Chapter 5

DISCOVERED MEMORIES AND THE "DELAYED DISCOVERY" DOCTRINE: A COGNITIVE CASE-BASED ANALYSIS

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In this chapter I will use the term "discovered memories" to refer to what others have described as "recovered memories." There are several reasons why I prefer the former term. The term "recovered memories" presumes that an individual is recovering something, i.e., that the event that is being recalled actually happened. In addition, it implies that the event was lost to memory and then somehow brought back. As will be shown, all of these aspects of the phenomenon may be in question, even for individuals who sincerely believe they have discovered a lost memory. In contrast, the term "discovered memories" focuses the discussion on the memory discovery experience, which is the discovery of the memory of an alleged traumatic event with the accompanying belief that the existence of this memory was not previously known. Additional advantages of the terms "discovered memory" and "memory discovery experience" is that they do not imply any specific mechanism of forgetting, such as repression, or that the memory itself is authentic. Often, discoveries are not what they at first appear to be.²

^{1.} Cf. Schooler, J.W., Ambadar, Z., & Bendiksen, M.A. (1997). A cognitive corroborative case study approach for investigating discovered memories of sexual abuse. In J. D. Read & D. S. Lindsay (Eds.) Recollections of trauma: Scientific research and clinical practices (pp. 379-388). New York, N.Y.: Plenum; Schooler, J.W. (1997). Reflections on a memory discovery. Child Maltreatment, 2, 126-133.

^{2.} Lindsay (this volume) prefers the term "recovered memory experiences" (RME's). This term is useful when talking about the phenomenology of a memory recovery; indeed, I have used it extensively myself in this context (e.g., Schooler, J.W. (1994). Seeking the core: The issues and evidence surrounding recovered accounts of sexual trauma. Consciousness and Cognition, 3, 452-469; Schooler, J.W., Bendiksen, M., Ambadar, Z. (1997). Taking the middle line: Can we accommodate both fabricated and recovered memories of sexual abuse? In M. Conway (Ed.) False and recovered memories, (pp. 251-292). Oxford, England: Oxford University Press.). As an alternative for the term "recovered memory," however, "recovered memory experience," in addition to being a bit unwieldy, still retains the questionable implication that an individual is recovering a memory that previously existed, was lost, and then was found. I hope that as the discussions on this topic mature the field will by consensus adopt new terms that are more precise and less burdened with potentially inappropriate assumptions. Although here I am casting my vote for the terms "discovered memories" (for such recollections) and "memory discoveries" (for the initial experience of discovery), "RME's" is certainly an improvement over the loaded term "recovered memories."

At present, there is a deep gulf between our scientific understanding of how people come to believe that they have discovered long-forgotten incidents of sexual abuse and the legal issues that must be resolved when claims of discovered memories of abuse are used as a foundation for litigation. Over half the states have passed special statutes of limitations for cases in which the plaintiffs purport to have recently discovered previously forgotten memories of sexual abuse. Although these statutes vary in their details, they all apply the "delayed discovery doctrine," which holds that the statute of limitations does not begin to run until the victim discovers the memory of abuse (or, in some cases, the causal connection between the abuse and her emotional injuries). As a consequence of such laws, individuals are able to file lawsuit: long after the standard statutes of limitations would have expired. Plaintiffs do, however, have the burden of proving the recovery of a previously repressed memory of having been sexually abused as a child.³

On the surface, the issue of deciding whether a person has discovered a previously repressed memory of abuse might seem to be a simple matter of resolving whether the abuse occurred and, if it did occur, whether or not it was previously forgotten. Resolution of these issues is complicated, however, by several important considerations:

1. The authenticity of the abuse. Assessing whether or not the abuse itself occurred is difficult because there is now considerable research to suggest that it may be possible to vividly "remember" traumatic experiences that never actually happened. Furthermore, both time and the nature of the act work against the acquisition of incontrovertible corroborating evidence.

2. The authenticity of the forgetting. Assessing whether or not the abuse was forgotten is complicated by the fact that, as will be shown, individuals can misremember their prior states of forgetting.

3. The authenticity of the discovery. Central to the notion of a "delayed discovery" is the premise that at some particular time one "discovered" his or her abuse history. However, there are various reasons why this "discovery" may be suspect. Given the importance of the delayed discovery clause in many statutes of limitations, it is possible that individuals might deliberately mischaracterize the memory as a discovery in order to be able to seek legal recourse. Even if an individual is sincere in reporting a memory discovery experience, it is still possible that the discovery itself is distorted. It may, as previously noted, be a "discovery" of an event that never occurred, or, as will be discussed, the individual may misconstrue what it is that was discovered. One may, for example, confuse a discovery of the interpretation of the experience with a discovery of the experience itself

^{3.} Taub, S. (1996). The legal treatment of recovered memories of child sexual abuse. *Journal of Legal Medicine*, 17, 183-214.

^{4.} Taub, S. (1996). The legal treatment of recovered memories of child sexual abuse. *Journal of Legal Medicine*, 17, 183-214.

4. The existence of special memory mechanisms. Even if an event is deemed to have occurred and to have been forgotten, it is unclear whether it necessarily was "repressed." Implicit (and at times explicit) in the special status given to discovered memories of abuse is the notion that some type of special memory mechanism(s) (e.g., repression) caused the memory to be forgotten and that these mechanisms differ from those at work in the case of other types of events, for which the "delayed discovery doctrine" would not apply. Sound scientific evidence for such "special" repression mechanisms has so far eluded scientific documentation, however.

I will briefly review these four critical issues that must be considered in assessing the appropriateness of invoking the "delayed discovery doctrine" when memories of sexual abuse are alleged to have been discovered. I will begin with a general discussion of the research that suggests that discovered memories can be the product of suggestion, but the bulk of my analysis will focus on actual cases that I and my collaborators have investigated. These cases demonstrate that individuals can have authentic memory discoveries that correspond to actual incidents of abuse. At the same time, they illustrate the complexities that surround the above issues and, as a consequence, suggest the need for great caution in invoking the delayed discovery doctrine in litigation on discovered memories.

THE AUTHENTICITY OF THE ABUSE

All too often, discussions of the authenticity of discovered memories of abuse will focus exclusively on either the reasons why we should be suspicious of such memories or on the reasons why should be accepting of them. There are, however, good reasons to believe that both sides of the issue have merit.

