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**Traumatic Memory and its Relationship to the Frequency and Duration of
Childhood Sexual Abuse**

Daniel B. Rothman

University of Manitoba

**A thesis submitted to the University of Manitoba in partial fulfillment of the
requirements for the degree of Master of Arts in the Department of Psychology.**

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**Traumatic Memory and its Relationship to the Frequency and Duration of
Childhood Sexual Abuse**

by

Daniel B. Rothman

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University
of Manitoba in partial fulfillment of the requirements of the degree
of
Master of Arts**

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Abstract

A growing body of literature advises that there may be a traumatic memory system that operates uniquely from ordinary memory. Posttraumatic Stress Disorder (PTSD) is useful as a framework to explain two seemingly contradictory processes involved in traumatic memory, *amnesia* and *hypermnnesia*, which can cooperate in the forgetting and subsequent recovery of traumatic memories. The present study explored the relationship between (1) self-reported confidence in the accuracy of memories of an abusive experience, (2) delayed recall of the abuse, and (3) some of the phenomenal characteristics of traumatic memories of the abuse. Participants were a sample of introductory psychology students who met the sexual abuse criteria of a modified version of Finkelhor's (1979) Sexual Victimization Survey and who completed the Revised Impact of Event Scale (IES-R; Horowitz, Wilner, & Alvarez, 1979). It was found that sexually abused individuals overall were less confident, more likely to have experienced delayed recall, and showed more traumatic symptoms of intrusion and avoidance than nonabused individuals. Participants who had been subjected to repeated and chronic abuse were more confident, but less likely to have experienced delayed recall and more expressive of an intrusive symptomatology than those whose abuse was of a comparatively lower frequency and duration. However, individuals abused by family members exhibited the greatest tendencies toward diminished

confidence in their memories, delayed recall, and psychological defenses.

Whether or not survivors were believed by their chosen confidants was associated with the operation of psychological defenses as well.

Traumatic Memory and its Relationship to the Frequency and Duration of Childhood Sexual Abuse

In the contentious area of childhood sexual abuse, if there is one region of consensus among discordant psychologists, it is that the sexual abuse of children does enduring damage (Briere, 1988; Briere & Runtz, 1987; Finkelhor, 1990; Herman, 1992; Grayston & De Luca, 1995; Romano & De Luca, 1997). This consensus has not come easily: Less than 20 years ago the existence of child sexual abuse was barely recognized and often denied with a disquieting eagerness (Rush, 1980). Predictably, the literature that now characterizes the investigation of *memories* of sexual abuse exhibits little agreement (see Lindsay & Read, 1994; Loftus, Garry, & Feldman, 1994; Mollon, 1996; Williams, 1994b). The accuracy of courtroom testimony in cases of child sexual abuse, particularly where recovered memories of abuse are involved, is a consequential and highly charged issue (see, for example, Loftus & Ketcham, 1994; Terr, 1994).

The need to determine the accuracy of child abuse memories has led to a review of the cognitive research on the malleability of memory (see Loftus & Ketcham, 1994; Loftus et al., 1994; Lindsay & Read, 1994). Cognitive psychologists argue that current theories and principles of memory can satisfactorily account for all of the ways in which remembering and forgetting might work. Still, this research has, to date, almost exclusively focused on

relatively mundane, everyday memory processes, often relying upon laboratory-generated memories, illustrative examples, and limited samples (Mollon, 1996; Terr, 1994; Williams, 1994a). If “trauma” is defined as an inescapably stressful life event that overwhelms a person’s existing coping mechanisms (van der Kolk, 1996a), it is questionable whether findings of memory distortions in normal participants exposed to laboratory-created stresses can serve as meaningful guides to understanding traumatic memories. As made plain by Williams (1994b) in her comment on one such typical study,

Likening having no memory of a severe trauma such as child sexual abuse to forgetting to buy a bottle of aspirin on a shopping trip (Loftus et al., 1994) seems to ignore the psychological significance of such events and the resulting distress often experienced by many victims (p. 1183).

Certainly, to enhance the applicability of research on memory to adults’ memories of childhood sexual abuse, “researchers need to attend to the ecological validity of the studies and also move beyond the reliance on anecdotal accounts, examples from the media and the courtroom, and small convenience samples” (Williams, 1994b, p. 1184). Memory for traumatic events may, indeed, be a unique kind of memory and should not be assimilated with laboratory measures of memory in general. Any investigation of the accuracy or validity of sexual abuse memories must incorporate data derived from memories for sexual abuse itself. Courtois

(1995) goes as far as to assert that “cognitive psychologists do not (yet) have a memory model that encompasses trauma or, perhaps even one that applies to trauma” (p. 295).

Traumatic Memory

The major problem with Courtois' (1995) assertion is that no accepted memory model for trauma has been formulated. Research on traumatic memory suggests that there are important differences in the ways people experience traumatic and nontraumatic events (Herman, 1992; LeDoux, 1989, 1992; van der Kolk, 1996a; van der Kolk & Fisler, 1995; Ward & Carroll, 1997). Posttraumatic Stress Disorder (PTSD) is often invoked as a framework to explain the processes involved in traumatic memory. A quick perusal of the current Diagnostic and Statistical Manual of Mental Disorders' (DSM-IV; APA, 1994) diagnostic criteria for PTSD will reveal that aberrations in memory are central to the description and diagnosis of the disorder. The posttraumatic syndrome has been described as the failure of time to heal all wounds (van der Kolk & McFarlane, 1996). The memory of the trauma is not integrated and accepted as part of the person's personal past; instead it comes to exist independently of previous schemata. The traumatized individual's life becomes organized around the traumatic events in many different ways.

Because people with PTSD have a fundamental impairment in the capacity to integrate traumatic experiences with other life events, their traumatic memories are often not coherent stories; they tend to consist of intense emotions or somatosensory impressions that cannot freely be expressed in language (van der Kolk & McFarlane, 1996). These intrusions of traumatic memories can take many different forms: Flashbacks, intense emotions such as fear or rage, somatic sensations and nightmares are all a part of the symptomatology (Laub & Auerhahn, 1993). Years and even decades after the original trauma, victims claim that when they relive their traumatic experiences, they are as vivid as when the trauma first occurred (van der Kolk & Fislser, 1995).

The DSM-IV's definition of PTSD recognizes that trauma can lead to extremes of retention and forgetting. Horrifying experiences can be remembered with extreme vividness, or they may totally resist integration. In many instances, traumatized individuals report a combination of both (van der Kolk, 1996a). Herein lies the fundamental difficulty in the understanding of traumatic memory: How does one account for obscured memories of childhood sexual abuse within the bounds of PTSD? How can the construct of PTSD include both amnesia (not remembering) and hypermnesia (remembering too much)? And even more confounding, how can both processes cooperate within the same individual? A growing body of research today advises that trauma can effect the individual by

both (1) forming an indelible mnemonic imprint of the traumatic experience, and by (2) leading to dissociation and amnesia.

Indelible Memories

Whereas people seem to assimilate predictable and familiar experiences easily, and while memories of ordinary events break down in clarity over time, some aspects of traumatic events appear to become fixed in the mind, unaltered by the passage of time or by the effects of subsequent experience (van der Kolk, 1996a). Van der Kolk (1996a) noted that for the past 100 years, starting with Janet (1889), scholars of trauma have observed that the imprints of traumatic experiences seem to be qualitatively different from memories of everyday events. Accounts of the memories of traumatized individuals consistently mention that emotional and perceptual elements tend to be more prominent than declarative or explicit components (Kardiner, 1941; Mollon, 1996; Terr, 1994). These oft repeated observations of the tenacity of traumatic memories have led to the notion that traumatic memories may be encoded differently from common memories—possibly due to differences in the focussing of attention, or maybe because extreme emotional arousal interferes with hippocampal memory function (Janet, 1889; LeDoux, 1992; van der Kolk, 1994).

Amnesia

Although vivid intrusions of traumatic images and sensations are some of the most dramatic expressions of PTSD, the loss of recollections for traumatic experiences is also well documented (van der Kolk, 1996a). Research suggests that for some victims of trauma, having no recall of the abuse is based on more than just ordinary forgetting associated with the passage of time, their young age at the time of trauma, or lack of salience of the traumatic event (Williams, 1994a, 1994b). It has been commonly accepted by memory theorists that remembering is a reconstructive process, like repeatedly telling a story to oneself, and that it is assimilated and organized by schemas (Mollon, 1996). Accordingly, memory of the “raw” or unprocessed event is never available. According to Piaget (1962), until there are available representations of events, primarily words, which can be arranged within the mind, there can be no memory: “There are no memories of early childhood for the excellent reason that at that stage there is no evocative mechanism capable of organising them” (p. 187).

