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9 Memory, Trauma, and Dissociation

STEVEN J. LYNN

Department of Psychology, Binghamton University, NY, USA

JOSHUA A. KNOX

Department of Psychology, Binghamton University, NY, USA

OLIVER FASSLER

Department of Psychology, Binghamton University, NY, USA

SCOTT O. LILIENFELD

Department of Psychology, Emory University, Atlanta, USA

ELIZABETH F. LOFTUS

University of California, Irvine, USA

Some time ago, one of the authors (SJJ) was consulted by a college-educated, 42-year-old woman, “Ms. M.” who stated she was a “multiple personality” and wanted help to fully integrate herself and her memories. She had moved recently from a large city and had been in treatment for three years with another therapist. She received the diagnosis of dissociative identity disorder (DID), formerly known as multiple personality disorder, after her therapist had referred her to a specialty hospital clinic for DID. After a two-week stay at this clinic, she stated that she “recovered” many memories of sexual abuse by her mother, father, and several clergy persons, all of whom she claimed participated in a satanic cult that was involved in the ritual murder and cannibalism of children in her neighborhood. She was convinced that the abuse began as early as the age of 8 months.

Prior to her hospitalization, Ms. M. was seriously depressed following the death of her father, her mother’s developing Alzheimer’s disease, her son’s paralysis in a skiing accident, and her divorce, all within a 14-month period. At the height of her depression, she began to experience morbid dreams that included people she loved hurting her. She also suffered from sleep paralysis, and experienced malevolent “presences” near her bed. Her therapist told her that her dreams and sleep-related fears indicated probable abuse. She was instructed to keep a dream journal to draw associations between what she dreamed and her current and past life. These ideas and techniques were reinforced during her treatment at the inpatient facility for DID. At one point, her therapist uncovered 13 personalities, including personalities of the opposite gender. Now, Ms. M. reported that she was “mostly integrated, but still depressed.”

This brief vignette raises fascinating questions about the veracity of recovered memories of trauma. Can people banish traumatic memories to the nether-regions of the unconscious where they are preserved intact until they are later recovered? Can traumatic memories breathe life into a dissociated personality that exerts influence on a hapless host personality? Or are such recovered memories mere chimeras, the product of inadvertent suggestions and the very procedures used to unearth the recollections? These and other questions related to the delayed recall of traumatic memories, have proved controversial since the days of Freud and Janet. There is little debate about memories that are continuously remembered, nor is there much dispute that people are capable of remembering events they have not thought about for some time, even years after their occurrence. What is at issue is: (1) whether special mechanisms of repression or dissociation account for the forgetting of traumatic material; and (2) whether it is necessary or perhaps harmful to use procedures like hypnosis or guided imagery to recover purportedly repressed or dissociated memories.

We will argue that accounts of delayed recall and recovered memories based on repression and dissociation are inadequate. We will further contend that suggestive influences inherent in many memory recovery procedures, in combination with problems in distinguishing fantasy and reality, account for many if not all, instances of "recovered memories."

REPRESSION AND DISSOCIATION

Many psychotherapists readily accept the idea of massive repression of early traumatic memories (Bruhn, 1990). Such statements in popular books as, "half of all incest survivors do not remember that the abuse occurred" (Blume, 1990, p. ••) or "millions of people have blocked out frightening episodes of abuse, years of their life, or their entire childhood" (Fredrickson, 1992, p. 15) exemplify beliefs that can be traced to Freud's views of the origin of obsessional neuroses and hysteria. Freud, along with Breuer, contended that these disorders were the byproduct of repressed experiences of sexual molestation. In this context, Freud described repression as occurring when the "ego was confronted by an experience, an idea, a feeling, arousing an affect so painful that the person resolved to forget it, since he had no confidence in his power to resolve the incompatibility between the unbearable idea and his ego by the processes of thought" (Freud, 1894, pp. 61–62). As McNally (2003) observed, despite the fact that Freud used the term "resolved to forget," Freud and others conceptualized repression as the unconscious motivated forgetting of unpleasant material (Holmes, 1990; McNally, 2003).

Freud's explanation for the cause of childhood hysteria was not warmly embraced by his colleagues for reasons that anticipate current concerns about recovered memories. That is, the techniques (e.g., hypnosis) that Freud used to unearth purportedly repressed memories were viewed as highly suggestive (Ciofi, 1974; Powell & Boer, 1994, 1995). Moreover, it was not evident that the abreaction of repressed memories played a role in the successful treatment of hysteria (Israel & Schatzman, 1993; McNally, 2003). Freud ultimately abandoned the seduction theory in favor of the idea that clients repress *fantasies* of sexual seduction. However, the notion that repressed traumatic memories must be

revealed has endured as a cornerstone of both contemporary psychoanalysis (Galatzer-Levy, 1997) and modern memory recovery therapists (Crews, 1998).

The idea that the memory of events can be forever-isolated, yet exert a profound influence on the rest of mental life, is also integral to the concept of dissociation. Early writings on dissociation provided the foundation for the modern “posttraumatic model” of severe dissociative disorders, particularly DID, diagnosed by the presence of two or more distinct personalities (i.e., alters) or “personality states.” Proponents of the posttraumatic model (e.g., Gleaves, 1996; Gleaves, May, & Cardena, 2001; Ross, 1997) posit that dissociative identity disorder arises primarily from a history of severe physical abuse, sexual abuse, or both in childhood. Individuals who undergo horrific trauma in early life are thought to compartmentalize their personalities into discrete alters as a means of coping with intense emotional pain.

This modern view closely resembles the historical concept of dissociation first introduced by the French neurologist Pierre Janet around the time that Freud and Breuer introduced the concept of repression. Janet regarded dissociation (which he termed “desaggregation”) as horizontal splitting within different parts of the unconscious, as opposed to the concept of repression which involved the vertical splitting between the conscious and unconscious. For Janet, this splitting resulted in “double consciousness,” which is similar in many ways to the modern-day concept of DID. Freud and his followers countered Janet’s views and contended that most, if not all, cases of multiple personality resulted from the suggestive influence of therapists upon patients, an argument allied to the contentions of modern critics of the posttraumatic model of DID.

