidance and arousal symptoms must co-occur for at least four weeks. Clinicians are required to specify between acute PTSD in which symptoms have occurred for less than three months, and chronic PTSD in which symptoms have occurred for three months or more. When symptoms are present for less than one month, individuals might fit the diagnostic criteria for acute stress disorder (ASD) (Kaplan & Saddock, 1998). As Table 2 reveals, ASD is similar to PTSD, with the onset of reexperiencing, avoidance and hyperarousal symptoms subsequent to a traumatic experience. In contrast to PTSD however, ASD can be diagnosed from two days after a traumatic event. ASD includes the presence of at least three dissociative symptoms such as emotional numbing and detachment, diminished awareness of the environment, derealization, depersonalisation and dissociative amnesia (APA, 1994). The strong emphasis on dissociative symptoms is based on research which has determined that dissociative symptoms both during trauma (Shalev, Peri, Canetti, Schreiber, 1996) and after trauma (Spiegel, Koopman, Cardena, & Classen, 1996) are predictive of PTSD and thereby represent more serious levels of traumatization.

Peritraumatic dissociation which involves the experience of unreality *during* a traumatic event is considered to be a biological reaction to inescapable terror and may take many forms including loss of time, blacking out, a sense that one is dreaming or floating above the scene, body distortions, feeling detached from one's body, emotional numbing and amnesia (Resick, 2001).

Table 2: DSM-IV Diagnostic Criteria for Acute Stress Disorder (APA, 1994)

- A. The person has been exposed to a traumatic event in which both of the following were present:
 (1) the person experienced, witnessed or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others
 (2) the person's response involved intense fear, helplessness or horror.
- B. Either while experiencing or after experiencing the distressing event, the individual has three (or more) of the following dissociative symptoms:
 (1) a subjective sense of numbing, detachment, or absence of emotional responsiveness
 (2) a reduction in awareness of his or her surroundings (e.g. "being in a daze")
 (3) derealization
 (4) depersonalization
 (5) dissociative amnesia (e.g., inability to recall an important aspect of the trauma)
- C. The traumatic event is persistently reexperienced in at least one of the following ways: recurrent images, thoughts, dreams, illusions, flashback episodes, or a sense of reliving the experience; or distress on exposure to reminders of the traumatic event.
- D. Marked avoidance of stimuli that arouse recollections of the trauma (e.g., thoughts, feelings, conversations, activities, places, people).
- E. Marked symptoms of anxiety or increased arousal (e.g., difficulty sleeping, irritability, poor concentration, hypervigilance, exaggerated startle response, and motor restlessness).
- F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning, impairs the individual's ability to pursue some necessary tasks, such as obtaining necessary assistance or mobilizing personal resources by telling family members about the traumatic experience
- G. The disturbance lasts for a minimum of 2 days and a maximum of 4 weeks and occurs within 4 weeks of a traumatic event.
- H. Not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition, is not better accounted for by brief psychotic disorder, and is not merely an exacerbation of a preexisting Axis I or Axis II disorder.
-

Criterion F states that to meet full diagnostic requirements for PTSD, the above symptoms must cause significant distress or impairment in social or occupational functioning. This is also necessary for a diagnosis of ASD. As with all psychological disorders, if symptoms are mild or do not interfere with a person's life, then treatment is not required and a diagnosis should not be made (Resick, 2001).

This research will focus on the fundamental symptom clusters found in ASD and PTSD. Consequently within the body of this article the terms "PTSD symptomatology" or "post-traumatic symptomatology" will pertain to the reexperiencing, avoidant, hyperarousal and dissociative symptoms described above. As Chapter 3 will explain, a variety of theories attempt to explain how PTSD symptoms are elicited and maintained. Within this next chapter the concept of unsafe cognitive-emotional schemas will also be introduced with a proposal of how these schemas, plus existing theories, can be integrated into a general theoretical framework of PTSD.

CHAPTER 3

Understanding PTSD: Theories and Explanations

3.1 Introduction

Over the years a variety of theories have been put forward to explain how and why the complex array of symptoms associated with PTSD are evoked and maintained. Learning theories, which incorporate the basic philosophy of classical and operant conditioning; and cognitive theories, including information processing and social-cognitive models, make a particularly large contribution to explaining PTSD symptomatology. Indeed many therapeutic programs proven effective in treating PTSD are founded within a cognitive-behavioural framework (Foa & Meadows, 1998).

3.2 Theories of PTSD

3.2.1 Learning Theories

Mowrer (1947 cited by Resick, 2001) first established a two-factor theory of classical and operant conditioning to account for post-traumatic symptomatology. Within this model, symptoms of reexperiencing and physiological arousal are said to be classically conditioned as initial fear responses are re-triggered by environmental reminders of the trauma. Avoidant and dissociative responses to trauma however, are considered to be under operant control, being positively reinforced through their ability to elude and prevent emotional distress (Mowrer, 1947 cited by Resick, 2001; Wagner & Linehan,

1998). Repeated exposure to conditioned stimuli (or environmental triggers) in the absence of negative consequences is hypothesized to alleviate post-traumatic symptoms by extinguishing the link between stimuli and fear response (Mowrer, 1947 cited by Resick, 2001). Indeed exposure therapy, which requires the client to develop an anxiety hierarchy and to mentally confront frightening stimuli has received solid empirical support for the treatment of PTSD (see Foa & Meadows, 1998 for literature review).

Even though learning theories have helped to explain how fear, anxiety and avoidance is elicited and maintained after trauma, such perspectives do not provide unique explanations for PTSD as compared to other anxiety-related disorders. PTSD and specific phobias, for example, are given the same theoretical explanations, even though each disorder is quite different (Joseph, Williams & Yule, 1997). Additional theoretical perspectives are thus required to make fuller sense of PTSD symptomatology.

3.2.2 Emotional Processing Theories

Rachman (1980 cited by Joseph, Williams & Yule, 1997) provides a framework for understanding post-traumatic symptoms by explaining that intrusive reexperiencing and physiological arousal are a consequence of inadequate emotional processing.

Accordingly, emotional reactions to trauma require absorption so that exposure to trauma-related cues no longer evoke intense emotion. Predictable, controllable stimuli, a high sense of self-efficacy and a relaxed state are considered to contribute to emotional processing. However sudden, uncontrollable and dangerous stimuli, a neurotic personality or fatigue are deemed to impede emotional processing. Although helpful, Rachman's emotional processing theory can not explain alone why symptoms specific to PTSD occur (Joseph, Williams & Yule, 1997).

Foa & Kozak (1986) also present an emotional processing theory in which PTSD symptoms are caused by the development of a pathological 'fear structure'. The fear structure consists of representations of trauma-related stimuli; information about cognitive, behavioural and physiological responses; and meanings which link these stimulus and response elements (Foa & Kozak, 1986). Hyperarousal and reexperiencing symptoms are thought to be evoked by activation of the fear structure, which is easily accessed and activated by a variety of cues. Attempts to avoid activation of the trauma-related fear structure is said to create the avoidance symptoms of PTSD.

The idea that intrusive and hyperarousal symptoms of PTSD are based on the brain's difficulties with processing highly distressing and emotive information is compatible with Horowitz's (1978) information processing model, which is discussed next.

3.2.3 Information Processing Model

Horowitz's (1978) information processing model contributes greatly to explanations regarding PTSD symptomatology. Horowitz (1978) proposes that post-traumatic symptoms occur when traumatic events constitute information that is incompatible with existing cognitive schemas. Cognitive schemas are mental frameworks that encompass the brain's most abstract generalized knowledge structures and function to guide and direct incoming knowledge and information (Janoff-Bulman, 1992). When a traumatic event is not compatible with existing cognitive schemas, extensive revision of existing beliefs and knowledge is required to integrate the event successfully. To prevent exhaustion which may impede such revision, inhibitive processes (i.e. avoidance and dissociation) and facilitative processes (i.e. intrusive reexperiencing) alternate until the

event is assimilated (Horowitz, 1978). When traumatic memories are eventually affirmed and integrated into existing schemata, most psychological distress is alleviated (van der Kolk & McFarlane, 1996).

Traumatic memories that are not accepted and synthesized over time however, become dissociated from normal memory systems and existing schemata. Because they are not 'stored' in normal memory, the dissociated memories stimulate chronic replaying of the trauma in images, feelings, behaviours and physiological states. This repetitive exposure of traumatic memories further heightens reactivity to trauma-related stimulus, thereby generating problems with arousal, attention and stimulus discrimination and evoking a variety of psychological defences found in PTSD (van der Kolk & McFarlane, 1996).

3.2.4 Social-Cognitive Perspectives

Traumatic experiences which are dissociated from normal memory are proposed to be stored only at perceptual levels of information processing as fragmented sensory elements (e.g. visual images, somatic sensations) with high levels of negative affect (van der Kolk, 1996). The absence of associated linguistic or semantic components means that dissociated traumatic memories are without accompanying narratives creating an inability for victims to talk coherently about the trauma. Over time, as victims acquire a deeper awareness of the trauma, the construction of a coherent narrative which gives meaning to the event is developed (van der Kolk, 1996). The brain's initial inability to formulate a clear, logical narrative of the trauma suggests that normal processing of the event is impeded because of an inability to accept or process the fundamental meaning of the traumatic experience: an idea compatible with social-cognitive theories of trauma.

Janoff-Bulman's (1992) social-cognitive theory of PTSD asserts that the inability to integrate information about a traumatic event is due to a failure to accept the adverse meanings of the event that victims attribute to themselves and the world. Events which shatter positive beliefs about one's self-worth and about the world as meaningful and benevolent are considered to be more traumatic. Janoff-Bulman's theory proposes that the more incongruent traumatic information is with existing schemas, the more the trauma shatters positive beliefs about the self and the world which creates greater risk for PTSD symptomatology.

Although research has revealed that victims of trauma have significantly more shattered assumptions relating to these self-world concepts than non-trauma victims (Janoff-Bulman, 1992), a controversy has arisen regarding this theory. Researchers have noted that individuals who experience the worst trauma-symptoms (e.g. meeting the PTSD diagnosis) are commonly individuals who have prior trauma-histories and therefore already had self-world assumptions that were shattered before the trauma (e.g. Nishith, Mechanic & Resick, 2000). If schema-congruent rather than schema-incongruent information triggers PTSD, then Janoff-Bulman's proposition that the extent of shattered assumptions is related to the extent of PTSD symptomatology cannot be supported (Resick, 2001).

Keeping in line with Janoff-Bulman's (1992) social-cognitive theory on shattered world assumptions, the author agrees that the perceived fundamental meaning of trauma creates severe distress and an inability to integrate information successfully. However, in line with researchers who argue that assumptions do not have to be 'shattered' to create PTSD, it is suggested that traumatic events do not refute positive schemas, but act to

confirm negative cognitive-emotional schemas relating to one's basic requirement for a sense of safety and survival. Next the concept of unsafe schemas will be introduced with theoretical propositions regarding how these schemas can fit into an integrated framework of the above theories.

3.3 Introducing Unsafe Cognitive-Emotional Schemas

While cognitive schemas are abstract, generalized knowledge structures that act as frameworks to help guide incoming data (Janoff-Bulman, 1992), emotion schemas are knowledge structures that act to prompt the experience and expression of particular emotions (Jenkins & Oatley, 1998). Cognitive-emotional schemas then, incorporate both beliefs and emotional responses. In the context of the present research, unsafe schemas are cognitive-emotional schemas that threaten a person's core sense of survival, safety, invulnerability and control, while eliciting intense anxiety, fear or horror.

It is proposed that during everyday life, unsafe schemas established from past experiences are typically denied, repressed and kept out of consciousness. Indeed people confront information all the time which confirms that they are powerless and vulnerable in many situations, however most tend to maintain an illusion of safety which assists in preventing anxiety for every-day functioning (Janoff-Bulman, 1992). During trauma however, unsafe schemas involving fear-inducing beliefs that humans are unsafe, vulnerable and powerless against preventing adverse circumstances, become activated. The elicitation of these repressed cognitive-emotional unsafe schemas through trauma create severe anxiety as beliefs about one's own true inability to conquer or control

severe threat are strengthened and confirmed.

The idea that unsafe schemas are the crux of PTSD can be placed within an integrated theoretical framework based on the above theories. It is proposed that when traumatic events disturb a person's sense of safety and security by triggering unsafe schemas, intense feelings of anxiety and hypervigilance occur. During the post-trauma period, such anxiety becomes conditioned and generalized to environmental stimuli, as classical learning theory proposes. Avoidance and dissociative symptoms then become positively reinforced under operant conditioning as negative trauma-related emotions, thoughts and memories are obstructed. As conditioning of fear responses become more entrenched, the pathological 'fear structure' as proposed by Foa & Kozak (1986) becomes established. The meanings which are said to link both representations of trauma-related stimuli and information about fear responses within the fear structure, come from unsafe schemas. Heightened sensitivity of the 'fear structure' to trauma-related cues maintains severe anxiety and hypervigilance and encourages avoidance, which impedes information processing of the event. This inability to process the event occurs due to an unwillingness to accept the perceived meaning of the event as related to a person's sense of security and safety; or the strength of elicited unsafe schemas. The dissociated memories stimulate chronic replaying of the traumatic event in images, feelings, behaviours and physiological states; generating the pattern of reexperiencing, avoidance and hyperarousal typically associated with PTSD. As this theoretical framework suggests, unsafe schemas and the degree to which they are elicited, represent the crux of PTSD symptomatology.

3.4 Can Research Support the Role of Unsafe Schemas in PTSD?

One aim of the current research, therefore, is to provide support for the hypothesis that elicitation of unsafe schemas is the crux of post-traumatic symptomatology. This is not a new idea; experts agree that a vital part of traumatisation involves perceptions relating to how threatened and helpless victims feel (van der Kolk & McFarlane, 1996).

Furthermore certain classes of traumatic experiences that are highly likely to threaten a person's core sense of safety, invulnerability and control, such as combat, grotesque violence, violent crime and violent abuse are also more likely to elicit high levels of post-traumatic symptoms (O'Brien, 1998; Joseph, Williams & Yule, 1997).

The invasion of one's body and personal space against one's will has been described as a central "traumatogenic dynamic" of disempowerment (Finkelhor & Browne, 1985 cited by McCann & Pearlman, 1990) and this threatened sense of control, may explain why high rates of chronic PTSD are found in victims suffering from interpersonal traumas such as rape (Foa & Rothbaum, 1989). Research has also shown that attribution of traumatic events to stable, uncontrollable causes are more likely to elicit emotion-focused rather than problem-focused coping, creating higher levels of PTSD (Mikulincer & Solomon, 1989). In contrast to attributing the causes of trauma to personal influences from an internal locus of control, attributing the causes of events to external circumstances from an external locus of control, is related to higher appraisals of threat and therefore higher levels of PTSD (Solomon, Mikulincer & Benbenishty, 1989). It is likely that traumas perceived as uncontrollable, are more likely to elicit schemas which threaten a person's general sense of control, creating perceptions of helplessness regarding the ability to be helped psychologically. The elicitation of unsafe schemas

relating to helplessness and powerlessness may encourage the limited problem-focused coping necessary for recovery, creating risk for the development of PTSD.

The idea that unsafe schemas play a role in PTSD may be supported by research showing that continuous re-exposure to trauma is associated with higher post-trauma distress (van der Kolk & McFarlane, 1996). For example, the strongest predictor of negative outcome among rape victims is having been raped before (Frazier & Borgida, 1988 cited by Frieze & Bookwala, 1996) and among victims of bank robberies is past experiences of bank robberies (Leymann, 1985 cited by Frieze & Bookwala, 1996). Frieze & Bookwala (1996) explain that such distress is caused by victims' strong perceptions of powerlessness about preventing further victimisation. Indeed when unsafe schemas are threatened repeatedly, they are likely to be reinforced with each experience of victimisation, so that PTSD becomes more likely with each adverse experience.

A study of rape victims given exposure therapy for chronic PTSD, revealed that more severe post-treatment psychopathology was associated with greater use of words regarding death and dying within the trauma narrative (Alveraz-Conrad, Zoellner & Foa, 2001). Use of words regarding death and dying during exposure therapy was suggested to be a product of 'mental defeat' - giving up all autonomy, will power and sense of identity and accepting or willing death during the trauma - which has been linked to more severe levels of post-trauma psychopathology in other studies (e.g. Ehlers et al., 1998). The author proposes that it was the extreme triggering of unsafe schemas within consciousness, during the assault, that created 'mental defeat'. By surrendering to the recognition of one's vulnerability, powerlessness and lack of safety during trauma, victims were unable to easily deny or repress such perceptions and accompanying

feelings during the post-trauma period. Having surrendered to the idea of an inevitable death only to survive the assault would leave victims with a persistent sense of their own mortality and vulnerability. It is likely that unsafe schemas would permeate consciousness recurringly, creating a chronic sense of danger and an inability to feel safe. Only with time, as the traumatic memories gradually became less intense, would the elicited unsafe schemas become less persistent so that PTSD symptoms could subside.