Talking is Remembering

Indeed, if we consider only memory that can be recalled and communicated in words, then we are led to the conclusion that memory is essentially unreliable and that recollection of any early childhood experience is basically impossible. However, this would ignore the wealth of research that

exists on implicit or behavioral memory (reviewed by Share, 1994). Schacter (1987) has referred to scientific descriptions of traumatic memories as examples of implicit memory. These memories may not be accessible to conscious recall or to representation in words, but they may be surprisingly accurate. In contrast, verbal memory is dependent on conscious awareness and may be subject to many distortions and creative embellishments (Mollon, 1996). Yet in a recent review of the scientific literature, van der Kolk (1996a) could find no published accounts of traumatic recollections of traumatic events in patients suffering from PTSD that had become distorted over time, either in an experimental or in a clinical setting.

Preverbal emotional memory of trauma may be deeply persisting—perhaps linked to what Terr (1988) calls “burned in” sensory impressions. Sensory (implicit) memory remains an accurate representation of the traumatic event that precipitated it, while verbal (explicit) memory is vulnerable to elaboration and distortion. As explained by van der Kolk (1994, 1996a, 1996b; van der Kolk & Fisler, 1995), when people receive sensory input, they usually automatically synthesize this incoming information into their large store of preexisting schemas. If an event is personally meaningful, people will generally, and without conscious awareness, transcribe these sensations into a narrative that will make sense of the experience, translating it into a meaningful personal story. In contrast with the way people seem to process everyday information, traumatic

experiences are initially strongly imprinted as sensations (visual, auditory, olfactory, tactual, taste) and are not collected and translated into personal narratives. In fact, traumatic memories appear to come back as emotional, sensory states with little verbal representation. When these traumatic memories arise, the traumatized individual may not be able to make sense of them: The recollection may appear as any combination of confusing images, sounds, smells, touches or tastes. This failure to process information on a symbolic, meaningful level, which is necessary for proper categorization and integration with other experience, is key to the pathology of PTSD.

These symptoms seem to be reflected in actual changes in brain activity (see van der Kolk, 1996a, 1996b). Positron emission tomography (PET) scans of people with PTSD have shown that when these people are exposed to stimuli reminiscent of their trauma, there is a decrease in oxygen utilization in Broca's area—the region in the left inferior frontal cortex responsible for generating words to attach to emotional experience. These findings may account for the trauma victim's frequent inability to put feelings into words, to make meaning of their trauma, and to describe their experiences to others. And when the traumatic experience occurs at an early, preverbal age, the pathological process is only facilitated.

Talking is Confusing

Van der Kolk (1996a, 1996b; van der Kolk & van der Hart, 1991) notes that although the sensory perceptions reported in PTSD may accurately reflect the actual imprints of sensations that were recorded at the time of the trauma, as soon as the person attempts to make sense of their experience in words (by forming a narrative) distortions may begin. Though trauma may leave an indelible imprint, once the person starts to talk about and make meaning of their experience, the traumatic memories are transcribed into ordinary memories that are prone to distortion. Psychologists and psychiatrists working with traumatized people (e.g., Shay, 1994; van der Kolk 1996a) observe that people seem unable to accept experiences that have no discernible meaning; they will try to make sense of what they are feeling. Once people become conscious of intrusive elements of the trauma, they are likely to try and fill in any blanks and complete the picture (van der Kolk, 1996a), a process that often distorts the memory.

Dissociation

Simply because no memory for a trauma may exist, it certainly does not mean that a traumatic experience did not occur (Prout & Dobson, 1998). Williams' (1994a) study of 129 women with carefully documented hospital records of childhood sexual abuse revealed that 38% did not recall the abuse that had been reported and recorded in hospital files 17 years earlier. As discussed

above, memories of traumatic experience, particularly memories of sexual abuse, are likely encoded, stored and retrieved differently than ordinary memories. This seems to be especially the case when the trauma or abuse occurs under circumstances of high arousal, terror, where escape is impossible or when the meaning of the abuse, if confronted, could be devastating (Berliner & Williams, 1994; LeDoux, 1989, 1992; van der Kolk, 1994; van der Kolk & Fisler, 1995).

The concept of dissociation as a psychologically motivated defense against knowing cannot be dismissed as implausible. That the mechanism to explain such a phenomenon has not yet been conclusively demonstrated in laboratory studies does not make it impossible (Berliner & Williams, 1994). The moral, ethical and practical difficulties in effectively reproducing trauma in an experimental setting impede such validation. However, the clinical recognition of dissociative processes has been longstanding (van der Kolk, van der Hart, & Marmar, 1996).

The current edition of the DSM-IV (APA, 1994) defines dissociation as a disruption in the usually integrated functions of consciousness, memory, identity, or perception of the environment. The DSM-IV's new diagnosis of Acute Stress Disorder (ASD), which differs from PTSD mostly in the duration of symptoms (a minimum of 2 days and a maximum of 4 weeks) focuses on dissociation in the immediate aftermath of a traumatic experience. Either while experiencing or after experiencing the traumatic event, the individual presents at least 3 of the

following symptoms: (1) a feeling of detachment, numbing, or lack of emotional responsiveness, (2) decreased awareness of surroundings, (3) derealization, (4) depersonalization, and (5) inability to remember a significant aspect of the trauma.

Both ASD and PTSD seem to originate in the individual's capacity to access dissociative states (Spiegel & Cardena, 1991). People who have earlier learned to use this mode of coping with threat seem to be particularly vulnerable to using it again during acute stress (van der Kolk, van der Hart, & Marmar, 1996). Dissociation prevents someone from "owning" the experience: dissociating the experience means that they cannot learn from it or integrate it into consciousness in a meaningful way (Shay, 1994). In fact, inability to integrate the trauma at the acute stage appears to make people vulnerable to the later development of PTSD (Solomon, Laror, & McFarlane, 1996).

When people feel threatened, they experience a significant narrowing of consciousness, and remain focussed on only the central perceptual details (Christianson, 1984; cited in van der Kolk, 1996a). As people are being traumatized, the narrowing of consciousness sometimes evolves into a complete amnesia for the experience. Janet (1919/1925) noted that when a person becomes too upset, memories cannot be transformed into a meaningful narrative; however, the person still remains confronted by the traumatic situation. This results in a

“phobia of memory” which prevents the integration of traumatic events and splits off the traumatic memories from ordinary consciousness. Janet claimed that the memory traces of the trauma endure as “unconscious fixed ideas,” that cannot be dislodged as long as they have not been translated into a personal narrative. When this occurs, the memories instead continue to intrude as terrifying and confusing perceptions and sensations (van der Kolk & van der Hart, 1991).

Although dissociation may be adaptive under extreme conditions, the lack of integration of traumatic memories into consciousness is thought to be the pathogenic means leading to the development of complex behavioral changes, of which PTSD is a clinical manifestation (van der Kolk, 1996a). Janet (1889) proposed that intense arousal seems to interfere with proper information processing and the storage of information in explicit memory. During conditions of high arousal, explicit memory may fail, leaving the traumatized individual in a state of speechless terror where words cannot describe what has happened. Nevertheless, though the person may not be able to produce a coherent, meaningful narrative of the event, there may be no interference with *implicit memory*. The person may “know” the emotional significance of a stimulus and be aware of associated perceptions and sensations without being able to articulate the reasons for feeling or behaving in a certain way. Janet (1889, 1919/1925; cited in van der Kolk & van der Hart, 1991) proposed that traumatic memories are split

off or dissociated from consciousness and instead are stored as sensory perceptions, obsessional ruminations, or behavioral reenactments. Piaget (1962) described how an active failure of explicit, semantic memory leads to the organization of memory on somatosensory or iconic levels. He noted that it is precisely because there is no immediate accommodation that there is a complete dissociation of the inner activity from the external world. As the external world is solely represented by images, it is assimilated without resistance (i.e., unattached to other memories) to the unconscious ego (van der Kolk, 1996a). Indeed, what may most complicate the capacity to communicate about and “remember” traumatic experiences is that memories of trauma may have no verbal, explicit ingredient at all. Instead, the memories may be organized on an implicit or sensory/perceptual level, without any accompanying narrative about what happened. Certainly, this idea is supported by recent findings (see van der Kolk, 1996b, discussed above) indicating that traumatic memories are often accompanied by a decrease in activation of the brain’s language centers.