CLASSICAL DISSOCIATION AND NEODISSOCIATION THEORIES

Interest in dissociation has waxed and waned since Janet’s (1889) landmark writings. The decline of the concept was fueled by the eclipse of dissociation theory by psychoanalysis, with its emphasis on repression, and by the rise of behaviorism, with its rejection of mentalist constructs. A third reason why classical dissociation theory fell out of favor was the lack of empirical support for the phenomenon of noninterference. According to this principle, two tasks performed simultaneously, like two “personalities,” theoretically could function independently. More specifically, simultaneous task performance should result in less interference when one task is performed subconsciously, as compared to when multiple tasks are performed consciously.

To test the hypothesis of noninterference, hypnotic techniques have been used to experimentally manipulate conscious and subconscious task performance. In an early investigation, Prince (1929) examined the ability of highly hypnotizable subjects to perform two or more tasks simultaneously (e.g., adding numbers while copying literature) following posthypnotic suggestions for subconscious performance of one of the tasks. Prince found that performance on one task degraded performance on the other. Subsequent experiments (Hull, 1933; Messerschmidt, 1927–1928; Mitchell, 1932) with hypnotizable subjects similarly showed that, following posthypnotic suggestions, concurrent tasks interfered with one another. These findings failed to support one of the central predictions resulting from classical dissociation theory.

Hilgard (1977, 1986, 1994) attempted to bridge the divide between dissociation theory and research by advancing a "neodissociation" theory that allowed for the possibility that all dissociations are not necessarily complete. Hilgard's model is based on three tenets: (1) the existence of interacting subordinate cognitive systems, with relative unity and functional autonomy; (2) the existence of some sort of hierarchical control of the interaction among these systems; and (3) the existence of an "executive ego," a central overarching control system. According to Hilgard (1986), increased task interference could result from the cognitive effort required to erect and maintain an amnesic-like barrier designed to "maintain one task as subconscious" (p. 147).

Hilgard's position was based on hypnosis research contrasting apparently subconscious performance (typically through the use of automatic writing suggestions) with conscious performance of an individual task. Studies indicated that keeping a task out of conscious awareness does indeed tax attentional resources (see Knox, Crutchfield, & Hilgard, 1975; Stevenson, 1976). Bowers and Brennenman (1981) found that performance on a dichotic listening task was not compromised by a competing task. However, a second study suggested that the initial results were not attributable to dissociation, but rather to participants adopting a passive response style whereby they focused attention primarily on the target stimuli. This interpretation was later supported by Green and Lynn's (1995) task interference study. In summary, studies of competing task performance cast doubt on the existence of a dissociative mechanism that creates two "streams of consciousness" that function independently without interference.

HIDDEN OBSERVER OR FLEXIBLE OBSERVER?

Hilgard introduced the metaphor of a "hidden observer" to describe the phenomenon by which a person registers and stores information in memory, without awareness that the information had been processed. Hilgard (1977) noted that the phenomenon was analogous to a situation in which an observer stands in the wings of a theater watching a center stage performance. For Hilgard, the hidden observer phenomenon represented a division of the monitoring function of consciousness, separated by an amnesic-like barrier.

Hilgard and associates (e.g., Crawford, Macdonald, & Hilgard, 1979; Hilgard, 1973, 1977; Hilgard, Hilgard, Macdonald, Morgan, & Johnson, 1978; Hilgard, Morgan, & McDonald, 1975; Knox, Morgan, & Hilgard, 1974) attempted to study the hidden observer phenomenon with tasks involving pain and hearing. In a typical study, highly suggestible subjects are first given hypnotic suggestions for analgesia, followed by instructions that they possess a "hidden part" that can experience high levels of pain when the hypnotist communicates directly with that hidden part by way of a prearranged cue. Research conducted in Hilgard's laboratory has demonstrated that hidden observer reports can penetrate hypnotic blindness, hypnotic deafness, and positive hallucinations in about 50% of subjects (see Kirsch & Lynn, 1998, for a review).

Supporters of neodissociation theory have interpreted the hidden observer phenomenon as reflecting the emergence of a hidden part of consciousness that exists independent of instructions or imaginative suggestions. Research has shown this is not the case, and the hidden observer phenomenon is reactive to the shaping influences of suggestion. Depending on instructions, the hidden observer can experience more pain or less pain or perceive

things normally or in reverse. There can even be two hidden observers, one storing memories of abstract words, the other storing memories of concrete words (Spanos, Flynn, & Gwynn, 1988; Spanos, Gwynn, & Stam, 1983; Spanos & Hewitt, 1980; Spanos & McLean, 1986; Spanos, Radtke, & Bertrand, 1984). Accordingly, reports of “hidden entities” appear to be byproducts of suggestions and contextual demands, rather than spontaneously occurring dissociated aspects of the personality (see Laurence, Perry, & Kihlstrom, 1983; Nogrady, McConkey, Laurence, & Perry, 1983, for a defense of the “hidden observer” and a rebuttal by Spanos, 1983, 1991). Such findings led Kirsch and Lynn (1998) to dub the hidden observer a “flexible observer.”

The hidden observer phenomenon is analogous to the trauma-engendered “hidden” alters that are the hallmark of DID, and that can purportedly be accessed by hypnotic suggestion. Bliss (1980) noted in the hypnotic treatment of DID that “alter egos are summoned, and usually asked to speak freely. When they appear, the subject is asked to listen. [The subject] is then introduced to some of the personalities” (p. 1393). However, the flexible observer research underscores how easy it is to suggest seemingly independent “parts” of the personality in individuals culled from a nonpathological, college student population. Such findings are consistent with the idea that the putative personalities of DID patients are likewise the products of suggestion rather than spontaneously discovered entities. Finally, flexible observer studies do not support the idea that dissociations are due to an amnesic barrier separating consciousness into two simultaneous streams (Kirsch & Lynn, 1998). Rather, a single, undivided stream of consciousness changes in a manner consistent with instructional cues.

