Chapter Seven

Why and How People Forget. Why and How People Forget Sexual Abuse. The Role of Traumatic Memories

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Introduction

Cases of child sexual abuse brought to the attention of researchers and clinicians reveal a complicated picture of memory for abuse. The accounts of survivors of Catholic priest abuse, including the widely reported story of Paul Busa, made the complexity of these stories known to the public in a new way (e.g., see Stern, 2002). As reported in the media, in February 2002, military security officer Paul Busa read a newspaper report about allegations of sexual abuse against Paul Shanley, a priest. The account triggered memories of being sexually abused by Shanley in the 1980s. Three years later, Shanley was convicted of raping Busa when he was a six-year-old boy. In addition to the evidence, which was sufficient to convict Shanley of abusing Busa, there was reason to believe that Shanley had abused many children throughout his career. According to newspaper reports, allegations of sexual abuse arose as early as a year after he was ordained as a priest, over 20 years before the incidents for which he was convicted. In 2002, when charges were pending against Shanley, 30 accusers had been identified. Over the years Shanley had made public comments supportive of sexual abuse of minors, and reportedly admitted being "attracted to adolescents" and having sexually abused four boys. Busa gave a similar account of repeated sexual abuse as two other boys who attended the same church, but much attention was paid to the fact that Busa did not have continuous memories of the abuse (Stern, 2002).

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These cases led the court, the public, and researchers to ask (at least) three questions: (1) *What* is the phenomenon? That is: Do people actually fail to recall sexual abuse? Do they have access to some parts of memories some of the time or are events completely unavailable? (2) *Why* do people fail to recall abuse? That is: Are people motivated not to recall abuse because the memories are too painful, terrifying, or threatening to relationships? (3) *How* do people *not* recall abuse? That is: What are the particular mechanisms by which people fail to recall abuse?

While these three questions are ultimately related, disentangling them is important for the progress of good science. This is because conflating these questions increases the chances that we will erroneously use answers to one question to confirm or dismiss answers to another question. For example, if we fail to identify the proper mechanisms by which people fail to recall abuse (*how* question), it may be tempting to disregard the phenomenon itself (*what* question) or the motivation to forget (*why* question). However, failure to identify the mechanism(s) by which a phenomenon emerges does not negate the phenomenon itself; nor does it disconfirm hypotheses about why the phenomenon may occur in the first place. In this chapter, we address each of these questions in turn, and conclude with recommendations for future research on memory for sexual abuse and other trauma.

The basics of human memory

Before embarking on a discussion of *what*, *why*, and *how*, we offer a brief overview of memory systems. Traditional models of memory describe a generic three-step process. First, information is encoded, then stored, and later retrieved. This process has also been called the library model, because it is similar to the process of receiving and labeling books with call numbers (encoding), placing books on stacks (storage), and finding and checking books out (retrieval). Cognitive psychology and neuroscience have elaborated on this model in recent years, finding that there are many kinds of memory at work simultaneously. Humans depend upon procedural memory (e.g., for riding a bike), sensory memory (e.g., for smells), declarative memory (e.g., for facts), and many other kinds of memory all at the same time. While often these different kinds of memories are linked together, they depend on somewhat separate neural and cognitive systems.

Memory impairment, then, can occur under at least three conditions: during encoding (failure to perceive or failure to consolidate), during retrieval, or during both encoding and retrieval (Freyd, 1996). While the field has at times treated all unawareness as equal, a more accurate picture of memory for trauma may be that some unawareness occurs because memories were never consolidated due to the effects of terror-inducing stressors, while other memories are inaccessible at a particular moment in time. Memories that are never

consolidated have not entered the system in a way that the memory event has been integrated and can later be recalled. Inaccessible memories, on the other hand, may have entered the system, but are inaccessible at the level of recall. Through these important distinctions, we notice multiple explanations for why unawareness might occur, which we will discuss in reviewing approaches to why and how questions.

Describing the phenomena: do people really forget sexual abuse?

There is enough empirical evidence to know that, in some cases, people do forget child sexual abuse. Across studies, roughly one third of adults tend to report some period for which they did not have full access to memory for a childhood traumatic event, though criteria for amnesia, from partial to full, varies from study to study (e.g., Elliott & Briere, 1995; Feldman-Summers & Pope, 1994; Herman & Shatzow, 1987; Loftus, Polonsky, & Fullilove, 1994; Williams, 1994). This body of work includes studies using both prospective (e.g., Williams, 1994, 1995) and retrospective (Elliott, 1997; Feldman-Summers & Pope, 1994; Freyd, DePrince, & Zurbriggen, 2001; Schultz, Passmore, & Yoder, 2003; Sheiman, 1999; Stoler, 2000) research methods; and includes documentation of amnesia for corroborated cases of abuse (Cheit, 2005). As noted by Brown, Scheflin, and Whitfield in their 1999 literature review: "in just this past decade alone, 68 research studies have been conducted on naturally occurring dissociative or traumatic amnesia for childhood sexual abuse. Not a single one of the 68 data-based studies failed to find it" (p. 126).