Evidence that Individuals Can Discover Memories for Abuse that Did Not Actually Occur

There are a plethora of reasons to be concerned that individuals can have sincere memory discovery experiences of abuse that may not have actually

^{5.} Schooler, J.W., Bendiksen, M., & Ambadar, Z. (1997). Taking the middle line: Can we accommodate both fabricated and recovered memories of sexual abuse? In M. Conway (Ed.) False and recovered memories (pp. 251-292). Oxford, England: Oxford University Press; Schooler, J.W., Ambadar, Z., & Bendiksen, M.A. (1997). A cognitive corroborative case study approach for investigating discovered memories of sexual abuse. In J. D. Read & D. S. Lindsay (Eds.) Recollections of trauma: Scientific research and clinical practices (pp. 379-388). New York, : Plenum.

occurred. As there are a number of excellent reviews of these issues, I will simply allude to several of the key points brought out in the research.⁶ First, one of the central findings of the past century of memory research is that memory is subject to distortion and change. From early research on the impact of schemas and retroactive memory interference to more recent research on misinformation and source monitoring, the converging finding is that memory is highly susceptible to change.^{7, 8, 9, 10}

Of particular relevance is research on the impact of misleading suggestions on memory for events. Numerous studies have demonstrated that experimenters' misleading postevent suggestions can substantially alter individuals' recollections of prior events. Such studies have found that false memories of suggested details can be recalled with a vividness and confidence that is comparable to that of memories of actual details, and can be equally likely to be maintained in the face of contradictory information. 11, 12, 13

One concern with the original misinformation paradigm is that it resulted in the generation of false details of events rather than of entire events that were false. There is now good evidence, however, that entire false events can be generated as a consequence of suggestions, including such events as being lost in a shopping mall, spilling punch on the bride's mother at a wed-

^{6.} See, e.g., Loitus, E., & Ketcham, K. (1994). The myth of repressed memory: False memories and allegations of sexual abuse. New York: St. Martin's Press; Pendergrast, M. (1996). Victims of memory: Sex abuse accusations and shattered lives. Hinesburg, VT: Upper Access; Lindsay, D.S., & Read, J.D. (1994). Psychotherapy and memories of child sexual abuse: A cognitive perspective. Applied Cognitive Psychology, 8, 281-338.

^{7.} See, e.g., Allport, G. W., & Postman, L. J. (1947). The psychology of rumor. New York: Henry Holt & Co., Bartlett, F. C. (1932). Remembering. Cambridge: Cambridge University Press.

McGeoch, J. H. (1942). The psychology of human learning. New York: Longmans. Green: Barnes.
 J.M., & Underwood, B.J. (1959). "Fate" of first-list associations in transfer theory. Journal of Experimental Psychology, 58, 97-105.

^{9.} Ceci, S.J., Loftus, E.F., Leichtman, M.D., & M., Bruck. [1994]. The possible role of source misattributions in the creation of false beliefs among preschoolers. *International Journal of Clinical and Experimental Hypnosis*, 42, 304-320; Loftus, E. F., Donders, K., Hoffmann, H. G., & Schooler, J.W. [1989]. Creating new memories that are quickly accessed and confidently held. *Memory and Cognition*, 17, 607-616.

Johnson, M. K., & Raye, C. L. (1981). Reality monitoring. Psychological Review, 85, 67-85.
 Johnson, M. K., Hashtroudi, S., & Lindsay, D.S. (1993). Source monitoring. Psychological Bulletin, 114, 3-28.

^{11.} Schooler, J. W., Clark, C. A., & Loftus, E. F. (1988). Knowing when memory is real. In M. Grueneberg, P. Morris, & R. N. Sykes [Eds.], Practical aspects of memory pp. 83-88): New York: Wiley; Schooler, J. W., Gerhard, D., & Loftus, E. F. (1986). Qualities of the unreal. Journal of Experimental Psychology: Learning, Memory, and Cognition, 12, 71-181.

^{12.} Loftus, E. F., Donders, K., Hoffmann, H. G., & Schooler, J.W. (1989). Creating new memories that are quickly accessed and confidently held. *Memory and Cognition*, 17, 607-616.

^{13.} Loftus, E. F., Korf, N., & Schooler, J. W. 1989). Misguided memories: Sincere distortions of reality. In J. Yuille Ed., Gredibility assessment: A theoretical and research perspective pp. 155-174.

Boston: Kluwer.

ding, and going to the hospital after getting a finger caught in a mousetrap. 14. 15, 16 There is even evidence that people can come to recall false events that supposedly occurred over extended periods of time. For example, using a clever paradigm in which participants were given false feedback about their performance on various tests, Kelley and Lindsay were able to cause a sizable minority of their participants to "remember" having once been left handed but having changed their hand orientation as a result of parental coercion (see Lindsay, this volume).

In addition to the research on laboratory-induced false memories, there is also "real-world" evidence that individuals can come to "remember" events that are extremely unlikely to have actually happened, including alien abductions, fantastic satanic ritual abuse, and even being stuck in the fallopian tube while still a zygote. 17, 18, 19 As Heurer has noted, "there are a lot of things we don't know about memory but one thing we do know is that you need a nervous system to have a memory. "20 This is an attribute that is indis-

putably lacking in zygotes.

Several studies have documented the alarming frequency with which mental health professionals use recovered memory therapy on individuals who initially purport to have no recollection of having been sexually abused. Polusny and Follette, for example, found that a substantial minority of clinicians reported using a variety of memory recovery techniques with adult clients "who have no specific memory of childhood sexual abuse but who [they] strongly suspected were sexually abused." According to statements made by the respondents, 33 percent of them recommended books on sexual abuse, 27 percent used guided imagery, 20 percent used hypnosis, and 29 percent reported referring their patients to sexual abuse survivor groups. Such findings suggest that it is not just a few "bad apples" who use these kind of suggestive techniques. Rather, it appears that many clinicians are engaging in

^{14.} Loftus, E.F. & Pickerel, J. (1995). The formation of false memories. Psychiatric Annals, 25, 720-724.

^{15.} Hyman, I.E. (1995). False memories of childhood experiences. Applied Cognitive Psychology, 9(3), 181-197.

^{16.} Ceci, S.J., Loftus, E.F., Leichtman, M.D., & M., Bruck. (1994). The possible role of source misattributions in the creation of false beliefs among preschoolers. *International Journal of Clinical and Experimental Hypnosis*, 42, 304-320.