Hypnotic amnesia is central to Hilgard’s neodissociation theory, and there are noteworthy parallels between dissociative amnesia and the subsequent recall of purportedly dissociated memories. Although spontaneous amnesia during or after hypnosis was once considered a common phenomenon, contemporary research has focused primarily on suggestion-induced amnesia. Typically, a suggestion is given to forget an event (e.g., one or more suggestions received), after which a reversal cue is administered to cancel the effects of the suggestion (e.g., “Now you can remember everything”). According to neodissociation theory, the temporarily forgotten material is isolated in a dissociated stream of consciousness, until rendered accessible to a second, nondissociated stream of consciousness, by the retrieval cue. In the single experimental assessment of hypnotic amnesia by way of the hidden observer, Spanos et al. (1984) produced two hidden observers in each of eight, highly hypnotizable participants. After individuals learned a list of concrete and abstract words, they received an amnesia suggestion to forget the words. Half of the participants were told that abstract words were stored in their right hemisphere and that concrete words were stored in their left. The remaining individuals received the opposite instructions regarding information storage. When the hypnotist contacted the hidden observer associated with the right hemisphere, individuals recalled all of the words purportedly stored there (e.g., concrete words), but none of the words stored in the left hemisphere (e.g., abstract words), and vice versa. Kirsch and Lynn (1998) observed that it was extremely unlikely that amnesia suggestions would generate such divisions of consciousness. Instead, the apparent division of consciousness is likely to have been produced by the hidden observer instructions.

The hypothesis that suggested amnesia is produced by a division of consciousness into two or more simultaneous streams is without an evidential base. Rather, the selective recall

of information after hidden observer instructions is consistent with motivated forgetting, a phenomenon that may be associated with forgetting important information in non-hypnotic contexts.

REPORTS OF AMNESIA FOR LIFE EVENTS

According to the DSM-IV, individuals with dissociative identity disorder (DID) report significant episodes of amnesia for important personal information. They may report frequent periods of "lost time," lasting hours or days, in which they cannot recall where they were or what they were doing. This amnesia is often reported to be asymmetrical, whereby the host personality knows little about the behaviors of the alters, but not vice versa (APA, 1994). The traditional treatment of DID involves liberating or recovering memories of traumatic abuse that are ostensibly ensconced within alter personalities. When these recovered memories become available to the host personality, they can be melded into an overarching personality structure.

A key question for conceptual models of DID is whether traumatic memories can be dissociated or repressed for many years, and then recovered in pristine form during psychotherapy. Some believe the matter is resolved. Karon and Widener (1997), for example, maintained that "Laboratory experiments from the 1930s . . . to the present . . . have shown evidence for repression" (p. 338). Others believe a considerably more tempered appraisal is warranted (see Lilienfeld & Loftus, 1998), observing that anecdotal data may provide suggestive support for repression (Cohen, 1996; Schachter & Kihlstrom, 1989), but over 60 years of laboratory research has failed to yield compelling support for this defense mechanism (Holmes, 1974, 1990). These observers note that, if anything, stressful experiences, because of their salience, should be easier to recall than emotionally sterile memories (Shobe & Kihlstrom, 1997).

Clinical anecdotes of reportedly recovered memories remain compelling to some workers in the field. Rieker and Carmen (1986) reported that a woman who entered psychotherapy for sexual dysfunction recovered memories of incest committed by her father. Schuker (1979) described a woman who entered psychotherapy for chronic insomnia, low self-esteem, and other problems, eventually coming to believe that she was sexually assaulted by her father. M. Williams (1987) described a man who entered therapy for depression and sleep disturbances had "recovered memories" of a servant molesting him. Such anecdotal reports are taken by some clinicians as "evidence" that clients can remember previously inaccessible painful experiences (Erdelyi, 1985). Others find these cases unconvincing "clinical speculations" (Holmes, 1990, p. 97).

Studies often cited (see Karon & Widener, 1997) as providing evidence for repression or dissociation are vulnerable to alternative explanations and criticisms. For example, Diven (1937) and Haggard (1943) associated electric shock with poorer recall of words, a finding potentially attributable to the interfering effects of stress on memory (Holmes, 1990). "Perceptual defense studies," in which participants demonstrate greater reluctance to report emotional than nonemotional words, may be attributable to differences in familiarity between these two classes of words (Holmes, 1990). Other studies suggest the possibility that some cognitive processing of simple stimuli may occur below the threshold of awareness (e.g., Shevrin, Williams, Marshall, & Hertel, 1992), but this does not provide

direct evidence for the existence of repression, dissociation, or any other special mechanism. After reviewing 60 years of research and finding no controlled laboratory support for the concept of repression, Holmes (1990) wryly suggested that any use of the concept be preceded by a caveat: "Warning. The concept of repression has not been validated with experimental research and its use may be hazardous to the accurate interpretation of clinical behavior" (p. 97).

Current research findings have not quelled the debates. Schefflin and Brown (1996) reviewed 25 studies and concluded that amnesia for childhood abuse was a robust finding. Piper (1997) proffered a critique of the same literature and observed that concepts of dissociation and dissociative amnesia were ambiguous and over-inclusive. Additionally, many of the studies reviewed by Schefflin and Brown (1996) failed to provide compelling verification that the reported abuse occurred. Piper observed that the failure to report past abuse provided no guarantee that the individual had actually forgotten, nor did the inability to recall a particular event implicate dissociation or repression as the causative mechanism.