As these studies demonstrate, the phenomenon of forgetting is diverse. For example, some people report relatively complete forgetting for sexually abusive events that occurred in childhood followed by remembering that ranges from relatively incomplete to complete. Still others report continuous, but incomplete memories. That is, they report always knowing what happened to them, but memories for aspects of the experience – for example, the emotions they felt at the time – are not accessible. There are many other permutations of discontinuous and/or incomplete memories that survivors, clinicians, and researchers may or may not label consistently as "forgotten" or "recovered" (e.g., Fivush, 2004). Some people report the experience of being surprised to "discover" they have memories of abuse that in fact they had discussed previously with other people. Schooler (2001) suggests that some people retain memories, but gain a new level of meta-awareness of the memories that is so surprising it leads them to believe they are recovering the memories themselves for the first time.

Survivors' experiences are diverse, and so are the names people use to describe the phenomenon of memory disturbance following trauma. This leads directly to the question: what should we call this phenomenon? As Freyd (1996) noted, "Whatever we call it – repression, dissociation, psychological defense, denial, amnesia, unawareness, or betrayal blindness – the failure to know some

significant and negative aspect of reality is an aspect of human experience that remains at once elusive and of central importance" (p. 16). Drawing on Freyd, DePrince, and Gleave's (2007) recent discussion of terminology, we use the term *unawareness* to refer to the phenomenon of information inaccessibility. In using this term, we intentionally avoid any inferences about *how* (i.e., mechanism) information becomes inaccessible (e.g., dissociation, everyday forgetting, encoding failures), instead emphasizing *why* (i.e., motivation) information may become inaccessible.

As we move on to discuss the *why* and *how* questions, we will structure our discussion around two major approaches to traumatic stress studies. The first highlights the role of fear in understanding post-traumatic responses and memory; the second highlights the role of betrayal.

Why do people forget? Why might fear lead to unawareness?

Researchers and clinicians have long assumed that terror plays a central role in human responses to traumatic events. In fact, the very definition of Post-Traumatic Stress Disorder (PTSD) requires that the individual react with overwhelming fear, helplessness, or horror (APA, 1994) to meet the diagnostic criteria. Different people who have experienced terrifying events report different types of memory disturbance, including both memory intrusions and unawareness. It could be that "difficulty forgetting (or letting go of) a horrifying experience may simply be the opposite side of the same coin of difficulty remembering (accepting or acknowledging) a horrifying experience" (Widiger & Sankis, 2000, p. 391). Indeed, PTSD has been characterized as "the reciprocal oscillation between reexperiencing and avoidance" (Leskin, Kaloupek, & Keane, 1998, p. 986).

In the face of divergent views about the relationship between un- and hyper-awareness in PTSD, we pause here to ask *why* might fear be associated with unawareness, particularly if we are more generally used to thinking of it as associated with memory intrusions or *hyper*-awareness? One explanation is that emotional arousal can have surprising and seemingly contradictory effects on memory. As noted in his recent review, Brewin (2003) examines evidence demonstrating that emotional arousal can be linked with *both* improved and impoverished memory for events. Thus, one logical route to memory impairment is to argue that overwhelming fear disrupts memory processes, thereby resulting in unawareness.

Why might betrayal lead to unawareness?

Freyd (1996) proposed betrayal trauma theory to account for the particular motivations that might lead to unawareness following sexual abuse. Betrayal trauma theory posits that there is a social utility in remaining unaware of abuse perpetrated by a caregiver. In cases where betrayals occur, the victim may be

motivated by the attachment to the caregiver to be unaware of the abuse. This type of memory impairment does not require that the memory for the event did not enter the system; rather, the theory supposes that autobiographical awareness of the event is dissociated or isolated from conscious awareness. This model does not require that memory impairment occurs at any particular stage; rather, the memory impairment can occur at encoding, consolidation, or retrieval.

Betrayal trauma theory was forged from an interdisciplinary view of human psychology (Figure 7.1). Drawing on evolutionary perspectives, Freyd (1996) reviewed evidence that humans have evolved to be excellent cheater detectors; under most circumstances, an ability to detect cheaters allows humans to withdraw from relationships in which they will likely be harmed by the cheater. Under some circumstances, however, detecting betrayals may actually be counterproductive to survival goals. In cases where a victim is dependent on a caregiver, survival may require that she/he remains unaware of the betrayal in order to maintain an attachment that is otherwise necessary for survival. In childhood sexual abuse, for example, a child who is aware that she/he is being abused by a parent may withdraw from the relationship (e.g., withdraw in terms of proximity or emotionally). For a child who depends on a caregiver for basic survival, withdrawing may actually be at odds with long-term survival. In this example, the child's survival would be better ensured by remaining blind to the betrayal and isolating knowledge of the event from conscious awareness.

