CHAPTER 7

The Construction of False Events in Memory

Kathy Pezdek and Tiffany Hinz

Department of Psychology, Claremont Graduate University, Claremont, California, USA

In March 1992, in Philadelphia, Pamela Freyd founded the False Memory Syndrome Foundation and therein coined the phrase ‘false memory’. Freyd’s efforts were in response to her daughter’s confrontation of her father regarding his alleged sexual abuse of her throughout her childhood. Freyd declared that the daughter’s memories of sexual abuse were ‘false memories’, likely planted by an overzealous therapist or by one of the self-help books on the topic of sexual abuse. Thus began the False Memory Syndrome Foundation, which currently claims 2,000 members and provides legal and psychological support primarily for alleged sexual-abuse perpetrators.

The origin of the False Memory Syndrome Foundation served as a call to action for cognitive psychologists studying memory. Although in 1992 much of the accumulating research literature on memory was relevant to the suggestive planting of false events in memory, the relationship was not a very clear or direct one. Subsequently, a number of researchers have begun to explore a wide range of cognitive aspects surrounding the false memory issue (cf. Bjorklund, in press; Conway, 1997; Pezdek & Banks, 1996; Read & Lindsay, 1997).

This chapter critically reviews six programs of research in which attempts have been made to suggestively plant false events in memory. These include our own research in this area as well as that of Elizabeth Loftus, Ira Hyman, Stephen Ceci, Maryanne Garry, and Giuliana.
Mazzoni. The purpose of this review is to elucidate the conditions under which false events are more or less likely to be planted in memory. Although research with word lists reporting false responding on recognition memory tests is also relevant to the construction of false events in memory (Roediger, McDermott, & Goff, 1997), we chose to focus on research in which false autobiographical events were suggestively planted in memory. This chapter does not focus exclusively on research with children. Because so few studies have been conducted to date on this topic, to restrict this review to the even smaller subset of studies that have tested children, would limit the findings regarding what factors influence the suggestive planting of false events in memory. Nonetheless, this research has clear implications for children and memories of childhood.

LOFTUS AND PICKRELL (1995)

One of the most widely cited studies that has sought to plant a false event in the memory of participants is that of Loftus and Pickrell (1995). In this study, 24 pairs of adults were recruited for a study on childhood memories. The majority of the pairs were parent–child pairs; the remainder were sibling pairs. Subjects were provided test booklets, mailed to them by their relative. In each booklet were descriptions of three true events (obtained from the relative) and one false event, each purported to have occurred when the subject was four to six years old. The one false event described an incident in which the subject had been lost as a child while shopping with a family member. Subjects were instructed to read each description and then to write down everything they could remember about each event. Two telephone or in-person interviews followed in which the relative 'pressed for details' of the subject's memory for each event. The first interview was a week or two after receiving the booklet; the second was a week or two later.

The major finding was that 7 out of the 24 subjects indicated in the initial test booklet that they remembered the false event 'either fully or partially'. During the subsequent interview, one of these seven subjects indicated that she did not really remember the event. Nonetheless, it is impressive that 25% of the subjects tested (6 out of 24) reported that they remembered the false event. To understand the cognitive processes underlying the planting of false events in memory, two
questions regarding these results deserve attention. First, could subjects’ accounts of false events be differentiated from their accounts of true events? Yes. Recalled true events ($M = 138$ words) contained more words than did recalled false events ($M = 50$ words). Also, mean clarity ratings in the second interview (on a scale of 1–10) were higher for recalled true events ($M = 6.3$) than for recalled false events ($M = 3.6$), and mean confidence ratings in the second interview (on a 1–5 scale) were higher for true events ($M = 2.2$) than for recalled false events ($M = 1.4$). At the end of the study, subjects were told that one of the events described had not really occurred. They were asked to pick which one this was. Nineteen of the 24 subjects identified the false event correctly. Clearly, the accounts of true events were discernible from the accounts of false events.

The second question concerns whether the six subjects who recalled the false event were recalling a previous true incident of being lost as a child while shopping with a family member or whether they were recalling the false event that was suggestively planted by their relative. The relatives of each subject had to verify that the subject had not been lost as a young child while shopping in a mall. However, children are so frequently lost, if only for a minute or so, that the parent’s or sibling’s memory for whether the subject had been lost some 13–48 years prior is of dubious value.