Several studies provide support for Piper's position. For example, Goodman and colleagues (Goodman et al., 2003) repeatedly interviewed 175 individuals with documented child sexual abuse, approximately 13 years after the target case. Of the individuals interviewed over three phases of the study, 18.9% of the respondents did not report the documented target case on initial report. However, in a subsequent phone interview 15.5% did not report the target case, and by the third (in person) interview phase, only 8% of the participants failed to report the target case. Goodman and colleagues (2003) observed that their findings highlight the importance of social factors in child sexual abuse disclosure. Other studies have shown that as many as 25% of individuals sampled failed to remember significant life events (e.g., injury-producing motor vehicle accidents, hospitalizations) even a year after they occurred (see Lilienfeld & Loftus, 1998).

Read and colleagues (see, for example, Read & Lindsay, 2000) demonstrated that one can readily induce reports of autobiographical memory gaps in normal subjects simply by asking them to recall multiple events from early childhood. When individuals are then asked, "Was there ever a period of time when you remembered less of your childhood than you do now?," they typically respond "Yes," believing that they now recall more of their childhood history than they once did. Ross (1997) has observed that similar questions are used commonly in investigations of DID to verify the presence of amnesia. Therefore, self-reports of autobiographical memory gaps in DID patients must be interpreted with caution, particularly when patients have been asked repeatedly to recall childhood memories.

DISSOCIATION, TRAUMA, AND MEMORY

The traditional notion of dissociation implies that memories can split off from ordinary consciousness in childhood yet remain preserved with minimal or no distortion for later recall in adulthood. Thus, van der Kolk, van der Hart, and Marmar (1996) suggested that dissociated imprints of memories are retrieved as sensory fragments that have little or no linguistic component. These hypothesized fragments then must be woven together to construct a coherent narrative memory of the traumatic event. Challenging this viewpoint,

Eisen and Lynn (2001) expressed skepticism regarding whether a memory that was never encoded as a coherent narrative could be retrieved and accurately reported at a later date. Further, the reconstruction of events from memory fragments, feelings, and intuition are among the most common contributing factors in the creation of false memory formation (see Loftus 1993, 2003, for a review).

Additional considerations belie the notion that initially incomplete and fragmented memories can be made whole years later (Eisen & Lynn, 2001). For example, even when there are no manifest memory problems such as profound amnesia for experienced traumas, the recovery of traumatic memories would be expected to vary from time to time, be more or less complete, and reflect contextual and defensive influences. Further, it is well known that normal forgetting takes place when a memory is isolated and never rehearsed. If dissociation involves the compartmentalization and subsequent avoidance of memories during a stressful experience, then rehearsal of memories should be effectively abolished. Even if isolated elements of the event were encoded and retained in declarative memory, the details of these decontextualized fragments would fade over time, like "ordinary" memories. If so, it would undermine the contention that dissociated memories can be recovered intact—often many years after the event—by such techniques as hypnosis (see Spiegel, 1995).

DISSOCIATION AND SUGGESTIBILITY

Appreciable individual differences exist in dissociative experiences (see Lynn & Rhue, 1994), as demonstrated by valid and reliable measures of dissociative tendencies (e.g., Dissociative Experiences Scale/DES, Bernstein & Putnam, 1986). Based on the DES and related instruments, an accumulating literature, albeit not entirely consistent, suggests a modest relationship between dissociation and inaccurate memories in children and adults. For example, the association between inaccurate memories and dissociation has been demonstrated in adults across several memory paradigms, with correlations in the range of $r = .18$ to $r = .53$. These paradigms have included a staged event followed by highly suggestive misleading questions a week later (Eisen & Carlson, 1998; Eisen, Morgan, & Mickies, 2002); a video of a crime followed by misleading information (Wright & Livingston-Raper, 2002); acceptance of early autobiographical memories using a memory implantation paradigm (Hyman & Billings, 1998; Qin, 1999; Porter, Birt, Yuille, & Lehman, 2000; Wilkinson & Hyman, 1998); repeated imagining of events that did not actually occur (Heaps & Nash, 2001; Paddock et al., 1998); errors in response to misleading questions on the Gudjonsson Scale of Interrogative Suggestibility (Merckelbach, Muris, Rassin, & Horselenberg, 2000; Wolfradt & Meyer, 1998); listening to an aversive story (Candel, Merckelbach, & Kuijpers, 2003); the inability to distinguish dreams and reality (Rassin, Merckelbach, & Spaan, 2001); and the DRM paradigm that involves the (false) recall of words that are not actually presented during the experiment (e.g., sleep) when a list of highly associated words (e.g., dream, bed) is presented to participants (Winograd, Peluso, & Glover, 1998).

A number of studies have failed to replicate these findings in the context of the DRM (Eisen Cardeneas, Kistorian, Yu, & Tirtibudi, 1999; Platt, Lacey, Iobst, & Finkelman, 1998; Qin, 1999; Wilkinson & Hyman, 1998), and memory implantation paradigms (Mazzoni, Loftus, Seitz, & Lynn, 1999; Mazzoni & Memom, in press). However, in aggre-

gate, the reviewed studies indicate that individuals with dissociative tendencies are at a somewhat heightened risk of developing false memories. Clearly, suggestive procedures should be scrupulously avoided with patients who demonstrate dissociative tendencies.

THE SOCIOCOGNITIVE MODEL OF DID

Suggestibility and suggestive influences play an important role in the sociocognitive model of DID. The sociocognitive model stands in contradistinction to traditional posttraumatic models, and proffers no special mechanism such as dissociation to account for the dramatic symptoms of DID. Rather, proponents of the sociocognitive model (Spanos, 1994, 1996; see also Aldridge-Morris, 1989; Lilienfeld et al., 1999; Lynn & Pintar, 1997; McHugh, 1992) contend that DID is a socially constructed condition that results from: (1) inadvertent therapist cueing such as suggestive questioning regarding the existence of possible alters; (2) media influences including film and television portrayals of DID like *Sybil*; and (3) broader sociocultural expectations regarding the presumed clinical features of DID.