Freyd (1996) reported on the re-analyses of four major data sets to test the betrayal trauma prediction that higher levels of memory impairment for

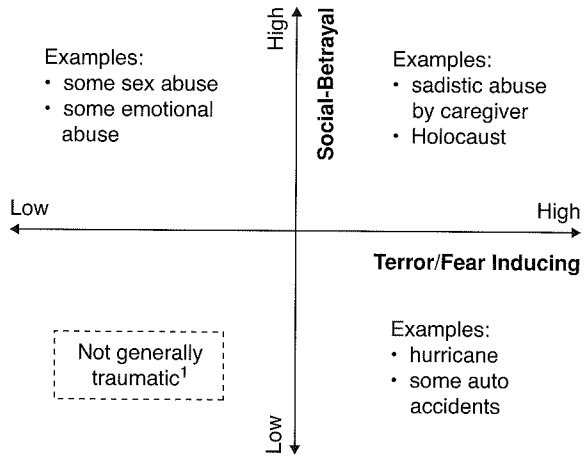

Figure 7.1 The two-dimensional model of trauma. © Jennifer J. Freyd, 1996. Reprinted with permission

Footnote 1. This is not to discount cases of sexual abuse in which a child is victimized by another child, or cases in which no interpersonal contact occurs (e.g. exposure to online pornography, or taking pictures of children for the purpose of producing child pornography without the child's knowledge).

childhood sexual abuse would differ depending on the victim–perpetrator relationship (see Figure 7.1). Three of these data sets were retrospective (Cameron, 1993; Feldman-Summers & Pope, 1994; Loftus, Polonsky, & Fullilove, 1994) and one was prospective (Williams, 1994). Within these data sets, the only information available on the victim–perpetrator relationship was an indication of whether the perpetrator was a family member or not. Freyd (1996) predicted that higher levels of reported memory impairment would be found for those people whose perpetrator was a family member compared to those whose perpetrator was a non-family member. In three of the re-analyses, higher levels of memory impairment were found when the perpetrator was a family member compared to cases when the perpetrator was a non-family member. In one study, no differences in memory impairment between family and non-family perpetration were found (Loftus, Polonsky, & Fullilove, 1994).

The re-analyses conducted by Freyd (1996) were an important first step in testing betrayal trauma theory. However, Freyd's original re-analyses (1996) assumed that a family member was equivalent to a caregiver. This may frequently be the case, but likely a subset of people may be abuse by a family member who is not a caregiver (e.g., abused by a father who is separated from the family and not responsible for caregiving). Likewise, perpetrators categorized as non-family members may provide care and be trusted, making abuse a betrayal; for example, coaches and clergy who provide emotional care to children, but are not family members. In such cases, betrayal trauma theory would predict memory impairment, but this would not be captured with the simple distinction of family member versus non-family member.

Support for betrayal trauma theory was found when the perpetrator–victim relationship was defined by caregiver status in a sample of participants at the University of Oregon (Freyd, DePrince, & Zurbriggen, 2001). Undergraduates were asked to complete a modified version of the Abuse and Perpetration Inventory (Lisak et al., 2000), called the Betrayal Trauma Inventory (BTI; Freyd et al., 2001), which specified the victim–perpetrator relationship along dimensions not previously examined. For example, this modified measure asks respondents to indicate who the perpetrator was ("What was the person's relationship to you; for example, friend, father, sister, uncle, etc.?"), as well as asks the respondent to identify whether or not the perpetrator was a caregiver. Caretaker status of the perpetrator, therefore, was determined by the participants' response to the item, "Was this person responsible for caring for you; for example, providing you with food or shelter?" Analyses revealed significantly more reported memory impairment when the perpetrator was a caregiver than when the perpetrator was a non-caregiver for sexual and physical abuse events. This was the first study to look at reported memory impairment by caretaker for sexual, physical, and emotional abuse. The pattern of memory impairment was consistent across sexual and physical abuse: more memory impairment was reported when the perpetrator was identified as a caregiver versus when the perpetrator was identified as a non-caregiver.

This pattern has now been replicated by others. For example, Shultz and colleagues (2003) found that participants reporting memory disturbances (relative to those who did not) indicated closer relationships with the perpetrator(s). Sheiman (1999) reported that, in a sample of 174 students, those participants who reported memory loss for child sexual abuse were more likely to experience abuse by people who were well known to them, compared to those who did not have memory loss. Interestingly, general autobiographical memory loss measured in a large epidemiologic study was strongly associated with a history of childhood abuse; further, increased memory loss was associated with sexual abuse by a relative (Edwards et al., 2001).