^{17.} Persinger, M. A. (1992). Neuropsychological profiles of adults who report "sudden remembering" of early childhood memories: Implications for claims of sex abuse. *Perceptual and Motor Skills*, 75, 259-266.

^{18.} Ofshe, R., & Watters, E. (1994). Making monsters: False memories, psychotherapy, and sexual hysteria. New York: Scribners.

^{19.} Loftus, E., & Ketcham, K. (1994). The myth of repressed memory: False memories and allegations of sexual abuse. New York: St. Martin's Press.

^{20.} Heurer, F., personal communication, May 1995.

^{21.} Polusny, M.A., & Follette, V.M. (1996). Remembering childhood sexual abuse: A national survey of psychologists' clinical practices, beliefs, and personal experiences. *Professional Psychology: Research and Practice*, 27, 41-52.

precisely the type of activities that cognitive psychologists would predict could produce false memories. (For evidence that these techniques are dan-

gerously suggestive, see Lindsay, this volume.)

There are additional reasons to believe that individuals may, especially when in treatment with trauma-oriented therapists, come to recall abusive events that never actually occurred. Many "retractors" have come to the conclusion that their abuse memories were false. Such conclusions do not demonstrate conclusively that the abuse was fictitious, but we certainly cannot accept these individuals' beliefs about their memories when they perceive them to be true and then reject their beliefs when they later conclude the memories were actually false.

It is well-known that individuals are tremendously persuadable when in the presence of authoritative individuals. Indeed, events of the twentieth century have shown that we previously underestimated just how persuadable people can be. No one would have expected that individuals in Nazi Germany could have been persuaded to do the things that they did. Few expected, in Milgram's classic studies, that the majority of experimental subjects could be persuaded to give their fellow subjects what they believed to be potentially lethal electrical shocks, and yet they did. Similarly, it came as a great surprise that the majority of people could, following the suggestions of their peers, come to perceive distinctly different line lengths as the same. Thus, we should be very careful not to make the same mistake again and assume that people cannot be persuaded that they possess memories of sexual abuse that did not in fact occur.

In short, although this brief review does not do justice to the full spectrum of evidence for the existence of false memories of abuse, it highlights some of the many reasons for concern. If an individual who has recovered a memory of abuse (1) originally had no reported knowledge of the abuse, (2) underwent extensive "recovered memory" therapy involving highly suggestive practices by an authoritative therapist who deeply believed that abuse did occur, and (3) currently has no corroborative evidence for that abuse, then there are very good reasons to view the memory with marked skepticism.

^{22.} See, for example, Pasley, L. E. (1993). Misplaced trust. In E. Goldstein & K. Farmer Eds., True stories of false memories (pp. 347-365). Boca Raton, FL: Sirs Publishing.

^{23.} Milgram, S. (1963). Behavioral study of obedience. Journal of Abnormal and Social Psychology, 57, 371-378. Horn, M. (1993, Nov. 29). Memories lost and found. U.S. News and World Report, 53-63.

^{24.} Asch, S.E. [1956]. Studies of independence and conformity: A minority of one against a unanimous majority. *Psychological Monographs*, 70 [9, Whole No 416].

Evidence that Individuals Can Discover Memories of Actual Abuse

Although in many cases involving discovered memories of abuse there are good reasons to be skeptical that the alleged abuse occurred, there are other cases in which there are good reasons to believe the abuse was factual. In a number of publicly documented cases, there is compelling corroborative evidence of the alleged abuse. Ross Cheit, for example, whose case was originally reported in U.S. News and World Report, awoke one night to images of his former choir camp administrator, Bill Farmer, hovering over him.25 The following day he recovered memories of being sexually abused by Farmer. The multiple sources of corroboration in this case included other individuals who had independently recorded instances of Farmer's sexual improprieties, both before and after Cheit's recovered memory experience, and most importantly, a tape-recorded confession by Farmer. 26 A second publicly-discussed recovered memory claim that has received corroboration in the public forum was featured in the 1993 court case of Commonwealth of Massachusetts v. Porter. In this case, Frank Fitzpatrick reported that he had been lying in bed with unexplainable anguish when he recalled being sexually molested many years earlier by Father James Porter. Corroboration of this case came from multiple sources. Church officials conceded that they had observed or heard of Porter's sexual improprieties. In addition, after Fitzpatrick made his charges public, nearly 100 people reported having been sexually abused by Porter.27

Although there have been a number of publicized cases of discovered memories with varying degrees of corroboration, there have been relatively few efforts by researchers to systematically document and corroborate actual allegations of recovered memories. Most investigations of discovered memories that have discussed corroboration have relied on the corroborative evidence that patients have claimed to find.²⁸ Clearly, patients may be

^{25.} Horn, M. (1993, Nov. 29). Memories lost and found. U.S. News and World Report, 53-63.

^{26.} Regretfully, a prior discussion of this case (Schooler, J.W., Bendiksen, M., Ambadar, Z. (1997). Taking the middle line: Can we accommodate both fabricated and recovered memories of sexual abuse? In M. Conway (Ed.) False and recovered memories, (pp. 251-292). Oxford, England: Oxford University Press) neglected to mention the existence of the tape-recorded confession and mischaracterized the evidence in this case as exclusively involving "multiple sources of indirect corroboration." (Schooler, et al., p. 261.)

^{27.} Recently a web site has been established that currently cites 45 public cases that have some form of corroboration. Interested readers can find it at: www.brown.edu/Departments/Taubman_Center/Recovmem/Archive.html.

^{28.} See, e.g., Andrews, A. [1997] Forms of memory recovery among adults in therapy: Preliminary results from an in-depth survey. In *Recollections of Trauma: Scientific research and clinical practices*. J.D. Read and D.S. Lindsay, Eds.): Plenum Press, NY; Herman, J. L., & Schatzow, E. [1987]. Recovery and ventication of memories of childhood sexual trauma. *Psychoanalytic Psychology*, 4, 1-14.

strongly biased to present their discoveries as being authentic. In the absence of more direct evidence, their claims of corroboration must therefore be viewed with some caution.

Recently, my collaborators and I have sought to investigate and seek independent corroboration of cases in which individuals alleged to have discovered previously forgotten memories of abuse. These cases were identified through modest networking and are not in any sense a representative sample. In each case, the investigators sought independent corroboration of the abuse, usually by contacting other individuals who the victim indicated had prior knowledge of either the abuse itself or the abusive tendencies of the alleged perpetrator. In the following discussion, I will briefly review each of the cases and the corroborative evidence of abuse that was obtained.