The sociocognitive model does not maintain that DID can typically be created in vacuum by iatrogenic or sociocultural influences. A large proportion of DID patients have histories of co-occurring psychopathology, particularly depression and borderline personality disorder (Ganaway, 1995). In the case presented at the outset of our discussion, it is virtually inconceivable but true that "Ms. M."’s depression was not a target of treatment, and she was never treated with antidepressant medications. Nor did her therapist realize that relatively common sleep-related phenomena, such as hypnagogic hallucinations and sleep paralysis have been associated with false memories of abuse (Powell & Nielsen, 1998). It seems plausible that iatrogenic and sociocultural influences often operate on a backdrop of preexisting psychopathology, and exert their impact primarily on individuals who are seeking a causal explanation ("effort after meaning") for their instability, identity problems, impulsiveness, and seemingly inexplicable behaviors. It is possible that fantasy proneness (see Lynn, Rhue, & Green, 1989) and the inability to distinguish reality and dream experiences (Kemp, Burt, & Sheen, 2003; Rassin et al., 2001) also increase vulnerability to DID.

SUGGESTING COMPLEX MEMORIES

According to the sociocognitive model, the presentation of DID is shaped by beliefs, expectancies, and suggestions regarding the symptoms of DID and early life events. Research has demonstrated that complex memories can be formed by way of subtle and not so subtle suggestions. Loftus and colleagues (Loftus, 1993; Loftus & Ketcham, 1994; Loftus & Pickrell, 1995) were among the first to demonstrate that people can be led to integrate an entirely fabricated event into their personal histories. In this line of research, participants were asked by an older sibling to remember real and fictitious events. The older sibling initially provided a few details about the false event, such as getting lost in a shopping mall. All subjects then participated in a series of interviews held over several days, during which some claimed to remember the false event, often providing surprisingly detailed accounts of the fictitious event.

Studies in other laboratories using similar experimental procedures similarly find that a significant minority of people will embrace false events. Hyman, Husband, and Billings

(1995) conducted interviews that included one unlikely event among several true events. The false events used in the study were (1) spilling a punch bowl at a wedding reception; (2) evacuating a grocery store when the sprinklers went off; and (3) releasing the parking brake of a car in a parking lot and hitting another car. Hyman and colleagues were interested in any elaboration that participants might provide to the false event. Results indicated that recall was very high for true events, and significantly lower for the false events. Nevertheless, by the time of a third interview, 25% of the participants exhibited some recall for the false event.

Pezdek, Finger, and Hodge (1997) asked adolescents to recall details regarding both true and false events. The false events involved the participants engaging in religious activities that were either consistent or inconsistent with their religious denomination (Catholic or Jewish). Ten out of 29 Catholics and 3 out of 22 Jews reported memories for at least one of the false events. Three of the participants exhibited memories for religious activities that were inconsistent with their denomination. Porter, Yuille, and Lehman (1999) recently found that 26% of participants reported at least one "complete" false memory of six suggested emotional childhood events (animal attack, indoor accident, outdoor accident, getting lost, medical procedure, and being injured by another child). The events were suggested in three different interviews over a two-week period in which the interviewer attempted to elicit false memories using guided imagery, context reinstatement, mild social pressure, and the encouragement of repeated recall attempts. In addition to the substantial minority of participants who reported a "complete" false memory, 30% reported a "partial" false memory in which some information was recalled or the individual was uncertain about whether the memory was false. In short, more than half of individuals exposed to a variety of memory recovery techniques were led to report an emotional false memory.

One recurring issue for memory distortion research is the question of whether purportedly "false" events actually might have happened. Perhaps the subject was, in fact, injured by another child, or lost in a mall, and the imagination exercise triggered a true memory rather than planting a false one. To demonstrate more convincingly that false memories can be insinuated into memory with suggestive techniques, researchers have tried to plant memories of events that are highly implausible, if not impossible. For example, very early memories dating from age 2 or earlier are implausible because infantile amnesia covers these early years. Yet, several studies demonstrate how easy it is to manipulate reports of early recollections. Malinoski and Lynn (1997) examined the influence of several techniques used by memory recovery therapists (e.g., Farmer, 1989; Meiselman, 1990) on reports of memories earlier than age 2. These techniques include compliments for increasingly early memory reports, the provision of information that most young adults can retrieve memories of very early events, and instructions to see events "in their mind's eye" as toddlers or infants. Prior to the introduction of such techniques, the mean age of initial reported memory was 3.7 years, with only 11% of participants reporting initial memories at or before age 24 months. After memory recovery procedures were implemented, 59% of participants reported a memory of their second birthday, 78.2% reported at least one memory that occurred by 24 months, and 33% reported a memory at age 12 months or earlier. In a second study (Lynn & Malinoski, 1997), a slight change in the wording of the question used to elicit early memories (High demand condition: "Tell me when you get an earlier memory", vs. Low demand condition: "If you don't remember it's all right")

resulted in a difference of average recall of nearly 1 year (low demand $M = 3.45$ years vs. high demand $M = 2.48$ years).

The material reviewed thus far underscores the malleability of early memory reports and calls into question the veracity of at least some reports of child abuse in studies of DID. In one study, for example, Ross, Miller, Bjornson, and Reagor (1991) found that 26% of DID patients reported being abused prior to age 3, while 10.6% reported being abused prior to age 1. Dell and Eisenhower (1990) reported that 4 of 11 adolescent patients with DID reported that their first alter emerged at age 2 or earlier. Of course, skeptics might still insist that memory recovery procedures access memories of actual events, no matter how early they are claimed to have occurred. To address this concern, investigators have demonstrated that participants can be led to report memories of events that could not possibly have occurred. For example, Sivec, Lynn, and Malinoski (1997) used hypnosis to regress participants to the age of 5. Some 20% of these participants then recalled playing with a toy that was not yet released at the time they would have been so young. Mazzoni and Memom (in press) implanted "impossible" memories in British students. The false event was "having a nurse remove a skin sample from my little finger." This medical procedure was not carried out in the United Kingdom, according to extensive investigation of health policy records.