What is the mechanism: how do people forget sexual abuse? How might fear lead to unawareness?

Turning to the *how* question, we discuss three possible fear-related routes to unawareness: (1) disruptions in encoding and consolidation; (2) dual representation models; and (3) avoidance.

Disruptions in encoding and consolidation of memories

Overwhelming fear may cause encoding disruptions in at least two ways. First, effects of emotional arousal at the time of the event may disrupt information entering the nervous system. Emotional arousal, for example, may cause a narrowing of attention resulting in either lack of or shallow encoding of important aspects of the trauma. As in the picnic example described below, if aspects of the event are not encoded (or are encoded only in a shallow way), they will be unavailable for retrieval later. Similarly, peritraumatic dissociative responses to the overwhelming fear may disrupt encoding of the aspects of the event. Indeed, fear at the time of the event has been associated with peritraumatic dissociation (Gershuny, Cloitre, & Otto, 2003).

Secondly, fear and corresponding stress may impair brain regions responsible for important memory functions, thus leading to unawareness. That is to say, overwhelming fear places the individual under demands of chronic stress. When an individual experiences a traumatic event that invokes terror, the system is driven to make changes to deal with the fear; these alterations may ultimately lead to neurobiological consequences which, in turn, interact with memory systems. When fear is the primary response to trauma, the systems likely to be involved with memory impairment will be those that are affected by the deleterious impact of stress, such as the hippocampus and related structures. The hippocampus is a brain structure located in the limbic system which has been associated with memory consolidation (Zola-Morgan & Squire, 1993), and which has been shown to be particularly vulnerable to the deleterious effects of stress (see Sapolsky, 1992). Not surprisingly, then, theorists and researchers have been interested in the interplay between fear, stress, and the hippocampus to provide an explanation of how fear may result in unawareness. For example,

Bremner (2001) argued that hippocampal dysfunction in individuals diagnosed with PTSD may result in an impaired ability to integrate memories for trauma at retrieval. In addition, chronic dysregulation of systems related to the stress response may also affect memory retrieval (Bremner, 2001).

Indeed, hippocampal correlates of trauma generally (and sexual abuse specifically) have been replicated fairly extensively. For example, a handful of studies demonstrate differences in hippocampal volume size in individuals exposed to traumatic events, including sexual abuse (e.g., Bremner et al., 1995; Bremner, et al., 1997; Gurvits et al., 1996; Stein et al., 1997). When differences in hippocampal function first emerged, it was generally assumed that the lower volumes were a consequence of the chronic stress caused by the trauma and its aftermath. Drawing on more recent twin studies, however, researchers have recently begun to suggest that smaller hippocampal volume may actually represent a risk factor for the development of PTSD (e.g., Pitman et al., 2006).

While the recent twin work causes the field to revisit interpretations of what the smaller hippocampal volume means (e.g., risk factor for or consequence of PTSD), links between fear-inducing traumas that cause PTSD and smaller hippocampal volume continue to provide a viable route to disruptions in memory. Because the hippocampus is responsible for important integrative functions, it would not be surprising to find that memory dysfunction – in the forms of hyper- and unawareness of memories – is mediated, in part, by the hippocampus.

Dual representation models of memory

The second fear-related route to memory impairment invokes dual representation theories of memory. Specifically, Brewin and colleagues (e.g., Brewin, 2003; Brewin, Dalgleish, & Joseph, 1996) have proposed a dual representation theory of PTSD, which suggests that trauma-related memories for emotionally arousing events are stored as verbally accessible and situationally accessible memories (VAMs and SAMs). VAMs include trauma narratives that the individual can consciously bring into awareness and articulate. VAMs and declarative memory are similar insofar as both include knowledge about which we can make statements. Brewin and colleagues argue that VAMs are integrated with other autobiographical information, interact with processes to develop meaning, and can be updated and recognized as existing at a particular point in time relative to the past, present, and future. SAMs, on the other hand, include lower-level perceptual information about the trauma scene and/or about somatic experiences during the trauma. SAMs are not verbally accessible and are more closely akin to non-declarative memories. SAMs are, in a sense, time-locked to the trauma; the memories do not get updated based on other information in autobiographical memory or based on time or context (e.g., relative to the past, present, and future).

Brewin and colleagues have generally used the dual-representation theory as a model for understanding intrusive flashbacks, arguing that flashbacks represent

SAMs that are neither linked to other aspects of autobiographical memory nor verbal expression. As noted by Brewin and colleagues (1996), hormones released in response to acute traumas "may act to diminish neural activity in anatomical structures serving conscious processing and to enhance activity in structures serving non-conscious perceptual and memory processes" (p. 676). While SAMs may give rise to the experiences of intrusive memories, they may also give rise to the experience that one does not *know* what happened in a verbally accessible way, which in turn may increase the likelihood of actual unawareness or reports of unawareness. Indeed, Brewin and colleagues (1996) argue that premature inhibition of processing trauma memories may result in impaired memory for the trauma or trauma-related material. Thus, the dual representation view of PTSD provides another route by which people may come to experience and report unawareness.

