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Bringing to Remembrance:  
The Trauma Memory Debate

Marleen S. Williams, Ph.D.1

Abstract

Recent focus on memories of abuse that are recalled during therapy has alerted mental health care providers to potential hazards to the client, the therapist, and innocent others. Being aware of current research on how memory works can help reduce these risks. Integrating information from both sides of the debate provides a more accurate understanding of delayed memory recall.

Recently, the courts have awarded millions of dollars to plaintiffs who have claimed that therapy implanted false memories of childhood abuse, creating unwarranted distress and disruption of family relationships. For example, Beth Rutherford, of Missouri, remembered while in therapy that when she was between the ages of seven and fourteen, her father repeatedly raped her while her mother held her down. She also remembered under guidance from her therapist that she had become pregnant twice and was forced to abort the pregnancy herself. When the client made the accusation, the father, a clergyman, was forced to resign from his job. Later medical examination revealed that Beth Rutherford was still a virgin. The court awarded one million dollars in damages to the plaintiff (Loftus, 1997).

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On the other hand, however, most therapists are aware of the high frequency of documented sexual and physical abuse that exists. There is abundant evidence that child sexual abuse is a complex, chronic, and pervasive problem that has historically been inadequately acknowledged. The collusion of secrecy, the power differential between victim and abuser, and lack of support and validation for the child victim all create intense emotional distress and problems in normal functioning and relationships for the child.

Recent focus on delayed memories of abuse has alerted clinicians to potential hazards to therapists, clients, and their families if therapy is not conducted with care as well as compassion. Being careful and compassionate may not, however, be enough to prevent legal, ethical, and clinical problems from arising. In response to the increasing number of legal and ethical complaints that have arisen in recent years, professional organizations such as the American Psychological Association have commissioned reports and issued directives on working with clients who may have histories of abuse.

When working with clients who remember abuse either before or during therapy, it is critical to review research on how memory works. Memory is not like a video recording where everything is an exact replica and if it can only be keyed up to the right spot you can get an accurate replay (Schacter, 1996). No one knows exactly how memory does work. Constructing an exact model of how memory functions is difficult because findings from research are very complex and often contradictory (Parkin, 1987). Memory does seem to rely, however, on a sequence of steps, each of which can impact accuracy and interpretation of memory. Those steps include sensory input, coding, storage, retrieval, reconstruction, and meaning (Brandimonte et al., 1996).

**Sensory Input**

Unless a person receives input from one of the five senses, there is no physiological mechanism for beginning the memory process. A person must respond through sight, smell, hearing, taste, or touch in
order to have awareness of an event. If a person is unconscious at the
time of an event and that event leaves no sensory evidence, the person
will have no memory for the event. If no sensory information gets to
the brain, it cannot be remembered. Sensory input is not always a per­
fectly accurate representation of external events, however. Deficits in
vision, hearing, tactile, taste, or olfactory processes may distort incom­
ing information.

Encoding

Memory can be encoded in any sensory modality. For example,
most people can recognize and differentiate smells without ever seeing
the source. Memory can also be coded without language. Procedural
memory is memory for things we can do but may or may not be able
to verbally explain (Parkin, 1987). A person may be able to remember
how to drive to a certain location by recognizing visual cues while on
the road but cannot later give verbal instructions on how to get there.
Some memory information may function independently of language
even though we could later attach a verbal description. For example,
you can remember how to walk and chew gum at the same time with­
out verbally processing either activity, but could probably reconstruct
the process verbally later.

A significant amount of research suggests that some memories,
particularly traumatic ones, may only get coded in sensorimotor or
somato-sensory ways (Sapota and van der Kolk, 1992; van der Kolk,
1984, 1987, 1988; van der Kolk and Saporta, 1991; van der Kolk and
van der Hart, 1991). Strong evidence also exists that pre-verbal chil­
dren who experience traumatic events can behaviorally re-enact the
trauma even if they have no verbal recall (Rovee-Collier, 1993 Hewitt,
1994; Terr, 1988, 1989). Two brain structures that play a role in non­
verbal memory, the amygdala and hippocampus, function differently
under stress (Christianson, 1992; Heuer and Rausberg, 1992; Janet,
1889; LeDoux, 1992, 1994; McGaugh, 1992; Cahill et al., 1994;
Nilsson and Archer, 1992). Evidence also exists that intense emotion­
al arousal plays a role in developing two separate memory systems—
one for cognitive information and one for affective information (Zajonc, 1980, 1981, 1984). These “amygdala” memories are sensory and emotionally, but not verbally, cued.

These findings about memory and how the brain works provide evidence for the validity of body memories as well as the split between thought and feeling that is seen with some trauma survivors. Although almost no biological research accounts for repression in a Freudian sense, there is considerable evidence to suggest a mechanism that works more like dissociation (Christianson and Nilsson, 1989; Greenberg, Pearlman, Schwartz and Grossman, 1983; Janet 1925; Ohman, 1991).