In addition, research has shown that memories of traumatic events become adaptively modified over time (Lee, Vaillant, Torrey & Elder, 1995). Longitudinal research over 45 years revealed that WWII soldiers who had *not* developed PTSD had modified their war-time narratives so that the most horrific events were diluted. WWII soldiers who did develop PTSD however, still remembered specific details of the horrific events and could relive the trauma with full sensory and emotional intensity (Lee, Vaillant, Torrey & Elder, 1995). It is proposed that modification of traumatic memories helped soldiers to repress or deny the accompanying anxiety-provoking meanings related to unsafe schemas, so that much of the horror and anxiety dissipated over time as traumatic memories were integrated into existing schemas. In contrast, clear detailed memories of severe trauma maintained unsafe schemas within consciousness, so that opposing beliefs about one's ability to remain safe and in control of potential threat could not be developed. Indeed, maintenance of clear memories of traumatic experiences, would persistently trigger accompanying meanings, creating limited escape from anxiety-provoking thoughts and emotions.

The concept of unsafe schemas may help to explain why post-traumatic psychopathology is sometimes evoked during normative events. Experiences such as marital difficulties,

children's behavior, 'normal' bereavement (Burstein, 1985), miscarriage and extramarital affairs by a spouse have been linked to PTSD symptomatology (Helzer, Robins & McEvoy, 1987). In such situations, it is possible that individuals' unsafe schemas were more vulnerable to being triggered due to past unresolved traumas and/or past insecure attachment experiences. Indeed research has shown that people who are vulnerable to developing PTSD after trauma are more likely to have experienced past multiple traumas (e.g. Burgess & Holstrom, 1978 cited by Zoellner, Fitzgibbons & Foa, 2001; Resick, 1993 cited by Zoellner, Fitzgibbons & Foa, 2001), including abuse during childhood (Breslau et al., 1991).

Insecure attachment experiences during childhood, such as parents being unpredictable or insensitive to distress (Bowlby, 1973), are considered to reinforce unsafe schemas making them more sensitive to being triggered in the future. Securely attached children know that eliciting distress signals will always cause parental responses which alleviate feelings of vulnerability and generate feelings of comfort. In contrast, children who are insecurely attached must face their own lack of power and vulnerability during distress (Bowlby, 1973). Because of such unstable attachment experiences, insecure children and adults may be more likely to develop schemas relating to the self as unsafe, vulnerable and lacking control, which may not only intensify PTSD symptoms, but create a general inability to cope with PTSD symptoms. Indeed insecure adult attachment style has predicted PTSD in prisoners of war (Dieperink, Leskela, Thuras & Engdahl, 2001) and has been associated with higher levels of PTSD symptomatology in traumatized populations, including ex-veterans (Mikulincer, Florian & Weller, 1993) and adult survivors of childhood abuse (Muller, Sicoli & Lemieux, 2000). Furthermore, during stress, adults with insecure attachment styles adopt less constructive distress

management techniques, less optimistic expectations about managing stress and lower sense of self-efficacy than those with secure attachment (see Mikulincer, Horesh, Eilati & Kotler, 1999 for review; see Mikulincer & Florian, 1998 for review). In contrast, secure attachment bonds have been noted as defending against trauma-induced psychopathology in both children and adults (Finkelhor & Browne, 1984).

3.5 Conclusion

The objective of this chapter was to introduce the concept of unsafe schemas and propose that the triggering of unsafe schemas are the crux of PTSD symptomatology. Like other animals, humans are biologically wired to survive. Physiologically and psychologically, humans are designed to automatically react during threat in ways that enhance their chances of survival. To confront and accept humankind's own lack of power and complete vulnerability to serious harm or death must be a devastating and shocking experience, which must have adverse psychological consequences.

Unsafe schemas however are not the only schemas considered to play a fundamental role in PTSD symptomatology. It is suspected that certain schemas relating to perceptions regarding the self and others - Internal Working Models (IWMs) - also play a fundamental role in helping to elicit and maintain symptoms. As will be discussed in Chapter 4, IWMs are an integral component of the attachment system and involve cognitive-emotional schemas relating to perceptions and feelings about the self and others. Such schemas develop in childhood and become readily accessible during times of stress when the attachment system becomes activated (Bowlby, 1988).

CHAPTER 4

Internal Working Models

4.1 Introduction

Before progressing to the specific aims of the current thesis, a brief overview of theory, research and literature regarding Internal Working Models (IWMs) should provide the background necessary to sufficiently comprehend how these schemas may help to facilitate and maintain PTSD symptomatology. IWMs are cognitive-emotional schemas which comprise of generalized perceptions, beliefs and feelings regarding the self and others. According to attachment theory, IWMs evolve as a consequence of environmental factors interacting with the “attachment behavioural system” and such schemas are critical for guiding people’s behaviours adaptively during times of stress (Bowlby, 1973). As a vital component of the “attachment behavioural system”, early IWMs function to help people gain comfort and security by allowing for prediction of outcomes in interpersonal situations and by assisting with the development of effective behavioural strategies to manage them (Main, Kaplan & Cassidy, 1985 cited by Collins & Read, 1994). As will be discussed, the “attachment behavioural system” is discernible within the first few days of life, functioning to enhance one’s chance of survival by promoting patterns of behaviours, emotions and perceptions about the self and others, which become readily accessible during times of stress (Bowlby, 1988).

4.2 The Attachment Behavioural System

Bowlby (1973) maintains that the “attachment behavioural system” is a homeostatic system which facilitates proximity-seeking actions and contact-maintaining behaviours in infants for the purpose of physical and emotional security from caregivers. Evident within the first few days after birth, this behavioural system adapts over time to the nature of the established emotional attachment bond with the primary caregiver (Bowlby, 1982) and essentially functions with the fundamental goal of self-preservation (Bowlby, 1973). To increase the likelihood of survival, the attachment system regulates in order to urge proximity to caregivers. When infants become mobile, parents are used as a secure-base, or foundation, which infants regularly return to during exploration of their surroundings and when feeling threatened, insecure or distressed. Adaptation of the attachment system in relation to the environment means that the type of parenting that infants are subjected to plays an essential role in regulating and influencing attachment behavioural patterns. Whereas sensitive, consistent care-giving facilitates secure attachment; insensitive, inconsistent, abusive and/or neglectful parenting facilitates anxious or insecure attachment (Ainsworth, Blehar, Waters & Wall, 1978; Main & Solomon, 1986).

Infants’ behavioural attachment patterns were first identified within the ‘Strange Situation’ by Ainsworth et al. (1978) as representing three prime styles: secure, insecure-ambivalent and insecure-avoidant. Later a fourth attachment category was identified and named disorganized/disoriented (Main & Solomon, 1986). During the ‘Strange Situation’ infants’ attachment systems are activated by controlled separations with mothers and the introduction of strangers. All four attachment styles have consistently

revealed unique patterns of emotional and behavioural responses within the 'Strange Situation'.

Securely attached infants generally make appropriate use of mother as a secure-base during exploration, becoming appropriately upset during separations with mother and being easily settled and comforted upon reunion with mother. Securely attached infants exhibit minimum levels of anxiety during separations with mother and low levels of anger towards mother upon reunion (Ainsworth et al., 1978). Secure attachment has been correlated with mothers' sensitivity to infant communication including reciprocal face-to-face interactions and gentle holding of the child during the first year of life (Ainsworth et al., 1978).

In contrast to securely attached infants, insecure-ambivalent infants are observed as being overly preoccupied with mothers whereabouts in the Strange Situation which interferes with effective exploration of the environment. During separations from mother, insecure-ambivalent infants exhibit high levels of fear and anxiety; while reunions with mother elicits high levels of displayed anger and hostility. After separations from mother insecure-ambivalent infants are difficult to comfort, remaining clingy and unsettled (Ainsworth et al., 1978). Parents who have insecure-ambivalent children are often inappropriately affectionate, unpredictable in responding to infants' needs and overly interfering when the infant does not need or want attention (Ainsworth et al., 1978). The unpredictability of mother's responses are said to be responsible for the insecure behaviours displayed by children with ambivalent attachment (Ainsworth, et al., 1978; Crittenden, 1995).

Unlike insecure-ambivalent infants who remain overly preoccupied with mother's whereabouts, insecure-avoidant infants appear disengaged from attachment feelings towards mother. Within the Strange Situation insecure-avoidant infants make limited use of mother as a secure base, failing to show signs of being upset or distressed during separations with her. During reunions insecure-avoidant infants actively avoid or ignore mother, remaining fixated on toys or other objects instead (Ainsworth et al., 1978). Although initially appearing like they have successfully deactivated their attachment systems, avoidant infants have very high heart-rates following separations from mother and can not fully engage their attention when distracting themselves by fixating on something else (Scroufe & Waters, 1977 cited by Fraley, Davis & Shaver, 1998). It is likely therefore that avoidant infants still experience some level of anxiety during separation from mothers, but do not reveal such emotions outwardly. Mothers of insecure-avoidant infants have been observed to reject attachment behaviours, such as crying or reaching arms out and are particularly averse to tactual contact (Ainsworth et al., 1978) suggesting that avoidant children's lack of emotional display is a strategy which prevents rejection and maintains proximity.

The last identified pattern of attachment, disorganized-disoriented, was discovered by Main and Solomon (1990) during examination of videotapes of unclassifiable infants within the Strange Situation. Such infants appeared to have no organized behavioural tendencies during separations and could not be classified as secure, insecure-ambivalent or insecure-avoidant. These infants revealed unusually odd behaviours with signs of dissociation in the presence of parents. They displayed a vast array of conflicted and abnormal behaviours including freezing all movement with trance-like facial expressions; rocking on hands and knees with face averted from the parent; rising to greet the parent

and falling prone; and clinging while leaning away from the parent figure. Subsequent to the classification of disorganized-disoriented infants by Main and Solomon (1990), it was discovered that those with such behaviours often comprised of infants who were physically abused or severely neglected by the parent (Crittenden, 1995). Others with this attachment status have also been known to have mothers who are suffering from a severe type of bipolar affective illness which creates erratic and unpredictable parenting (Radke-Yarrow, Cummings, Kuczynski & Chapman, 1985); mothers who are suffering from unresolved parental loss during childhood; or mothers who have been sexually or physically abused as children (Main and Hesse, in press cited by Bowlby, 1988). The theory was proposed that disoriented-disorganized infants suffer a collapse in behavioural strategy when needing security. Because frightening parental behaviour is the source of distress and threat, the infant is unable to approach parents, like secure and ambivalent children; nor can the infant shift attention like avoidant infants. The disoriented-disorganized infant then, has no consistent behavioural strategy in his or her repertoire which will guarantee a sense of safety or security, which explains why such odd, unusual, conflicting behaviours are observed during the Strange Situation (Main, 1995).

As revealed above, the secure, insecure-ambivalent, insecure-avoidant and disorganized-disoriented attachment styles each evidence unique behavioural reactions during times of uncertainty and stress. Such differences are proposed to be due to unique systematic differences in particular cognitive-emotional schemas called Internal Working Models (IWMs) (Bowlby, 1973).

Being readily accessible during times of stress when the attachment system is activated

(Bowlby, 1988), IWMs develop from how well attachment needs, such as felt security and maintenance of proximity, are regulated and satisfied by attachment figures (Bretherton, 1985 cited by Collins & Read, 1994). From the moment an infant is consciously aware, perceptions and associated emotions about others and the self are initiated. Over time such information is internalised into more generalized representational schemas, otherwise called IWMs (Bowlby, 1973). These cognitive-emotional schemas, which persist into adulthood (Bowlby, 1988), are said to represent perceptions of social reality, guide information processing, predictions and expectations about others' behaviours in relation to the self, and shape the nature in which attachment behaviours are expressed (Bowlby, 1973). However because the attachment system functions essentially to protect individuals from danger, IWMs are extremely sensitive during stress (Bowlby, 1988). Consequently, as will be discussed in the next chapter, IWMs are expected to be adversely impacted by traumatic events, thereby working with unsafe schemas to promote PTSD symptomatology. As will be discussed next, IWMs are said to persist throughout childhood and into adulthood, affecting expectations, emotions, defences and behaviour in close relationships, while also eliciting attachment styles parallel to the secure, ambivalent, avoidant and disorganized/disoriented styles recognized in young infants (Bartholomew & Shaver, 1998).

4.2. IWMs in Childhood

As already discussed, the secure, ambivalent, avoidant and disorganized/disoriented attachment styles each preserve a unique configuration of IWMs which influence how an infant responds to stress, copes with emotion and interacts with significant others

(Ainsworth, et al., 1978). As will be discussed, attachment styles may also influence vulnerability to later psychopathology, with secure attachment acting as a possible protective factor against childhood psychological disorder (Crittenden, 1995).

Securely attached children seem to exhibit superior levels of social and exploratory competence within peer and school settings, showing the ability to respond to problem situations with greater flexibility, persistence and resourcefulness, than insecurely attached children (Carlson & Scroufe, 1995). The sensitive and responsive nature of parenting experienced by securely attached children explains the high levels of confidence that securely attached children have in themselves and others, which provides the foundation for positive IWMs of both the self and others (Feeney, Noller & Hanrahan, 1994).

In contrast, the insecure and disorganized attachment types maintain adverse IWMs about the self and/or others (Feeny, Noller & Hanrahan, 1994). Insecure-ambivalent children grow up striving to gain attention from others to maintain a sense of security as a consequence of the inconsistent availability and responding of care-takers. As a result, little attention is given to self-development and self-deprecating views are elicited and maintained (Collins & Read, 1994). Insecure-avoidant children, on the other hand, develop negative IWMs of others as untrustworthy and of the self as unworthy of care, as they are consistently rejected when seeking comfort and security (Collins & Read, 1994). Several studies suggest however, that disorganized-disoriented attachment status, which comprises of exceptionally negative IWMs of both self and others (Feeney, Noller & Hanrahan, 1994), offers the most prominent risk for both disruptive-aggressive school behaviours (Lyons-Ruth, 1996; Solomon, George & DeJong, 1995; Greenberg,

Speltz, DeKlyen, & Endriga, 1991 cited by Main, 1996) and psychopathology during later childhood and adolescence (e.g. Liotti, 1992; Carlson, 1995 cited by Main, 1996).

4.3. IWMs in Adulthood

While continuing to guide and shape the emotional and cognitive processing of social information, IWMs are carried into adulthood, maintaining their influence over behaviours while affecting vulnerability to mental illness (Collins & Read, 1994). As will be discussed, adult attachment styles have been measured and defined in various ways by researchers and clinicians. The following discussion will highlight the major ways in which adult attachment has been measured and subsequently justify the assessment tool used for this research project.

4.3. Assessment of Adult Attachment Styles

Although adult attachment styles have been measured and defined in various ways within the literature, two primary fields of attachment classification exist. The first domain, dominated by the Adult Attachment Interview (AAI), deals with childhood memories of attachment figures (Main & Goldwyn, 1994 cited by Adam, Sheldon-Keller & West, 1996). Within this domain, attachment status is assessed by examining the linguistic components of participants' discourse as they answer questions relating to a variety of questions on childhood experiences, including attachment relationships, loss of significant others and separation from attachment figures. Participants are asked to

describe and contemplate the potential effects of such experiences on their own development and personality (George, Kaplan & Main, 1996 cited by Adam, Sheldon-Keller & West, 1996). Classification of secure-autonomous, preoccupied-entangled, dismissing or unresolved-disorganized parallel the infant attachment styles of secure, insecure-ambivalent, insecure-avoidant and disorganized-disoriented respectively (Main, 1996).

Secure-autonomous attachment is represented by consistently clear, coherent and collaborative discourse which is relevant, accurate and complete. The ability to maintain a coherent, rational discourse even during discussion about negative childhood experiences, suggests that any past issues are indeed resolved and are not hindering present day social, emotional or cognitive functioning (Main, 1996). However discourse of the additional three insecure attachment styles, represents a lack of resolution regarding adverse childhood experiences.