Case 1: JR reported discovering a memory of being fondled by a priest at age eleven and subsequently discovering memories of additional incidents of abuse that took place over the next several years. He discovered the initial memory while lying in bed one night after seeing a movie involving sexual abuse. The corroboration: Another individual reported that he had been abused by the same priest. Although this individual only made his accusation after JR had discovered his memory, he indicated that he had maintained an intact memory of being abused by this priest. Thus, to the degree that the abuse memories of individuals who have maintained intact memories of abuse are not in question, this individual's allegations support the likelihood that this priest abused JR as well.³⁰

Case 2: MB reported discovering a recollection of being raped while hitchhiking at age seventeen. The discovery experience occurred when MB was thirty-four years old after she heard a friend refer to a young woman as "certainly not a virgin." The corroboration: An individual who was present the day of the rape confirmed MB'S original recounting of the experience.

Case 3: TW reported discovering a memory at the age of twenty-four of being fondled by a family friend at age nine. The recollection was triggered after a friend suggested that they hear a talk on sexual abuse. The corroboration: TW's former husband reported that she had talked about the abuse several times prior to this memory discovery experience.

Case 4: DN reported discovering a memory of being raped in a hospital at the age of nineteen and then taking the case to court. She discovered the

^{29.} Schooler, J.W., Bendiksen, M., & Ambadar, Z. [1997]. Taking the middle line: Can we accommodate both fabricated and recovered memories of sexual abuse? In M. Conway 'Ed.: False and recovered memories, (pp. 251-292). Oxford, England: Oxford University Press; Schooler, J.W., Ambadar, Z., & Bendiksen, M.A. [1997]. A cognitive corroborative case study approach for investigating discovered memories of sexual abuse. In J. D. Read & D. S. Lindsay 'Eds. Recollections of trauma: Scientific research and clinical practices. [pp. 379-388] New York: Plenum; Schooler, J.W. [1998]. Discovered memories of abuse: A cognitive corroborative case study approach. Invited manuscript in preparation for Journal of Aggression, Maltreatment, and Trauma.

^{30.} Loftus, E. F. 1993). The reality of repressed memories. American Psychologist, 48, 518-537.

memory at age thirty-five, several hours after her group therapist remarked that survivors of childhood abuse, which DN had maintained an intact memory of being, often are victimized as adults. The corroboration: DN's former lawyer confirmed that the case had gone to court and that the perpetrator was found guilty.

Case 5: JN reported discovering a memory of being molested at age five. The discovery experience occurred when she was eighteen, soon after she became sexually active. The corroboration: JN's mother confirmed that this

event actually did happen.

Case 6: CV reported discovering a memory of being molested and exposed to masturbation by her stepfather at age ten. This memory discovery experience occurred while CV was cleaning the bathroom at the age of twenty-seven. The corroboration: her sister stated that she had also been abused by the stepfather and had maintained intact memories of the abuse,

although she had never discussed it with CV.

Summary. In each of these cases, there are compelling reasons to believe that the individual's memory discovery experiences corresponded to actual abuse events because the investigators were able independently to obtain corroborative evidence of the abuse. It is important to emphasize that this corroboration does not absolutely guarantee that the events took place. Indeed, how strongly one views the corroborative evidence is likely to depend in part on one's a priori views regarding the likelihood that such discovered memory experiences could in fact correspond to actual events. If the likelihood of such events is viewed as comparable to, say, alien abductions, then none of the corroborative evidence described here is likely to be persuasive. On the other hand, if one views discovered memory experiences as at least plausible, then the corroboration presented here is apt to be compelling. It is therefore important to explore the scientific factors that could potentially explain memory discovery experiences in order to better assess how plausible or implausible they really are (see subsequent section).

The present attempts at corroboration illustrate the complexities of relying on such discovered memory experiences for purposes of litigation. Collectively, the corroborative evidence suggests the strong likelihood that discovered memories really can correspond to actual events. From a legal standpoint, claims of discovered memories should therefore not be dismissed out of hand. In no single case, however, was the evidence absolutely incontrovertible. Thus these findings also illustrate the difficulty of relying on a

specific discovered memory as the foundation for litigation.

THE AUTHENTICITY OF FORGETTING

In the previous discussion I focused on the corroborative evidence for the original abuse. An additional critical component of the delayed discovery doctrine is the claim that knowledge of the abuse (or its negative effects) was absent for some period of time. Assessing prior degrees of forgetting is, unfortunately, extremely difficult. Individuals' assessments of forgetting are based on their estimations of what they knew at an earlier period of time. They must therefore guess what they would have known had they been queried about the abuse at an earlier time. This point is clearly illustrated by JR (Case 1) who, in characterizing his forgetting prior to the discovery experience, observed:

If you had done a survey of people walking into the movie theater when I saw the movie...asking people about child sexual abuse, "have you ever been, or do you know anybody who has ever been?" I would have absolutely, flatly, unhesitatingly said "no."

It is clear from this characterization that JR unambiguously believes that prior to the discovery he had absolutely forgotten the experience. As his testimony illustrates, however, this belief is based on his estimation of what he thinks would have happened had he been queried about his abuse prior to his remembering it. In fact, he was not actually asked about the abuse prior to remembering it and so we cannot ascertain the full degree to which he had previously forgotten the abuse.³¹

Case 4 similarly illustrates the difficulty in assessing prior degrees of forgetting. As with JR, ND unambiguously believed that she had forgotten her rape and ensuing court case prior to her memory discovery experience. She

observed:

It's like, how could I forget this? As horrible as it was having to go to court....and having to tell what happened and everything, how could I forget that? I had no idea when I did forget it but I really feel that it had been totally forgotten until that night.

In support of her claim of forgetting, DN noted that on intake for therapy for childhood abuse she had described various incidents of childhood abuse but had failed to report her adult rape. This lack of reporting, although potentially attributable to her having forgotten it, could also have occurred because she was not thinking of her adult rape in the context of childhood abuse.

^{31.} Of course, even if he had recalled the memory following a direct query this would not prove that the memory had not been forgotten up until that point, as the query itself could have triggered the memory. Such observations further illustrate the fundamental difficulty of assessing forgetting and, indeed, in even conceptualizing what forgetting really means in these situations.