Does this mean that all visual flashbacks, body memories, and other nonverbal re-enactments are perfect portrayals of past events? No, that assumes more than the evidence implies. Internal, as well as external, sources of information are also coded and stored in the memory. Fantasy, dreams, plans, anticipation of events, hopes, and fears all become part of the system and are coded and stored along with real events. Early childhood events such as medical procedures or other traumatic experiences may be coded and stored through visual or sensory modalities because the child has not yet acquired the language for interpreting the event. In children, the frontal lobes, hippocampus, and other brain structures important in understanding and storing memory are not fully developed. Memory for events may be partial or mis-coded, making reconstructing accurate memories difficult or impossible without external information (Enns et al., 1995).

A case example illustrates this. A young woman presented a story in therapy of flashback images and memories that she believed meant she had experienced ritualistic abuse in childhood. The memories and images were of men in black or black men cutting her, blood on her underclothes, and being bound or restrained. She also believed that her father had been involved in the abuse. She believed the abuse occurred at a very young age. She could not remember more than these memory fragments.

Her therapist encouraged her to speak with her older brother, whom she trusted, about the memories. He disclosed to her that when
she was three years old, she had become entangled in a pile of barbed wire. The more she struggled, the more she became caught and restrained. Two black farm hands heard her cry and came running with wire cutters to free her. They had verbally teased her a little, which had been very upsetting to her. When they had cut the wire, freeing her, they carried her home to her father. The barbed wire had cut her causing her to bleed onto her clothing (Stephenson, 1997).

Nonverbal memories may also be later “re-coded” in light of adult meaning. Attributing long-standing psychological problems to events that were only given meaning during therapy can be risky. For example, Roseanne Barr’s attribution of life-long problems because her mother fondled her in infancy doesn’t make sense because early experiences of fondling would not be coded any differently than other activities such as diapering, toileting, or applying ointment. The meaning of “betrayal” was only given to the event later in life (American Psychological Association, 1996).

Confounding variables such as family dysfunction, physical, verbal, and emotional abuse as well as biological vulnerability and other life events may become intertwined and make it impossible to understand and accurately account for the client’s distress. The therapist cannot safely conclude that the severity of the client’s symptoms equals the severity of sexual abuse (Beitchman et al., 1991, 1992; Kihlstrom, 1994; Nash et al., 1993).

Storage

After sensory input is received and coded, information must be put into long-term storage in order to become a memory. Rehearsal is one of the main mechanisms for storage (Parkin 1987). Events that happen over and over are more likely to become permanent memories than isolated or rare events. Highly emotionally arousing events can be an exception, however. “Flashbulb” memories may be detailed and long-lasting even though the event occurred only once (Conway, 1995). This well-documented phenomenon is inconsistent with the idea that traumatic memory events can be forgotten. Laboratory
research suggests that the opposite would be true—these events are less likely to be forgotten. This does not prove, however, that traumatic events can never be forgotten. There were literally hundreds of documented cases following World War II of amnesia for traumatic combat experiences. Typical of these cases is the story of a tailgunner whose bomber plane crashed in a field near the runway. The plane was on fire and the tailgunner knew it would blow up when the fire reached the gas tank. In spite of a broken arm, the tailgunner freed himself and then tried to free the pilot who was much larger, unconscious, and had broken both legs. Although a crowd gathered around at a safe distance, no one would help with the rescue for fear of the plane exploding. The tailgunner, inch by inch, dragged the pilot to safety before the plane exploded. Following the event, the tailgunner developed a conversion disorder that was manifest by paralysis of the unbroken arm. Although he was awarded a medal for bravery, he had no memory of the event. It was not until later, after the war ended and during psychotherapy, that he was able to recall the crash and rescue, including his own experience of terror during that event (Karon and Widener, 1997).

Can memories get into storage for events that never happened? Research by Loftus, Spanos, and others provides ample evidence that memories can be implanted in storage. Hypnosis and other intrusive methods have been shown to be effective in implanting memories for events that never occurred. Existing memories can also be altered, and details that once existed in storage and were retrieved are found to no longer be available (Loftus, 1997; Loftus and Ketcham, 1994; Garry, Manning, Loftus, and Sherman, 1996; Rubin, 1996; Schacter, 1996, Spanos, 1996). Knowing that memories can be implanted and altered does not mean, however, that all memories retrieved in therapy are false. Memories that real abuse never occurred can also be implanted, and perpetrators’ memories for abuse may also be altered and inaccurate.

It is unclear from current research at what age memories can be put into storage and later retrieved. Childhood amnesia before age
three or four is well documented (Winograd and Killinger, 1983; Rubin, 1982; Sheingold and Tenney, 1982). It is believed that most events do not get put into storage because of immaturity of the brain. Some more recent research, however, suggests that children as young as two can remember events for long periods of time and that babies as young as eleven months have accurate recall for specific events for over a month (Bauer, 1996). Whether these memories last and are retrievable seems to be dependent on whether the events continue to occur and are verbally recoded later. Memories are more likely to be retained if they are verbally discussed and socially supported.