Preoccupied-entangled attachment is characterized by over-preoccupation with past attachment experiences and involves confused, angry or passive stances which are often incoherent. This is contrasted with dismissing attachment, represented by overly optimistic attitudes about childhood experiences in which specific memories are either not supplied, or contradict the idea of the 'perfect' childhood trying to be portrayed. In both cases, lack of resolution effects the ability to discuss negative childhood experiences clearly. When past childhood trauma or neglect was extreme, participants are often found to be unresolved-disorganized. Lapses in monitoring of reasoning or discourse, with an inability to maintain clear, coherent sentences when talking about past traumas signifies this attachment status. Incoherent discourse is considered to be a sign of

disorganization and dissociation which is triggered by painful childhood memories which have not been worked through (Main, 1996).

The second main field of adult attachment deals with assessment of adults' current relationship experiences and is dominated by an array of self-report questionnaires. Some researchers have conceptualised the secure, ambivalent and avoidant attachment styles, as originally discovered by Ainsworth and colleagues (1978), into force-choiced measures of adult romantic relationships (e.g. Hazan & Shaver, 1987). However, because research (e.g. Feeney, 1991 cited by Feeney, Noller & Hanrahan, 1994) contradicts the notion that each person fits neatly into one attachment category, continuous measures of attachment have been developed so that individuals can reflect each attachment style by using a Likert-type format for each of the corresponding attachment descriptions (e.g. Griffin & Bartholomew, 1994).

In addition to measuring 'attachment styles' categorically or continuously, other researchers have developed assessment tools which tap into the attachment construct more specifically. One such tool is the Attachment Style Questionnaire (ASQ) developed by Feeney, Noller & Harahan (1994). The ASQ was formulated on the understanding that adult attachment contains two underlying dimensions: IWMs of the self (positive or negative) and IWMs of others (positive or negative). Bartholomew & Horowitz (1991) were the first to propose that each combination of the four dimensions of IWMs define four possible attachment styles. Secure attachment is a combination of positive IWMs of the self and positive IWMS of others; preoccupied attachment combines negative IWMs of the self and positive IWMS of others; dismissing attachment combines positive IWMs of the self and negative IWMS of others; and fearful attachment

involves both negative IWMs of the self and of others.

During formulation of the ASQ, research lead Feeny, Noller & Harahan (1994) to identify five main factors inclusive of the four possible dimensions of IWMs (positive-negative; self-other). These dimensions are *Confidence* which represent positive IWMs of the self and others; *Discomfort with Closeness* and *Relationships as Secondary* which represent negative IWMs of others; and *Need for Approval* and *Preoccupation with Relationships* which represent negative IWMs of the self.

Confidence is related to high levels of self-esteem, comfort with closeness and the ability to trust and depend on others. Discomfort with Closeness is characterized by difficulties with depending, trusting and getting close to others. Relationships as Secondary is characterized by dismissing relationships and appearing independent in order to protect the self from hurt and vulnerability. Preoccupation with Relationships involves attempts to fulfil dependency needs by anxiously reaching out to others. Finally, Need for Approval involves the need to gain approval and acceptance from others (Feeney, et al., 1994).

Subsequent analyses on the ASQ scales validated Bartholomew & Horowitz's (1991) proposal that each attachment style maintains unique configurations of IWMs relating to the self and others. Feeney, Noller & Hanrahan (1994) revealed that members of the secure group were very high in *Confidence*, and low on all other scales involving negative IWMs. In effect, as previous research would predict (e.g. Bartholomew & Horowitz, 1991), secure subjects had high self-esteem, were confident about close relationships and were comfortable with intimacy.

In stark contrast, members of the fearful group were very low in *Confidence*, but high on all four factors measuring negative IWMs. Consequently, fearful subjects lacked confidence in themselves and others, were uncomfortable with intimacy and worried about gaining others' approval.

Dismissing subjects scored high on *Relationships as Secondary* and *Discomfort with Closeness*, and moderate in *Confidence*, *Need for Approval* and *Preoccupation with Relationships*. These individuals excluded relationships to emphasize achievement and were uncomfortable being close to others. Although somewhat confident in themselves, dismissing individuals still worried about gaining others' approval.

Finally, members of the preoccupied group scored high on *Preoccupation with Relationships* and *Need for Approval*, moderate on *Discomfort with Closeness*, low to moderate in *Confidence* and low in *Relationships as Secondary* scales. Preoccupied individuals were concerned about approval and insecure about their relationships. Although they emphasized the importance of relationships, preoccupied individuals were uncomfortable with closeness and lacked confidence in themselves and others.

The analysis by Feeney, Noller & Hanrahan (1994) demonstrates that each attachment style is characteristic of particular patterns of IWMs which guide information processing, expectations, perceptions and behaviours. The specificity of the ASQ in measuring IWMs was the main reason why this assessment tool was used in the current research project to identify the emergence of positive and negative IWMs of the self and others subsequent to a traumatic experience. As will be outlined in Chapter 5, IWMs are hypothesized to be extremely sensitive to traumatic events and negative IWMs are

predicted to play a key role in the post-traumatic symptoms of reexperiencing, avoidance, arousal and dissociation.

Chapter 5

IWMs, Unsafe Schemas and PTSD Symptomatology

5.1. Introduction

Although IWMs are verified as being reasonably stable and consistent across situations and over time (Brennan & Shaver, 1994), research regarding the development and nature of these schemas has been limited (Berman & Sperling, 1994). Bowlby (1982) conceptualised the development of IWMs as a process analogous to pathways in which a given pathway either continues straight or branches into other trajectories. Certain conditions, such as successful experiences in therapy, unexpected and random changes in conditions or maturation alone are considered to modify behavioural and mental pathways over the long term (Crittenden, 1997). Although some research supports the idea that long term changes in IWMs can occur (e.g. Hazan & Hutt, 1993 cited by Rothbard & Shaver, 1994), research regarding *temporary, sudden* or *abrupt* changes of IWMs has been neglected.

The current researcher however, intends to shed light on the nature of IWMs as being particularly sensitive to traumatisation and thus not as fixed as theorists advocate. Just as distressing childhood experiences facilitate negative IWMs of the self and others during formative years (Bowlby, 1973; Crittenden, 1995), traumatic experiences during adulthood, which jeopardize the attachment systems' fundamental goal of survival, are proposed to trigger negative IWMs about the self and others. The elicitation of negative IWMs during and after trauma are envisaged to function automatically as a self-

protective mechanism.

Frightening and stressful events during adulthood are said to heighten accessibility of an individual's IWMs to help guide behaviour so that survival is ensured (Bowlby, 1982). However, as will be discussed, experiences which act to jeopardize one's sense of control and safety are theorized to trigger and strengthen negative IWMs of the self and others in preparation for similar experiences in the future. Although all past internally represented information may help with survival, the traumatic experience itself is predicted to dominate representations of current reality, subsequently guiding information processing, beliefs and expectations about others and the self during the post-trauma phase. A review of the literature reveals that researchers often neglect Bowlby's (1973) conviction that individuals possess multiple IWMs of the self and others which are operative during different times. Trauma is proposed to augment negative IWMs which are already prominent, elicit negative IWMs which were previously unnoticed or adversely affect the structure of positive IWMs. Negative IWMs are expected to remain as dominating influences within consciousness until after adaptation and recovery from trauma when they subside and/or are replaced with more positive beliefs. As will be discussed, negative IWMs in combination with unsafe schemas are theorized to be elicited during and immediately after trauma, with each of these adverse schemas triggering and strengthening the other during traumatization. The facilitation of these two schema-types simultaneously are expected to influence the provocation and maintenance of post-traumatic symptomatology and have serious implications on psychological recovery and adjustment.

5.2. IWMs of Others and Unsafe Schemas

Traumatic experiences which reinforce a sense of insecurity, vulnerability and powerlessness cause high levels of anticipatory anxiety, later promoting a generalization of threat to many potentially safe situations (van der Kolk & McFarlane, 1996). This generalization of anxiety to other situations makes sense. Research has shown that intense emotional reactions elicited during highly meaningful events typically become organizing structures for guiding the processing of succeeding experiences (Tomkins, 1979 cited by Jenkins & Oatley, 1998).

It is envisaged that as traumatized individuals increasingly sense the world as a dangerous place, unsafe schemas are not only reinforced, but the ability to trust or depend on people declines, so that negative IWMs of others are activated. Indeed the strong elicitation of negative IWMs of others, may explain why interpersonal traumas such as rape and other forms of assault violence, commonly elicit difficulties with trust and intimacy (Mechanic, Resick & Griffin, 1994 cited by Resick, 2001).

During the post-trauma period, survivors often experience a heightened sensitivity of interpersonal distance (Symonds, 1980 cited by Holloway & Fullerton, 1994) which the author believes is due to triggering of the attachment behavioural system. This finely-tuned attentiveness to interpersonal distance often generates negative biases in perceptions, leading to negative beliefs about others as indifferent or unfeeling (Symonds, 1980 cited by Holloway & Fullerton, 1994). As a result, such perceptions may create adverse implications for trauma victims whose predominant needs involve social support and knowledge that others can be relied on to provide comfort and

reassurance (McCann & Pearlman, 1990). The elicitation of negative IWMs during the post-trauma period may generate low levels of perceived social support, possibly evoking a sense of isolation and fear, while maintaining unsafe schemas. Indeed negative IWMs of others is related to low levels of expressiveness, high levels of introversion (Bartholomew & Horowitz, 1991) and low levels of support-seeking during anxiety-arousing conditions (Simpson, Rholes & Nelligan, 1992). As a result negative IWMs of others may encourage withdrawal from social support and discourage early engagement in therapy; both factors which may prevent emotional engagement and therefore hinder the trauma recovery process (Gilboa-Shechtman & Foa, 2001).

5.3. IWMs of the Self and Unsafe Schemas

During the post-trauma period, victims are vulnerable to a number of negative emotional states which are likely to elicit and maintain negative IWMs of the self. For example, victims of violence often feel disgraced and humiliated (Krupnick & Horowitz, 1980 cited by Holloway & Fullerton, 1994); victims of fatal events may experience survivor-guilt and blame themselves for things they did or failed to do during the event (Joseph, Hodgkinson, Yule & Williams, 1993); and hostage victims may feel worthless and subject themselves to critical self-blaming thoughts at being unable to avoid the capture (Hatcher, 1981 cited by Holloway & Fullerton, 1994). The sense of shame and consequent withdrawal from potential sources of social support occurring with the elicitation of negative IWMs including self-blaming and guilt reactions (Joseph, Williams & Yule, 1997) may delay help seeking, enhance feelings of interpersonal distance between others and reinforce further negative IWMs of the self, thereby delaying the

recovery process.

In addition to the elicitation of negative self-perceptions about the traumatic event, trauma survivors must cope with derogatory self-perceptions relating to their own perceived inability to cope with the psychological after-effects of the event, which often involve thoughts about being incompetent and useless (Zoellner, Fitzgibbons & Foa, 2001). This activation of a bad or weak sense of self typically activates secondary emotional reactions such as depression, generalized anxiety or hopelessness (Paivio & Greenberg, 1998). Indeed; the triggering of negative self-IWMs during traumatization may explain why PTSD is highly comorbid with other anxiety disorders, mood disorders, substance abuse and character pathology (Foa, Keane & Friedman, in press cited by Fairbank, Ebert & Caddell, 2001; Hyams, Wagnall & Rosnall, 1996 cited by Fairbank, Ebert & Caddell, 2001). It is theorized that negative IWMs of the self perpetuate fears about 'belonging' and being accepted by others, which further reinforces unsafe schemas and perpetuates post-traumatic symptomatology.

As will be discussed next, this research aims to decipher whether the elicitation of unsafe schemas and negative IWMs are common during the post-trauma phase, and whether these cognitive-emotional schemas can predict PTSD symptomatology.

5.4. Goals of the Present Study

A fundamental aim of this research is to establish support for the idea that post-traumatic symptoms (i.e. reexperiencing, avoidance, anxiety and dissociation) are elicited and maintained by the presence of unsafe schemas and negative IWMs. The facilitation of these two schema-types simultaneously are expected to influence the provocation and maintenance of post-traumatic symptomatology and have serious implications on psychological recovery and adjustment. The fundamental goals of the study are as follows.

Goal 1: To establish support for the theory that elicitation of unsafe schemas and negative IWMs after a traumatic event play a role in the experienced intensity of PTSD symptomatology.

Goal 2: To establish support for the theory that the presence of unsafe schemas and negative IWMs after a traumatic event play a fundamental role in the maintenance of PTSD symptomatology.

To meet these goals correlation, regression and comparison analyses are required. It is expected that the degree and length of time that post-traumatic symptoms were experienced by participants immediately after trauma, will be positively correlated with the degree that unsafe schemas and negative IWMs were triggered during the traumatisation period. In contrast positive IWMs of the self and others are expected to be inversely correlated with PTSD symptoms.

Regression analyses will determine if the degree and length of time that PTSD symptoms were experienced after trauma can be predicted by the degree that unsafe schemas and IWMs are triggered together during traumatization. A comparison of the independent effects of the impact variables (unsafe schemas and IWMs) is expected to reveal that unsafe schemas is the strongest predictor of PTSD symptoms.

Significant differences are expected to be revealed between participants who meet DSM-IV diagnostic criteria for chronic PTSD, acute PTSD and ASD in the degree that unsafe schemas, negative IWMs and positive IWMs were elicited immediately after a traumatic event. It is expected that any significant differences between diagnostic groups will help to explain why some individuals experience post-traumatic symptoms for short time periods, while others may suffer chronically.

Goal 3: To establish support for the theory that unsafe schemas and negative IWMs trigger and reinforce each other during traumatization, provoking PTSD symptomatology.

Unsafe schemas and negative IWMs are expected to correlate significantly, supporting the idea that each negative schema-type acts to trigger and reinforce the other during traumatization.

Comparisons of participants who meet diagnostic status for PTSD or ASD and participants who do not reach criteria for a diagnosis, will reveal that diagnostic groups have significantly higher levels of both unsafe schemas and negative IWMs.

Goal 4: To decipher if any differences exist between secure, preoccupied, dismissing and fearful responses to trauma.

It is hoped that identification of particular post-trauma attachment style reactions may help to explain individual differences in reactions to trauma and help professionals to immediately predict trauma victims' potential diagnostic status, so that procedures may be established to speed up the recovery process.

It is expected that significant differences are revealed between post-trauma secure and insecure attachment styles in the degree to which PTSD symptoms and unsafe schemas were elicited after a traumatic event.

Significant differences are also expected to be revealed between post-trauma attachment styles of secure, preoccupied, dismissing and fearful in the degree to which PTSD symptoms were elicited after a traumatic event. Fearful attachment, will represent the highest post-traumatic scores due to the highest scores on both negative IWMs of self and negative IWMs of others. Dismissing and preoccupied are expected to represent moderate PTSD scores, while secure attachment should represent the lowest PTSD scores.

CHAPTER 6

Method

6.1 Procedure

Approval of the study was gained from the Massey University Ethics Committee. Two methods were used to recruit participants over 18 years old who had experienced a previous traumatic event. Firstly, written advertisements, shown in Appendix A, were placed in public places such as on church notice boards, supermarket notice boards, email lists and within community newspapers. Interested candidates were required to make contact with the researcher via phone or email and questionnaires were sent out to qualifying candidates. Secondly, in an effort to reach a greater number of people, venues such as police stations, fire stations, churches and schools were visited and groups or individuals were approached personally by the researcher. Questionnaires were either handed out to individuals or left with a person in charge with a covering advertisement.

To protect the well-being of participants, all interested individuals had to declare that the traumatic event was not currently causing distress. From phone calls received through advertising, four people were turned down because of admitting to experiences which indicated that the trauma was currently causing psychological distress (e.g. nightmares about the event, reexperiencing, panic attacks).

All qualifying participants received an Information Sheet (Appendix B) and four short questionnaires (Appendices C-F). As revealed in Appendix B, the Information Sheet

included information about the study and about individuals' rights as participants, in addition to a list of people/agencies and contact phone numbers in case of distressing psychological reactions while completing the questionnaires. Once again the Information Sheet clearly stated that individuals did not qualify to participate if they were currently distressed by the traumatic experience.

Initially 450 questionnaires were distributed. However low return rates of completed questionnaires meant that an extra 200 questionnaires were distributed. In total 650 questionnaires were distributed and 192 were returned. Four questionnaires were disregarded because two participants were under the age of 18 years when the trauma occurred; one participant reported two separate events which had occurred at different ages; and one participant was still involved in the reported family situation which had been occurring for over 30 years.