In another line of research (Braun, Ellis, & Loftus, 2002), people evaluated advertising copy that featured Bugs Bunny at Disneyland, a scene that never could have occurred because Bugs Bunny is a Warner Bros. cartoon character. Later, when asked about their own experiences at Disneyland, 16% of these subjects said that they remembered meeting and shaking hands with Bugs Bunny. In follow-up research carried out by Grinley (cited in Loftus, 2003), several presentations of fake advertisements involving Bugs Bunny at Disneyland resulted in 25–35% of subjects claiming to have met Bugs Bunny at the Disney theme park. Moreover, when subjects were subsequently asked for precise reports on their encounter with Bugs Bunny, 62% remembered shaking his hand and 46% remembered hugging him.

One of the most powerful techniques for planting implausible false memories has involved the use of fake photographs (Wade, Garry, Read, & Lindsay, 2002). Subjects were shown a falsified photograph of a hot-air balloon, in which the subject and a relative had been pasted. Family members had confirmed that an actual hot-air balloon ride had never occurred for the subjects, who were shown the fake photograph and asked to tell "everything you can remember without leaving anything out, no matter how trivial it may seem." After two further interviews, 50% of subjects recalled the fictitious hot-air balloon ride, at least in part, with some embellishing their reports with sensory details.

Yet another set of findings concerns individuals who genuinely believe in memories of traumatic events that are extremely unlikely to have occurred. For example, there have been reports of satanic ritual abuse, often associated with diagnoses of DID, and often arising in the context of psychotherapy (Qin, Goodman, Bottoms, & Shaver, 1998; Mulhern, 1992). Following years of investigation into claims of horrific child abuse (e.g., human sacrifice, baby-breeding), American law enforcement agencies, including the FBI (Lanning & Burgess, 1989), were unable to garner any evidence to support the allegations. Mulhern (1992) conducted a sociohistorical analysis and concluded that there is no credible evidence to suggest that memories of ritualistic torture and abuse are veridical. Spanos,

Burgess, and Burgess (1994) drew similar conclusions concerning the veracity of reports on alleged abductions by aliens. Surveys of therapists conducted by Qin et al. (1998) reveal that satanic ritual abuse reports are associated with a relatively small group of therapists who, the authors speculate, may “accept, and even help to create, ‘false memories’ of satanic ritual abuse” (p. 279).

ADDITIONAL FINDINGS SUPPORTING THE SOCIOCOGNITIVE MODEL

According to the sociocognitive model, the dramatic rise in DID cases in the 1980s occurred largely as a result of iatrogenic (therapist-induced) influences, coupled with increased media attention accorded to the diagnosis. Specifically, as DID became familiar to both psychotherapists and the general public, an autocatalytic feedback loop was set in motion (see Shermer, 1997, for examples). In this feedback loop, therapeutic and societal expectations regarding the features of DID gave rise to greater numbers of cases; in turn influencing therapeutic and societal expectations regarding the features of DID; in turn giving rise to greater number of cases of DID, and so on. In short, the features of DID (e.g., “separate” personalities that house dissociated memories) do not necessarily arise spontaneously in the aftermath of a devastating history of trauma. Rather, they represent “creations,” much like the hidden observer. Multiple findings support this view including the following:

- 1 The number of patients with DID has increased dramatically over the past few decades (Elzinga, van Dyck, & Spinhoven, 1998).
- 2 The number of alters per DID individual has similarly increased over the past few decades (North, Ryall, Ricci, & Wetzel, 1993), although the number of alters at the time of initial diagnosis appears to have remained constant (Ross, Norton, & Wozney, 1989).
- 3 Both of these increases coincide with dramatically increased therapist and public awareness of the major features of DID (Fahy, 1988).
- 4 It has been well established (see Loftus, 1992; Spanos, 1994) that individuals can be led to report a wide range of fabricated memories that are held with conviction.
- 5 Mainstream treatment techniques for DID appear to reinforce patients’ displays of multiplicity, reify alters as distinct personalities, and encourage patients to establish contact with presumed latent alters (Spanos, 1994, 1996).
- 6 Many or most DID patients show few or no clear-cut signs of this condition (e.g., alters) prior to psychotherapy (Kluft, 1984).
- 7 The number of alters per DID individual tends to increase substantially over the course of DID-oriented psychotherapy (Piper, 1997).
- 8 Psychotherapists who use hypnosis tend to have more DID patients in their caseloads than do psychotherapists who do not use hypnosis (Powell & Gee, 1999).
- 9 The majority of diagnoses of DID derive from a relatively small number of psychotherapists, many of whom are specialists in DID (Mai, 1995).
- 10 Laboratory studies suggest that nonclinical participants who are provided with appropriate cues and prompts can reproduce many of the overt features of DID (Spanos, Weekes, & Bertrand, 1985; Stafford & Lynn, 2002).

- 11 Until fairly recently, diagnoses of DID were limited largely to North America, where the condition has received widespread media publicity (Spanos, 1996), although DID is now being diagnosed with considerable frequency in some countries (e.g., Holland) in which it has recently become more widely publicized.

SUGGESTIVE THERAPEUTIC TECHNIQUES

According to the sociocognitive model, certain psychotherapeutic techniques are viewed as highly “risky,” insofar as they can induce false memories (see Lynn, Lock, Loftus, Lilienfeld, & Krackow, 2003, for a more expansive treatment of the issue). These techniques are now discussed.