It is important to understand that storage of memories is not all-or-nothing. Fragments and partial memories may be all that were stored. A complete and literal recording of events may not be available. Looking for external validation and interpretation may be the safest way of understanding sketchy and fragmentary memories rather than attempting to fill in the gaps with assumed meaning. A case study that illustrates the usefulness of external information is of a young woman who began experiencing flashback memories of a red liquid blotch coupled with feelings of intense anxiety. She believed she had been around 18 months old at the time of the event. This was all that she remembered. Her mother was able to provide information that the red blotch was probably related to a miscarriage the mother experienced at that time (Sugar, 1992).

Does trauma in some way change the brain? PET Scans of individuals with a verified history of trauma show differences in limbic system structures and the amygdala from a matched control group with no history of trauma (van der Kolk, 1992). Trauma also alters neurohormones that impact memory (Cahill, Prins, Weber, and McGaugh, 1994; McGaugh, 1992; Yehuda, 1994; Yehuda et al., 1995). PTSD war veterans have also been shown to have memory deficits when memory ability is measured by standardized tests such as the Wechsler Memory Scale (Bremner et al., 1993). The implication of this kind of research is not clear but does provide evidence that traumatic memories can be lost or fragmentary because of changes in
the brain. These studies do not shed any light, however, on whether or how lost memories can later be retrieved.

Retrieval

Once information is put into long-term storage it must be retrievable to be useable. Mnemonic devices that are used to improve memory (associating one concept with another thought or image) help by facilitating retrieval through association. This model of memory retrieval has been used by cognitive scientists to explain how memory for traumatic events is released only by exposure to “rare associates” (Yates and Nasby, 1993; Dalenberg et al., 1995). Under this theory, traumatic memories are stored under a different “file” and accessed only by very specific cues. This could explain the sudden onset and flooding by intrusive recollection of previously unavailable traumatic material. This explanation of flashbacks and flooding of intrusive memories is also consistent with State Dependent Learning Theory (Parkin, 1987). Memory that is stored in a specific mental/emotional state can only be retrieved in that same state. Ethical Standards prevent studying how memory for traumatic events may be state dependent directly through laboratory experiments.

Does this mean that if you use the right cue, you can always retrieve or unlock the memory? No, because it may never have entered storage or it may have been inaccurately encoded. Not all abuse is traumatic to children at the time. Such memories would not be stored under the system of high emotional arousal and resulting dissociation. In some cases intense emotions and meaning of the event were only paired with abuse later in life.

If trauma and high emotional arousal can interfere with storage and retrieval, this supports the argument that not all events can be retrieved accurately (Abhold, 1992; Neisser and Harsch, 1992). For example, many holocaust survivors can access no memory for verifiable events. In one case, a man was beaten so severely that he was not able to walk for several days. Forty years later, he only remembers receiving an occasional kick (Wagenaar and Groenweg, 1990).
Although this provides evidence that verifiable traumatic events can be forgotten and not be available for recall, it does not prove that once-forgotten memories can never be retrieved. Although only one case of verifiable recovered memory is enough to make it within the possibility of human experience, many such cases exist.

One such case involved a woman who was adopted at a young age. She had no memory of her birth parents. While in therapy, she dissociated into another personality and began to talk about a bizarre ritual she experienced with her birth mother. When she switched out of the dissociated state, she was amnesic for the event. However, within minutes, she had a flashback of receiving bizarre enematization from her birth mother. In later therapy sessions, under hypnosis, she recalled further memories of bizarre abusive rituals. The client was sure that the memories were inaccurate. She was able to locate her birth parents and discovered that her birth mother had been institutionalized as a paranoid schizophrenic. She also found albums and diaries that had belonged to her birth mother. In the diaries were descriptions and comments about the very rituals and behaviors the woman had remembered in therapy (Kluft, 1997).

In summary, what do we know about memory from research? Although much is still uncertain, it is safe to assume that (1) not everything gets into memory, (2) what does varies in strength, (3) memories may be changed, and (4) the retrieval system is not perfect. It is premature to close the debate on delayed memory recall. Verifiable case histories gleaned from clinical practice point to the reality of accurate recall of once-forgotten memories. Making the issue an artificial dichotomy is inaccurate. It is not either/or, it is both. It is important in working with memory in therapy to avoid the illusion of a final, definitive truth, make absolute assumptions or prescribe universal interventions. It is important to understand that there is much yet to be revealed concerning the brain, memory, and trauma.

The more we learn about delayed memory recall, the more ambiguous the truth becomes and the more careful and informed we need to be. To protect all who are affected by these concerns, there is
a greater need for therapy practice to be informed by an integration of both research and practice.

References