In total the participant response rate was 35% with 188 questionnaires being regarded as usable. Although other studies report response rates which are typically higher, generally around 50% (e.g. Vincent, 1994), the requirement of this study for participants to think back to a previous traumatic experience involving intense fear, shock, helplessness and/or horror may have understandably created hesitation or procrastination in filling out the questionnaires.

6.2 Research Participants

Participants in the study were males and females, 18 years or older, who had experienced a past traumatic event that was not currently causing distress. Of the 188 participants, 143 were female (76%) and 45 were male (24%). As shown in Table 3, participants ranged from 18 to 80 years. The largest age category was the 34 to 49 year group with 90 (47%) participants. A further 58 (31%) participants were aged between 18 and 33 years; 32 (17%) participants were aged between 50 and 64 years; and 7 (4%) participants represented the 65 to 80 age group category. Finally one (1%) participant did not specify an age.

A total of 163 (87%) of the sample identified themselves as New Zealander or New Zealand European, 7 (3.75%) as Maori and 13 (7%) as belonging to other ethnic groups (as detailed in Table 3). Five participants (3.25%) did not specify any ethnicity.

Table 3 shows that 53 (28%) participants worked in clerical, sales, retail, service or management. A further 23 (12%) participants represented the home executive/mother category and 22 (11.50%) worked in health, community or social service fields. In addition 13 (7%) were students or researchers and 12 (6.5%) were teachers or lecturers. A further 12 (6.5%) were professionals involved in the fields of accountancy, ministering, parliament, industrial psychology, architecture, law, engineering, pharmacology, occupational therapy, health specialty and human resources. There were 9 (5%) rescue workers involved in policing and fire fighting, 7 (3.5%) beneficiaries, 7 (3.5%) retired participants and 5 tradesmen (3%) including a carpenter, glazier, painter, cable-maker and electrician. Finally, 16 (8.5%) participants represented the 'other'

Table 3: Demographic and Occupational Status of Research Sample (N=188)

Description	N	Percentage
Gender		
Male	45	24.00
Female	143	76.00
Age		
18-33 years	58	31.00
34-49	90	47.00
50-64	32	17.00
65-80	7	4.00
Not stated	1	1.00
Ethnicity		
NZ European	158	84.00
NZer	5	2.75
Maori	7	3.75
Maori/European	4	2.25
Samoan/NZer	2	1.00
Samoan/Maori	1	.50
Indian	1	.50
Chinese/European	1	.50
Swiss/NZer	1	.50
Irish	1	.50
English	2	1.00
Not stated	5	2.75
Occupation		
Clercl/retail/sales/srvce/mangmnt	53	28.00
Home executive/mother	23	12.00
Health/comm/socl srvces	22	11.50
Student/researcher	13	7.00
Teacher/lecturer	12	6.50
Professional	12	6.50
Rescue worker	9	5.00
Beneficiary	7	3.50
Retired	7	3.50
Trade	5	3.00
Other	16	8.50
Not stated	9	5.00

category and were involved in a variety of occupations. These included Iwi liaison officer, soldier, chef, butcher, custodian, volunteer, analyst, vet nurse, business owner, computer expert and factory/process worker. Nine (5%) participants did not state any occupation.

All participants referred to a traumatic event in the past. One hundred and ten (59%) participants referred to events when they were between 18 and 33 years; 60 (32%) participants referred to events when they were between 34 and 49 years; and 15 (8%) participants referred to events when they were between 50 and 65 years. The number of participants referring to events which occurred in the last 5 years was 86 (45%). Events which occurred between 6 and 10 years ago were referred to by 39 (21%) participants, and similarly 39 (21%) participants referred to events which occurred between 11 and 20 years ago. Finally events which occurred in the last 21 to 60 years ago were referred to by 20 (11%) participants. Four (2%) participants did not specify age of trauma.

6.3 Measures

6.3.1 The Stressful Event Questionnaire (SEQ)

The Stressful Event Questionnaire (SEQ) was designed for the purpose of this research to collect general demographic information about participants and to collect basic details about the particular traumatic experiences. The SEQ outlines examples of traumatic events before detailing criteria that must be met for events to be appropriate for the study. It is stated that the traumatic event must have occurred from the age of 18 years

and meet the following criteria:

- 1) The event involved actual or potential for own or others physical injury or death; or beliefs that physical well-being of self or others were threatened.
- 2) The event elicited feelings of fear, shock, helplessness and/or horror.

Participants are asked to state the trauma that they will refer to, the worst part of the event and age at time of the trauma. The degree to which the event could be controlled and predicted is also assessed, as lack of these two variables are considered to be fundamental in creating post-traumatic symptoms (Joseph, Williams & Yules, 1997). Information about amount of exposure to the event while feeling the most intense emotions is also requested. The SEQ can be viewed in Appendix C.

6.3.2 Stanford Acute Stress Reaction Questionnaire (SASRQ)

The SASRQ is a modified version of a preliminary 98-item assessment tool called the Acute Stress Reaction Questionnaire, which was developed to assess acute reactions to trauma (Cardeña, Koopman, Classen, Waelde & Spiegel, 2000). Developed by Cardeña, Classen, Koopman & Spiegel (1996), the SASRQ is a 30-item instrument which measures the existence of ASD after traumatic events. The SASRQ evaluates reactions to trauma in terms of dissociative symptomatology (numbing/detachment, reduction in awareness, derealization, depersonalization and dissociative amnesia); reexperiencing symptomatology; avoidance; hyperarousal; and impairment in functioning. The questionnaire also asks about the degree to which the event/s were disturbing and how many days the worst symptoms were experienced (up to “five days or more”). To provide more precision for the current study, the questionnaire also provided options for number of hours, days, weeks or months that the worst symptoms were experienced.

Participants rate 30 statements on a 6-point Likert-type scale ranking the degree to which each symptom was endured after the traumatic event. Questionnaires can be scored according to the Likert-type scale (0-5) so that a total score out of 150 is given. Dichotomous scoring is also possible so that the presence of each symptom can be determined (0-2: 0, 3-5: 1) which allows for measurement of diagnostic status regarding ASD, acute PTSD or chronic PTSD. The two measurement options (ranked and dichotomous) allows for both comparison of different diagnostic categories, as well as testing the strength of relationships between continuous variables: a fundamental reason why the SASRQ was chosen for this research.

Another strength of the SASRQ is that, unlike other measures of reactions to traumatic stress (e.g. Impact of Event Scale), this tool measures dissociative reactions in addition to the fundamental symptoms of reexperiencing, avoidance and anxiety. Dissociative reactions are common both during and after traumatic experiences (Shalev, Peri, Canetti & Schreiber, 1996; Spiegel, Koopman, Cardeña & Classen, 1996).

The validity and reliability of the SASRQ has been supported by a number of analyses (see Cardeña et al., 2000 for a literature review of recent research). Construct validity of the SASRQ is supported by research showing that the highest test scores are obtained by individuals exposed to trauma or acute stress, including rescue workers exposed to rescue operations as compared to non-exposed rescue workers (Cardeña, Grieger, Staab, Fullerton & Ursano, 1997); and railroad-workers who had witnessed an individual being run over by a train as compared to workers without such experiences (Margiotta, Anastas, Stamm & Everett, 1999 cited by Cardeña et al., 2000).

In addition, research shows a relationship between trauma exposure and SASRQ scores. For example Spiegel et al. (1996) found that exposure to fire in a large firestorm correlated significantly with scores on dissociative and anxiety subscales ($p < .01$). The SASRQ has also predicted incidences of long-term PTSD and has shown significant convergent validity with the Impact of Events Scale (IES) (Cardeña et al., 1996).

High internal consistency of the SASRQ has been shown with Cronbach's alpha ranging from .8 to .95 for the total scale; and .64 to .98 for subscales (see Cardeña et al. 2000 for literature review). Test-retest reliability when assessing acute stress reactions which may change over time is a complex issue. However Cardeña et al. (2000) found a significant correlation ($r = .69, p < .001$) in a 3 to 4 week test-retest study among graduate and undergraduate students who had not experienced severe stressors during this interval. Overall the SASRQ appears to have sound psychometric properties. The SASRQ can be sighted in Appendix D.

3.3.3 The Experience of Trauma Inventory (ETI)

In line with Janoff-Bulman's (1992) social-cognitive theory on shattered world assumptions, the author agrees that the perceived fundamental meaning of trauma creates severe distress and an inability to integrate information successfully. The ETI was designed to measure the degree to which these fundamental meanings of trauma, namely cognitive-emotional unsafe schemas which threaten a person's core sense of safety, invulnerability and control, were evoked after a traumatic event. The ETI is made up of three subscales: Threatened Safety, Threatened Invulnerability and Threatened Control. Participants are asked to respond on a Likert-type scale from 0 (not at all) to 4 (often and intensely) the degree to which each statement was similar to their beliefs and

perceptions during the traumatization period (the time just after the traumatic experience when the worst feelings of distress were occurring). Each subscale includes five statements which participants rate on a 5 point Likert-type scale (Not at all Experienced to Often and Intensely Experienced).

Questions for each scale were designed with the following procedure. The construct that each subscale intended to measure was looked up in a number of vocabulary list books (i.e. dictionaries and thesaurus) and associated words were noted. Questions were then designed with the associated words, until a list of questions for each of the three constructs was established. By a process of sorting and eliminating it was ensured that within each scale, key words were not repetitively used and that each scale included at least two statements measuring affect (e.g. "I felt a lack of control over my life"); at least two statements relating to immediate experience during traumatisation (e.g. "The event shattered my sense of security"); at least one statement relating to thoughts and feelings about the future (e.g. "I felt like I was open to more bad things happening"); and at least one statement relating to other people or things (e.g. "The event made me realize that people are helpless against threat", "I realized I could not predict or control bad things").

Internal consistency for each scale was shown in the current study with Cronbach alpha coefficients of .81 (Safety), .84 (Invulnerability) and .86 (Control). The ETI can be viewed in Appendix E.

6.3.4 Attachment Style Questionnaire (ASQ)

The ASQ was developed by Feeney, Noller & Hanrahan (1994) and consists of five subscales each measuring a specific type of internal working model (IWM) relating to the

self or others. The five subscales are Confidence, Need for Approval, Preoccupation with Relationships, Discomfort with Closeness and Relationships as Secondary. These five subscales can be further combined to measure Positive IWMs of the self and others (Confidence); Negative IWMs of the self (Need for Approval, Preoccupation with Relationships); and Negative IWMs of others (Discomfort with Closeness, Relationships as Secondary).

The ASQ is made up of 40 statements which participants rate on a Likert-type scale from 1 to 6 (totally disagree to totally agree). For the purpose of the present study each question was modified slightly so that post-trauma attachment style, rather than current attachment style, was assessed. For example the question "Overall, I am a worthwhile person" was changed to "During this time, I felt like a worthwhile person".

The ASQ is designed to be scored on a continuous scale so the degree to which each IWM is endorsed can be measured. However, by referring to results of a cluster analysis conducted by Feeney, Noller & Hanrahan (1994), the degree to which all IWMs are endorsed by an individual can be considered together and placed categorically into an adult pattern of attachment (Secure, Preoccupied, Dismissing or Fearful). The current research made use of both continuous and categorical styles of measurement.

Studies have supported the construct validity of the ASQ. Significant intercorrelations have been reported between all scales. Negative correlations were found between Confidence and the four scales measuring aspects of insecure attachment; while Need for Approval, Preoccupation with Relationships, Relationships as Secondary, and Discomfort with Closeness were positively intercorrelated (Feeney et al., 1994).

In addition, analysis of Hazan and Shaver's (1987) forced-choice measure of adult attachment revealed positive correlations between avoidant attachment and negative IWMs of others (Discomfort with Closeness; Relationships as Secondary); and anxious-ambivalent attachment and negative IWMs of the self (Preoccupation with Relationships; Need for Approval) (Feeney et al., 1994).

Studies also reveal high levels of internal consistency of the ASQ. For example a study of 470 subjects revealed Cronbach's alpha coefficients of .80, .79, .76, .84, and .76 for Confidence, Need for Approval, Preoccupation with Relationships, Discomfort with Closeness and Relationships as Secondary respectively. In addition, test-retest reliability of the ASQ was calculated with 295 participants over 10 weeks. Reliability coefficients were .74 (Confidence and Discomfort with Closeness), .78 (Need for Approval), .72 (Preoccupation with Relationships), and .67 (Relationships as Secondary).

The ASQ is displayed in Appendix F.

CHAPTER 7

Results

7.1 Experiences of Trauma

Table 4 summarises the 188 traumatic experiences that participants referred to within questionnaires. The mean SASRQ score for post-traumatic symptoms (PTSD.SYMP) are also included. Events eliciting the highest levels of PTSD.SYMP were multiple victimisation ($M = 115.33$, $SD = 24.79$, $n = 3$), physical and/or sexual assault ($M = 96.63$, $SD = 23.84$, $n = 16$), concerns about physical or mental well-being ($M = 86.73$, $SD = 39.53$, $n = 11$) and traumatic death or loss ($M = 82.47$, $SD = 26.26$, $n = 59$).

The most frequently reported experience was traumatic death or loss, declared by 61 (32%) participants. A few participants provided further details revealing that some deaths were caused by vehicle accidents (12), suicide (6) or murder (4); some deaths were stillborn, newborn or infant deaths (7); and one traumatic loss incident involved the disappearance of a child who has never been found (1). Husbands/partners, parents and close friends of participants were most commonly the people deceased. Four participants reported traumatic loss of more than one person, either within very close proximity of time or during the same incident. Of the 61 participants who referred to traumatic death or loss, 54 (89%) were female and 7 were male (11%).

The second most frequently referred to trauma involved experiences which elicited beliefs that one's own physical safety, or the safety of a significant person, was seriously

Table 4: Traumatic Events Referred to by Research Sample

Traumatic Event	N	Percentage	TOT.PTSD Mean
Traumatic death or loss	59	31.00	82.49
Events which caused beliefs that own/other's safety was severely threatened	27	14.50	77.26
Vehicle accident	24	13.00	65.00
Physical and/or sexual assault	16	8.50	96.63
Concerns about physical/psychological problems of others	12	6.50	59.00
Concerns about physical/psychological wellbeing of self	11	6.00	86.73
Viewing of accident, injuries, death of others or accident	10	5.50	43.90
Secondary trauma (assault, accident, or serious injury of significant other)	10	5.50	74.20
Accident (other than vehicle)	9	5.00	43.56
Viewing/hearing about a news event	5	2.50	50.40
Victim of multiple serious crimes in one incident	3	1.50	115.33
Disaster	2	1.00	54.00
Not stated	2	1.00	52.00

threatened. Such beliefs were reported by 27 (9.5%) participants and included home invasions (2), kidnappings (2), armed robberies (4), window tapping at night (1), being stalked (1) and death/injury threats (2). Other experiences included near-miss life threatening accidents (2), being caught in the middle of a gang-related war (1), being in

Indonesia when the riots occurred (1) and not taking a booked plane flight which subsequently crashed (1). Separations or divorce with partners (3), being falsely accused of a crime (2), distressing news from a solicitor (1) and being stuck in Melbourne during the Air NZ strike after the Sept. 11 terrorist attacks (1) were also referred to. Events which elicited concerns for another person's well-being included death threats to a significant other (1), fears that a teenage son would commit suicide after being removed from the family home by protection services (1) and attempts to stop suicide from occurring (1). Of the 27 participants referring to events in this category, 18 (66%) were female and 9 (34%) were male.

Involvement in vehicle accidents were the third most frequently reported trauma declared by 24 (12.5%) participants. Events involved car accidents (17), motor-cycle accidents (3), horse and carriage accident (1), running over a dog (1) and being hit by a car in a hit and run incident (1). Five participants reported that the car accidents were fatal or caused serious injuries to themselves or others; two of these participants experienced death of family members who were in the same car and were also represented under the traumatic death category. Of the 24 participants referring to vehicle accidents, 20 (85%) were female and 4 (15%) were male.

Physical and/or sexual assault was the fourth highest trauma type referred to by 16 (8.5%) participants who were all female. Traumas involved domestic violence by husbands or boyfriends, including physical assault (3), attempted rape (1) and both physical and sexual assault (2). Also reported were violent attacks by a severely handicapped son (1), a dog attack which required immediate surgery (1), rape by an intruder at night (1) and attempted rape by a stranger in a foreign country (1).

Participants also reported sexual assault (3) and physical assault (1) without giving further details.