Although it is extremely difficult to document true forgetting in these types of cases, it is possible to demonstrate overestimations of forgetting. In cases 2 and 3, for example, there was clear evidence of misconstrual of prior forgetting. In each of these cases the victim's ex-husband reported discussing the event with the victim during a time in which the victim later believed that she had completely forgotten it. In both of these cases the individuals were truly shocked to discover that they had been aware of, and had talked about, the abuse at that time. TW (Case 3) described her reaction upon learning that she had previously told her husband about the abuse as follows:

I felt like falling over. Absolutely shocked and floored that it happened. And I still am...I can't remember telling him, I can't think of anything about the memory before [the recovery], and it's very disturbing, actually.

The fact that individuals can believe that they had entirely forgotten abuse at a time at which they are known to have been aware of it illustrates the difficulty in relying on individuals' assessments of their own prior memory states. Scientifically, this finding suggests that there may be some very interesting hindsight bias effects that may distort individuals' assessments of their prior degree of forgetting. (I will return to this issue later.) From a legal perspective, this demonstrates that we cannot assume that a memory was necessarily completely forgotten even if an individual sincerely believes that it was.

THE AUTHENTICITY OF THE DISCOVERY EXPERIENCE

Given the centrality of the "discovery doctrine" in allowing discovered memories to be considered in court, it is easy to see why an individual might be motivated to characterize an always intact memory as recently discovered in order to be able to pursue legal action. In the present cases, however, there is relatively little reason to suspect that such deliberate misconstrual of the discovery experience is occurring. In five of the cases, the individuals did not pursue legal actions subsequent to the memory discovery. JR (Case 1) did pursue legal action after having his discovery experience, but at the time that he made his accusations (1988), the discovery doctrine had not been applied to discovered memories; the case therefore did not go to court because of the statute of limitations. JR's discovery thus occurred prior to the time at which there was a legal advantage for characterizing a memory as "discovered" and prior to the time in which it was publicly appreciated that such memory discoveries occurred.

Another compelling aspect of the memory discovery experiences reported here is the striking similarity of the phenomenology of discovery reported in all of these cases. Three distinctive qualities characterized the discov-

ery experiences that we investigated: sudden surprise, immediate unpacking of the memory, and an emotional onrush. With respect to the sudden surprise quality of the discovery, JR described the discovery as occurring "fairly suddenly," WB described a "sudden and clear picture," TW noted that "the whole thing was evident and immediate to me," and DN observed that "all at once I remembered."

An unpacking of the experience also typified many of the accounts. TW observed "It was like...a package of some sort...something there that's completely unwound instantly, and not only the experience but the sequel of the experience". DN recounted "All at once I remembered...not only that I had been a victim, but that I had to go to court." CV described this unpacking as occurring visually, noting "Suddenly a whole reel of pictures started running through my mind."

The emotional impact of the experience was also noted in the majority of cases. JR described his experience as being "stunned." WB noted "complete chaos in my emotions." DN characterized her reaction as "just this

extreme emotion of fear and disbelief."

Although the striking parallels among the phenomenological accounts of these memory discovery experiences cannot serve incontrovertibly to validate these experiences, they do (especially given the lack of evidence for deliberate deceit) lend credence to the notion that these individuals reported authentic discovery experiences; i.e., they truly believed they were discovering previously forgotten incidents of abuse. The fact that individuals can have authentic memory discovery experiences in which they truly believe they are remembering long-forgotten incidents of abuse does not necessarily demonstrate that the abuse was as forgotten as they thought it was, however. When the evidence regarding prior forgetting is considered, these cases suggest that it may well be possible to have full-blown discovery experiences for memories that may not have been entirely forgotten, a finding that may have important legal implications.

THE EXISTENCE OF SPECIAL MEMORY MECHANISMS

The fourth critical consideration in considering the appropriateness of applying the delayed discovery doctrine to discovered memory experiences involves assessing whether unique memory processes (e.g., repression) are involved. If the alleged forgetting and remembering associated with discovered memory experiences involves the same basic memory mechanisms involved in other types of forgetting situations, then it is unclear why special status should be given to the recollection of abuse. When one considers

whether special memory mechanisms need to be invoked in accounting for the cases described above, a number of observations emerge. First, as will be seen, there are a number of relatively standard memory mechanisms that may readily apply to these cases. Second, these cases suggest the possible existence of other memory mechanisms, not heretofore scientifically examined, that may well apply both in these cases and in a variety of more "standard" forgetting situations. Finally, although unique trauma-related processes (e.g., repression, dissociation) cannot be inferred on the basis of the present evidence (and indeed such processes may well not be required at all), the present evidence does not allow us to dismiss the possibility of their existence.

Well-Established General Memory Mechanisms

There are quite a few well-documented memory mechanisms that seem readily applicable to the cases described here. In prior writings I have outlined how a number of well-established memory mechanisms may contribute to discovered memory experiences. I will limit my discussion here to three standard memory mechanisms that seem likely to be especially important.

1. Directed Forgetting

It has been well demonstrated in the cognitive literature that individuals can forget information when they actively attempt to do so.³³ In short, much of the forgetting in these cases could be a consequence of individuals' active attempts to forget the experience. MB explicitly recalls that "I tried not to think about it." In other cases, individuals report no recollection of actively trying to forget the experience. In Case 4, for example, DN observed "I really don't remember putting it out of my mind, I really don't know when I forgot it, I really didn't try to forget it, it was just like it never happened. Then all at once it came back." If one can forget about being raped and going to court, however, one clearly should be able to forget about having tried to put such memories out of mind. Thus the lack of recollection of directed forgetting provides little evidence that such processes did not occur.

^{32.} See, e.g., Schooler, J.W. (1994). Seeking the core: The issues and evidence surrounding recovered accounts of sexual trauma. Consciousness and Cognition, 3, 452-469; Schooler, J.W., Bendiksen, M., & Ambadar, Z. (1997). Taking the middle line: Can we accommodate both fabricated and recovered memories of sexual abuse? In M. Conway (Ed.) False and recovered memories, (pp. 251-292). Oxford, England: Oxford University Press.

^{33.} See, e.g., Bjork, R.A. (1989). Retrieval inhibition as an adaptive mechanism in human memory. In H.L. Roediger & F.I.M. Craik (Eds.). Varieties of memory and consciousness: Essays in honor of Endel Tulving. (pp.309-330). Hillsdale, NJ: Lawrence Erlbaum.