GUIDED IMAGERY

According to a survey by Poole, Lindsay, Memom, and Bull (1995), 32% of US therapists report using “imagery-related” techniques to reveal past abuse. Roland (1993), for example, used visualization to jog “blocked” memories, and a “reconstruction” technique to recover repressed memories. The use of imagery to uncover allegedly repressed memories warrants concern because people frequently confuse real and imagined memories, particularly when memories are initially hazy or unavailable. Hyman and Pentland (1996) found that participants who engaged in guided imagery reported more false memories of attending a wedding and knocking over a punchbowl, than did individuals in a control group with instructions to do their best to remember childhood events. This finding is not surprising given that a sizable body of research has shown that simply having participants imagine an event can lead to the formation of false memories. Typically, confidence in the occurrence of fictitious events increases after those events have been imagined. This phenomenon is called imagination inflation, and has been demonstrated repeatedly (reviewed in Garry & Polaschek, 2000).

DREAM ANALYSIS

The imagination inflation paradigm has been extended to dream experiences. Viewed by Freud as the “royal road to the unconscious,” dreams have been used to provide a window on past experiences, including repressed traumatic events. For example, van der Kolk, Britz, Burr, Sherry, and Hartmann (1994) claimed that dreams can represent “exact replicas” of traumatic experiences (p. 188), a view not unlike that propounded by Frederickson (1992), who argued that dreams are a vehicle by which “Buried memories of abuse intrude into . . . consciousness” (p. 44). In the case study presented at the outset of this chapter, the patient’s dreams were interpreted in this manner. Survey research indicates that upwards of a third of US psychotherapists (37–44%) use dream interpretation (see also Brenneis, 1997; Polusny & Follette, 1996), despite the fact that no data exist to support the claim that dreams are indicative of a history of child abuse (Lindsay & Read 1994).

In several studies by Mazzoni and colleagues (Loftus & Mazzoni, 1998; Mazzoni, Lombardo, Malvagia, & Loftus, 1997; Mazzoni et al., 1999), participants reported child-

hood experiences on two occasions, 3–4 weeks apart. Between sessions, some subjects were exposed to a 30-minute therapy simulation in which an expert clinician analyzed dream reports. No matter what participants dreamed, they received the suggestion that their dream was indicative of having experienced certain events (e.g., being lost in a public place or abandoned by parents) before the age of 3. Although subjects previously had indicated that they had not experienced these events before age 3, many individuals revised their accounts of the past.

HYPNOSIS

For many years, hypnosis has been a mainstream treatment of DID (e.g., see Ross, 1997), employed in an effort to discover or call forth presumed latent alters (Spanos, 1994, 1996). Hypnotic techniques frequently employ suggestions that clearly resemble those used to elicit the hidden observer in an effort to recover purportedly repressed or dissociated memories. Nevertheless, there is strong evidence that hypnosis does not improve recall, although it often increases respondents' confidence in their recall (Lynn, Lock, Myers, & Payne, 1997; Steblay & Bothwell, 1994). Lynn et al. reviewed data from several studies indicating that hypnotized participants performed either no better or worse than nonhypnotized participants on both structured and unstructured tests of recall. Moreover, a meta-analysis demonstrated that hypnotized participants exhibit higher rates of false memories than nonhypnotized participants following misinformation and leading questions (Steblay & Bothwell, 1994).

"Hypnotic age-regression" is the use of hypnosis to take a person back in time to recover traumatic and nontraumatic memories. According to Nash (1987), adults who ostensibly age-regressed to childhood do not show expected patterns associated with early development. For example, adults who age-regressed to childhood fall prey to the famous Ponzo (railroad tracks) illusion, even though this perceptual phenomenon occurs among adults, but not most children. This finding, and others reviewed by Nash (1987), strongly suggest that the perceptions of adults purportedly regressed to childhood continue to function like that of adults, not children. No matter how compelling "age-regressed experiences" may be to the hypnotized subject, they do not represent literal reinstatements of childhood experiences, behaviors, or feelings.

Hypnosis also can be used to induce "Past life regression," based on the premise that current psychological and physical symptoms are related to traumas that occurred in previous lives (see Mills & Lynn, 2000). However, Spanos, Menary, Gabora, DuBreuil, and Dewhirst (1991) demonstrated that information provided during hypnotic age regression was almost invariably incorrect. For example, one participant who was regressed to ancient times claimed to be Julius Caesar, emperor of Rome, in 50 BC, even though the designations of BC and AD were not adopted until centuries later, and Julius Caesar had died decades prior to the first Roman emperor. Spanos and colleagues found that past life experiences were elaborate, conformed to induced expectancies, and varied in accordance with pre-hypnotic information participants received regarding past historical periods (Spanos, 1996). Hypnotically induced past life experiences appear to be fantasies constructed from available cultural narratives, as well as from cues present in the hypnotic situation.

Finally, hypnosis can be used to implant false traumatic memories, a phenomenon demonstrated more than 100 years ago (Rosen, Sageman, & Loftus, 2003).

SYMPTOM AND PERSONALITY INTERPRETATIONS

Poole et al. (1995) surveyed US practitioners and found that more than one-third used symptom interpretation to recover suspected memories of abuse. Some popular self-help books for incest survivors follow this approach and provide symptom lists whose items are touted as possible or probable correlates of childhood incest (e.g., Do you use work or achievements to compensate for inadequate feelings in other parts of your life?). Blume's Incest Survivors' Aftereffects Checklist consists of 34 such correlates. The scale instructions read: "Do you find many characteristics of yourself on this list? If so, you could be a survivor of incest." Many of the characteristics of such checklists are vague and applicable to non-abused individuals; an observation that calls to mind the "P.T. Barnum effect," wherein highly general statements are perceived as true when applied specifically to oneself (Emery & Lilienfeld, 2002; Rosen, 1975). Additionally, no known constellation of specific symptoms related to a history of abuse actually exists, and non-victims experience many of the same symptoms contained on survivor checklists (Tavris, 1993).