Concerns about physical or mental illness of loved ones were referred to by 12 (6.5%) participants. Seven participants reported serious health problems of family members including brain tumours, brain haemorrhaging, strokes, cardiac arrests and the physical repercussions of severe alcoholism; three reported concerns about the physical and mental wellbeing of people they were employed to help; and three reported concerns about the mental/emotional well-being of others due to anorexia nervosa, psychosis and grief. One participant (8%) referring to events in this category was male and 11 (92%) were female.

Concerns about one's own physical or mental/emotional wellbeing was referred to by 11(6%) participants. Events included cancer with surgical procedures to remove cancerous growths (3) and surgery for other problems (3). Other health issues included antiphospholipid lung syndrome, viral pneumonia simultaneously with blood poisoning, major stroke, suicide attempt and alcoholism. Of participants referring to events in this category, seven (64%) were female and four (36%) were male.

Viewing accidents, injuries, dead people or accident sites was reported by 10 (5.5%) participants. Most traumas in this category involved rescue workers arriving at the scene of an accident, crime or suicide; and seeing/finding dead people or people in severe pain (9). One participant who was not a rescue worker was required to help transport a dead body (suicide jumper on to rocks). More males, than females, were represented: eight (80%) were male and two were (20%) female.

Secondary trauma involving assault, accident or serious injury of loved ones were referred to by 10 (5.5%) participants, all female. Six participants referred to serious accidents of loved ones including near drowning (1) and burns of infants/young children (2), serious injuries of son or daughter (age not reported) in vehicle accidents (2), and serious injuries of 12 year old daughter in paragliding accident (1). Other secondary traumas included attempted suicide of son, suspicion of physical/sexual abuse of a child, seeing someone being assaulted and a family member being involved in an abusive relationship.

Accidents that were not vehicle-related were referred to by 9 (5%) participant. Events included severe electric shocks (2), near drownings (2), cutting off major part of index finger (1), knee injury (1), broken ribs and whip lash in a work-related fall (1), falling down the side of a mountain while tramping (1) and crash landing while paragliding (1). Of those referring to non-vehicle related accidents, seven (78%) were male and two (22%) were female.

Viewing or hearing an unpleasant news event was reported as a traumatic experience by five (2.5%) participants. Four reported the September 11th terrorist attacks on the twin towers in New York and one participant mentioned the abuse and murder of a young child. Of those representing this category, one (20%) participant was male and four (80%) were female.

Three participants referred to multiple victimisation (1.5%). One participant was kidnapped, physically assaulted and sexually abused; one participant was shot, sexually assaulted and witnessed the murder of her boy-friend in a robbery incident; and one

participant was shot and witnessed the murder of her husband in a robbery incident. All three participants were female.

Disasters were referred to by two participants (1%). Both disasters, reported by males, were house-fires which occurred while participants and family members were still in the house.

Two participants (1%) answered all questions without specifying the event being referred to.

From 176 participants who answered the questions about how controllable and predictable the events were, 90 (51%) reported the trauma as being predictable but uncontrollable and 71 (40%) reported the trauma as being both unpredictable and uncontrollable. Only 10 (6%) participants reported that the trauma was to some extent controllable although not predictable, while 5 (3%) participants reported the trauma as both controllable and predictable to some degree.

7.2 Statistical Analysis

The statistical package for the Social Sciences (SPSS/PC) was used for all data analysis (Norusis, 2000). Prior to the main analyses, data was screened for accuracy of data entry, missing values and outliers. Variable distributions for all continuous variables were screened for normality. Mean substitution was used to estimate random missing values. Once decided that outliers were sampled from the target population, they were kept

within the analysis but given raw scores one unit larger, or smaller, than the next most extreme score in the distribution. These steps are recommended by Tabachnick & Fidell (2001) to reduce the impact of outliers so that statistics are not distorted.

All together 188 data sets were available for Pearson's r correlation analyses and multiple regression analyses. This was well above the required 85 paired scores needed to detect medium effect sizes with the correlation coefficient statistic with power level of .80 (the most desirable level of power) and with Type 1 error set at .05 (Leavitt, 1991).

7.3 PTSD Symptomatology

Table 5 presents descriptive statistics for the SASRQ for total PTSD scores (PTSD.SYMP) and symptom variables of dissociation (DISS), reexperiencing (REEXP), avoidance (AVOID), anxiety (ANX) and impairment of functioning (FUNCTION).

Table 5: SASRQ Responses After a Traumatic Event

Variable	Range	Min.Score	Max.Score	Mean	Std.Deviation
PTSD.SYMP	139	4.0	143	74.41	33.25
DISS	47	0.0	47	21.58	12.35
REEXP	32	0.0	32	16.82	7.40
AVOID	33	0.0	33	14.49	8.50
ANXIETY	30	0.0	30	16.90	6.95
FUNCTION	10	0.0	10	4.93	2.98
DAYS.EXP	731	0.3	732	163.27	201.53

As Table 5 shows, the length of time that the worst PTSD symptoms were experienced (DAYS.EXP) ranged from a few hours to 2 years, with a mean of 5.4 months or 163 days (SD = 201.5).

SASRQ results were assessed depending on quantity and combination of symptoms and length of time symptoms were experienced. Participants were categorized as chronic PTSD (C.PTSD), acute PTSD (A.PTSD), acute stress disorder (ASD) or no-diagnosis (NO-DIAG). In total, 98 participants (54%) met criteria for a diagnosis and 77 participants (42%) did not meet criteria. Thirteen participants (4%) were not categorised due to missing data regarding length of time symptoms were experienced. Table 6 presents data for diagnostic groups, including the mean age at time of trauma, and number and percentage of males and females representing each category.

Table 6: Diagnostic Status of Research Sample

Diagnostic Status	n %		Female n %		Male n %		AGE Mean	PTSD.SYMP Mean
	A.PTSD	19	(10%)	15	(79%)	4	(21%)	33.0
ASD	15	(8%)	14	(93%)	1	(7%)	30.0	80
NO-DIAG	77	(41%)	50	(66%)	26	(34%)	30.0	44
UNKNOWN	13	(7%)	12	(92%)	1	(8%)	40.0	77

To determine if intensity of PTSD symptoms significantly differed between diagnostic groups, one-way analyses of variance were conducted. A statistically significant difference was revealed at the $p < .001$ level in scores for the four diagnostic groups [$F(4, 178) = 82.47, p = .000$]. The effect size, calculated using eta squared, was large at

.64 (Cohen, 1988 cited by Pallant, 2001). Post-hoc comparisons using the Tukey HSD test indicated that the mean PTSD.SYMP score for NO.DIAG ($M = 44.40$, $SD = 19.70$) significantly differed at the .05 level when compared to all diagnostic groups.

Comparisons of mean PTSD.SYMP scores between C. PTSD, A.PTSD and ASD groups, showed that the only significant difference was between C.PTSD ($M = 103.88$, $SD = 21.04$) and ASD ($M = 80.07$, $SD = 18.03$).

One-way analyses of variance determined no significant differences between diagnostic groups regarding participants' age at the time of trauma [$F(4, 175) = 1.62$, $p = .172$].

7.4 Post-Traumatic Responses and Demographic Variables

Independent-samples t-tests were conducted to compare gender differences for PTSD symptoms. On PTSD.SYMP, females scored significantly higher ($M = 78.41$, $SD = 29.84$) than males ($M = 62.98$, $SD = 39.96$; $t(188) = -2.36$, $p = .02$). However on DAYS.EXP, no significant differences were found between females ($M = 174.87$, $SD = 197.90$) and males ($M = 130.08$, $SD = 212.84$; $t(175) = -1.25$, $p = .21$).

One-way analyses of variance were conducted to explore the impact of ethnicity on PTSD symptomatology. No statistically significant differences were revealed between ethnic groups at the $p < .05$ level for PTSD.SYMP [$F(10, 173) = 1.10$, $p = .37$] or DAYS.EXP [$F(10, 170) = .40$, $p = .95$]. However ethnic groups obtaining the highest mean scores for PTSD symptomatology were Samoan/Maori ($M = 127$) and Maori/European ($M = 109$).

One-way analyses of variance were conducted to explore if age at time of trauma had a significant impact on PTSD symptoms. No significant differences were found between age groups for PTSD.SYMP [$F(2, 180) = 2.06, p = .13$] or for DAYS.EXP [$F(2, 168) = 1.08, p = .34$]. However the 50-65 year age group obtained the highest mean for both PTSD.SYMP ($M = 91.20, SD = 26.75$) and DAYS.EXP ($M = 212.42, SD = 222.07$). The 18-33 year age group obtained the lowest means for PTSD.SYMP ($M = 73.09, SD = 32.60$) and DAYS.EXP ($M = 146.33, SD = 189.62$). The 34-49 year age group obtained means slightly higher than the 18-33 year age group for PTSD.SYMP ($M = 73.47, SD = 34.76$) and DAYS.EXP ($M = 186.45, SD = 222.07$).

7.5 Bivariate relationships

The relationship between main symptom variables (PTSD.SYMP and DAYS.EXP) and independent variables (unsafe schemas and IWMs) were investigated using Pearson product-moment correlation coefficient. Results are presented in Table 7. All correlations were statistically significant and ranged from .19 to .71. PTSD.SYMP showed moderate to strong relationships with all unsafe schema and IWM variables ranging from .47 to .71. The strongest correlation was between PTSD.SYMP and CONTRL ($r = .71$).

DAYS.EXP had weak to moderate significant correlations with all unsafe schema and IWM variables ranging from .25 to .51. DAYS.EXP correlated most strongly with DSCMFRT ($r = .43$).

Table 7: Correlations Between PTSD Symptoms and Schema Variables (N=188)

	PTSD.SYMP	DAYS.EXP
UNSAFE.SCHMS	.710**	.386**
SAFETY	.636**	.309**
INVULN	.653**	.339**
CONTRL	.713**	.448**
POS.IWMS	-.466**	-.247**
CONFDNC	-.466**	-.247**
NEG.SELF	.588**	.228**
NEED.APP	.528**	.226**
PREOCC	.538**	.187*
NEG.OTHER	.631**	.441**
DISCMFRT	.603**	.428**
REL.SEC	.558**	.387**

** $p < .01$ (2-tailed) * $p < .05$ (2-tailed)

Correlations between specific symptom variables (dissociation, reexperiencing, avoidance, anxiety and impairment in functioning) and independent variables (unsafe schemas and IWMS) are presented in Table 8. All correlations were statistically significant and ranged from .33 to .64. The strongest bivariate relationship was between CONTRL and ANX ($r = .64$).

Pearson correlation analyses also revealed statistically significant relationships ($p < .01$) between all unsafe schema subscales (SAFETY, INVULN & CONTRL). Correlations between SAFETY and CONTRL ($r = .76$), SAFETY and INVULN ($r = .83$), and INVULN and CONTRL ($r = .82$) were all strong.

Table 8: Correlations Between PTSD Symptoms and Schema Variables (N =188)

	DISS	REEXP	AVOID	ANXTY	FUNCTN
UNSAFE.SCHMS	.609	.658	.631	.660	.544
SAFETY	.542	.588	.553	.600	.501
INVULN	.551	.620	.584	.624	.474
CONTRL	.638	.642	.618	.643	.568
POS.IWMS	-.437	-.330	-.470	-.423	-.364
CONFDNC	-.437	-.330	-.470	-.423	-.364
NEG.SELF	.555	.467	.552	.516	.440
NEED.APP	.482	.431	.500	.467	.368
PREOCC	.524	.420	.499	.464	.427
NEG.OTHER	.581	.523	.634	.523	.441
DISCMFRT	.526	.511	.621	.519	.403
REL.SEC	.562	.441	.527	.439	.445

*All correlations are $p < .01$ (2-tailed)

The relationship between unsafe schema variables and IWM variables were also investigated using Pearson product-moment correlation coefficient. Results are presented in Table 9. All correlations were statistically significant ($p < .01$) and ranged from .28 to .46. POS.IWMS were inversely related to unsafe schemas. The strongest relationship was between NEG.OTHER and UNSAFE.SCHMS ($r = .46$). From the specific IWMs, DISCMFRT revealed the highest relationships with all unsafe schema variables.

Table 9: Correlations Between Unsafe Schema Variables and IWM Variables (N = 188)

	UNSAFE.			
	SCHMS	SAFETY	INVULN	CONTRL
POS.IWMS	-.324	-.314	-.283	-.318
CONFDNC	-.324	-.314	-.283	-.318
NEG.SELF	.409	.393	.347	.402
NEED.APP	.378	.357	.339	.351
PREOCC	.350	.340	.283	.367
NEG.OTHER	.463	.430	.443	.446
DISCMFRT	.461	.431	.435	.443
REL.SEC	.365	.338	.355	.355

*All correlations are $p < .01$ (2-tailed)

7.6 The Impact of Unsafe Schemas and IWMs on PTSD Symptoms

The following sections present the results of four standard multiple regression analyses which determine if level of unsafe schemas and negative IWMs significantly predicted the intensity and length of time that PTSD symptoms were experienced after a traumatic event.

In the first regression, level of PTSD symptoms (PTSD.SYMP) was entered as the dependant variable, while unsafe schemas, positive IWMs and negative IWMs were entered together as independent variables. In the second regression, the same independent variables were entered, with length of time that PTSD symptoms were

experienced (DAYS.EXP) entered as the dependant variable. Table 10 presents the regression coefficient and adjusted R² value for the two analyses.

Table 10: Regression Coefficients (and adjusted R² value) for Unsafe Schemas and IWMs

Variables	PTSD.SYMP <i>β</i>	DAYS.EXP <i>β</i>
UNSAFE.SCHMS	.505**	.250**
PSTVE	.006	.087
NEG.SLF	.211**	-.149
NEG.OTHR	.259**	.485**
Adj R ²	.644**	.237**
	F (4, 184) = 78.19**	F (4, 171) = 13.89**

** $p < .001$

Taken together unsafe schemas and IWMs explained 64% of the variance in the intensity of PTSD symptoms after a traumatic event. PTSD.SYMP was significantly predicted by UNSAFE.SCHMS, NEG.OTHR and NEG.SLF, with UNSAFE.SCHMS explaining a relatively large amount of the variance.

Unsafe schemas and IWMs explained 24% of the variance in the length of time PTSD symptoms were experienced after trauma. DAYS.EXP was significantly predicted by UNSAFE.SCHMS and NEG.OTHR, with NEG.OTHR explaining the most variance.

To provide more specific data regarding the predictors of PTSD symptoms, the sub-scale

variables which make up unsafe schemas (SAFETY, INVULN, CONTRL) and IWMs (CONFDNC, DISCMFRT, REL.SEC, PREOCC, NEED.APP) were entered as the independent variables, with PTSD.SYMP and DAYS.EXP again entered as dependant variables. Results are presented in Table 11.

Table 11: Regression Coefficients (and adjusted R² value) for Specific Unsafe Schema and IWM Variables

Variables	PTSD.SYMP β	DAYS.EXP β
Unsafe Schemas		
SAFETY	.080	-.071
INVULN	.101	-.139
CONTRL	.376***	.491***
Positive IWMs		
CONFDNC	.005	.100
Negative IWMs Self		
NEED.APP	.080	.034
PREOCC	.148*	.131
Negative IWMs Other		
DISCMFRT	.127	.325**
REL.SEC	.161*	.202*
Adj R ²	.655	.277
	F (8, 180) = 42.97***	F(8, 167) = 8.932***

*** $p < .001$ ** $p < .005$ * $p < .05$

As exemplified in Table 11, level of PTSD symptomatology was significantly predicted by CONTRL, REL.SEC and PREOCC. The length of time that post-traumatic symptoms were experienced was significantly predicted by CONTRL, DISCMFRT and REL.SEC. The unsafe schema variable, CONTRL (Threatened Control), was the strongest predictor of both TOT.PTSD and DAYS.EXP.

7.7 Statistical Comparisons Between Diagnostic Groups

A series of one-way ANOVAs were conducted to explore the impact of unsafe schemas and IWMs on diagnostic status. Table 12 shows that significant differences ($p < .001$) for the four groups on all levels were found. Using eta squared calculations, effect sizes for all comparisons were large, ranging from .23 to .37 (Cohen, 1988 cited by Pallant, 2001). Post-hoc comparisons using the Tukey HSD tests indicated that NO-DIAG had significantly higher positive IWMs, lower IWMs and lower unsafe schema levels when compared with both C.PTSD ($p < .001$) and A.PTSD ($p < .05$) groups. C.PTSD did not differ significantly from A.PTSD on any level ($p > .05$), yet C.PTSD represented significantly higher levels of INVULN, DSCMFRT, REL.SEC and NEG.OTHR when compared to ASD ($p < .05$). The A.PTSD and ASD groups did not differ significantly from each other on any level ($p > .05$).