Traumatic Memories “Recovered”

Today it is generally accepted that the memory system is made up of networks of related information, and that the activation of one aspect of such a network facilitates the retrieval of associated memories (Collins & Loftus, 1975; Leichtman, Ceci, & Ornstein, 1992). Emotions and sensations seem to be the

critical cues for the retrieval of information along these associative pathways. This means that the emotions attached to any particular experience play a major role in what cognitive schemas will be activated. This is the state-dependent nature of traumatic memory recall: Memories (sensory/perceptual or symbolic) related to the trauma are elicited by heightened arousal (Solomon, Garb, Bleich, & Grupper, 1987). Information acquired in an aroused state is retrieved more easily when people are brought back to that particular state of mind (Rawlins, 1980). Briere (1992) observed that over time, coping operations may cause the experience to recede until it is only accessible with certain stimuli. In this light, it is understandable how many people with histories of trauma such as child sexual abuse appear to function well, as long as feelings related to traumatic memories are not stimulated. Yet after exposure to specific emotional or sensory triggers, they may feel or act as if they were being traumatized all over again. These triggers are not necessarily inherently frightening. Any emotion or sensation related to a specific traumatic experience might serve as a cue for the retrieval of associated feelings including fear, intimacy, and sexual arousal (van der Kolk, 1996a).

But Are They Accurate?

The reality monitoring model introduced by Johnson and Raye (1981) is useful in describing those processes used to distinguish between memories for

real and imagined events. Ward and Carroll (1997) extended this model to sexual abuse memories, examining the characteristics of memories for various autobiographical events. Among their findings was that participants who had been sexually abused were less *confident* about the accuracy of their memories of the abuse than about other autobiographical events (both real and imagined). Certainly, this finding is contrary to the popular perception that traumatic memories are more vivid than common ones, and thus more likely to be held with confidence (Lindsay & Read, 1994). Yet Williams (1994a) found that, although the sexually abused women in her study who recovered memories of their childhood abuse were often not highly *confident* about their memories, when their accounts of the abuse were compared to earlier documentation of the abuse, they were accurate. In fact, their memories were as reliable as those of the women who had always remembered the abuse. To date, the empirical research supports the notion that these recovered memories may indeed benefit from the indelible imprinting of traumatic memory processes hypothesized by neurocognitive investigators.

A substantial body of evidence supports the notion that traumatic memory very likely involves a system quite separate from ordinary memory. The framework of PTSD appears capable of elucidating certain apparently conflicting features of this system: hypermnesia and amnesia. When one considers the

overlapping effect of certain separate but not entirely distinct processes, (1) the cooperation of indelible imprinting and dissociation, (2) the failure of explicit, narrative memory processes and the encoding of implicit, sensory/perceptual memory and (3) the state-dependent nature of traumatic memory recall, the forgetting and subsequent recovery of memories related to traumatic experience can be better understood.

The Frequency and Duration of Traumatic Experience

Clinicians who work with individuals who have been traumatized as children recognize that it may be worthwhile to differentiate between different types of traumatic experience. Terr (1991) has found that recall for “single blow” traumas in an otherwise trauma-free environment, which she refers to as Type I traumas, are often recalled with stunning detail and precision. By contrast, Type II traumas which involve repeated brutalization tend to be processed differently. According to Terr, the defenses and coping mechanisms used by children who undergo Type II traumas—denial, repression, dissociation, identification with the aggressor, and aggression turned against the self—often lead to profound character changes and “forgetting.” Mollon (1996) noted that this is not surprising if one considers that the child who is repeatedly abused will have many opportunities to learn ways of reducing her/his states of being overwhelmed by making use of a variety of defensive mechanisms.

Williams (1994b) observed that there is some reason to believe that the process of forgetting child sexual abuse may differ from forgetting other traumatic events of childhood. Abuse by trusted perpetrators (such as family and family friends) is more likely to have occurred repeatedly and routinely than abuse by a stranger (Herman, 1992; Williams, 1994b). Therefore, high frequency and duration of child sexual abuse may be an indication that the abuser had a close relationship to the child. Abuse by a trusted perpetrator is likely to combine elements of fear, betrayal, shame, guilt and conflict. Often, the responses of others who learn about the abuse do little to assure comfort and unconflicted memories of the event, because their responses often convey shock, disbelief, and denial (Berliner & Conte, 1990; Browne & Finkelhor, 1986; Williams, 1994b).

Child victims may be less likely to talk about the events with someone. Often, these abused children are subjected to denial of the validity of their experiences (Herman, 1992; Williams, 1994b). A number of factors such as internal conflict, lack of memory rehearsal, and negation of the experience may contribute to the victims' confusion about the nature of the abuse and cause them to experience difficulty with their memory of it. And if a child is subjected to repeated, chronic trauma, the child may become especially adept at altering their state of consciousness (i.e., dissociating). Williams' (1994a) found that women abused by someone close to them were more likely to have forgotten the abuse

than those who had been abused by a stranger, suggesting that repeated abuse may be associated with no recall.

In a recent pilot study, Rothman, Holens and De Luca (1998) surveyed a population of university students on childhood sexual experiences. The investigators found that individuals who experienced repeated childhood sexual abuse over a long period of time were less confident about the accuracy of their memories for the abuse than individuals whose abuse was of a comparatively lower frequency and duration. One of the assertions made was that being unsure about memories of sexual abuse cannot be regarded as evidence that such abuse did not occur, or that the memories are 'false', a conclusion that has implications for legal evidence and for psychotherapy.

Hypotheses

The present study explored a number of issues relating to the memory correlates of early traumatic experience. One issue examined concerns the self-reported confidence of memories of childhood sexual abuse, as it relates to the repetitiveness and chronicity of those abuse episodes. It was hypothesized that (1) sexually abused individuals would be less confident about their memories of the abuse than nonabused people would be about their memories of a nonabusive sexual experience, and that (2) individuals who recounted both a high frequency and duration of childhood sexual abuse on a modified version of the Sexual

Victimization Survey (Finkelhor, 1979) would report lower confidence in the accuracy of corresponding memories than those who recounted a low frequency and duration. Some other, exploratory questions were also addressed in the present research: (1) Are recovered memories of sexual abuse more common to individuals whose abuse was repeated and chronic? And (2) if those memories of sexual abuse were recovered, are they more likely to have been recovered outside of therapy or within the context of a therapeutic relationship?

Clinical, field, and experimental studies of responses to potentially traumatic life events give concordant findings: There is a general human tendency to undergo episodes of intrusive thinking and periods of avoidance (Horowitz, Wilner, & Alvarez, 1979). Indeed, recurrent and intrusive reexperiencing of a traumatic event (through recollections, dreams, sensations and perceptions) and avoidance of thoughts, feelings or activities related to the trauma are the hallmarks of the memory-related symptoms of Posttraumatic Stress Disorder (APA, 1994). It was predicted that individuals who had been sexually abused as children would demonstrate significantly greater traumatic elements in their memories of the abuse, as encompassed by the construct of PTSD, than those who have no history of abuse. That is, sexually abused individuals were expected to show more subjective symptoms of intrusion and avoidance than their nonabused cohorts, as measured by the Revised Impact of Event Scale (IES-R) (Horowitz,

Wilner, & Alvarez, 1979). Further, individuals who had been subjected to abuse of a high frequency and duration were expected to show more of these symptoms than those whose abuse was of a comparatively lower frequency and duration. The relationship between confidence of memory of sexual abuse and symptoms of traumatic memory was also explored, although no specific hypothesis was asserted in this regard.

Method

Participants

Participants were undergraduates recruited from a pool of Introductory Psychology students at the University of Manitoba. The students, who participated in partial fulfilment of course credit, were recruited for a study looking at “sexual experience.” Of this sample, participants were recategorized according to their responses on the items of a modified version of Finkelhor’s (1979) Sexual Victimization Survey (see Appendix A).

Sexual Victimization Survey (SVS)

Finkelhor’s (1979) original survey was used to measure the extent of sexual abuse that had occurred within a population of college students during their childhood. Although he did not provide statistical data on the reliability or validity of the instrument, he indicated that 19% of female college students reported experiences of childhood sexual abuse on the questionnaire. This number

closely resembles the prevalence rates of child sexual abuse found in other studies using this survey (Abdulrehman & De Luca, 1997; DeJaegher, 1996; Rothman et al., 1998; Runtz, 1987), which argues for good test-retest reliability of the questionnaire using a sample of college students. On performing an internal reliability test on the entire scale, Runtz (1987) reported a Cronbach's Alpha of .90.