It is also important to note that, prior to constructing the false event, Loftus and Pickrell asked each parent or sibling to provide ‘information about a plausible shopping trip to a mall or large department store in order to construct a false event where the subject could conceivably have gotten lost’. This information was then incorporated into the false event constructed for each child. It is clear, then, that the false event for each subject was constructed from information that in fact described features of true incidents from the subject’s childhood. Remember that the six subjects who were considered to have recalled the false event had recalled it ‘either fully or partially’. For a recalled event to be considered a ‘remembered false event’ in the Loftus and Pickrell study, it was not necessary for the subject to have recalled any additional information beyond that provided by the experimenters. Thus, since the described false event included much true information gathered from the parent or sibling, one interpretation of the result of Loftus and Pickrell is that the subjects who were considered to have recalled the false event simply recalled some of the true information included in the description of the false event; that is, the suggested false event was not really planted in memory.

In two studies, we tested the hypothesis that events will be suggestively planted in memory to the degree that they are plausible and script-relevant knowledge exists in memory. This hypothesis was derived from the notion that an asserted event must first be evaluated as true before it can be incorporated into autobiographical memory and, if an event is implausible, it is not likely to be evaluated as true. Furthermore, it should be easier to form a memory trace for an event that is plausible and about which one has a well-developed generic script than to form a memory trace for an event that is implausible and about which one does not have a well-developed script.

The false event utilized by Loftus and Pickrell (1995) was clearly a plausible event. Pezdek, Finger, and Hodge (1997, Experiment 2) compared the probability of planting a false memory for a plausible event (being lost as a child in a mall while shopping) to the probability of planting a false memory for an implausible event (receiving a rectal enema as a child). In this study, 20 confederate experimenters read descriptions of one true event and two false events to a younger sibling or close relative, the subject, who was at least 15 years old (mean age = 23.5 years) at the time of the study. After each event, the subject was told by their relative, “This is what I remember about this event. Now what do you remember about it?” One day and again about one week later, each confederate returned to test if the subject had any additional memories for the events.

The most important result involves the number of subjects who remembered the plausible versus the implausible false event. Three subjects (15%) remembered the false event about being lost and recalled additional details of this event. This figure is somewhat less than Loftus and Pickrell’s (1995) report of 25% false recall for essentially the same false event. One explanation for this is that we used a stricter operational definition of what qualified as ‘remembering a false event’. In our study, an event was not considered to have been recalled from memory unless the subject recalled information about the event beyond that included in the description read to them. Regarding the implausible false event, however, none of the subjects remembered the false event about receiving a rectal enema. The hypothesis was confirmed—plausible false events were more likely to be suggestively planted in memory than implausible false events.

This hypothesis was tested in a different experiment by Pezdek et al. (1997, Experiment 1), this time using a mixed factorial design in which each false event served as both a plausible and implausible event.
Thirty-two Jewish and 29 Catholic high-school students were read descriptions of three true events and two false events that were reported to have happened when they were eight years old and were asked what they recalled about each. One false event described a Jewish ritual; the other false event described a Catholic ritual. Catholics were significantly more likely to recognize falsely the Catholic event \( (n = 7) \) than the Jewish event \( (n = 1) \) and Jews were significantly more likely to recognize falsely the Jewish event \( (n = 3) \) than the Catholic event \( (n = 0) \). Again, the plausible false event was more likely to be planted in memory than the implausible event.

Pezdek and Hodge (1999) specifically examined developmental differences in the suggestive planting of false events in memory. In this study, the methodology used by Pezdek et al. (1997, Experiment 2) was used to test the vulnerability of children to suggestibility for a plausible false event (being lost as a child while shopping in a mall) versus an implausible false event (receiving a rectal enema). Developmental differences in suggestibility for plausible versus implausible events warrant investigation because young children, due to their relatively more limited world experiences, generally have less script-relevant knowledge in memory than do older children, even for events that are familiar to both age groups (Fivush & Slackman, 1986; Fivush, Kuebli, & Clubb, 1992). Thus, it might be predicted that children would not distinguish between suggestively incorporating plausible versus implausible false events into their memory.