Table 12: Mean Scores and F Ratios for Unsafe Schema and IWM Variables for Diagnostic Groups (N = 174)

	C.PTSD (N = 63)	A.PTSD (N = 19)	ASD (N = 15)	NO.DIAG (N = 77)	F
	Mean	Mean	Mean	Mean	
UNSAFE.SCHMS	47.56	42.74	38.60	27.12	31.90
SAFETY	15.05	14.68	11.80	8.96	21.42
INVULN	15.46	13.16	11.47	8.52	25.61
CONTRL	16.94	14.89	14.07	9.64	32.24
POS.IWMS	27.58	29.56	29.67	37.16	16.96
CONFDNC	27.58	29.56	29.67	37.16	16.96
NEG.SELF	55.92	60.56	52.00	39.36	22.41
NEED.APP	25.31	26.56	22.40	16.90	16.25
PREOCC	30.61	33.44	29.60	22.51	17.70
NEG.OTHER	67.91	60.61	50.00	43.70	32.21
DISCMFRT	43.48	39.22	31.40	27.53	31.89
REL.SEC	24.39	20.83	18.60	15.81	19.41

All comparisons = $p < .001$

To help identify possible explanations for chronicity of post-traumatic symptoms, A.PTSD and ASD were collapsed into one classification (NON.CHRONIC) and compared to chronic PTSD (CHRONIC) on all variables. Table 13 shows that CHRONIC groups had significantly higher levels of INVULN, CONTRL, DSCMFRT and REL.SEC, than NON-CHRONIC groups.

Table 13: Means and Standard Deviations of Unsafe Schemas and IWMs for Chronic and Non-Chronic Diagnostic Groups (N = 97)

	CHRONIC (N = 63)		NON.CHRONIC (N = 34)		<i>t</i>	p =
	Mean	SD	Mean	SD		
UNSAFE.SCHMS	47.56	10.35	40.91	13.27	2.53	.014*
SAFETY	15.05	4.10	13.41	5.01	1.73	.086
INVULN	15.46	4.31	12.41	5.49	2.81	.007**
CONTRL	16.94	3.35	14.53	4.05	3.14	.002**
POS.IWMS	27.58	8.17	29.61	8.41	-1.17	.247
CONFDNC	27.58	8.17	29.61	8.41	-1.17	.247
NEG.SELF	55.92	15.68	56.67	11.70	- .24	.811
NEED.APP	25.31	9.03	24.67	6.83	- .39	.695
PREOCC	30.61	8.48	31.70	6.97	- .63	.528
NEG.OTHER	67.91	15.46	55.79	14.59	3.73	.000***
DISCMFRT	43.48	9.80	35.67	10.19	3.67	.000***
REL.SEC	24.39	7.12	19.82	6.25	3.12	.002**

* $p < .05$ ** $p < .01$ *** $p < .001$

7.8 Statistical Comparisons Between Attachment Style Reactions to Trauma

By referring to results of a cluster analysis conducted by Feeney, Noller & Hanrahan (1994), the degree to which all IWMs were endorsed during traumatization by each participant was considered together and placed categorically into an adult pattern of

attachment (Secure, Preoccupied, Dismissing or Fearful). Overall, 70 (37%) participants were classified as Secure, 13 (7%) participants as Preoccupied, 17 (9%) as Dismissing and 39 (21%) as Fearful. The number of participants who did not meet criteria for any attachment category was 49 (26%). Table 14 presents results of a series of one-way ANOVAs which compared attachment style reactions to trauma on TOT.PTSD, DAYS.EXP and unsafe schema variables. Statistically significant differences were revealed at the $p < .001$ level in scores for the four attachment styles.

Table 14: Means and F Ratios of PTSD Symptoms and Unsafe Schemas for Attachment Style Reactions to Trauma

	Secure (N=70) Mean	Preoccupied (N=13) Mean	Dismissing (N=17) Mean	Fearful (N=39) Mean	F (4,135) =
PTSD.SYMP	48.80	87.77	89.71	102.28	12.64
DAYS.EXP	84.39	52.43	313.77	268.66	9.91
UNSAFE.SCHMS	28.54	37.85	44.41	47.44	14.78
SAFETY	8.97	12.08	13.94	15.31	12.65
INVULN	9.00	12.08	15.29	14.95	11.51
CONTRL	10.30	13.69	15.18	17.00	14.85

* All comparisons are $p < .001$

Fearful and Dismissing groups represented the highest mean scores on unsafe schemas and PTSD symptomatology. Secure groups represented the lowest means for all variables. Post-hoc comparisons using the Tukey HSD test revealed that Fearful and Dismissing groups represented significantly higher mean scores than Secure groups on all individual levels of unsafe schemas and PTSD symptoms ($p < .005$).

Independent-samples t-tests were conducted to compare PTSD.SYMP, DAYS.EXP and UNSFE.SCHMS scores between SECURE and INSECURE (Preoccupied, Dismissing and Fearful) groups. Statistically significant differences were found between SECURE and INSECURE groups on all variables ($p < .01$).

Of those in the Secure group, 77% did not meet any diagnostic status after the experienced trauma. Of those in the Preoccupied group, 78% had met diagnostic status for either A.PTSD or ASD after the trauma. Approximately 70% of those in both the Dismissing and Fearful groups met diagnostic criteria for C.PTSD.

CHAPTER 8

Discussion

8.1 Introduction

The fundamental aim of the present study was to establish support for the idea that the triggering of unsafe schemas and negative IWMs play a fundamental role in PTSD symptomatology after a traumatic experience. As will be discussed, statistical analyses fulfilled the three main goals of the study, creating important implications for explanations regarding post-traumatic symptoms and the clinical treatment of traumatized individuals. Discussion about the demographic composition of the sample, limitations of the study and ideas for future research are also included.

8.2 Demographic Composition of the Sample

Analysis of the present study's sample revealed that most participants were New Zealand European females between the ages of 18 and 49 years old.

Although epidemiological studies (e.g. Kessler et al., in press cited by McFarlane & De Girolamo, 1996) reveal that men and women tend to experience similar rates of trauma, only 45 (24%) of the 188 participants in the present study were male. Flett et al., (no date) encountered a similar phenomenon during trauma research in New Zealand, explaining that males have a higher tendency to refuse to participate and are less

available than females. Two other reasons may explain the low rate of male volunteers in the current study. Firstly, studies show that the risk of developing PTSD after a trauma is twice as high in females than in males (Norris, 1992). The current study showed that females scored significantly higher than males on both the degree and length of time that post-traumatic symptomatology was experienced after a traumatic event. Lower post-trauma distress levels may have caused many males to consider that their experiences were not “traumatic” enough for participation in a trauma study. The second possible reason for the low rate of male participants is that knowledge about the study may have reached more females, than males, due to location of some advertisements (e.g. supermarket notice-boards, school staff rooms).

Only 20 (9.5%) of the 188 participants in the present study identified with minority ethnic cultures and only 12 (6%) identified with the Maori culture. Considering that Maori experience significantly higher rates of domestic assault, physical assault, vehicle accidents and traumatic deaths than non-Maori (Flett et al., no date), Maori populations were underrepresented in the present study’s sample. Techniques of the researcher to find participants (e.g. notice-board advertising) were typically Western in nature, which may have deterred potential participants from minority cultures. Extra efforts should have been made to gain culturally representative samples by locating and discussing the study with representatives of different culturally based groups.

With regards to age of the 188 participants, only 39 (21%) were over 49 years old. The higher number of younger and middle-age participants in this study is logical considering that these age groups tend to report higher rates of trauma (Flett et al., no date) and participants tended to refer to more recent traumatic events. Indeed 86 (45%)

participants referred to events which occurred in the last five years, while 39 (21%) referred to events which occurred between 6 and 10 years ago.

8.3 Demographic Variables and Post-Traumatic Responses

Comparisons among gender groups, age groups and ethnic groups, revealed that gender groups showed the only significant differences in post-traumatic symptomatology.

Females reported significantly higher levels of symptomatology, for longer periods of time, than males ($p < .05$); and more females (57%), than males (40%), reached DSM-IV diagnostic criteria for ASD or PTSD. These results support previous research which suggest that being female is a risk factor in the development of PTSD after a trauma (Breslau et al., 1991; Kessler et al., 1995; Norris, 1992).

Comparisons of all ethnic groups in the present study found no significant differences in degree and length of time that post-traumatic symptomatology was experienced. These results were expected and in line with both New Zealand (Flett et al., no date) and overseas research (see review by Resick, 2001), which suggests that ethnicity is not associated with psychological impact of trauma.

Comparisons of age groups (at time of trauma) revealed no significant differences in the degree and length of time that post-traumatic symptomatology was experienced. These results were unexpected. Previous studies have shown that younger age groups are at higher risk for developing PTSD, while older age groups have the lowest risk of developing PTSD (Norris, 1992; Davidson, Hughes, Blazer & George, 1991; Kessler et

al., 1995). A likely reason for these results is that the study only attracted older participants who had experienced extreme distress after an experience. Indeed of the participants who experienced trauma between ages 50 and 65 years, 86% reached diagnostic criteria for ASD, acute PTSD or chronic PTSD: a large difference to the younger age groups in which approximately 53.5% reached criteria for a DSM-IV diagnosis.

8.4 Relating the Statistical Findings to the Goals of the Study

8.4.1 Goal 1

To establish support for theory that elicitation of unsafe schemas and negative IWMs after a traumatic event a role in the experienced intensity of PTSD symptomatology.

Results of this study provided preliminary support for the idea that unsafe schemas and negative IWMs play a fundamental role in the experienced intensity of PTSD symptoms (i.e. reexperiencing, avoidance, anxiety, dissociation, impairment in functioning).

Moderate significant relationships between PTSD.SYMP and both unsafe schema and IWM variables were revealed. Multiple regression analyses showed that taken together, unsafe schemas and IWMs explained 65.5% of the variance in the level of PTSD.SYMP after a traumatic event. Unsafe schemas was the strongest predictor of PTSD.SYMP, followed by negative IWMs of others and subsequently, negative IWMs of self. Positive IWMs did not predict level of PTSD.SYMP, suggesting that rather than the absence of positive IWMs, it is the strong presence of negative attachment-related schemas which

adversely affect psychological wellbeing.

The significant ability for unsafe schemas to explain the highest variance in PTSD symptoms, indicates that the triggering of perceptions that humans are unsafe, vulnerable and powerless against threat play a critical role in eliciting the hyper-arousal, reexperiencing and avoidant symptoms typically found in trauma victims. The significant ability for unsafe schemas to predict PTSD symptoms is consistent with claims that a vital part of traumatisation involves perceptions relating to how threatened and helpless victims feel (van der Kolk & McFarlane, 1996). The results also helps to explain why certain classes of traumatic events that are highly likely to threaten a person's core sense of safety and security, such as combat, grotesque violence, violent crime or violent abuse are more likely to elicit high levels of post-traumatic symptomatology (O'Brien, 1998; Joseph, Williams & Yule, 1997).

The relationship between unsafe schemas and PTSD symptomatology also assists with explanations about why continuous re-exposure to trauma is linked to higher levels of psychological distress (van der Kolk & McFarlane, 1996). Unsafe schemas are likely to be strengthened with each experience of re-victimisation, developing a lower threshold to being triggered every time they are reinforced. This helps to justify why individuals experience different levels of vulnerability to PTSD, with potential reasons as to why PTSD is sometimes evoked during normative events.

In the present study although strong and significant correlations between unsafe schema subscales (SAFETY, INVULN, CONTRL) and PTSD.SYMP were revealed, CONTRL was the only unsafe schema which significantly predicted PTSD.SYMP. It appears that

events that generate large threats to a person's sense of control may create particularly high levels of post-traumatic distress, especially with reexperiencing and anxiety-related symptoms. Such results are consistent with Frieze & Bookwala's (1996) proposition that continuous re-exposure to trauma creates higher distress because of a developed sense of powerlessness about preventing further victimisation.

The ability for CONTRL to significantly predict variance in PTSD.SYMP is also uniform with research revealing that trauma victims who attribute the causes of trauma to external circumstances, from an external locus of control, will typically experience high levels of PTSD due to higher appraisals of threat. This is in contrast to trauma victims with an internal locus of control, who perceive the experience as less threatening and experience less psychological distress (Solomon, Mikulincer & Benbenishty, 1989).

A shattered sense of control may extend to perceptions relating to victims' own psychological well-being, creating a sense of helplessness over the ability to cope with PTSD symptomatology and pessimistic attitudes about the capability to be helped or get better. Such a sense of helplessness may obstruct more adaptive problem-focused coping strategies. Research has shown that soldiers who relate their problems to uncontrollable and stable causes use more emotion-focused coping and less problem-focused coping and are therefore at greater risk of developing PTSD (Mikulincer & Solomon, 1989). Possibly, emotion-focused coping mediates the relationship between a threatened sense of control and PTSD, however further research is required to determine the role that coping strategies play in relation to unsafe schemas and PTSD symptoms.

PTSD.SYMP correlated positively with all negative IWMs, and correlated negatively

with all positive IWMs. These results indicate that negative perceptions of the self and others are elicited during traumatization. Such results can be explained by Bowlby's (1982) proposition that frightening and stressful experiences trigger the attachment behavioural system making IWMs highly accessible. The intensely negative emotions and perceptions triggered by a traumatic experience, are proposed to generalize to these highly accessible, and newly vulnerable, IWMs. Indeed research (Tomkins, 1979 cited by Jenkins & Oatley, 1998) has shown that emotional reactions which are elicited after significant events, typically become organizing structures which guide the processing of succeeding experiences. If this is the case, then it would be easy for IWMs, which have become activated into consciousness, to become adversely affected during emotional traumatization.

Two specific IWM schemas predicted PTSD: Relationships as Secondary and Preoccupation with Relationships. Such findings appear somewhat perplexing initially, since each schema appears to be opposite in nature. While Relationships as Secondary represent perceptions which encourage the exclusion of relationships to emphasize independence, Preoccupation with Relationships involves perceptions which cause obsessing and fixating on relationships to fulfil dependency needs (Feeney et al., 1994). Such schemas however, are not as incompatible as initial appearances. While Relationships as Secondary pertains primarily to negative attitudes of others, Preoccupation with Relationships pertains to negative attitudes of the self (Feeney et al., 1994). It is envisaged that as traumatized individuals increasingly sense the world as a dangerous place, the ability to trust or depend on others declines, so that an emphasis on independence creates withdrawal and avoidance from others. However with increased need for support and acceptance, victims are also acutely aware and anxiously

preoccupied of their own needs for connection and intimacy with others. Both of these schema types may consequently lower levels of perceived social support and generate a high sense of isolation, fear and anxiety; factors which may reinforce unsafe schemas and intensify psychological distress.

The association between negative IWMs and post-traumatic symptoms may explain why many traumatized people present with a range of psychological problems which are not included in the PTSD diagnosis, including depression and alcoholism (Kessler et al., 1995); self-hatred; aggressive behaviour against self and others; intimacy problems; and difficulties experiencing pleasure or satisfaction (van der Kolk, 1996). Further research on trauma should explore and study the whole range of psychological responses to trauma, while examining the potential mediating effects of negative IWMs on the relationship between PTSD and other psychiatric problems. If negative IWMs are found to mediate this relationship, then trauma therapy which focuses on eradicating negative IWMs may be largely effective in treating a range of trauma-related problems simultaneously.

The elicitation of negative IWMs may also be the underlying factor linking all post-trauma variables found to predict high levels of PTSD symptomatology. Such variables, which include avoidance-type coping, withdrawal (Bryant & Harvey, 1995), lack of social interaction and inadequate social support (Davidson, Hughes, Blazer & George, 1991) may, for example, be a result of the elicitation of negative IWMs about the self and others after trauma. Indeed further research is required to determine whether the relationship between negative IWMs and PTSD symptoms is mediated by such factors.

8.4.2 Goal 2

To establish support for the theory that the presence of unsafe schemas and negative IWMs after a traumatic event play a fundamental role in the maintenance of PTSD symptomatology

Results of the study supported the theory that the length of time that post-traumatic symptomatology is experienced, depends on the degree that unsafe schemas and negative IWMs are elicited. The length of time that PTSD symptoms were experienced after trauma (DAYS.EXP) significantly correlated with the degree that unsafe schemas and IWMs were elicited. Taken together, unsafe schemas and IWMs explained 23.7% of the variance in DAYS.EXP.