Definition of Sexual Abuse

For the purposes of the present study, only the section of Finkelhor's survey that described the types of sexual behavior experienced in childhood was used. Although the item content remains essentially unchanged, some alterations were made. Finkelhor (1979) defined sexual abuse as sexual contact with a person at least five years older before the subject was 12 years of age, or with a person at least 10 years older when the subject was between 12 and 16. In the present study child sexual abuse was defined as sexual contact before 14 years of age with an individual who is at least 5 years older than the child. Where the age difference was less than 5 years, the experience was considered abuse only if the participant: (a) clearly indicated that he/she was sexually abused as a child, (b) indicated that he/she did not consent to the experience, (c) indicated that he/she was threatened, physically forced/hurt or convinced to participate, or (d) was in a position of powerlessness relative to the perpetrator. Only experiences involving actual

physical contact were included in this definition. The age constraints used here more closely resemble those specified by previous research using this instrument (e.g., Abdulrehman & De Luca, 1997; Rothman et al., 1998; Runtz, 1987). As well, this age limit is consistent with the age of “consent” as defined by current Canadian sexual abuse laws.

Revised Impact of Event Scale (IES-R)

In studies of psychological responses to traumatic life events, common qualities of memory experience have been found among individuals suffering from symptoms of Posttraumatic Stress Disorder: intrusion and avoidance (APA, 1994; van der Kolk & McFarlane, 1996). Intrusion is characterized by recurrent and intrusive reexperiencing of a traumatic event through recollections, dreams, sensations and perceptions. Avoidance is distinguished as a disengagement of thoughts, feelings or activities related to the trauma. The Revised Impact of Event Scale (IES-R; Horowitz, Wilner, & Alvarez, 1979) (see Appendix B) was designed as a subjective measure of these two phenomena of traumatic experience. The IES-R has shown good psychometric characteristics (Horowitz, Wilner, & Alvarez, 1979). The split-half reliability of the total scale was high ($r = .86$), and the internal consistency of the scales, as calculated using Cronbach’s Alpha, was also high (intrusion = .78, avoidance = .82). A correlation of .42 ($p < .0002$) between the intrusion and avoidance subsets indicated that the two subsets

are associated, but do not measure identical dimensions of traumatic memory.

Test-retest reliability of the scale was also quite good, indicating .87 for the total stress scores, .89 for the intrusion subscale and .79 for avoidance. The IES-R's sensitivity was supported by indications of change in a population where clinical impressions by experienced observers suggested such change and by the scale's ability to discriminate persons from different populations who had experienced different kinds of stressful life events.

Procedure

Participants filled out the two paper-and-pencil surveys regarding any sexual experiences they had before the age of 18. Verbal and written instructions were provided prior to the participants beginning the questionnaires (see Appendix A). The instructions provided information regarding the sensitive nature of some of the questions, the participant's right to withdraw from the study without penalty, and precautions taken by the examiner to protect the confidentiality of the participants. Due to the potential for the subject matter of the study to cause the participants emotional distress, each person was given a debriefing sheet as s/he left the study. This sheet explained the purpose of the study and provided the participant with a local crisis line telephone number and the number of the university's Psychological Service Centre where the author's

advisor could be reached. The questionnaire was presented as arranged in Appendices A and B.

Results

Final Sample

Data was collected on 530 participants. Of this group, 35 cases were excluded from analysis because they did not report any pre-adult sexual experiences. Four more cases were excluded because missing responses made it impossible to determine whether or not they were abused. Analysis was subsequently performed on 491 individuals: 311 females, 169 males, and 11 participants who failed to report their gender on the questionnaire. From the participants' responses to the items on the questionnaire, it was determined that 194 individuals (40% of the sample) met the criteria for childhood sexual victimization; 138 females and 56 males.

Data Analysis

Participants were first separated into two groups for data analysis according to whether or not they met the criteria for sexual victimization, based on their responses to the SVS: Abused and Nonabused. Previous research with a sexually abused college population indicated that it was meaningful to recategorize the Abused participants, based on their responses to the *frequency of sexual abuse* and *duration of sexual abuse* items on the questionnaire (items 27

and 28, respectively) (Rothman et al., 1998). Those participants who reported that the frequency of the abuse was between 11 and 50+ episodes and that the duration lasted from “a few months” to “many years” were recategorized into a High Frequency & Duration group. Participants who indicated that the frequency of the abuse was between 1 and 10 episodes and that the duration of the abuse lasted between “one day” and a “few weeks” were recategorized into a Low Frequency & Duration group. Subsequent data analysis was performed on the resulting four groups: Abused, Nonabused, High Frequency & Duration, and Low Frequency & Duration.

A Measure of Confidence

Two measures of confidence of memory were collected. One was a general assessment of confidence concerning the reported sexual experience, as gauged by the participants’ responses to item 34 of the SVS, “Overall, how confident do you feel about your memory of this experience?” The second measure of confidence was taken as the mean of items 29b, 30b, 31b, and 32b, those items following each probe into whether or not the respondent was threatened, forced, physically hurt, or convinced to participate in the reported sexual experience that asked “How confident are you that you remember all the details of the incident?” Analysis demonstrated that, although the two measures were strongly related, $r(196) = .65, p < .001$, they were not completely redundant.

Further examination supported the assertion that the two measures differed from one another, $t(195) = 2.01, p < .05$. Upon consideration of some of the vagaries inherent in self-report investigation, it was decided that an average measure would better reflect an overall assessment of self-reported confidence of memory.

Controlling Type-I Error

Because of the inflammatory effect of multiple comparisons on a Type-I error rate, a family error rate was utilized. Each set of contrasts (confidence, delayed recall, traumatic memory characteristics) was considered a unique family of contrasts. Using the Dunn (Bonferroni) multiple comparison correction procedure (Dunn, 1961), the alpha level for each family was set at a minimum of .01. Exceptions to this rule were made, however, when the comparison included at least one group with an $n < 20$. It was decided that, in these small n comparisons, the risk of making a Type-I error was satisfactorily minimal, and preferable to the reduction in power and increased risk of a Type-II error that would result from stricter alpha levels.

Are Abused People Less Confident About their Memories?

In regard to the abused vs. nonabused participants' memories of a reported sexual experience, a comparison was made between the Nonabused and Abused groups' memories concerning a reported significant pre-adult sexual experience. Because classification into "abused" and "nonabused" groups was made on the

basis of the participants' responses to items concerning this reported experience, the comparison being made was actually one between an abusive pre-adult sexual experience and a nonabusive one. Results (see Table 1) indicated that abused participants were less confident about their memories of a reported sexual experience than were nonabused participants, $t(476) = 5.01, p < .001$.

Do Frequency and Duration of Abuse Effect Confidence of Memory?

It was predicted that individuals who recounted both a high frequency and duration of childhood sexual abuse would report lower confidence in the accuracy of corresponding memories than those who recounted a comparatively lower frequency and duration. The difference between the High and Low Frequency & Duration groups in their confidence of memory for the abuse was significant, although not in the direction hypothesized, $t(159) = -2.91, p < .005$. Those people in the High Frequency & Duration group were *more* confident about their memories of the abuse than those in the Low Frequency & Duration group (see Table 1). In other words, the more repetitive and chronic their abuse was, the more confident the participants were about their memories of it.

Table 1

Group Contrasts for Confidence of Memory

Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Nonabused	281	4.56	.723	5.01***
Abused	197	4.20	.803	
Low Frequency & Duration	77	4.07	.850	-2.91**
High Frequency & Duration	84	4.41	.605	

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

Do Memories of Abuse Tend to be Continuous or Recovered?

The exploratory question of whether memories for an abusive experience were more likely to have always been remembered (continuous) or forgotten for a period of time and later recollected (recovered) was examined with a chi-square analysis. Results indicated that nonabused participants were more likely to have continuously held their memories of the reported (nonabusive) sexual experience than were the Abused group to have always remembered their (abusive) reported sexual experience, $\chi^2(1, N = 471) = 27.43, p < .001$. That is, the Abused group

was more likely to have forgotten and later recovered their memories of the abusive experience. Results are presented in Table 2.