Nineteen younger children (5–7 years old) and 20 older children (9–12 years old) were included in this study. A parent (or an experimenter with the parent sitting nearby) read descriptions of four events that they reported had happened when the child was four years old. The child was asked to recall everything he or she could remember about each event. Two events were true; the two false events were those from Pezdek et al. (1997, Experiment 2). Children were also prompted for recall on the next day; there were few differences in the results between days 1 and 2.

The majority of the children (54%) did not remember either false event. Three children, all in the younger age group, remembered both false events. The principal finding involves the number of children who remembered the plausible versus the implausible false event. Of the 15 children who remembered one false event on day 2, 14 remembered the plausible false event and only 1 remembered the implausible false event. The finding was consistent for both age groups. Among the younger children, all seven children who remembered one false event on day 2 also remembered the plausible event and none the implausible event. Among the eight older children who remembered one false event, all eight remembered the plausible event and none the implausible event.
event by day 2, seven remembered the plausible event and one the implausible event.

These results suggest that, with children as with adults, plausible false events are more likely to be suggestively planted in memory than implausible false events. Nonetheless, these results do suggest developmental differences in the general vulnerability to suggestively planting false events in memory. First, whereas 3 out of the 19 younger children (16%) reported that they remembered both false events, none of the older children did so. Also, developmental comparisons can be made based on the probability of remembering the ‘lost in the mall’ plausible false event scenario that has now been used in at least three different studies. Whereas 53% of the younger children and 35% of the older children in this study remembered the false event about being lost, 15% of the adults in the Pozdek et al. (1997) study and 25% of the adults in the Loftus and Pickrell (1995) study did so. These findings are consistent with the conclusions that age differences in the suggestibility of memory reliably occur (Ceci & Bruck, 1993).

HYMAN, HUSBAND, AND BILLINGS (1995)

The notion that false events incorporated into memory are schematic reconstructions of plausible and familiar true events receives additional support from two studies by Hyman. Hyman et al. (1995, Experiment 1) presented students a very brief description of one of two false events created by the experimenters, along with descriptions of two to five true events from a questionnaire completed by parents. The students were asked what they remembered about each event. The two false events described were: (a) a birthday party at age 5 and (b) an overnight visit to the hospital at age 5. A second interview followed one to seven days after the first one.

The major result was that no one recalled a false event in the first interview; four participants (4/20 = 20%) recalled a false event in the second interview. Each of these four participants had talked about related information during the first interview even though they did not recall the suggested incident. Based on this finding, Hyman et al. (1995) suggested that these participants constructed a memory for the false event by incorporating details suggested in the false event into an existing event schema. According to this interpretation, prior knowledge of the suggested event is a necessary condition for false recall. Accordingly, Hyman et al. (1995) suggested that ‘it is possible that the wholesale adoption of an event when an individual has no related
knowledge or when the individual does not access related information may be rare.'

In Hyman et al. (1995, Experiment 2), two less plausible false events were used: (a) attending a wedding reception and accidentally spilling a punch bowl and (b) having to evacuate a grocery store when the overhead sprinkler systems erroneously activated. Participants were read more detailed descriptions of the events than were provided in Experiment 1 and were asked what they remembered about each. For each participant, the descriptions included three to five true events and one false event. In addition, each subject participated in three interviews spaced one day apart, and the interviewer utilized heightened ‘conformity demands’ relative to Experiment 1. Participants were repeatedly told that the purpose of the experiment was to produce more complete and more accurate recall by the end of the last interview session; whenever a participant could not recall an event on the first or second trial, they were encouraged to think more about the events for the subsequent interview.

No one recalled a false event in the first interview; 9 participants (9/51 = 18%) recalled a false event in the second interview; 13 participants (13/51 = 25%) recalled a false event in the third interview. Of the 13 participants who recalled a false event by the third interview, 6 of the recall protocols reflected clear memory for the suggested false event, 5 were less clear (their recall included less of the critical information or inferential information that followed from the details in the presented description), and 2 participants recalled the false event but attributed the false recall to an image and expressed doubt about whether the image was really a memory. These findings, along with those of Loftus and Pickrell (1995), suggest that researchers should not consider false memories dichotomously as present or absent. Rather, individuals who report some memory for suggested false events nonetheless differ qualitatively in terms of the richness of their memories.