DAYS.EXP was predicted most strongly by NEG.OTHER and subsequently UNSFE.SCHMS. These results suggest that negative perceptions of others play the strongest role in prolonging post-traumatic symptoms, while unsafe schemas play a significant but less powerful role.

Of the specific variables, CONTROL and DISCMFRT were the strongest significant predictors of DAYS.EXP, with REL.SEC also playing a weaker, yet significant role. It seems that events which destroy a person's sense of control and elicit schemas which adversely affect the ability and desire to become genuinely intimate with others, are particularly likely to generate chronic symptoms for victims. Such results may explain why studies find high rates of chronic PTSD in victims suffering from interpersonal traumas such as rape (e.g. Foa & Rothbaum, 1989). The invasion of one's body and personal space against one's will has been described as a central "traumatogenic

dynamic” of disempowerment which shatters one’s sense of control (Finkelhor & Browne, 1985 cited by McCann & Pearlman, 1990). Interpersonal traumas, like rape and other forms of physical violence, also commonly elicit difficulties with trust and intimacy (Mechanic, Resick & Griffin, 1994 cited by Resick, 2001), which may be explained by the elicitation of negative IWMs of others. Indeed strong triggering of negative IWMs of others may be why a large proportion (81%) of the 16 participants referring to physical and/or sexual assault in the current study, received a diagnosis of chronic PTSD.

The persuasive ability of negative IWMs of others to predict DAYS.EXP makes sense, when considering that negative IWMs of others is associated with high levels of introversion, low levels of emotional expressiveness (Bartholomew & Horowitz, 1991) and low levels of support-seeking during anxiety-arousing conditions (Simpson, Rholes & Nelligan, 1992). All of these factors are likely to promote withdrawal from potential sources of personal and professional support, prevent emotional processing of the event and encourage use of avoidance to cope with symptoms. This provides some support for Foa’s (1997) emotional processing theory of PTSD which states that recovery from PTSD must involve emotional engagement. The elicitation of negative IWMs help to explain why early engagement in therapy and therefore high emotional engagement, is often replaced with high levels of cognitive, emotional and behavioural avoidance in sufferers of long-term PTSD. Further research is required to determine whether the triggering of negative IWMs of others is largely responsible for causing the factors which prevent successful recovery, such as non-compliance with treatment demands and failure to complete the recommended number of treatment sessions (Foa & Cahill, 2002).

8.4.3 Goal 3

To establish support for the theory that unsafe schemas and negative IWMs trigger and reinforce each other during traumatization, provoking PTSD symptomatology.

Correlational analyses showed significant moderate relationships between unsafe schemas and IWMs. Although causation can not be inferred from correlational data, the significant relationships between variables provides a preliminary indication that unsafe schemas and negative IWMs are closely related and may stimulate each other within a reinforcing feedback cycle during traumatization. Further exploratory research may be required however, so that a more comprehensive analysis of the psychological processes during traumatization can be determined.

Comparisons between participants who reached diagnostic status for PTSD or ASD (DIAGNOSIS) and participants without a diagnostic status (NO.DIAG) revealed statistically significant differences for all levels of unsafe schemas and IWMS. The highest levels of unsafe schemas and negative IWMs, and lowest levels of positive IWMS were prominent in participants who reached diagnostic status. These findings provide some support for the hypothesis that facilitation of unsafe schemas and negative IWMS simultaneously, during traumatization, provoke and maintain PTSD symptomatology with adverse consequences on the natural process of psychological adjustment to trauma (as outlined in Chapter 2). Alternative reasons for these data should also be explored however. For example, while unsafe schemas may elicit PTSD symptoms, PTSD symptoms may elicit negative IWMS; or a third confounding variable may be responsible for the relationship between unsafe schemas, IWMS and PTSD symptoms.

8.4.4 Goal 4

To decipher if significant differences exist between Secure, Preoccupied, Dismissing and Fearful responses to trauma.

The degree to which all IWMs were endorsed were considered together and placed categorically into an adult pattern of attachment (Secure, Preoccupied, Dismissing or Fearful). It is interesting to note however that most participants were either Secure (n = 70) or Fearful (n = 39), while less participants represented the Preoccupied (n = 13) and Dismissing (n = 17) categories. The possibility that negative IWMs of one type helps to elicit and reinforce negative IWMs of the other type, may explain why the combination of both positive and negative IWMs simultaneously is not very common during traumatisation.

Comparisons revealed that participants with secure attachment responses reported significantly lower PTSD.SYMP and DAYS.EXP than participants with insecure attachment. Fearful attachment had the highest mean for PTSD.SYMP. Dismissing attachment revealed slightly higher scores than Preoccupied attachment on all symptom variables except FUNCTION. Such comparisons indicate that insecure attachment reactions, which incorporate the strong presence of negative IWMs of the self and/or others, creates risk for high levels of PTSD symptomatology. In contrast, Secure attachment, involving positive IWMs of both the self and others, act to protect against intense PTSD symptomatology after trauma.

Comparisons of mean scores for DAYS.EXP between attachment styles revealed that Dismissing (M = 313.77) and Fearful responses (M = 268.66) were significantly higher

than Secure ($M = 84.39$) or Preoccupied responses ($M = 52.43$). Fearful and Dismissing attachment both incorporate negative IWMs of others. As already proposed, negative IWMs of others are likely to promote withdrawal from personal and professional support, prevent emotional processing of the traumatic event and encourage use of avoidance to cope with symptoms. In contrast, positive IWMs of others are likely to encourage high-levels of support seeking and emotional expressiveness (Bartholomew & Horowitz, 1991), which may encourage earlier emotional processing of the trauma and potentially, earlier recovery (Gilboa-Shechtman & Foa, 2001).

Readers are reminded that the present study did *not* assess how people with certain attachment styles (i.e. Secure, Dismissing, Preoccupied, Fearful) reacted to traumatic situations. Research has already demonstrated that during stress, adults with insecure adult attachment styles adopt less constructive distress management techniques, less optimistic expectations about managing stress and lower sense of self-efficacy than those with secure attachment (see Mikulincer, Horesh, Eilati & Kotler, 1999 for review). It is therefore not surprising that secure attachment appears to act as a buffer against stress (see review by Mikulincer & Florian, 1998), while insecure attachment creates vulnerability to higher levels of psychiatric symptomatology and greater problems during post-trauma functioning (Mikulincer, Horesh, Eilati, & Kotler, 1999). The relationship between insecure attachment and trauma-related psychopathology however, is generally studied *after* the traumatic event has occurred, so that self-report questionnaires are typically measuring *post*-trauma attachment styles. The presumption that IWMs do not change temporarily or abruptly, may have caused researchers to assume that negative post-trauma IWMs were always evident - even before the trauma. More accurately however, post-trauma IWMs may have changed substantially from pre-trauma IWMs,

triggering or enhancing negative IWMs while lowering the presence of positive IWMs. Further research should be longitudinal in nature, attempting to study changes in IWMs from pre- to post-trauma functioning; and from post-trauma functioning to recovery. Although such research would be expensive, requiring the study of a number of participants longitudinally over a period of years, it would contribute enormously to current understandings about the psychological effects of trauma.

8.5 Factors Limiting the Present Study

The majority of participants in the study's sample were New Zealand European females, who were more likely to respond to advertisements and send in completed questionnaires. Consequently, attempts to generalise the findings of the present study to males or individuals from minority ethnic groups may be problematic. The relationship between PTSD symptomatology, unsafe schemas and IWMs requires further assessment with males and individuals from minority races, including Maori, Pacific Island and Asian cultures.

The low return rate of questionnaires means that those who did not respond could include people who varied in quite different ways on the variables that were measured. Also, because the sample was taken from the general community, caution should be taken if generalizing the results of the study to psychiatric populations.

The data in the present study are open to a variety of interpretations and clearly more elaborate research is required to determine the interplay of variables related to PTSD.

It is possible, for example, that a threatened sense of control and negative IWMs are caused by PTSD symptoms, rather than the influential variables intensifying and maintaining PTSD. As has been said before by researchers attempting to decipher particular variables associated with PTSD: “Establishing cause and effect in this area and untangling the inevitable reciprocal feedback loops that are likely to exist represents a thorny methodological challenge” (Flett et al., no date, p102).

The present study is limited by reliance on self-report data which was retrospective in nature. Memory difficulties and biases may have distorted results, especially for participants referring to events many years ago. Additionally, post-traumatic symptoms such as hyper-arousal and dissociation may have affected memory during traumatization so that reports were based on guesses or “what was likely”. Information derived from secondary sources such as clinical records and family observations, or systematic interviews with participants, may have provided a way to validate data. In the absence of clinical validation, the conclusions of this research must be regarded as tentative.

There are a number of measurement issues in this study. There are validity issues for at least two of the four questionnaires used. The ETI was a previously untested measure and although revealing some interesting results, would need to be systematically developed before further study is undertaken. The new constructs, unsafe schemas, threatened safety, threatened invulnerability and threatened control, require further definitional refinement and more precise operational definitions before more valid measures are developed.

Measurement of attachment style response is another issue requiring attention. The

variety of ways that attachment can be measured, indicates that future studies need to utilize these measures as well. There is a possibility that the current study did not achieve accurate measurement of attachment style response due to adaptation of the ASQ, which was designed to measure *current* attachment style, rather than attachment style at a specific time in the past.

8.6 Practical Implications of the Current Research

Findings of the present study generate several implications for professionals working with traumatized individuals, especially those who meet DSM-IV criteria for ASD or PTSD.

Of the three unsafe schema variables, threatened control predicted both intensity and length of time that post-traumatic symptoms were experienced. These results suggest that cognitive-affective schemas relating to the victim's shattered sense of control may be particularly crucial to address during therapy. As a significant predictor of DAYS.EXP, trauma victims' may find that confrontation with their own lack of control over dreadful circumstances (and therefore similar experiences in the future) is indeed a frightening task, which is easier to deny or avoid. To prevent treatment resistance and non-compliance, which is typical in sufferers of long-term PTSD (Foa & Cahill, 2002), therapists may need to develop creative strategies for allowing trauma patients a strong sense of control within the therapeutic setting. Discussing the issue of control and asking patients for their own ideas about how a sense of control can be maintained throughout sessions may be an effective start.

Trauma survivors may also be helped if families and friends are educated about the importance of being supportive and available, without “taking over” and doing too much for the victim, which may only reinforce perceptions of powerlessness. Obviously further research using in-depth interviews with trauma victims, will help to clarify how therapists, families and friends can encourage a greater sense of control while supporting the recovery of trauma victims.

Relationships as Secondary (emphasizing withdrawal and avoidance of relationships) and Preoccupation with Relationships (involving uncertainty, concern and insecurity regarding relationships with others) were the two IWM predictors of PTSD.SYMP. These results suggest that even though the most traumatized individuals are likely to withdraw from others to protect themselves against hurt and vulnerability, they may be sensitively aware and anxiously preoccupied of a strong need for connection and intimacy with others. Practical implications are that the management of current relationship issues and interpersonal issues in therapy are of primary importance and should not be set aside as secondary to dealing with PTSD symptoms. In fact, dealing with interpersonal issues, may be an indirect way of alleviating PTSD symptoms in trauma patients. Previous studies (e.g. Vincent, 1994; Carroll, Rueger, Foy & Dohanoe, 1985 cited by Fairbank et al., 2001) revealing the relationship between interpersonal problems and PTSD have highlighted the importance of including attempts to improve interpersonal skills and reduce interactional difficulties between family members of trauma victims. Limited reference has been made however, about how this may be best achieved. The results of the present study suggest that elicitation of negative IWMs during traumatisation is the fundamental reason for interpersonal problems, including marital problems, interfamilial aggression, interpersonal violence, social maladjustment,

difficulties with expressiveness and self-disclosure (as discussed in Chapter 1). Placing a strong focus on helping victims to reassess negative attachment-related schemas, rather than focusing only on specific interpersonal dilemmas that the client is having, may be the key to reducing unhelpful social and interactional problems in trauma victims.

Assessment of the amalgamation of each client's IWMs might also assist therapists in the design and implementation of more efficacious treatment programs for traumatized individuals.

Findings of the present study indicated that approximately 70% of participants within both Dismissing and Fearful categories met diagnostic criteria for C.PTSD. Such results insinuate that regardless of strong positive self-IWMs, strong elicitation of negative IWMs of others is a risk factor for chronic and long-lasting PTSD symptomatology. Of those with Preoccupied responses to trauma, 78% met diagnostic status for either A.PTSD or ASD, suggesting that negative IWMs of the self, in combination with positive IWMs of others, predicts severe but short-term PTSD symptoms. In contrast to groups who responded with insecure attachment reactions, the majority (77%) of participants with Secure responses to trauma did not meet criteria for any diagnostic status. Strong presence of positive IWMs of both the self and others are likely to predict swift recovery.

The practical implications of such findings, is that pre-treatment assessment of IWMs should help therapists to predict the potential future diagnostic status of patients.

Traumatized people with strong negative IWMs of the self, but positive IWMs of others, would be identified as potentially vulnerable to developing ASD or acute PTSD.

Individualized treatment plans which target working on negative IWMs of the self,

possibly caused by typical post-trauma states such as disgrace, humiliation (Krupnick & Horowitz, 1980 cited by Holloway & Fullerton, 1994), guilt and self-blame (Joseph, Hodgkinson, Yule & Williams, 1993; Hatcher, 1981 cited by Holloway & Fullerton, 1994) may help to alleviate the intensity of PTSD symptoms, by preventing secondary anxiety-related emotional reactions which are often activated by a bad or weak sense of self (Paivio & Greenberg, 1998).

Traumatized people with strong negative IWMs of others would be identified as potentially vulnerable to developing chronic PTSD, therefore requiring more intensive treatment. Extra efforts to enhance the effectiveness of support systems, through educating and counselling family members and close friends about how to interact with and support the trauma victim effectively; and how to handle interpersonal difficulties or conflicts which may arise, could be essential in preventing chronic PTSD which may last for years. Attempts to enhance perceived support may decrease negative IWMs of others and promote earlier engagement in therapy, higher levels of treatment compliance and therefore earlier emotional processing of the event: factors crucial in successful recovery from PTSD (Burstein, 1986; Gilboa-Shechtman & Foa, 2001). Preventing traumatized individuals from withdrawing from established support systems and encouraging them to accept new supports, may be the key to weakening negative IWMs of others and beginning the recovery process.

If strong elicitation of negative IWMs of others predict chronic PTSD, then the presence of these adverse cognitive-emotional schemas may be a fundamental reason why early engagement in therapy and treatment-compliance is often replaced with high levels of cognitive, emotional and behavioural avoidance in sufferers of long-term PTSD (van der

Kolk, McFarlane & van der Hart, 1996). Because negative IWMs of others predicted both intensity and length of time that post-traumatic symptoms were experienced, it seems crucial that immediate post-trauma support assists victims with the capacity and desire to become connected to other people. Group therapy may be an important alternative to individual therapy, by promoting emotional connections and positive relationships with people as an alternative to withdrawal and isolation.

Educating victims' family and friends about the importance of being persistently available and supportive may also be a simple, yet crucial, step. This is because negative IWMs encourage people to behave in ways which inadvertently evoke the unsupportive behaviours that they expect from others (Bowlby, 1988). Family and friends of trauma victims should be educated about IWMs and how to respond to particular behaviours in ways which do not confirm the trauma sufferer's negative expectations. Enhancing trauma victims' perceptions of available social support is associated with lower levels of post-traumatic symptomatology (see Weaver, Resnick, Glynn & Foy, 1999 for a review) and may be one way to weaken existing negative IWMs of others with assurance that they are not reinforced or strengthened. Indeed spending time educating family and friends may be worth the extra expense and effort, if PTSD symptoms are prevented from becoming chronic and enduring.

8.7 Future Research Directions

Although the present study revealed some interesting results about the relationship between unsafe schemas, IWMs and PTSD symptomatology after trauma, additional

research is necessary to clarify the nature and direction of the associations between these variables.

Exploratory research utilizing in-depth interviews with trauma victims may construct clearer understandings about the various ways in which unsafe schemas, IWMs and PTSD symptomatology interact. Interviews with trauma survivors should also provide a wealth of insight regarding the various ways in which therapists, family and friends can provide effective support and help to prevent adverse cognitive-emotional schemas from being reinforced and strengthened during traumatization.