2. Reinterpretation

Another potentially very important mechanism is reinterpretation.34 Changes in the interpretation of an event can activate previously inaccessible information. An individual who comes to interpret an event in a different way could, as a consequence of the new interpretation, remember more information about the event and also have a more emotional account of it. This is clearly applicable in Case 2, in which MB said, "In a way I've managed to repress the meaning of what happened all these years. I may not have completely forgotten the experience but I pushed it away, minimized it; it wasn't a real rape." When MB had her discovery experience it was framed specifically in terms of the interpretation of the experience. She exclaimed, "Oh, my God, I was raped!" Although individuals in the other cases were not specifically aware of the possible role of reinterpretation of their experience in driving the discovery, it seems quite plausible that such processes may have been involved. Accordingly, in some of these cases individuals may have had a discovery of the meaning of the event and may have then misconstrued the discovery of the meaning of the event as a discovery of the memory itself.

3. Encoding Specificity

Another very important mechanism is encoding specificity.³⁵ The basic principle at work here is that the probability of retrieving a memory is maximized when retrieval conditions correspond to the encoding conditions. Strikingly, in all six cases there was a notable correspondence between the original abuse situation and the situation in which the memory was ultimately cued: Case 1, seeing a movie about abuse; Case 2, mentioning the virginity of the young woman (this woman was a virgin when she was raped); Case 3, the prospect of seeing a talk on abuse; Case 4, the mention of adult sexual abuse; Case 5, becoming sexually active; and Case 6, cleaning a bathroom (CV's abuse originally occurred in the bathroom). In all of these cases there is some significant overlap between the initial experience and the cuing conditions.

^{34.} See, e.g., Anderson, R.C., & Pitchert, J.W. (1978). Recall of previously unrecallable information following a shift in perspective. *Journal of Verbal Learning and Verbal Behavior*, 17, 1-12.

^{35.} See, e.g., Tulving, E., & Thompson, D. M. (1973). Encoding specificity and retrieval processes in episodic memory. *Psychological Review*, 80, 352-373.

Previously Uninvestigated but Potentially General Memory Mechanisms

1. The "Forgot It All Along" Effect

One potentially pertinent general memory mechanism that is suggested by these cases is what we have termed the "forgot it all along" effect. In several of these cases the individuals underestimated their prior knowledge about the event. At present little is known about the processes that might lead to the underestimation of prior knowledge, but much is known about why people often overestimate their prior knowledge, a phenomenon quite aptly termed the "knew it all along" effect.36 The premise of the "knew it all along" effect is that a person who is told something will then believe that he knew it all along. This happens because individuals use their current knowledge state to infer their earlier knowledge state. In effect, one reasons, "I know it now, therefore I must have known it before." Although there has been little research to date on cases of underestimations of prior knowledge. it seems reasonable to suppose that if one can use one's current knowledge state to make overestimations of prior knowledge, one may also use it to make underestimations of prior knowledge. Accordingly, in the context of the emotional onrush associated with thinking about memories of abuse individuals may assume that they had no previous knowledge about their abuse. They may reason, "If I'm this shocked and surprised now, then I must have previously completely forgotten about the experience."

In short, individuals may misattribute the emotional onrush associated with thinking about the event to the emotional onrush of discovering the memory itself. In reality, there are a number of other reasons why an individual might experience an emotional onrush besides discovering a long forgotten memory. The person may be accessing the emotional content that had, for whatever reasons, not been accessed on prior retrievals. Consistent with this view, although both WB and TW had spoken about their memories prior to their memory discovery experiences, they reportedly did so in an emotionally flat manner. Individuals may also reinterpret the experience, redefining it as abuse and confusing the emotion stemming from this new and more upsetting characterization with the experience of discovering the memory itself. Yet another possibility is that prior attempts at putting the memory out of mind may have resulted in an emotional "rebound effect" when it was once again thought about. The revisiting of previously suppressed thoughts can induce a strong emotional punch.³⁷ The emotion

^{36.} Fischoff, B. (1982). For those condemned to study the past: Heuristics and biases in hindsight. In D. Kahneman, P. Slovic, & A. Tversky (Eds.), Judgment under uncertainty: Heuristics and biases (pp. 335-351). New York: Cambridge University Press.

^{37.} Wegner, D.M & Gold, D.B. [1995]. Fanning old flames: Emotional and cognitive effects of suppressing thoughts of a past relationship. *Journal of Personality and Social Psychology*, 5, 782-792.

resulting from the rebound of suppression could thus also be confused with the discovery of the memory. In short, there are a variety of reasons other than the actual discovery of a long forgotten memory that could cause individuals to retrieve the memory with great emotion. These alternative sources of emotional punch might nevertheless mislead individuals into believing that they were just now remembering the experience for the first time.

2. Precipitous Forgetting of Nocturnal Experiences

The above mechanisms, or some combination thereof, could, at least in principle, readily account for many of the elements of the discovery experience phenomena illustrated in the reviewed cases. However, there is one element of some characterizations of discovered memories that these mechanisms clearly cannot accommodate: the claim that abuse was precipitously forgotten nearly immediately after it occurred. Characterizations of forgetting as precipitous are certainly not ubiquitous. In the majority of the cases reported here individuals believed they had remembered the experience for at least some period of time following the event. In the case of JR, however, who reported repeatedly going on overnight camping trips with his abuser, the element of precipitous forgetting was central to his account. JR observed:

When I woke up in the morning I didn't have any knowledge of what had happened the night before, which is why I could continue to go on trips with him and enjoy it.

In one of the best documented cases of discovered memories involving corroborated abuse, Ross Cheit similarly characterized the forgetting as having been complete the morning after the abuse. As noted in the *Providence Journal Bulletin*, May 8, 1995:

When morning came, life at Camp Wallace Alexander would slide back into its familiar grooves, the nocturnal ritual would fade into the shadows. In the daytime, Cheit says, he was my friend.

In a personal communication, Cheit further substantiated this claim, saying "I am confident as I can be that I did not think of the abuse in the daytime." 38

How can it be that a person is abused in the middle of the night and wakes up the next morning having completely forgotten it? One possibility is that the person's belief in precipitous forgetting represents another instance of mischaracterizing prior forgetting. Such sincere mischaracterizations could result from a reinterpretation of the experience. At the time, these experi-

^{38.} Cheit, R., personal communication, November 15, 1997.

ences may have been associated with greater ambivalence than they are today. In order to account for how they could continue interacting with the perpetrators, victims may infer that they must have forgotten the experience

during the day.