Table 2

Chi-Square Analysis of Recovered vs. Continuous Memory for Nonabused and Abused Groups

		Nonabused	Abused	Row Total	χ^2
Recovered	<i>n</i>	14	39	53	27.43***
Continuous	<i>n</i>	267	151	418	
Column Total	<i>n</i>	281	190	<i>N</i> = 471	

*** $p < .001$

With respect to the question of whether the High Frequency & Duration abused group differed from the Low Frequency & Duration abused group in terms of their propensity to forget an abusive experience, analysis revealed that the High Frequency & Duration group was *less* likely to have forgotten the abuse than the Low group, $\chi^2(1, N = 155) = 4.52, p < .05$. That is, the more repetitive and

chronic the abuse was, the more likely the participants were to have held continuous memories of the experience (see Table 3).

Table 3

Chi-Square Analysis of Recovered vs. Continuous Memory for Low and High Frequency & Duration Groups

		Low Frequency & Duration	High Frequency & Duration	Row Total	χ^2
Recovered	<i>n</i>	19	10	29	4.52*
Continuous	<i>n</i>	55	71	126	
Column Total	<i>n</i>	74	81	<i>N</i> = 155	

* $p < .05$

Does Therapy Lead to Recovered Memories of Childhood Sexual Abuse?

The present study also intended to examine the question of whether recovered memories of abuse tend to be remembered within or outside of a therapeutic context. Unfortunately, only one of the participants in the entire sample reported having visited a therapist. This made any further comparisons impossible.

Traumatic Memory Characteristics

A correlational analysis was performed to look at the internal characteristics of the Revised Impact of Event Scale (IES-R). The avoidance and intrusion subscales each correlated highly with the overall, total distress mean for the Abused group, $r(197) = .89, p < .001$, and $r(197) = .83, p < .001$, respectively. A correlation of 0.49 ($p < .001$) between the avoidance and intrusion subscale scores indicated that the two subsets were associated, but did not measure identical dimensions of traumatic memory. These findings closely resemble those reported by Horowitz et al. (1979) in their original construction of the scale.

It was hypothesized that abused participants would show more traumatic memory symptoms surrounding the reported pre-adult sexual experience than their nonabused counterparts, as measured by the IES-R. Results supported the hypothesis, indicating that the Abused group reported more symptoms of avoidance, $t(482) = -8.89, p < .001$, intrusion $t(483) = -5.23, p < .001$, and a higher overall mean score of traumatic distress symptomatology, $t(483) = -8.34, p < .001$. It was further predicted that the High Frequency & Duration abused group would exhibit more characteristics of traumatic memory than the Low group. The results indicated that those participants categorized as High Frequency and Duration presented significantly more symptoms of intrusion, $t(159) = -3.25, p <$

.003, but neither more symptoms of avoidance nor a larger overall mean distress score. Table 4 presents the results and descriptive statistics for these contrasts.

The relationship between confidence of memory for the abusive experience and traumatic memory characteristics was examined for the Abused group as well. There proved to be a slight negative relationship between confidence of memory for the Abused group and avoidance symptoms on the IES-R, $r(197) = -.17, p < .03$. Although this coefficient only accounts for approximately 3% of the variance, the means (see Tables 1 and 4) indicate that the coefficient was calculated using a very restricted range of scores. Indeed, this restricted range would cause the variance to be largely reduced. The significant result can therefore be considered slightly more remarkable than it would appear upon initial consideration.

Analysis failed to obtain significant relationships between confidence and intrusion or between confidence and overall symptom expression. These results argue that the less confident the Abused group was about their reported abusive experiences, the more they tended to show traumatic memory symptoms of avoidance, but not intrusion. However, a correlational procedure revealed that the tendency towards avoidance symptom presentation was greater in those abused participants who experienced delayed recall of the abuse than in those who reported continuous memories, $r(190) = -.26, p < .001$. Again, considering the

restricted range being sampled (see Table 4) and the highly significant p -value. the 6% of the variance accounted for in this correlation may be considered worthy of note.

Table 4

Group Contrasts for Traumatic Memory Characteristics

Group	Avoidance			Intrusion			Overall Distress					
	n	M	SD	t	n	M	SD	t	n	M	SD	t
Nonabused	287	1.30	.497	-8.89***	288	1.48	.594	-5.23***	288	1.39	.471	-8.34***
Abused	197	1.89	.831		197	1.82	.758		197	1.86	.689	
Low Frequency & Duration	77	1.97	.874	1.87 ^a	77	1.62	.650	-3.22**	77	1.81	.703	-.48
High Frequency & Duration	84	1.74	.667		84	1.99	.792		84	1.86	.607	

^a*p* = .064

p* < .01. *p* < .001.

A Better Measure of Severity?

Due to an inability to comfortably accept a result in the opposite direction of the one hypothesized, the findings were rigorously re-examined. Surely the confidence hypothesis was not untenable. It was decided to turn back to the original pilot study upon which the prediction was based (Rothman et al., 1998). This data was scrutinized in an attempt to account for the discrepancy between the hypothesized and actual results. A now-glaring mistake was discovered in the coding of the original data: The data, in fact, was completely *consistent* with that of the present study; it had *always* pointed in the direction indicated by the current investigation. The more repeated and chronic the abuse was, the more confident the participants had been in their recollections of it.

Post-hoc Analysis

Still refusing to allow that the basic premise of the argument was poorly reasoned, that the more severe the abuse, the less the victim would remember it, an attempt was made to account for the conflicting data. It was theorized that the problem lay in the conceptualization of severity. Most of the abuse in the present study (about 70% of it) occurred in the context of a "boyfriend-girlfriend" relationship. Perhaps frequency and duration of abuse were not good indices, in the present research, of the severity of a sexually abusive experience. Past research (e.g., Williams, 1994a) has suggested that people abused by someone

close to them were more likely to have forgotten the abuse than those who had been abused by a stranger. It was decided, then, to perform a post-hoc analysis looking at the same hypotheses, but instead using intrafamilial vs. extrafamilial sexual abuse as an index of severity. Familial abuse was defined as an abusive sexual experience (subject to the same criteria as described above) where the perpetrator was a family relation of the victim. This category included fathers, mothers, grandfathers, grandmothers, stepfathers, stepmothers, uncles, aunts, brothers, sisters, and cousins. Extrafamilial abuse occurred when the perpetrator was a stranger, friend, acquaintance, friend of the parents, neighbour, teacher, baby-sitter, coach, counsellor, or another person not a family relation of the respondent.

Does Closeness to the Perpetrator Affect Confidence of Memory?

It was hypothesized that those participants who were sexually abused by family members would be less confident about their recollections of the abusive experience than those who were abused by people outside of the family. Analysis supported this hypothesis, indicating that intrafamilially abused individuals were less confident about their memories of the abuse than individuals whose abuse was extrafamilial, $t(195) = 2.15, p < .05$ (see Table 5).

Table 5

Familial Group Contrast for Confidence of Memory

Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Extrafamilial	178	4.26	.748	2.15*
Intrafamilial	19	3.70	1.107	

* $p < .05$ Does Intrafamilial Abuse Lead to Forgetting?

It was predicted that, compared to those whose abuse was extrafamilial, individuals abused by family members would be more likely to have forgotten and later recovered memories of the abuse than to have held those memories continuously. This prediction was supported, $\chi^2(1, N = 190) = 22.34, p < .001$ (see Table 6 for summary statistics). Table 7 displays the percentage of each group that experienced delayed recall of their reported sexual experiences.

Table 6

Chi-Square Analysis of Recovered vs. Continuous Memory for Extrafamilial and Intrafamilial Abuse Groups

		Extrafamilial	Intrafamilial	Row Total	X^2
Recovered	<i>n</i>	28	11	39	22.34***
Continuous	<i>n</i>	145	6	151	
Column Total	<i>n</i>	173	17	<i>N</i> = 190	

****p* < .001

Table 7

Percentage of People Who Experienced Delayed Recall of their Reported Sexual Experiences

Group	Percent	Group	Percent	Group	Percent
Nonabused	5.0	Low Frequency & Duration	25.7	Extrafamilial	16.2
Abused	20.5	High Frequency & Duration	14.1	Intrafamilial	64.7

Intrafamilial Abuse and Traumatic Memory

It was expected that, compared to extrafamilially abused people, those participants who were abused by family members would show more characteristics of traumatic memory. With regard to avoidance, familially abused individuals presented more symptoms than people abused outside the family. The two groups also differed significantly in their overall scores on the traumatic memory inventory. Familially abused individuals presented more overall distress symptoms than the extrafamilially abused group. However, the two groups did not differ significantly in their expression of symptoms of intrusion. (see Table 8 for descriptive and inferential statistics).