Together, Hyman’s experiments along with those of Pezdek and colleagues support a consistent model of the cognitive processes underlying the suggestive planting of false events in memory. When a false event is suggested, schema-relevant information in memory is activated. Whether the event will be judged to be true is determined by the extent of the overlap between the suggested false event and the activated memory for the schema-relevant information. If the false event is judged to be true, then details of the generic script for the event as well as details from related episodes of the event can be transported to the memory for the suggested false event. Thus, memory for the false event becomes developed by this related information in memory. Memories for false events will then vary in terms of the extent to
which they include: (a) elaborations of the information suggested and (b) transported information from memories for prior events. And, the more overlap there is between the distributions of these two types of information, the more likely it is that a suggested false event will be judged to be true and incorporated into memory. An interesting direction for future research would be to isolate factors that affect the relative amounts of these two types of information in false events that are judged to be true.

**CECI, HUFFMAN, SMITH, AND LOFTUS (1996); CECI, LOFTUS, LEICHTMAN, AND BRUCK (1994); AND HUFFMAN, CROSSMAN, AND CECI (1997)**

The results reported by Hyman et al. (1995) raise questions about the effect of repeated suggestion on the planting of false events in memory, and whether constructed memories for false events that were repeatedly suggested are likely to endure over time. These issues were specifically addressed in several studies by Ceci and his colleagues. Ceci et al. (1996) interviewed 96 three- to six-year-old children regarding the occurrence of two true events and two false events that were reported to have transpired within the prior 12 months. The two false events were: (a) getting one’s hand caught in a mousetrap and having to go to the hospital to get it removed and (b) going on a hot-air balloon ride with classmates. The children were repeatedly interviewed seven to ten times over a ten-week period. Each time they were interviewed, they were told to ‘think really hard if it happened’, and then indicate to the experimenter whether it had occurred.

The major results were that, although the effect of repeated sessions did not significantly affect the rate of assenting to false events (mean percent assents to false events in the initial session and the final session were both 34%), the age by sessions interaction approached significance ($p = 0.097$). Whereas the mean proportion of assents to false events increased (although not significantly) over sessions for children aged five to six years (from 25% in session 1 to 32% in the last session), the mean proportion of assents to false events decreased (although not significantly) over sessions for children aged three to four years (from 44% in session 1 to 36% in the last session).

These data are difficult to interpret for several reasons. First, the children were not asked what they remembered about each event, but only whether they remembered it or not. Unfortunately, the use of a dichotomous response makes it impossible to know what proportion
of the 'yes' responses simply reflected a response bias to comply with authority. This issue is of particular concern given the fact that, even in the very first interview, it was reported that 44% of the false events were 'remembered' by the younger children and 25% of the false events were 'remembered' by the older children. The fact that these proportions were so high in the initial session makes it difficult to interpret what a response of 'yes' meant to these children.

Interpretation of these findings is further complicated by the fact that conflicting results were reported in a subsequent study. This study (Ceci et al., 1994) was conducted similarly to the Ceci et al. (1996) study with the exception that in each test session the children were told that they had actually experienced each event. Children were also asked to create a visual picture of each event in their head and tell the experimenters if they remembered it. The results were that, in the initial session, younger children assented to 35% of the false events and older children assented to 25% of the false events. Furthermore, over twelve sessions, the rate of assenting increased for both age groups, to 45% for the younger children and 40% for the older children. Together, the results of these two studies suggest that children's rate of assenting to false events increases with repeated suggestion only when heightened conformity demands are imposed by the experimenter. These findings are consistent with the results summarized above by Hyman et al. (1995, Experiment 2) with adults. These results emphasize the importance of determining in 'false memory research', whether one is assessing a true change in memory or simply individuals' compliance with authority.