Is it possible that precipitous forgetting could be real? In exploring the claims of precipitous forgetting of abuse, it may be helpful to ask two related questions: (1) Are there any known situations in which individuals do immediately forget traumatic experiences? (2) If so, do such situations have anything in common with sexual abuse situations? The standard answer to the first question is "no." We do not typically forget traumatic experiences unless there is actual physical trauma to the brain (e.g., a concussion). This observation overlooks one striking anomaly to this seemingly sound generalization, however. There is at least one situation in which individuals often, indeed usually, forget traumatic and disturbing events: when they occur during dreams. It is well-known that individuals typically forget the content of dreams and nightmares despite the fact that dreams are often disturbing and even traumatic. ^{39, 40} Could the processes that lead to the precipitous forgetting of dreams be related to claims of precipitous forgetting of sexual abuse?

There are a number of striking parallels between dream forgetting and allegations of forgetting of sexual abuse. First, in contrast to virtually all other types of traumatic experiences, sexual abuse, like dreams, often occurs at night while the individual is in bed. Thus, various physiological nocturnal processes that may contribute to dream forgetting may also contribute to the forgetting of nocturnal abuse. Second, like dreams, sexual abuse experiences (especially when perpetrated by a known care giver) are bizarre, occur in isolation, and may be difficult to reconcile with preexisting schemata and other events. These parallels between dreams and nocturnal abuse may both contribute to the forgetting of such abuse and to the dismissal of such recol-

lections as being merely "bad dreams."

Although the clinical literature does not provide an experimental basis for claims of precipitous forgetting of nocturnal abuse, sleep research provides some evidence that precipitous forgetting of more mundane events can and does occur. A number of laboratory studies have examined memory for

^{39.} See, e.g., Hobson, J.A. (1988) The dreaming brain. New York: Basic Books; Kramer, M. (1979). Dream disturbances. Psychiatric-Annals, 9, 50-68.

^{40.} Hobson, J.A. (1988) The dreaming brain. New York: Basic Books; Hobson, J.A. (1997). Consciousness as a state dependent phenomenon. In Cohen, J.D. & Schooler, J.W. Scientific approaches to consciousness. Mahwah, N.J.: Erlbaum.

^{41.} Cf. Hobson, J.A. (1988) The dreaming brain. New York: Basic Books; Hobson, J.A. (1997). Consciousness as a state dependent phenomenon. In Cohen, J.D. & Schooler, J.W. Scientific approaches to consciousness. Mahwah, N.J.: Erlbaum.

material encoded immediately prior to sleep. Anthony et al. reported "anterograde and retrograde amnesia" for verbal materials presented immediately prior to sleep onset. Other studies have examined memory for material introduced upon awakening from sleep. Bonnet examined immediate and morning recall in individuals who were awakened from either stage 2 (light sleep) or slow-wave sleep (deep sleep) and presented with word lists. All participants showed relatively poor morning retrieval, especially those awakened from slow-wave sleep. These studies have documented precipitous forgetting of mundane materials encountered in close proximity to

sleep onset and awakenings from sleep.

If precipitous forgetting of abuse is associated with its nocturnal occurrence, the critical question that arises is whether such experiences can be recovered. Although there is some, albeit limited, evidence for precipitous forgetting of nocturnal experiences, there is no direct empirical evidence that such memories can later be recovered. The lack of evidence may simply result from the fact that no one has yet directly investigated this issue. We are currently conducting a study to determine the extent of forgetting and recovery of nocturnal events. While the issue of recovery of precipitously forgotten nocturnal events is clearly still an open question, it should be noted that in both of the reviewed cases in which precipitous forgetting was alleged, the alleged abuse occurred at night and was purportedly forgotten by morning. Moreover, in both JR's case and Cheit's case, the memories were discovered while they were lying in bed at night. JR reported, "I couldn't sleep, I tossed and turned. After a couple hours of not sleeping, that's when I had my first memory." Cheit reported "having had something like a dream. He woke with a baffling sense that a man he had not seen or thought of in twenty-five years was powerfully present in the room."44 These anecdotal reports raise the possibility that some type of state- dependence may contribute to both the forgetting of and subsequent remembering of nocturnal abuse. 45

^{42.} Anthony, J., Wyatt, J.K., Bootzin, R.R., Oswald, V., & Allen, J.J. (1994). Retrograde and anterograde amnesia at sleep onset: A conceptual replication. Sleep Research, 23, 502-511.

^{43.} Bonnet, M.H. (1983). Memory for events occurring during arousal from sleep. Psychophysiology, 20, 81-87.

^{44.} Horn, M. (1993, Nov. 29). Memories lost and found. U.S. News and World Report, 53-63.

^{45.} In addition to being a potential cause of precipitous forgetting of actual abuse, nocturnal dream-related processes may also contribute to the fabrication of false memories. It has been suggested, for example, that alien abduction reports may result from the misinterpretation of nightmares (Karon, B. (1996). On being abducted by aliens. Psychoanalytic-Psychology, 3, 417., and that bizarre accounts of sexual abuse may be the product of a confusion between nightmares and reality. (Dalenberg, C. J. 1996). Fantastic elements in child disclosures of abuse. Paper presented at the Conference on Responding to Child Maltreatment, San Diego.) Although this is another issue for future research, it seems quite plausible that individuals might be much more suggestible regarding events purported to have happened at night. Those who appreciate that nocturnal experiences are apt to be recalled less clearly than other experiences may be more apt to accept a suggested and perhaps initially "fuzzy" false memory as having actually occurred.

Further research is necessary to determine whether the nocturnal characteristics of some sexual abuse incidents may contribute to the alleged precipitous forgetting of such experiences. Although at present, we must consider this hypothesis rather speculative, it seems at least plausible that the precipitous forgetting alleged in some discovered memory cases could be the consequence of the unique forgetting processes associated with nocturnal events and in particular the forgetting of dreams. Like dream forgetting, such nocturnal abuse forgetting might result from difficulties in the full consolidation of memories due to brain states and/or a lack of schematic coherence due to the fact that the nocturnal event is bizarre and unattached to everyday experience. In addition, because nocturnal abuse may be "dreamlike," individuals may upon awakening dismiss their experiences as being nothing more than a very bad dream.