The results from the study indicate that unsafe schemas and negative IWMs are triggered after a traumatic event. Future research might include longitudinal studies which assess how such schemas develop and transform after particular experiences. More specifically, studies which assess changes of unsafe schemas and IWMs from pre- to post-trauma functioning, and from post-trauma functioning to recovery, would provide more valuable information about the affects of traumatization. Data from secondary sources such as family, friends and therapists about the behaviours and interactional patterns of trauma victims may also provide important additional insights about attachment behaviours during traumatization.

The analysis supported the theory that IWMs are particularly sensitive to traumatisations and not as fixed as theorists advocate. Just as distressing childhood experiences facilitate negative IWMs of the self and others during the formative years (Bowlby, 1973; Crittenden, 1995), traumatic experiences during adulthood, which jeopardize the attachment system's fundamental goal of survival, may trigger negative IWMs of the self

and others. However, the present study can only be considered a preliminary assessment about the attachment system and PTSD. Further research which assesses attachment reactions during the traumatization period with different assessment tools, should provide further insight about the attachment system and PTSD. The presumption that IWMs do not change temporarily or abruptly has meant that there is no systematically developed measure of Attachment Style Response. Research should further investigate whether IWMs do change abruptly during trauma, so that Attachment Style Response can become a systematically developed construct which can form the basis for additional insights and further research about the psychological effects of trauma.

Results of the present study can not be generalized to all trauma victims, because specific criteria had to be fulfilled to meet the study's definition of a "traumatic event". Future research should study a range of events considered "traumatic" to individuals. In particular, responses to normative events (e.g. marriage break-ups) which are experienced as traumatic, should be studied to advance knowledge about the potential role of unsafe schemas and IWMs in the development of PTSD in some people.

The present study's sample comprised of trauma victims who lived within the general community. Knowledge about the psychological effects of trauma may benefit from investigating patients who are in psychiatric care, especially individuals who have resided under long-term care. A deeper understanding of cognitive-emotional schemas and attachment-related behaviours of hospitalised individuals who have experienced past trauma would help hospital-staff to provide more effective support and care.

Information gathered from each participant in the current study was limited due to the

smaller size of the project. Future research on the psychological effects of trauma should not limit the analysis to just PTSD symptoms, but assess the whole spectrum of psychological difficulties evident after trauma. Exploration of the potential mediating effects of negative IWMs on the relationship between PTSD and other psychiatric problems would create valuable information for therapists who work with trauma victims. Future research examining the presence and details of particular risk factor variables in the development of PTSD, such as avoidance-type coping (Bryant & Harvey, 1995), lack of social interaction (Davidson, Hughes, Blazer & George, 1991) and non-compliance with treatment demands (Foa & Cahill, 2002) would be beneficial. Such data would provide opportunities to conduct analyses and determine whether negative IWMs and unsafe schemas play a main causative role in eliciting these risk factors which maintain and elicit PTSD and hinder recovery.

8.8 Conclusion

The present study created valuable understandings about some predominating and potentially influential cognitive-emotional schemas related to PTSD symptomatology. While unsafe schemas, and in particular a threatened sense of control, appear to play a fundamental role in the experienced intensification of PTSD symptoms; negative IWMs of others appear to play a large role in maintaining PTSD symptoms. Although further research is required, the findings of this research have provided the basis for a deeper understanding of PTSD symptomatology, so that more efficacious therapeutic procedures and programs may be developed to prevent long-term psychiatric deterioration and swifter recovery after trauma.

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APPENDIX A

450 VOLUNTEERS FOR TRAUMA STUDY NEEDED

**Have you ever experienced a traumatic event
or felt traumatized?**

Were you 18 years old or older at the time?

If you answered yes to both questions then you may be able to help.

My name is Teesha Passmore and I am currently conducting research through the Psychology Department at Massey University.

I need male and female volunteers to fill out a 30 minute questionnaire about a past traumatic event/s. The event/s must **not** be currently causing distress.

The traumatic event/s needs to have occurred from the age of 18 years, and meet the following three criteria,

- 1) The event involved actual **or** potential for death or physical injury of self or others; **or** beliefs that the physical wellbeing of yourself or others were threatened in some way
- 2) The event created feelings of fear, shock, helplessness and/or horror.
- 3) The event is **not** currently causing distress

If you would like a questionnaire sent or have any queries, please contact me at Teesha@netaccess.co.nz or ph. 025 6881918. You may also contact my supervisor, Dr Robert Gregory at R.J.Gregory@massey.ac.nz, or ph. (06) 350-5799, ext. 2053. To maintain confidentiality you do not have to provide your name: The questionnaire can be sent to 'Study Respondent'. A stamped self-addressed envelope will be provided for you to send your responses.

Thank you
Teesha Passmore

APPENDIX B

Information Sheet

The Triggering of Unsafe Schemas and Insecure Attachment Styles in Posttraumatic Stress Responses During Adulthood.

My name is Teesha Passmore and I am currently conducting some research as a requirement for completion of a Masters Degree in Psychology through Massey University. Supervising this research is Dr. Robert Gregory, lecturer in the Department of Psychology, Massey University.

This research is studying the effects of traumatic experiences on people's behaviours, emotions, perceptions and thoughts. I am contacting men and women over the age of 18 years and asking them to fill out four short questionnaires in relation to a past traumatic experience.

The traumatic event/s needs to have occurred from the age of 18 years, and meet the following two criteria,

- 1) the event/s involved actual or potential for own or others physical injury or death; or beliefs that physical well-being of self or others was threatened.
- 2) The event/s created feelings of fear, shock, helplessness and/or horror.

The attached questionnaires ask you to think back to a traumatic event/s with the above criteria; to briefly describe the event/s and to note how the event/s affected you. The traumatic event/s must not be currently affecting your psychological well-being.

Taken together all questionnaires should take about 30 minutes to complete. Upon completion questionnaires should be placed within the free-post envelope and posted.

To conduct this research, I need at least 200 anonymous questionnaires to be completed and returned.

Please note the following as you consider to participate in this research

- * Your participation in this study is voluntary and anonymous. You will not be required to identify yourself at any time.
- * You have the right to decline to participate
- * You have the right to refuse to answer any questions or questionnaires
- * Returned questionnaires will be used only for the purpose of this research and not made available to another other person but myself and my supervisor
- * You have the right to have access to results of the study at the conclusion of the research. The conclusion of this sheet allows you to receive a summary anonymously.
- * You have the right to contact myself or Dr. Robert Gregory during your participation to ask any questions and clarify anything that you may be unsure of
- * Return and completion of the questionnaires implies that you have consented to participate in this study

* **IMPORTANT NOTE**

Because these questions are related to past negative experiences, please be aware of your own feelings while completing the questionnaires and DO NOT push yourself to answer any questions which you find overly distressing.

If you feel unduly overwhelmed or upset while completing the questionnaires please STOP filling out the questionnaires and contact a support person. In the event that no one is available the following options are possible

- Psychiatric Emergencies (ph. (03) 3640-640) is a department in the hospital which deals with urgent psychological problems.

- Your local GP or doctor can offer support and refer you to appropriate services

- Victim Support (ph. (03) 379-6767) is a support service made of volunteers for individuals suffering from criminal victimization

- Life Line (ph. (03) 366-6743 or 0800 353-353) is a 24 hour telephone counselling service for adults in need of support

It is hoped that the information gained from this research will assist practitioners working in the area of trauma to further understand the impact of stressful and traumatic experiences on people.

I can be contacted via e-mail at Teesha@netaccess.co.nz or by phone on 025-688 1918. Dr. Robert Gregory can be contacted via e-mail at R.J.Gregory@massey.ac.nz or by phone on (06) 350-5799, ext. 2053. Should you like any further information or to discuss any part of this study please don't hesitate to contact either of us.

This project has been reviewed and approved by the Massey University Human Ethics Committee, PN Protocol 02/91. If you have any concerns about the conduct of this research, please contact Professor Sylvia V. Rumball, Chair, Massey University, Regional Human Ethics Committee, Palmerston North, telephone (06) 350-5249, email S.V.Rumball@massey.ac.nz.

Thank you for your participation

Teesha Passmore

Please send a summary of the results of this study to

NAME: (Optional) _____

EMAIL: _____

POSTAL ADDRESS: _____

APPENDIX C

QUESTIONNAIRE 1

STRESSFUL EVENT QUESTIONNAIRE

* Please note: This project has been reviewed and approved by the Massey University Human Ethics Committee, PN Protocol 02/91. If you have any concerns about the conduct of this research, please contact Professor Sylvia V. Rumball, Chair, Massey University, Regional Human Ethics Committee, Palmerston North, telephone (06) 350-5249, email S.V.Rumball@massey.ac.nz. Return and completion of the following questionnaires implies that you have consented to participating in this study.

Responses to traumatic events can be mild or severe; and may last from one day to months.

Traumatic events may include...

Events experienced yourself - such as unexpected death of a loved one; an operation; a car accident; a natural disaster; or sexual or physical assault;

Events you saw in real life - such as seeing someone being hit by a car; seeing someone being assaulted

Events you saw on television - such as the September 11th terrorist attacks

Events you heard about - such as distressing experiences that a loved one endured

The following questionnaires ask you to refer to **one traumatic experience** in your life **from the age of 18 years**

The event **must** meet the following two criteria

1) The event involved actual **or** potential for own or others physical injury or death; **or** beliefs that physical wellbeing of yourself or others was threatened 2) The event created feelings of fear, shock, helplessness and/or horror.

Please choose an experience/s that meets the above two criteria and complete the questionnaires in relation to the same event/s each time.

1 - What is your age? _____ 1a - What is your occupation? _____

2 - Are you MALE FEMALE (please circle one)

3 - What ethnic group/s do you identify with? _____

4 - What traumatizing event/s will you refer to? _____

5 - Did the event/s involve actual injury or death of others; *or* were you injured?
(PLEASE CIRCLE)

YES NO

6 - Did the event/s involve the *potential* for injury or death of yourself or others; *or* did you believe that physical wellbeing of yourself or someone else was threatened?
(PLEASE CIRCLE)

YES NO

PLEASE NOTE: If you answered NO to BOTH questions 5 and 6 then the event that you have chosen does not meet criteria for this study.

7 - What was the worst part of the event/s for you? _____

8 - How old were you *at the time* of the traumatizing event/s? _____

9 - To what degree were the event/s outside your control? (PLEASE CIRCLE)

0	1	2	3
Not at all	A little	Moderately	Completely

10 - How predictable were the traumatic parts of the event/s (PLEASE CIRCLE)

0	1	2	3
Not at all	A little	Moderately	Completely

11 - How much exposure did you have to experiencing/witnessing/hearing the traumatic event/s while you felt your most intense emotion (e.g. horror, fear, terror, helplessness). (PLEASE CIRCLE)

1 - Once for period of _____ (how long?) 2 - A couple of times

3 - A few times

4 - Over and over again

APPENDIX D

QUESTIONNAIRE 2

SASRQ

This questionnaire will ask you a series of questions relating to your responses to the *same traumatic event/s* that you chose earlier. Please answer as honestly as you can.

1) How disturbing was the event/s to you? (Please mark one)

___ Not at all disturbing ___ Somewhat disturbing
 ___ Moderately disturbing ___ Very disturbing ___ Extremely disturbing

2) DIRECTIONS.

Below is a list of experiences that people sometimes have during and after a traumatic event. Please read each item carefully and decide how well it describes your experiences after the traumatic event/s. Use the 0-5 point scale shown below for each of the 30 experiences and write the number in the box next to each item.

0	1	2	3	4	5
Not	Very Rarely	Rarely	Sometimes	Often	Very Often
Experienced	Experienced	Experienced	Experienced	Experienced	Experienced

1 - I had difficulty falling or staying asleep

2 - I felt restless

3 - I felt a sense of timelessness

- 4 - I was slow to respond
- 5 - I tried to avoid feelings about the event/s
- 6 - I had repeated distressing dreams relating to the event/s
- 7 - I felt extremely upset if exposed to anything that reminded me of the event/s
- 8 - I would jump in surprise at the least thing
- 9 - The stressful event/s made it difficult for me to perform work or other things
I needed to do
- 10 - I did not have the usual sense of who I am
- 11 - I tried to avoid activities that reminded me of the stressful event/s
- 12 - I felt "on edge" or vigilant
- 13 - I experienced myself as though I were a stranger
- 14 - I tried to avoid conversations about the event/s
- 15 - I had a bodily reaction (e.g. sore stomach) when exposed to reminders of the
stressful event/s
- 16 - I had problems remembering important details about the stressful event/s
- 17 - I tried to avoid thoughts about the stressful event/s
- 18 - Things I saw looked different to me from how I know they really looked.
- 19 - I had repeated and unwanted memories of the event/s
- 20 - I felt distant from my emotions
- 21 - I felt irritable or had outbursts of anger

- 22 - I avoided contact with people who reminded me of the event
- 23 - I would suddenly act or feel the same emotions as when I first saw the event
- 24 - My mind went blank
- 25 - I can't remember much of what happened or how I reacted
- 26 - My reactions caused problems in my relationships with other people
- 27 - I had difficulty concentrating
- 28 - I felt estranged or detached from other people
- 29 - The visual images of the event/s occurred over and over again in my mind
- 30 - I tried to stay away from places that reminded me of the event

31 - How long did you experienced the worst symptoms of distress? (Please write numbers the space provided)

_____ hours _____ days _____ weeks _____ months

APPENDIX E

QUESTIONNAIRE 3
EXPERIENCE OF TRAUMA INVENTORY

Below is a list of thoughts and feelings some people have *after* traumatic event/s. Using the scale below please answer the following questions by placing the number in the box next to each item. Please refer to the same traumatic event that you have in the previous questionnaires.

0	1	2	3	4
Not at all	A little	Somewhat	Moderately	Often and Intensely

1 - The event/s triggered fears about death

2 - The event/s made me realize how vulnerable I am

3 - I realized that I could not predict or control bad things

4 - I felt unsafe and insecure

5 - I felt that protection from danger was impossible

6 - I felt victimized

7 - I felt a lack of control over my life

8 - The event/s made me realize that people are helpless against threat

9 - The event created a sense that people can not be protected from harm

10 - I felt powerless

11 - The event shattered my sense of security

12 - I felt vulnerable and defenceless

13 - I felt like I was open to more bad things happening

14 - I realized that I was powerless against stopping bad things

15 - My sense of power and control over my life was shattered

APPENDIX F

QUESTIONNAIRE 4
ATTACHMENT STYLES QUESTIONNAIRE

Refer once more to the same traumatic experience as before and show how much you agree with each of the following items by rating them on this scale:

1	2	3	4	5	6
Totally disagree	Strongly disagree	Slightly disagree	Slightly agree	Strongly agree	Totally agree

- 1 - Overall, I still felt like a worthwhile person
- 2 - At the time I was still easy to get to know
- 3 - I feel confident that other people would be there for me when I need them
- 4 - I wanted to depend on myself rather than other people
- 5 - I wanted to keep to myself
- 6 - I felt that to ask for help was to admit that I was a failure
- 7 - My worth become based on achieving anything
- 8 - Building relationships become secondary to achieving anything
- 9 - Doing my best was more important than getting on with others
- 10 - If I had something to do, I would rather get it done no matter who got hurt
- 11 - At the time it was important to me that others liked me
- 12 - It was important to me to avoid doing things that others wouldn't like
- 13 - I found it hard to make a decision unless I knew what other people were
 thinking

- 14 - I felt that my relationships with others were generally superficial
- 15 - I thought sometimes that I was no good at all
- 16 - I found it hard to trust other people
- 17 - I find it difficult to depend on others
- 18 - I find that others were reluctant to get as close as I would have liked
- 19 - I found it relatively easy to get close to people during that time
- 20 - I found it easy to trust others
- 21 - I felt comfortable depending on other people
- 22 - I worried that others wouldn't care as much about me as I cared about them
- 23 - I worried about people getting too close
- 24 - I worried that I wouldn't measure up to other people
- 25 - I had mixed feelings about being close to others
- 26 - While I wanted to get close to others, I felt uneasy about it
- 27 - I wondered why people would want to be involved with me
- 28 - It was very important to me to have a close relationship
- 29 - I worried a lot about my relationships
- 30 - I often wondered how I would cope without some one to love me
- 31 - I felt confident about relating to others
- 32 - I often felt left out or alone
- 33 - I often worried that I did not really fit in with other people

34 - I felt that others had their own problems so I didn't want to bother them with mine

35 - When I talked over my problems with others, I generally felt ashamed or foolish

36 - I was too concerned about other things to put much time into relationships

37 - During this time I knew others were generally aware and concerned

38 - I was confident that other people still liked and respected me

39 - I was frustrated when others were not available when I need them

40 - Other people often disappointed me