Table 8

Family Group Contrasts for Traumatic Memory Characteristics

Group	Avoidance			Intrusion			Overall Distress					
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Extrafamilial	178	1.79	.794	-8.03***	178	1.82	.768	-.22	178	1.80	.685	-3.59***
Intrafamilial	19	2.84	.508		19	1.86	.673		19	2.38	.486	

**p* = .064

p* < .01. *p* < .001.

Were Abused Individuals Believed?

It was considered that whether or not individuals were believed when they disclosed their abusive experiences to a confidant might be associated with the expression of traumatic symptomatology. Results (see Table 9) revealed that abused participants were subjected to more disbelief than nonabused participants were when they confided in someone else about the reported sexual experience. The Low Frequency & Duration group encountered more disbelief than the High Frequency & Duration group as well. The intrafamilially abused participants, who experienced significantly more disbelief than the extrafamilially abused group when disclosure about the abuse was made to a confidant, encountered the greatest amount of disbelief. Ten of the 19 familially abused individuals in the study did not tell anyone about the abuse. Further analysis revealed that the less the abused individuals were believed, the greater their expression of avoidance symptomatology, $r(148) = .17, p < .05$.

Did Sexually Abused Individuals Perceive the Abuse as Abuse?

Participants were asked the question, "Do you feel that you were sexually abused as a child?" Of those respondents who met the criteria for child sexual abuse, only 11.2% indicated that they felt that they were sexually abused as children (see Table 10).

Table 9

Group Contrasts for Reaction of Confidant to Survivor's Disclosure of the Reported Sexual Experience

Group	Believed/Disbelieved			
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Nonabused	236	1.50	.752	-2.64**
Abused	148	1.75	1.01	
Low Frequency & Duration	55	2.00	1.71	2.32*
High Frequency & Duration	71	1.58	.873	
Extrafamilial	139	1.70	.981	-2.16*
Intrafamilial	9	2.44	1.24	

Note. The higher the mean score, the *less* believed the associated group.

* $p < .05$

** $p < .01$

Table 10

Responses of Sexually Abused Participants to the Question: "Do you feel that you were sexually abused as a child?"

Response	<i>n</i>	Percent
Yes	22	11.2
No	175	88.8

Gender Effects

A strong focus on female victims of child sexual abuse can be found in the literature. Indeed, girls seem to be largely over-represented as victims of such abuse. However, this has resulted in a dearth of research investigating the effects of male sexual victimization. What has been said about young girls can not assuredly be applied to boys. Therefore, separate analyses were performed for each of the above predictions looking for sex differences in each of the effects found. The results showed that gender effects for each of the above analyses were all nonsignificant (see Appendix C).

Age Effects

Considering the large percentage of abuse in the present study that occurred within the context of boyfriend-girlfriend type relationships, the possibility was contemplated that intrafamilial abuse may tend to begin at a

younger age than abuse that occurs outside the family. If this were true, then the familial abuse effects found would likely be confounded by the age variable. An examination of this issue, controlling for age using a partial correlation procedure, indicated that all age effects in regard to the hypotheses were nonsignificant (see Appendix D).

Discussion

To elaborate our understanding of the dynamics involved in traumatic memory, individuals who were sexually abused as children were examined with respect to the quality and quantity of their recollections of the abuse. Three major areas were looked at: (1) reported confidence in the accuracy of the memories, (2) the continuity of the memories, and (3) the presentation of symptoms thought to be inherent to psychological trauma. The severity of the abuse was expected to play a role in the formation and expression of traumatic memory. At the outset, it was believed that frequency and duration of abuse would serve as good measures with which to distinguish between the more severely abused and the less severely injured. Indeed, those people abused more repeatedly and chronically did differ from their counterparts who were abused less frequently and for a shorter duration. People abused repeatedly and chronically were more confident about their memories of the abuse than were those abused less frequently and for a shorter duration. They were also more likely to have always remembered the

experiences. Certainly, these findings are consistent with a model of memory advocated by both “common sense” and most cognitive psychologists (see Lindsay & Read, 1994; Loftus et al., 1994). It says, simply, that the more recurrent and prolonged an experience is, the more likely a person will be to remember it well. Evidently, this may be a heuristic that can sometimes apply to trauma as well.

The frequently, chronically abused individuals did show more evidence of trauma than the lesser abused group, however, in their expression of symptoms of intrusion in their memories. The more repeated and chronic the abuse was, the greater, also, was the tendency to reexperience the traumatic event psychologically. Again, this outcome would not likely defy the expectations of many people. It, too, is consistent with the commonly held model of memory, and also with the hypermnesia element of Posttraumatic Stress Disorder (PTSD).

A slightly more interesting result was found when comparing abused and nonabused individuals. The abused participants, when compared to nonabused people, were less confident about the accuracy of their memories of the sexually abusive experience, more likely to have forgotten the memories for a period of time and later recovered them, and exhibited more symptoms of trauma (avoidance, intrusion, and overall distress), as measured by the Revised Impact of Event Scale (IES-R). These findings argue against the all-encompassing,

common model of memory. If memory processes operated in the same way for everybody, the abused participants would not be expected to manifest these contrary recollective features. The findings are consistent, however, with a model for traumatic memory proposed by many clinicians and researchers (e.g., Courtois, 1995; Janet, 1889; Mollon, 1996; Terr, 1988, 1994; van der Kolk, 1994, 1996a, 1996b).

Family Abuse

Further investigation indicated that the frequency and duration of sexual abuse might not be the most appropriate means of gauging the severity of the abusive experience. Post-hoc analysis suggested that a more definitive measure of severity could instead be found in the relationship between the abused and the abuser: the distinction between whether the abuse was perpetrated by a family member or by someone outside the family. Evidently, abuse by family members interfered with the victims' memories of the abuse. Compared to those people abused by nonfamily perpetrators, survivors of familial abuse were less sure about the details of the experience and more inclined to have experienced delayed recall of the abuse. They also presented more symptoms of avoidance and overall distress in their recollections. These findings support previous research demonstrating that abuse by family members is associated with higher levels of psychological distress (see Finkelhor & Browne, 1985; Williams, 1994a).

The variables found to be associated with trauma in the present study are consistent with the hypothesis that more complex psychological processes affect memories of childhood sexual abuse. Consistent with the present research, the clinical literature on adult survivors of sexual abuse suggests that the aversiveness of the experience may lead some victims to engage in active strategies to avoid reminders of traumatic events and, ultimately, memories of the event (see Herman, 1992; Terr, 1994; Williams, 1994b). The present results imply that these avoidance strategies operate even more powerfully in intrafamilially abused individuals, who demonstrated much more psychological avoidance than all the abused participants taken together.

Forgetting and Remembering

Previous research on survivors of sexual abuse indicates that delayed recall of the experience is far from uncommon. Of the 450 adult survivors studied by Briere and Conte (1993), 59% reported some period of not remembering the abuse. Herman and Schatzow (1987) studied 53 abused women, of whom 64% reported some degree of amnesia. In another study (Loftus, Polonsky, & Fullilove, 1993; reported in Olio & Cornell, 1994) 18% of the women reporting an abuse history had forgotten the abuse for a period of time. The findings of the present research fit easily into the range set by those investigations.

Interestingly, of those who were abused by family members, nearly two-thirds reported having forgotten and later recovered their memories of the experience. There is much evidence to suggest that this amnesia was not due to what some cognitive theorists (e.g., Lindsay & Read, 1994; Loftus et al., 1994) label “normal forgetting.” Issues of betrayal and stigmatization are often associated with familial abuse (Briere, 1992; Williams, 1994b). Sexual abuse in general, and abuse by a trusted perpetrator, in particular, are likely to be associated with feelings of shame, guilt, and fear. It is probable that this combination contributes to internal conflict that is difficult to confront, both for the survivor and for others who learn of the abuse. Often, the responses of others convey confusion, denial, and disbelief (Berliner & Conte, 1990; Browne & Finkelhor, 1986).