3. Trauma-Specific Memory Mechanisms

Given the various mechanisms outlined above, it seems quite plausible that it may ultimately be possible to account for all authentic discovered memories without having to call on mechanisms unique to trauma. At the same time, however, there are a number of hypothesized special mechanisms that might ultimately prove to be exclusively associated with traumatic experiences, although at present they have not been adequately demonstrated. Possible candidates include:

a. Dissociative Processes. It has been suggested that during trauma individuals may separate themselves from the experience. Such complete distancing of oneself from ongoing events could alter the manner in which such experiences are encoded and later retrieved.46

b. Physiological Processes. There is evidence (primarily from animal studies) to suggest that highly arousing situations may increase the involvement of the amygdala-based storage of memory and decrease hippocampal-based storage, resulting in the production of fragmentary affective memories. 47, 48, 49

c. Psychodynamic Processes. There could be automatic processes (e.g., repression) that limit access to recollections that are excessively disturbing or

^{46.} See, e.g., Spiegel, D., & Cardena, E. (1991). Disintegrated experience: The dissociative disorders revisited. Journal of Abnormal Psychology, 100, 366-378.

^{47.} LeDoux, J.E. (1992). Emotion as memory: Anatomical systems underlying indelible neural traces. In S.A. Christianson (Ed.), The handbook of emotion and memory: Research and theory 'pp. 269-288). Hillsdale, NJ: Erlbaum.

^{48.} See, e.g., Nadel, L., & Jacobs, W.J. (in press). Traumatic memory is special. Current Directions

^{49.} See also Metcalfe, J., & Jacobs, W.J. (1998). Emotional memory: The effects of stress on "cool" and "hot" memory systems. The Psychology of Learning and Motivation, 38, 187-222.

threatening to the ego.⁵⁰ At present, there is simply insufficient evidence to assess the role of these mechanisms in mediating discovered memories.⁵¹

Summary of special mechanisms. The existence of unique processes that could be involved in the forgetting and subsequent discovery of memories of abuse remains an open question. The cases documented here can potentially be accounted for on the basis of nontrauma-based memory mechanisms, particularly if we add to the list hindsight biases that may distort individuals' assessments of their degree of prior forgetting and nocturnal forgetting processes. On the other hand, we cannot at present rule out the possibility that psychological and/or physiological processes that are unique to trauma may be involved in at least some discovered memory experiences. Although the presence of unique forgetting processes is clearly of great legal importance in assessing whether discovered traumatic memories should be given special consideration in litigation, the scientific jury is still out. 52

CONCLUSIONS

Although many issues remain to be resolved regarding the scientific status of discovered memories and their applicability to the discovered memory doctrine, a few unambiguous conclusions seem warranted. First, there seems little question but that individuals are capable of generating and believing false memories. Moreover, the aggressive memory therapies in which some discovered memories are elicited involve precisely the type of suggestive and coercive conditions that are known to produce false memories. On the basis of such observations, it seems clear that we cannot assume that an abusive episode occurred simply because an individual sincerely recalls it. Second, although we must be skeptical of discovered memories in the absence of corroboration, attempts at independently corroborating some of these recollections indicate that they can (at least sometimes) correspond to actual events. Thus we can neither accept nor reject discovered memories out of hand. Third, even when individuals have the experience of discovering a seemingly long-forgotten memory for a corroboratable abuse, it is possible that the memory was not entirely forgotten prior to its discovery. Thus, an individ-

^{50.} See, e.g., Vaillant, G. (1992). Ego mechanisms of defense: A guide for clinicians and researchers. Washington, D.C.: American Psychiatric Press.

^{51.} See also Schooler, J.W. & Hyman, I.E. (1997). Investigating alternative accounts of veridical and non-veridical memories of trauma: Report of the cognitive working groups. In J. D. Read & D. S. Lindsay (Eds.) Recollections of trauma: Scientific research and clinical practices (pp. 531-540). New York: Plenum.52. For recent opposing views on this topic, see Shobe, K. K., & Kihlstrom, J. F. (1997). Is traumatic memory special? Current Directions in Psychological Science, 6, 70-75; and Nadel, L., & Jacobs, W.J. (in press). Traumatic memory is special. Current Directions in Psychological Science.

ual's convictions regarding his or her prior forgetting of an experience cannot alone demonstrate that the memory was actually inaccessible. Fourth, even if the memory was not entirely forgotten, the experience of discovery may be profound. The individual may, for example, be discovering previously unappreciated emotions or understanding of the experience and confusing this discovery with a discovery of the memory itself. Although precisely what aspect of the experience the individual has discovered is unclear, it may still be reasonably argued that some type of discovery regarding the significance of the event occurred. Thus, following discovery experiences of corroboratable abuse, a newfound concern with an abuse experience may be authentic, even if the prior degree of forgetting may have been unwittingly exaggerated.

Finally, the specific processes that lead to discovered memory experiences corresponding to actual events have yet to be fully determined. It may be that the forgetting and recollection of traumatic memories involve the very same processes that are associated with the forgetting of nontraumatic experiences. Indeed, the present discussion elucidated a number of mechanisms, both standard ones typically considered in memory discussion and newly proposed ones (e.g., the "forgot it all along" effect and nocturnal forgetting processes), that may apply to the discovery of both traumatic and nontraumatic memories. At the same time, however, it must be conceded that additional trauma-specific mechanisms may also be at play. Thus, at present, we cannot assert with confidence that discovered memories of abuse draw exclusively on the same mechanisms as other types of experiences, nor can

we claim that unique mechanisms are involved.

In reviewing the scientific evidence surrounding discovered memories of abuse it is easy to become discouraged. Investigations of both the production of false memories and the discovery of true memories of abuse are hampered by important ethical concerns. We cannot ethically attempt to implant memories of severe trauma, nor can we induce actual trauma and then investigate its subsequent forgetting and recollection. Thus, we must rely on indirect approaches such as the implanting of nontraumatic or, at most, only mildly traumatic false memories in the laboratory and the investigation of uncontrolled case studies in the field. Though imperfect, such approaches provide our best current approximations of the phenomena at hand. Given these limitations, it might be tempting to simply ignore our present scientific knowledge in making legal determinations on this topic. In my opinion, however, the legal system will be far better served by relying on our current, albeit incomplete, scientific understanding of discovered memories rather than on mere intuition and folk theories of memory. At the same time, it is imperative that scientists who communicate our current understanding of the topic maintain humility by articulating clearly both what we do and don't know about discovered memory experiences.