Avoidance

The third fear-related route to unawareness invokes classic approaches to anxiety. To the extent that fear-related memories are painful and aversive, anxiety models suggest that the individual will increasingly avoid both external and internal reminders of the trauma (notably, Brewin et al., 1996, also predict avoidance when memories are prematurely inhibited). In turn, the memories may not be processed in ways that integrate them with other autobiographical memories, increasing the likelihood of unawareness.

How might betrayal be related to unawareness?

We discuss three possible betrayal-related routes to unawareness: (1) retrieval-induced forgetting; (2) silencing and nondisclosure; and (3) related coping and/or symptoms.

Retrieval-induced forgetting

Retrieval-induced forgetting may be especially relevant under circumstances where a child must contend with a caregiver who is also abusive. Specifically, Anderson (2001) has applied models of active forgetting to memory impairment for betrayal traumas. Drawing on a strong empirical research program, Anderson (2001) proposes that human cognition includes the ability to actively inhibit information. The ability to inhibit information is necessary to human cognitive functioning; that is, we must be able to forget information, particularly when trying to learn new information.

In a series of laboratory tasks, Anderson (2001) and colleagues have illustrated that under certain circumstances, individuals will actively inhibit information from recall in order to retrieve related information. Anderson (2001) proposes that retrieval-induced forgetting is caused by inhibitory mechanisms that can be studied empirically. For example, participants in a laboratory task are asked to study words that fall into categories (e.g., *banana* and *orange* are

members of the category *fruit*). Using a retrieval practice paradigm, participants are asked to rehearse certain word-pairs, such as *fruit–banana*. Following this, the participants are tested for their memory for a previously introduced, but not practiced, item (e.g., *orange*). Researchers were interested in participants' memory for *banana* (also in the category *fruit*, but not practiced) versus memory for *house* (not in the category *fruit*, but not practiced). Participants showed poorer memory for words drawn from the same category they had practiced than those drawn from a different category (e.g., house) (Anderson & Bjork, 1994). Anderson and colleagues have argued that memory mechanisms allow us to suppress banana when we are trying to remember *fruit–orange* because *banana* would otherwise compete with *orange*; therefore, retrieval-induced forgetting mechanisms suppress *banana*. When subsequently tested for *banana*, memory for items has been inhibited.

Extending this work to trauma, Anderson (2001) proposed that betrayal traumas (e.g., child abuse by a caregiver) may create dynamics in which retrieval-induced forgetting is possible. Drawing on betrayal trauma theory, Anderson suggests that children who are abused by caregivers take in a great deal of information – good and bad – about their abusive caregivers. As Freyd (1996) has proposed, a child abused by a caregiver may be at an advantage to remain unaware of the abuse in order to preserve the attachment. In such a case, the child would be motivated to rehearse and remember non-abuse-related information about the caregiver and forget abuse-related information. A parallel can be drawn between the laboratory model of retrieval-induced forgetting (e.g., Anderson, 2001) and cases where a child is motivated to rehearse and remember non-abuse-related information about the caregiver. Specifically, as the child rehearses non-abuse-related information, he/she may actively suppress completing information about abuse. A retrieval-induced forgetting model provides the first empirical support for the processes that lead to memory impairment in betrayal trauma theory. Caution must be taken in generalizing from laboratory tasks to real world events; Anderson's (2001) model provides a useful framework for delineating possible mechanisms that underlie forgetting, but does not have the ecological validity to speak directly to the phenomenon of memory impairment for trauma.

Another recent study addressed the question of whether even highly valenced violent and sexual information could be forgotten and later recalled. Smith and Moynan (2008) asked participants to memorize lists of words that included expletives and words related to death and disease, followed by either an interference task or a control task. Participants were then given a free recall task. On the free recall task, participants in the experimental condition remembered significantly fewer words, including the highly charged expletives and words related to death and disease. After the free recall test, participants were given retrieval cues. On the cued recall test, no differences in memory for the original lists of words emerged. In sum, participants were able to encode highly charged words, to forget those words, and later recall the words when

the appropriate cues were available. This study is unique in that it provides direct laboratory evidence that even emotionally charged, violent, and sexual material can be forgotten and recalled.