Survivors are not Believed

Indeed, supplementary analysis revealed that, in general, abused participants were subjected to more disbelief than the nonabused participants were when they confided in someone else about the reported sexual experience. Individuals abused by family members were even less believed. In fact, a disbelieving response from a confidant was the one item linking the three groups of people that reported the most forgetting. All those individuals who were sexually abused, and specifically, those who were abused for a low frequency and

duration and those abused by family members, each reported the highest percentage of forgetting and disbelief in their respective comparisons. The role of social supports and, above all, being accepted and understood, cannot be overemphasized in its importance to the psychological health of a survivor of abuse. Not being believed is another likely contributing factor to the psychological trauma of an abuse survivor. The less the abused individuals were believed, the more they expressed trauma-related avoidance symptomatology. When the victim is a child who is dependent on adults for all aspects of his or her well being, the effects of this kind of disbelief are likely profoundly damaging.

The question of why people abused infrequently and for a short duration were subjected to more disbelief than individuals who were abused for a comparatively higher frequency and duration may be answerable by comparing these two groups of people in their expression of traumatic memory characteristics. Although the difference between these two groups was nonsignificant in this respect, individuals whose abuse was of a low frequency and duration showed a greater tendency toward avoidance than people who were more repeatedly and chronically abused. It is possible that disbelief contributes to avoidance and forgetting. It was found that the tendency towards avoidance symptom presentation was greater in those abused participants who experienced delayed recall of the abuse than in those who reported continuous memories.

However, this still begs the question, why did those people who were abused less frequently and for a shorter duration present *more* symptoms of avoidance (though not significantly more) and a *greater* inclination for forgetting than those abused more repeatedly and chronically? The present data does not easily lend itself to answering this question, although it may be helpful to consider some of the dynamics of forgetting.

Psychological Defenses and Forgetting

A spectrum of forgetting phenomena may contribute to delayed recall: dissociation, denial, and repression, either experienced separately or in combination (Olio & Cornell, 1994). Although most memory researchers would acknowledge that there is little scientific evidence to document the existence of repression, good science would forestall any assertion that its existence has been disproven. Many researchers in the area would not deny the existence of "motivated forgetting." This concept allows for various types of retrieval failures that can result in a person forgetting something that he or she might remember at another time (Olio & Cornell, 1994). It is conceivable that over time, coping mechanisms may cause the experience to withdraw until it is only accessible with certain stimuli (Briere, 1992). Active strategies such as motivated forgetting may be most operative where one-time abusive experiences occur, as evident in those people whose abuse was of a low frequency and duration, where most of the

reported abuse occurred in a boyfriend-girlfriend context. It should be emphasized, however, that almost three fourths of those people abused infrequently and for a short duration did *not* ever forget the abuse, while about two-thirds of those abused by family members *did* forget it. Comparisons between groups are all relative.

Individuals abused by family members did show more avoidance, but they did not present any more intrusive symptoms of trauma than extrafamilially abused people did. This finding contrasts quite sharply with the results of a comparison between those people abused for a high frequency and duration and those abused for a low frequency and duration, which revealed that the highly abused individuals suffered from more intrusive symptoms. This may indicate that psychological defenses operate more powerfully in those people familially abused. It is important to note also that 10 of the 19 people who were abused by family members chose not to reveal their abuse to anyone. This may be another, simpler strategy of avoidance (of hurtful reactions as well as of painful memories) that likely also contributed to the higher rates of delayed recall among family abused individuals. Or it may be that the traumatic experience was subject to dissociation and therefore incommunicable (Janet, 1889; Piaget, 1962; van der Kolk, 1996a, 1996b). It is speculated that unconscious strategies may also operate to a greater extent in familially abused individuals, leading to their very high rate

of delayed recall. However, the IES-R, like most psychological scales, is incapable of tapping into unconscious processes. It is significant to note that survivors of familial abuse were not deprived of intrusive symptoms. In fact, the familially abused participants exhibited the highest degree of intrusive symptoms of any of the other individuals looked at. Interestingly, the appearance here of traumatic symptomatology illustrates elements of the two contradictory conditions of PTSD, hypermnesia and amnesia, that were shown to function not only within the different groups under investigation, but often within the same individuals at different times.

Sensitivity of the IES-R with Sexually Abused Populations

The present research also provides evidence for the sensitivity of the IES-R in differentiating between special populations. It has demonstrated its efficacy in distinguishing between sexually abused and nonabused populations and between populations suffering from different degrees of sexual trauma. Although the IES-R certainly cannot be advocated as an instrument of validation for whether or not sexual abuse did, in fact, occur, its usefulness could potentially be extended as a clinical screening instrument. Applied to suspected victims of sexual abuse, even years after the abuse has ended, the IES-R could be utilized to indicate the severity of current traumatic symptoms and to direct symptom-specific, and possibly long-term intervention approaches.

Limitation of Findings and Implications for Further Study

The present research supports the existence of a traumatic memory network that operates under a different set of rules from ordinary memory processes. It indicates that there are considerable differences in the ways people experience traumatic and nontraumatic events. Furthermore, it provides some information about the workings of traumatic memory processes, and elucidates certain key aspects of PTSD, both of which can co-exist in individuals suffering from the disorder: hypermnesia and amnesia. Severity of the trauma, as gauged by the closeness of the survivor to the abuser, appears to function as a warning sign, a beacon for the operation of traumatic memory processes. Individuals abused by family members exhibit the greatest tendencies toward diminished confidence in their memories, delayed recall, and psychological defenses.

It should be noted that this study, as well as a previous one (reported by Runtz, 1987), discovered that a negligible number of university students had ever been in therapy and that none had sought help specifically regarding sexual abuse. Therefore, a university population of sexually abused individuals is likely quite distinct from a clinical sample in terms of its overall under-expression of traumatic symptomatology. Individuals who have gone on to pursue post-secondary education are most likely a comparatively well functioning group of people. Clinical studies, however, tend to include higher amounts of child sexual

abuse (Briere & Runtz, 1985; cited in Runtz, 1987), and higher rates of incest (Briere & Runtz, 1986) when compared to studies of college populations. These clinical studies suggest that abuse victims in these samples suffer from greater psychological distress than either nonabused clients or abused nonclients (Runtz, 1987). Further studies should expand the current focus by examining populations that have received clinical attention. Comparing sexually traumatized clinical populations at different stages of psychosocial development and recovery would allow the cognitive development of traumatized individuals to be better traced. This would provide further insight into the development and evolution of psychological defense strategies, possibly allowing for greater precision in therapeutic approaches to trauma.

A significant finding of the current study was that, despite an exclusive focus on a college population, a strong relationship still existed between child sexual abuse and traumatic symptomatology. The implications are substantial: The psychological effects of childhood sexual abuse are far-reaching and probably mostly unidentified. Years after the initial trauma, symptoms persist undetected. Many individuals do not identify abuse as a presenting problem during therapy (Briere, 1992). Almost nine-tenths of the abused individuals in the present study did not even recognize their experiences as abusive despite their symptomatology, a finding that is consistent with previous research (Rothman et

al., 1999), and a salient and ironic phenomenon of psychological defense. It is most essential that clinicians and social activists be aware of the prevalence of victimization and of its psychological consequences.

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Appendix A**Questionnaire**

Dear Student:

We would like to ask you to participate in this study of sexual experiences by filling out this questionnaire. Some of the questions here are very personal. Because they are personal, social science researchers have been reluctant to investigate them in the past. Many people have different kinds of relationships, physical, emotional, and sexual, as they grow up. These are, for the most part, a normal part of growing up. If social scientists are to help families and society to become healthier environments for growing up, if we are to help answer questions about important social issues like sex education, parent-child relationships, child abuse, relationships between men and women, and so forth, we need to know more about these personal things.

We hope that with this in mind, and the knowledge that **EVERYTHING YOU ANSWER HERE IS COMPLETELY ANONYMOUS**, that you will decide to participate. Keep in mind that you are under no obligation to participate, however. Some of the information you will be providing here is probably not information you would want others to know about. It may be personally embarrassing or painful. As much as we would like your cooperation, you should feel free to not fill out a questionnaire. In fact, if at any point while reading this consent form or filling out the questionnaire you decide that you no longer wish to participate, you may stop wherever you are and fill in no more. Simply turn in the questionnaire and indicate your intention not to complete it. If you choose to leave the experiment you will not lose your experimental credit.

All questionnaires are completely anonymous. Nowhere on the questionnaire do we ask for your name, and we have carefully avoided asking questions that might identify you indirectly. All questionnaires will be guarded carefully, and no one but the researcher will have access to them.

IF YOU CONSENT TO CONTINUE, PLEASE *PRINT* YOUR NAME AND *SIGN* IT THE SPACES PROVIDED BELOW.