One way of determining whether children's assents to false events reflect the construction of a false event in memory is to examine the persistence of these memories over time. A test of this question was conducted by Huffman et al. (1997). In this study, 22 of the participants in the study by Ceci et al. (1996) were retested two years later when they were 71–89 months of age. Each child was re-interviewed at the site of their original interview. They were shown cards describing the same true and false events included in the original study and for each were asked to think real hard about the event and to indicate whether the event had ever happened. Of the 37 true events recalled in the original study, 29 (78%) were recalled two years later. However, of the 39 false events assented to in the original study, only 9 (23%) were assented to two years later. Seventy-seven per cent of the initial false assents were recanted two years later. This finding raises serious doubts about whether the original 'assents to false events' reflect anything more than compliance with authority.
GARRY, MANNING, LOFTUS, AND SHERMAN (1996)

Garry et al. (1996) investigated whether childhood events could be suggestively planted in memory by having participants simply think about the to-be-planted event (see also Heaps & Nash, 1999; Paddock et al., 1998). This procedure, called 'imagination inflation', assessed the extent to which individuals' confidence that an event occurred was increased after imagining the event. Younger adults completed a 40-item Life Events Inventory (LEI) in which they rated the likelihood that each event, or a very similar one, had happened to them before the age of 10 on a scale from 1 (definitely did not happen) to 8 (definitely did happen). Included in this list were eight target events. Two weeks later, subjects were instructed to imagine four target events; four target events not imagined served as controls. After imagining the events, they completed the LEI a second time.

In presenting the results, Garry et al. (1996) selected the events to which subjects had initially responded 1–4 (low likelihood). They then examined the direction of change in these likelihood ratings in the second administration of the LEI. These results are presented in the top panel of Figure 7.1. Likelihood ratings for the majority of the target events did not change from time 1 to time 2 (57% in the imagined condition and 65% in the not-imagined condition). However, when scores did change, they were more likely to increase than decrease and there were more positive changes in the imagined condition (34%) than in the not-imagined condition (25%). From these findings the authors reported that 'imagining a self-reported counterfactual event increased confidence that the event did happen' (Garry et al., 1996, p. 213).

We recently tested an alternative interpretation of these results; that is, that the results simply reflect regression toward the mean. This interpretation is suggested by two results in the Garry et al. (1996) study. First, likelihood ratings for events initially rated 1–4 increased from time 1 to time 2 for both imagined and not-imagined events. Second, we recently obtained from the authors the findings regarding the events initially rated 5–8; these results were not reported in the published study. These data are presented in the top panel of Figure 7.2. As can be seen, when likelihood ratings did change from time 1 to time 2 for these events, 44% decreased (32 of 73) and only 16% increased (12 of 73), and this pattern of results was consistent for both imagined and not-imagined events. These findings are exactly what would be predicted by regression toward the mean.

In the experiment we recently conducted (Pezdek & Eddy, 2001), we used a procedure very similar to that used by Garry et al. (1996) and
Figure 7.1. Per cent of events for which likelihood ratings decreased, stayed the same, or increased from time 1 to time 2 for participants who initially responded 1-4 in Garry et al. (1996) and Pezdek and Eddy (2001).

analyzed the responses to all target events, not just those with low initial likelihood rating. The data were first analyzed comparably to those of Garry et al. (1996) to assess whether we replicated their findings. The general pattern of results for target items initially rated 1-4 is presented in the bottom panel of Figure 7.1. When the data were
Figure 7.2. Per cent of events for which likelihood ratings decreased, stayed the same, or increased from time 1 to time 2 for participants who initially responded 5–8 in Garry et al. (1996) and Pezdek and Eddy (2001).

analyzed comparably to those of Garry et al. (1996), their findings were replicated. First, likelihood ratings for the majority of the target events initially rated 1–4 did not change from time 1 to time 2 (50% in the imagined condition and 65% in the not-imagined condition). However, when likelihood ratings did change, they were more likely to
increase than decrease and there were more positive changes in the
imagined condition (39%) than in the not-imagined condition (25%). In
Figure 7.1, it is important to note, however, that the pattern of results
was remarkably similar to the imagined target events, the target
events not imagined, and the non-target events.