Silencing and nondisclosure

While the retrieval-induced forgetting approach offered an active route whereby rehearsing one set of associations inhibits another set of associations, more passive processes may also lead to unawareness. In particular, nondisclosure of events may have important effects on memory (and as noted previously, nondisclosure could occur because of avoidance of fear-related affect). As reviewed by Foynes, Freyd, and DePrince (2009), most survivors of sexual abuse either do not disclose or wait long periods of time to disclose sexual abuse. In fact, a recent review found nondisclosure rates in sexual abuse as high as 46–69% (London et al., 2005). Less than one in four survivors disclose immediately following abuse (Paine & Hansen, 2002).

Why don't children disclose abuse, especially when they are exposed to child abuse prevention campaigns that encourage them to "tell a trusted adult"? Children who have been confused and betrayed by an adult (and/or by non-offending adults as well) have good reason to be wary of all adults. If the child is not believed, they risk disrupting attachments to caregivers and retaliation from the perpetrator. Indeed, data suggest that when disclosure of a negative experience results in *negative* feedback, *non* disclosure actually predicts better outcomes (Lepore, Ragan, & Jones, 2000; Major et al., 1990). In very real ways, sexual abuse narratives continue to be silenced within families and, societies, and by survivors themselves (Fivush, 2004).

In the context of the striking rates of nondisclosure, shareability theory (Freyd, 1983, 1996) offers additional explanations for unawareness of abuse. Shareability theory was first developed to explain mental processing about a single event can be continuous and fine-grained as well as discrete and categorical. Shareability theory posits that mental processing is affected by the fact that humans are socially dependent on each other. According to shareability theory, people recode fine-grained perceptual information about events to a more discrete and abstract form so that the information can be shared with other people. A person's internal representation of an event may be highly continuous and full of sensory details that differ substantially from the representation of the event that is shared with another person.

Through the process of sharing, according to shareability theory, those aspects of the event that are hard to share with others are likely to be dropped from memory or recoded into more discrete concepts as the event is shared with other people. For example, a person may have an internal memory of a picnic on a hot day that includes the smell of flowers, the sensation of the sun on skin, conversations with other people, and similar. In telling someone else about the picnic, the person is likely to say it was a hot day, or give an approximate temperature in degrees rather than attempt to explain the sensation

of being under the hot sun. In other words, fine-grained details become more discrete. Telling another who was present and the topic of conversation is easy to share with words and are details that are likely to remain as the story is told. The smell of the flowers is difficult to convey to another person, as well as usually being less relevant to the listener, and may be dropped from the story altogether. As memories are told and retold, shareability theory posits that they become more and more concrete and shareable in just this way.

Shareability theory, then, predicts that memory for events that have never been discussed will be qualitatively different from those that have been shared with others. Sexual abuse is very unlikely to be shared with others, and thus is unlikely to undergo the process of becoming more discrete and shareable. The original sensory and other fine-grained details are likely to remain intact, and the memory is likely to not be in a form that is immediately shareable with others. Placing memory for unspoken events within the context of shareability theory provides one way of understanding how memory for sexually abusive events may be processed differently from other memories that are shared with others.

In applying shareability theory to memory for trauma, disclosure becomes an increasingly important factor to assess. For example, Goodman and colleagues (2003) reported that "relationship betrayal" was not a statistically significant predictor of forgetting in a sample of adults who had been involved in child abuse prosecution cases during childhood. The prosecution process would have required children to communicate about the sexual abuse, which may have resulted in less memory decline because of changes in the structure of the memory; as well as opportunities to rehearse the memory. Thus, disclosure may have played an important role in the development and maintenance of memories for the sexual abuse. However, it is also possible that the motivation to be unaware was removed because the children (presumably) did not need to remain dependent upon perpetrators who were being charged with a crime (see commentaries by Freyd, 2003, and Zurbriggen & Becker-Blease, 2003 for additional discussion).

Developmental research on autobiographical memory sheds light on why young children are likely to have a particularly hard time developing a coherent narrative for sexual abuse memories. Robyn Fivush and colleagues have found that parents play an important role in providing recall cues to help children remember relevant details of memories (Fivush, 2007; Fivush et al., 1997). Parents who provide meaningful narration before, during, and after events can help their children retrieve memories, as well as help them organize memories, and learn which aspects of memories are most important for others to understand what happened. Parents who are skilled at helping children construct narratives of everyday events tend to be better at helping children understand stressful events, such as a trip to the emergency room or being in a natural disaster (Sales, Fivush, & Peterson, 2003; Ackil, Van Abbema, & Bauer, 2003). When parents talk to their children about these events, they use a slightly different style than when discussing everyday events. Rather than creating a shared

positive memory, parents use language to help children understand stressful events and why they happened (Fivush, 2007). The fact that parents change their strategy when talking about memories of stressful events that involve high levels of fear and physical danger tells us something about the power of communication in how young children perceive and recall these kinds of events.

