

APS Student Caucus Symposium: Paradigms for Creating False Memories

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Psychological research has proven that people are able to create false memories, but what kind of factors can contribute to the creation of memories that never happened? Four students from Victoria University of Wellington in New Zealand traveled to Chicago to present their research at the APS Student Caucus Symposium “All Roads Lead to Rome : Four Paradigms for Creating False Memories.” The group demonstrated that false memories can be formed by manipulating a variety of factors, including personality, social, developmental, and event factors.

Beat, Batter, and Butcher

In her presentation “Beat, Batter, Butcher: The Role of Aggression in Recall of Ambiguous Words,” Melanie Takarangi examined the recall of ambiguous words, like in the sentence: ‘The painter drew a knife.’ Does this mean the painter drew a picture of a knife, or that the painter pulled a knife out of his pocket? People who think this sentence refers to a violent connotation tend to have a hostile attribution bias, in which they interpret ambiguous information violently.

Hostile attribution bias can be found either in people who have a naturally aggressive personality, or it can be induced in the laboratory, through the use of priming techniques. Using the Deese, Roediger, McDermott paradigm, Takarangi had subjects read lists of random words and tested how many words they could correctly and falsely recall. Subjects in the primed category read a list of insulting words, and

did a recall on that list. Then the subjects read a list of ambiguous words like “cut, whip, beat, punch, and butcher,” all words related to cooking that could also refer to aggressive actions.

After reading the ambiguous words, subjects were asked to do a free recall and think out loud at the same time. Their responses were then coded into violent and non-violent categories. Takarangi’s results showed that people with high trait aggression were almost five times more likely to falsely remember a violent word not on the ambiguous list than those with low trait aggression. Aggressively primed subjects were six and a half times more likely to report violent words than those that were not primed.

Peanut Butter and Jelly

Takarangi showed that false memories could be created without an explicit suggestion of the false memory, and Matt Gerrie took this one step further by asking whether people could remember events they did not witness. He tested this by making a video of someone making a peanut butter and jelly sandwich. He removed parts of the video and inserted video clips of non-related events. Subjects viewed the video and were asked 24 hours later what they saw. He found that 60 percent of the time subjects reported seeing parts of the video that they hadn’t actually seen, and that they were very confident that they had seen these clips.

Gerrie then asked independent raters to rate events in the video to determine which events were crucial to making the sandwich. The raters all rated events like spreading the peanut butter and jelly, and putting the pieces of bread together as crucial events, and events like putting the lids on the jars and cutting the sandwich as non-crucial.

Gerrie then removed either the crux or non-crux events and showed the video. When asked later what they remembered seeing, the subjects “performed equally well when they had a true memory for a crucial or non-crucial event.” However, when subjects claimed to remember events they hadn’t actually seen, they were “far more likely to remember non-crucial events than the crucial events.” Gerrie’s research shows that people can claim to remember entire chunks of events that they did not witness, however non-crucial events are more likely to be falsely remembered.

Hot Air Balloons and Tea With Prince Charles

We know that children can report entire, bizarre experiences and they can even claim to witness these bizarre experiences, but how does objective evidence, like a photograph of the false event, affect children’s false reports? And does the recency of false events affect children’s belief and false memories? These were the questions Deryn Strange asked in her presentation, “Children’s Perceptions of Event Plausibility Determine False Memories.”

To test this, Strange supplanted the children’s pictures into other pictures so that the children looked as if they were on a hot air balloon ride and as if they were sitting down to tea with Prince Charles. These two events were selected to compare the false memory reports between a low probability event (Prince Charles) and a high probability event (balloon ride).

To test the effect of recency of the events, three groups of children participated in the experiment. Six-year-olds saw false pictures of themselves at age two, and 10-year-olds saw themselves either at age six,

or at age two. After looking at the photos, children were asked how sure they were of the event happening, and how many details they remember about the event.

In order to be classified as a false memory, children had to say that they were “quite sure that the event happened,” and they had to give elaborate details. Strange’s results found that 6-year-olds were more than twice as likely to create false memories as 10-year-olds. “The recency of the false event had no impact on children’s beliefs and memories for the false event,” Strange noted. In addition, children were just as likely to believe they were in a hot air balloon as to believe that they had tea with Prince Charles. Strange’s results show that with the use of photos, “even the implausible may be believed.”

Sibling Memories

Following up on Strange’s research, Lauren French looked at how a discussion with a sibling would affect the creation of a false memory. In her presentation, “Whose Memory Is It Anyway? The Effect of Joint Reminiscence on Siblings’ Memories of Childhood,” French had siblings look at pictures and read descriptions of true events that happened in their childhood. Then the siblings either saw a picture or read a description of a false event, like riding in a hot air balloon. The subjects then joined together in an online chat room and discussed the events.

French compared the information that subjects gave about the event, both before the online discussion and after, and counted the amount of overlap that both siblings reported. For the true event, there was a 30 percent increase in the amount of information that both subjects gave about the event after the discussion. For the false event, 29 percent of the subjects had a clear or partial memory of the false event before the discussion, and after the discussion, only 14 percent of the subjects recalled the false event, and their memories were cloudy.

French’s study found that “discussion does affect memory.” When discussed with the energy of these presenters, it also affects, quite positively, the way we understand memory.