A very different pattern of results is revealed in the analysis of events
initially rated 5-8. These results are presented in the bottom panel of
Figure 7.2. As would be predicted by the regression toward the mean
interpretation, likelihood ratings for the majority of the target events
initially rated 5-8 decreased from time 1 to time 2; ratings for 54% of
the events in the imagined condition and 53% of the events in the not-
imagined condition decreased from time 1 to time 2. Furthermore, as in
the bottom panel of Figure 7.1, the pattern of results was remarkably
similar to the imagined target events, the target events not imagined,
and the non-target events.

Additional analyses were performed on the data to assess patterns of
results beyond those addressed by Garry et al. (1996). A repeated
factors ANOVA (analysis of variance) was conducted to compare the
effects of time and imagination condition on the magnitude of the
change in likelihood ratings from time 1 to time 2. The only significant
result was the main effect of time; ratings increased significantly from
time 1 (M = 2.96) to time 2 (M = 3.44). The positive direction of this
trend is accounted for by the fact that 75% of all target events were
initially rated 1-4 and 25% were initially rated 5-8. The effect of the
imagination condition was not significant (F(1, 73) = 1.15), nor did this
condition significantly interact with time (F(1, 73) = 0.22).

The fact that the pattern of results was similar to the imagined target
events, the target events not imagined, and the non-target events
suggests that the change in results from time 1 to time 2 was not
affected by the act of imagining per se. These results suggest that the
change in likelihood ratings from time 1 to time 2 can be explained by
simple regression to the mean. From the results of Garry et al. (1996)
and those of Pezdek and Eddy (2001), it is clear that simply imagining a
fictitious childhood event does not increase the probability that the
event will be planted in autobiographical memory.

Results similar to those of Garry et al. (1996) were reported in two
recent studies by Heaps and Nash (1999) and Paddock et al. (1998),
using procedures similar to those of Garry et al. (1996). In the first of
these studies, results were not reported separately for events initially
rated 1-4 versus 5-8, and 90% of the target events were initially rated
1-4. The results of Paddock et al. also focused on analyses of events
initially rated 1-4. They did include some analyses of all target events
initially rated 1-7, but they did not separately examine events with
high versus low initial likelihood ratings. Because in most imagination
inflation studies only the minority of events receive initial high likeli-
hood ratings, analyses that combine results for all events are not sensi-
tive to the direction of the effect for events with initial high likelihood
ratings. Furthermore, in their Experiment 2, Paddock et al. tested
subjects who were not from a college population and reported no
evidence of imagination inflation; imagining the target events did not
influence likelihood ratings from time 1 to time 2.

MAZZONI, LOFTUS, SEITZ, AND LYNN (1999)

Mazzoni et al. (1999) introduced a variation in the procedure of Garry et
al. (1996) to test if individuals’ beliefs about the occurrence of a
suggested childhood event can be altered by having their dreams inter-
preted to indicate that they had experienced the event in their child-
hood. Participants were administered a 20-item LEI similar to that
used by Garry et al. (1996). After reading each event, they indicated, or
a scale from 1 (definitely did not happen) to 8 (definitely did happen)
how likely it was that they had experienced the event, or a similar one
before the age of three. The critical target event was either ‘was
harassed by a bully’ or ‘was lost in a public place for more than one
hour’. All subjects completed the LEI in session 1 and three to four
weeks later in session 2. All subjects selected to participate in the
complete experiment had initially specified a rating of 1–3 for the
critical target event.

One and a half to two weeks after session 1, subjects in the dream
interpretation condition participated in what they were led to believe
was an unrelated session. They were asked to bring two of their
dreams to this session to be interpreted by a clinical psychologist with
extensive experience in dream interpretation. During the session, the
psychologist interpreted one of their dreams to suggest that a difficult
childhood experience such as being bullied/lost appeared to have
happened to them before the age of three. The control subjects did not
have a session that intervened between LEI sessions 1 and 2.