Like bogus symptom interpretation, bogus personality interpretation can be used to create highly implausible or false memories. Spanos, Burgess, Burgess, Samuels, and Blois (1999) informed participants that their personality indicated certain experiences during the first week of life. After participants completed a questionnaire, they were told that a computer-generated personality profile based on their responses indicated they were "High Perceptual Cognitive Monitors," and that people with this profile had experienced special visual stimulation by a mobile within the first week of life. Participants were told falsely that the study was designed to recover memories to confirm the personality test scores. The participants were age regressed to the crib; half of the participants were hypnotized and half received non-hypnotic age regression instructions. In the non-hypnotic group, 95% of the participants reported infant memories and 56% reported the target mobile. However, all of these participants indicated that the memories were fantasy constructions or that they were unsure if the memories were real. In the hypnotic group, 79% of the participants reported infant memories and 46% reported the target mobile. Some 49% of these participants believed the memories were real, and only 16% classified the memories as fantasies.

DuBreuil, Garry, and Loftus (1998) used the bogus personality interpretation paradigm and non-hypnotic age regression to implant memories of the second day of life (crib group) or the first day of kindergarten (kindergarten group). College students were administered a test that purportedly measured personality. These students were told that their test scores indicated it was likely they had participated in a nationwide program designed to enhance development through the use of red and green moving mobiles. A "crib" group was told that their enrichment program had occurred in the hospital immediately after birth, while a "kindergarten" group was told that mobiles had been placed in kindergarten classrooms. Participants were given the false information that memory functions "like a videotape recorder" and that age regression can access otherwise inaccessible memories. Participants were age-regressed without hypnosis and given suggestions to visualize themselves at the

target age. Some 25% of the kindergarten group and 55% of the crib group reported the target memory. All kindergarten participants believed that their memories corresponded to real events. In the crib group, 33% believed in the reality of their memories, 17% did not, and 50% were unsure.

BIBLIOTHERAPY

Many therapists who treat patients with suspected abuse histories prescribe “survivor books” or self-help books that provide “confirmation” of an individual’s signs and symptoms from past abuse. The issue of symptom lists and interpretation of these symptoms already has been discussed. In some cases, the survivor self-help books purport to provide a means of gaining access to memories (e.g., Bass and Davis’, 1988, *The Courage to Heal*), providing imaginative exercises, stories of other survivors’ struggles, and sources of potential support for with other abuse survivors. Unfortunately, instructional materials can lead readers to develop false memories, as demonstrated by Mazzoni, Loftus, and Kirsch (2001) with regard to beliefs pertaining to whether individuals witnessed a case of demonic possession during early childhood. Events that were not experienced during childhood and initially deemed to be highly implausible can, with sufficient credibility-enhancing information, come to be viewed as having occurred in real life.

CONCLUDING COMMENTS AND CLINICAL IMPLICATIONS

Some authors (e.g., Karon & Widener, 1997) have been quick to invoke the existence of special memory processes, particularly dissociation and repression, to account for certain seemingly striking cases of memory loss among psychiatric patients. Several of these authors have dismissed evidence that well-established memory phenomena, such as ordinary forgetting or infantile amnesia, can account for such cases. Nevertheless, careful examination of these cases reveals that strong claims of special memory mechanisms are susceptible to a host of alternative explanations (Lilienfeld & Loftus, 1998).

A review of the research literature finds little empirical support for a dissociative mechanism that is responsible for the forgetting of traumatic events. Nor is there much support for the capacity of memory recovery techniques to excavate remembrances that somehow remain unadulterated by the passage of time. These conclusions are based largely on the (1) lack of support for separate yet co-occurring streams of consciousness; (2) the fact that apparent divisions in the personality (e.g., the hidden observer phenomenon) can be created and shaped by suggestions; (3) the dubious nature of claims of psychogenic amnesia for salient life events; and (4) the fact that high scores on measures of dissociation are related to false rather than accurate memories. Further, there are findings to suggest that the very techniques used to recover memories may sully them and provide the fodder for both the creation of alter personalities in DID and the traumatic memories that are so frequently associated in clinical lore with multiple identities. Moreover, the evidence in support of the operation of a special dissociative mechanism that isolates and preserves memories is less than convincing.

The convergence of evidence provides a potent argument for the validity of the sociocognitive model (Lilienfeld et al., 1999; see also Lynn & Pinter, 1997). Although it

would be premature to exclude all possibility that early trauma plays at least some role in the genesis of DID (see Lilienfeld & Lynn, 2003), compelling evidence indicates that the multiple identities are shaped substantially by suggestive therapeutic practices and broader sociocultural expectations regarding the features of multiple personality disorder (cf., Gleaves, 1996). Unquestionably, the suffering of DID patients is entirely genuine. In this respect, the oft-asked question of whether DID “exists” misses the mark (Lilienfeld et al., 1999; McHugh, 1992). Ironically, however, at least some of this suffering appears to be brought on by well-intentioned psychotherapists. The history of DID, its rise in the 1980s, alarm that suggestive techniques could be causing the phenomena, followed by a decline in clinical presentations of the disorder, along with successful litigation against clinicians alleged to have created “multiples,” should give pause to all concerned clinicians. Today, informed practice demands vigilance regarding the use of even mildly suggestive procedures in psychotherapy.

While the existence of special memory processes cannot be ruled out conclusively, given the state of the research evidence, a basic principle in philosophy of science is that the burden of proof falls squarely on the shoulders of those advancing affirmative claims. At this point, particularly with the paucity of laboratory evidence for special memory mechanisms (e.g., see Holmes, 1990), the ball now lies in the court of those who invoke dissociation, repression, or both to account for DID and related clinical phenomena. Moreover, the logical principle of Occam’s Razor (the principle of parsimony) suggests that we should be reluctant to invoke special explanations for phenomena in the absence of strong evidence, when more mundane explanations work equally well, or better. Whether the advocates of special memory mechanisms will be able to meet this test remains to be seen.

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