How do parents talk with children about sexual abuse? We do not yet have the answer to that question, but children are very unlikely to have the same meaningful narrative to accompany memories of sexual abuse as they might for everyday or even other kinds of stressful events. Perpetrators and non-offending adults are likely either to not talk about the abusive event at all or to provide a confusing narrative (e.g., telling children that they initiated the abuse). We can speculate that an inconsistent pattern, providing elaborate narratives for most events but not abusive events, may influence memory retrieval and organization even further.

Fivush (2004) further posits that not talking about sexual abuse narratives affects a survivor's sense of self. Based on a study of 12 sexual abuse survivors, she found that survivors who reported "continuous memory" (i.e., always recalled the events, but the level of detail may have changed over time) were more likely than those who abruptly became aware of previously inaccessible memories to provide a coherent narrative of the abuse events, and were more likely to describe an integrated sense of self. Those with a less integrated sense of self indicated that it was hard for them to accept that the abuse they remembered actually happened to them. This line of investigation brings in the question not only of basic memory processes, but the roles of schemas and self-concept in integrating experiences into a memorable and consistent set of autobiographical memories.

This research also points to the role of other adults – perpetrators – in the formation of children's memories. We should remember that most sexual abuse involves interpersonal interactions between a child victim and an older perpetrator. Unlike witnesses to crime or victims of natural disasters, or even most physical abuse victims, sexual abuse victims are often targeted and manipulated by another person who depends on the victim's silence.

Many perpetrators take careful steps to prevent children from disclosing abuse. They choose potential victims who are socially isolated, have poor relationships with parents, and who lack confidence (Elliott, Browne, & Kilcoyne, 1995). They often introduce sex slowly, and stop if children show signs that they might tell someone, and they scare children with stories of what will happen if they do tell (e.g., the child will go into foster care, the perpetrator will go to jail, the perpetrator will hurt the child, etc.). In light of the foregoing discussion about shareability and children's needs to discuss events with adults in order to form coherent memories, every step perpetrators take to ensure nondisclosure is a step toward amnesia for the event. In other words, perpetrators' grooming activities are so frequently successful, in part, because they prevent children from developing coherent memories that could be told.

Some perpetrators take an even more direct route to disorient victims and prevent the development of coherent memories. They drug their victims by giving them drugs or alcohol with or without their knowledge. The victims of Dennis Gray, a former priest, explain in the documentary *Twist of Faith* (Dick, 2006) how Gray invited adolescent boys to a cabin where alcohol was freely available. One survivor described getting drunk and waking up the next morning in Gray's bed, not knowing what happened the night before. This technique works on three levels. First, boys are given gifts and made to feel special and grown up. Second, the gifts are illegal, so the boys would have to admit to illegal activity in order to report the abuse. For both of these reasons, the boys were reluctant to disclose, and thus less likely to have complete memories. Third, the alcoholic substances themselves induce amnesia, preventing them from giving a coherent report.

One of the ways that offender behavior confuses children and makes it hard for them to develop a coherent memory or disclose is the way in which many act one way during the abuse and another way in everyday life. In *Twist of Faith*, a survivor described his confusion when, minutes after raping him, his priest Dennis Gray led a group of people in Sunday Mass. It was a surreal experience, and he could not reconcile the two back-to-back events. How do offenders manage that kind of Jekyll and Hyde act? Some are likely psychopaths who blatantly manipulate people for their own desires. Others, though, may make use of some of the same dissociative strategies that victims use to get through victimization. That is, some offenders may dissociate, or block out, perpetration experiences during the times when they are living their everyday lives. In fact, lack of memory for perpetration is a significant issue in treatment. Some offenders do not deny that they committed sexual crimes for which they were convicted, but claim no personal memories for the event (Marshall et al., 2005). In a separate study of 17 convicted sex offenders, Becker-Blease and Freyd (2007) found that half reported some amnesia for at least one perpetration event, and forgetting perpetration was related to dissociating during the event.

Related coping and/or symptoms

Betrayal traumas may be associated with psychobiological responses, efforts at coping, or psychological symptoms that, in turn, are also associated with memory disruption. For example, traumas high in betrayal appear to be associated with dissociation (see Somer, Chapter 8 in this book for a review on dissociation and trauma). Maltreated preschoolers have been shown to have higher dissociation scores than non-maltreated peers (Hulette, Fisher et al., 2008; Hulette, Freyd et al., 2008). Chu and Dill (1990) reported that childhood physical and/or sexual abuse by family members (but not abuse by non-familial members) was significantly related to increased DES (Dissociative Experiences Scale) scores in psychiatric inpatients. Similarly, significant correlations between symptoms of pathological dissociation and intra-familial (but not extra-familial) trauma have been observed among

delinquent juveniles (Plattner et al., 2003). Among undergraduates, DePrince (2005) found that the presence of betrayal trauma before the age of 18 was associated with pathological dissociation after age 18.