Mazzoni et al. (1999) reported that in the dream interpretation condi-
tion from time 1 to time 2 for the critical target item, likelihood
ratings of 46% of the participants stayed the same, 50% increased, and
4% decreased. In the control condition, however, from time 1 to time 2
for the critical target item, ratings of 58% of the participants stayed
the same, 11% increased, and 31% decreased. These results reflect that
subjects were more likely to change their likelihood ratings if they
were in the dream interpretation condition than the control condition
and, when a change in ratings occurred, it was more likely an increase in the dream condition and a decline in the control condition.

This pattern of results, unlike that reported Garry et al. (1996), cannot be explained by simple regression to the mean; performance differed between the control and experimental conditions. On the other hand, these results do not appear to reflect a change in memory for the target event; the false target event was not actually planted in memory. In the dream interpretation session, the subjects were provided with a reason why it was likely or plausible that they had been bullied/lost as a child. When they later rated how likely it was that they had been bullied or lost as a child, their likelihood ratings increased.

Mazzoni et al. (1999) provided in their article the memory reports of the eight subjects in the dream condition whose likelihood scores increased from time 1 to time 2. Four of these subjects included in their description, time references significantly older than the age of three that was included in the false target event. Two additional children included in their descriptions indications that they had inferred that the event occurred, although they may not have had a specific memory of it ('I was walking beside my mother in a public place, so there is a chance I got lost in a public place' and 'Probably when I was playing outside the house'). Also, because being bullied and being lost are not uncommon childhood experiences, it is possible that subjects were recalling details of true autobiographical experiences rather than details of the specific false event tested. Without additional evidence indicating that these individuals were recalling the specific event suggested, it does not appear that their memory for the target event was changed through dream interpretation.

CONCLUSIONS

The research on the construction of false events in memory is clearly in its infancy. Although it is evident that some false events can be planted in memory under some conditions, it is not yet clear what the full range of these conditions is. It does appear that plausible false events are more likely to be planted in memory than implausible false events (Pezdek et al., 1997; Pezdek & Hodge, 1999) and that prior knowledge of the suggested event increases the probability that the false event will be incorporated into memory (Hyman et al., 1995). It has also been demonstrated that false events are more likely to be planted with young children (5–7 years of age) than with older children (9–12 years of age), and both of these age groups are more suggestible than adults.
(Pezdek & Hodge, 1999). Beyond this, we have more questions than answers because the research in this area is riddled with methodological problems.

The finding that false events are more likely to be planted with young children than with older children or adults has obvious implications for courts trying to assess the veracity of children's testimony. This concern is further complicated by that fact that Criterion Based Content Analysis (CBCA), a commonly used technique for differentiating between accounts of true and false events, is far less effective with accounts of young children than with those of older children and adults (Esplin, Boychuk, & Raskin, 1988). This is not surprising given that the general characteristics of the CBCA are the most discriminating factors (i.e. the logical structure and amount of detail in the account), and pre-schoolers' narratives are less well structured than those of older children (Fivush & Slackman, 1986; Fivush et al., 1992).

Research on the construction of false autobiographical memories is methodologically challenging, and we have several suggestions to reduce methodological problems. First, that researchers use a clear operational definition of when a false event is 'remembered'. Such a definition should be sensitive to the extent to which a subject is retrieving information about the supposed false event from their own autobiographical memory versus simply complying with the experimenter's suggestion that the false event did occur. This is an especially important consideration when testing children, given that children are more compliant with authority than are adults. The operational definition of when a false event is 'remembered' should also be sensitive to the extent to which a 'memory' for a false event is truly an enduring episodic autobiographical memory for the suggested event versus the retrieval of information from memory for a true event that the subject was reminded of by the false event. In the majority of the false memory studies reviewed here, this distinction has not been made.

The second suggestion is that if an experimenter includes, in the description of a false event, details gathered from family members regarding actual events in the subject's past, the experimenter must have some way of distinguishing in the recall protocols between whether the subject is recalling details of the suggested false event or details of similar true events.

The call to action to cognitive psychologists provided by the False Memory Syndrome Foundation continues. This is an area of research that has significant and immediate application. It is important to understand which memories are more likely to be falsely planted in which people under what conditions. This research is being used in courts of law to influence decisions regarding whether accounts of childhood
abuse by adults and children are true or false. It is thus critical that research in this area adheres to the highest scientific standards.

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REFERENCES