Thank you for your cooperation.

Age: _____

Please write your age at the top of this sheet and begin answering the following questions as honestly as you can.

Part I (Demographic information is collected for statistical purposes only)

PLEASE CIRCLE THE APPROPRIATE ANSWER.

1) Sex: FEMALE MALE

2) Marital Status:

- Single A
- Married or living as married B
- Separated or divorced C
- Other D

3) Year in program at university:

- First A
- Second B
- Third C
- Fourth D
- Fifth E
- Sixth or more F

4) Living arrangements:

- With parents A
- Alone B
- With friends or other family C
- With spouse or partner D
- Residence E

5) Number of children in your family, including yourself, even if you don't live with them now.

One...A Two...B Three...C Four...D Five or more...E

6) In your family, are you

the only child A
the youngest child B
in the middle C
the oldest D

7) Estimate yearly family income when you were 18 years and younger.

Less than \$10,000/yr. A
\$10-19,000/yr..... B
\$20-29,000/yr..... C
\$30-39,000/yr..... D
More than \$40,000/yr..... E

8) Estimated size of the farm, town or city you lived in the longest when you were 18 years of age or younger.

10,000 people or less A
11-50,000 people B
51-150,000 people C
151-300,000 people D
More than 300,000 people E

**PLEASE ANSWER THE NEXT TWO QUESTIONS (9 & 10) BY PLACING
A CHECK MARK IN THE SPACE PROVIDED ON THIS SHEET**

9) In what religion were you raised?

- Roman Catholic _____
- Eastern Orthodox _____
- Episcopalian _____
- Congregationalist _____
- Methodist _____
- Presbyterian _____
- Other Protestant (specify) _____
- Judaism _____
- Islam _____
- Traditional Aboriginal Spirituality .. _____
- Hinduism _____
- Buddhism _____
- Other Eastern (specify) _____
- Agnostic _____
- No religion _____
- Other (specify) _____

- | | | |
|--|-----|----|
| 13. Another person showing his or her sex organs to you. | YES | NO |
| 14. You showing your sex organs to another person. | YES | NO |
| 15. Another person fondling you in a sexual way. | YES | NO |
| 16. You fondling another person in a sexual way. | YES | NO |
| 17. Another person touching your sex organs. | YES | NO |
| 18. You touching another persons sex organs. | YES | NO |
| 19. Your mouth touching another person's sex organs | YES | NO |
| 20. Another person's mouth touching your sex organs | YES | NO |
| 21. Attempting intercourse. | YES | NO |
| 22. Intercourse | YES | NO |

If any of the above experiences occurred with more than one individual, then answer the following questions with the experience that seems *most significant* to you.

PLEASE MARK YOUR ANSWERS TO THE NEXT 3 QUESTIONS (23 TO 25)

IN THE SPACE PROVIDED BELOW.

23. How old were you the first time this happened? _____

24. How old was the other person, the first time it happened? _____

25. Was the other person

- a stranger _____
- an acquaintance _____
- a friend of yours _____
- a friend of your parents _____
- your father or mother _____
- your grandfather or grandmother _____
- your stepfather or stepmother _____
- your boyfriend or girl friend _____
- your uncle or aunt _____
- your brother or sister _____
- your cousin _____
- your neighbour _____
- your teacher _____
- your baby-sitter _____
- other _____ (specify) _____
- your coach _____
- your counsellor _____

FOR THE QUESTIONS BELOW, AGAIN, CIRCLE THE APPROPRIATE ANSWER.

26. Was the other person

MALE FEMALE

27. For how long would you estimate that this sexual behaviour continued?
(answer for the most appropriate category)

- Happened over one day or a few days A
- Happened over a period of a few weeks B
- Happened over a period of a few months C
- Happened over a period of a few years D
- Happened over a period of many years E

28. How many times would you estimate that this sexual behaviour occurred?

- Only once or twice A
- From 3-10 times B
- From 11-25 times C
- From 25-50 times D
- More than 50 times E

INDICATE IF THE OTHER PERSON EVER:

29. a) threatened you

YES NO

b) How confident are you that you remember all the details of the incident?

- A.....B.....C.....D.....E
Not very confident *Very*
Confident

30. a) forced you

YES NO

b) How confident are you that you remember all the details of the incident?

- A.....B.....C.....D.....E
Not very confident *Very Confident*

31. a) hurt you physically

YES NO

b) How confident are you that you remember all the details of the incident?

A.....B.....C.....D.....E
Not very confident *Very Confident*

32. a) convinced you to participate

YES NO

b) How confident are you that you remember all the details of the incident?

A.....B.....C.....D.....E
Not very confident *Very Confident*

33. Looking back at this experience now, would you say this experience was

A.....B.....C.....D.....E
Positive *Negative*

34. Overall, how confident do you feel about your memory of this experience?

A.....B.....C.....D.....E
Not very confident *Very Confident*

35. Did you tell anybody about the experience?

YES NO

36. Who did you tell?

CHECK THE ONE ANSWER THAT SEEMS MOST SIGNIFICANT TO YOU.

- a stranger _____
- an acquaintance _____
- a friend of yours _____
- a friend of your parents _____
- your father or mother _____
- your grandfather or grandmother _____
- your stepfather or stepmother _____
- your boyfriend or girl friend _____
- your uncle or aunt _____
- your brother or sister _____
- your cousin _____
- your neighbour _____
- your teacher _____
- your baby-sitter _____
- other (specify) _____
- your coach _____
- your counsellor _____

37. Was the other person

MALE

FEMALE

38. How would you describe that person's reaction?

A.....B.....C.....D.....E
Believing *Disbelieving*

39. Was there a period of time when you did not remember the experience?

YES NO

40. Did you remember the experience in sessions with a therapist/counsellor or outside of therapy?

IN THERAPY

NOT IN THERAPY

41. Do you feel that you were sexually abused as a child?

YES

NO

Appendix B

The following items refer to the sexual experience that you have been answering questions about. Please fill in each item on the **IBM sheet**, indicating how frequently these comments were true for you *DURING THE PAST SEVEN DAYS*. If they did not occur during that time, please fill in the "Not at all" bubble.

Not at all	=	A
Rarely	=	B
Sometimes	=	C
Often	=	D

1. I thought about it when I didn't mean to.
2. I avoided letting myself get upset when I thought about it or was reminded of it.
3. I tried to remove it from memory.
4. I had trouble falling or staying asleep, because of pictures or thoughts about it that came into my mind.
5. I had waves of strong feelings about it.
6. I had dreams about it.
7. I stayed away from reminders of it.
8. I felt as if it hadn't happened or it wasn't real.
9. I tried not to talk about it.
10. Pictures about it popped into my mind.
11. Other things kept making me think about it.
12. I was aware that I still had a lot of feelings about it, but I didn't deal with them.
13. I tried not to think about it.
14. Any reminder brought back feelings about it.
15. Any feelings about it were kind of numb.

Appendix C

Table C1

Gender Contrasts for Confidence of Memory of Abused Sample

Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Females	138	4.22	.807	.10 ^a
Males	56	4.20	.775	

^a*p* = .917

Table C2

Chi-Square Analysis of Recovered vs. Continuous Memory for Male and Female Abused Participants

		Females	Males	Row Total	<i>X</i> ²
Recovered	<i>n</i>	30	9	39	.55 ^a
Continuous	<i>n</i>	105	43	148	
Column Total	<i>n</i>	135	52	<i>N</i> = 187	

^a*p* = .458

Table C3

Gender Contrasts for Traumatic Memory Characteristics of Abused Sample

Group	Avoidance				Intrusion				Overall Distress			
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Females	138	1.95	.874	1.23 ^a	138	1.81	.765	-.46 ^b	138	1.88	.730	.53 ^c
Males	56	1.80	.715		56	1.87	.748		56	1.83	.580	

^a*p* = .221 ^b*p* = .644 ^c*p* = .597

Table C4

Gender Contrasts for Reaction of Confidant to Survivor's Disclosure of the Reported Sexual Experience

Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Females	105	1.71	1.044	-.59 ^a
Males	40	1.83	.931	

^a*p* = .558

Appendix D

Partial Correlations of Familial Abuse Grouping with Various Measures,
Controlling for Age of the Survivor at the Time of Abuse

Delayed recall	-.34**
Confidence	-.22**
Avoidance	.36**
Intrusion	.03 ^a
Overall Distress	.24**

** $p < .01$ ^a $p = .63$