Phenomenologically, dissociation involves alterations in attention and memory (see DePrince & Freyd, 2007, for review). Indeed, laboratory-based studies have identified attentional conditions under which high levels of dissociation are associated with worse recall of trauma-related relative to neutral stimuli when compared to low dissociators, which show the opposite pattern (see DePrince & Freyd, 2001, 2004; DePrince, Freyd, & Malle, 2007).

Attachment theorists posit that inconsistent care from caregivers may lead children to develop cognitive strategies to avoid rejection in the future (Kirsh & Cassidy, 1997; Main & Solomon, 1990). As such, these theories are consistent with fear-based theories that emphasize avoidance of overwhelming stimuli. These theories are especially applicable to betrayal trauma theory, however, since betrayal trauma theory specifically implicates attachment processes in the motivation for amnesia. Specifically, according to betrayal trauma theory, children remain unaware of abuse because it allows them to maintain functional attachment systems with caregivers.

Some researchers have pointed to attachment theory as an important framework for understanding children's memory for trauma (Alexander, Quas, & Goodman, 2002). As reviewed by Alexander and colleagues, several studies have shown that attachment classification predicted how well children recalled a number of stories designed to evoke representations of caregivers (e.g., stories about a child asking for help after being injured) or had a negative or positive valence (Alexander & Edelstein, as cited in Alexander, Quas, & Goodman, 2002; Belsky, Spritz, & Crnic, 1996; Kirsh & Cassidy, 1997). This line of research suggests that children attend to, and therefore construct memories based upon, information consistent with their view of relationships between themselves and caregivers. In a study of abused children, Becker-Blease, Freyd, and Pears (2004) found that abused preschoolers remembered fewer negatively charged, attachment-related pictures compared to non-abused children in a divided attention task. Valentino and colleagues (2008) found that abused children, relative to neglected and non-maltreated children, had poorer memory overall for positive and negative words, some of which were associated with mothers. One of the authors' explanations for the finding is that the procedure, which highlighted the mother-relevant information, activated the children's attachment system, leading to overall memory impairment for all the words in the task. Clearly, more research is needed to pull together emerging lines of research in the area of attachment and memory.

Thus, links between dissociation, attachment, and basic cognitive processes involved in attention and memory may provide another route by which unawareness can emerge following traumatic events, especially those high in betrayal.

Assumptions in both terror and betrayal approaches

Both fear and betrayal perspectives make assumptions that are important to keep in mind as the field moves forward. For example, a focus on terror and PTSD resulting from traumatic events has likely driven the way that the field has looked at childhood trauma and its effects to date (e.g., for a review, see Finkehor & Kendall-Tackett, 1997). With a focus on PTSD, Finkelhor and Kendall-Tackett (1997) have argued that the field as a whole has concentrated on extremes of victimization in children and paid relatively little attention to effects outside of PTSD. Further, the focus on PTSD has also resulted in relatively little research attention being paid to forms of childhood trauma that do not necessarily lead to PTSD, such as abandonment and neglect (Finkelhor & Kendall-Tackett, 1997). Likely, it is the case that researchers have focused primarily on events that are very high in terror (e.g., severe physical abuse) and less so on events that are lower in terror (e.g., some neglect) because the predominant models for studying post-traumatic responses have been derived from the PTSD research tradition that assumes terror and fear to be central.

The betrayal trauma approach assumes that it is not necessary for victims to be consciously aware of the feeling of betrayal; however, appraisal processes have been very important in models of post-traumatic distress. Instead, betrayal is defined by the relationship between victim and perpetrator. We applaud that the betrayal perspective emphasizes that the context of traumatic events must be examined to determine whether the trauma involved an interpersonal violation and if so, the degree to which this violation was a betrayal of a human ethic. However, we should not lose sight of the important role that appraisals appear to play in long-term attempts at meaning-making and coping.

Conclusions

As our understanding of memory for trauma advances, the field must start to differentiate between mechanisms (*how*) and motivations (*why*) that can lead to memory impairment. This chapter set out to identify two ways in which memory can be unavailable: failure to consolidate information under conditions of terror versus knowledge isolation resulting in unawareness of trauma in order to preserve necessary attachments.

The study of sexual abuse may benefit more than other types of trauma from analyses that differentiate between fear and betrayal. Some events, like most natural disasters, are almost purely fear-inducing. Other events, such as physical abuse, almost always involve fear and betrayal. Sexual abuse can take many forms, from almost purely terrifying, as in the case of a stranger rape, or an almost pure betrayal, as when a father has his children pose for pornographic pictures. Of course, sexual abuse very often involves both fear and betrayal. Studies that measure not only the presence or absence of sexual abuse, but also

factors that contribute to fear and betrayal may discover important differences in when and how memories for the abuse are remembered.

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