Alternative Facts

Jessica M. Blay

San Jose State University

The popular press article chosen for review in this paper is “Why does the human brain create false memories?” (2013) by Melissa Hogenboom, a science reporter for BBC news. The author states that memories can be created incorrectly as our view of the world is constantly readjusting. Some examples of false memories were provided, originally collected by artist AR Hopwood. For instance, one person recalled biting into a mouse in order to quiet their brother, and another incorrectly believed their girlfriend had a sister that died at the dentist, to the point that he kept all dentist appointments secret.

The author then went into a section going over some previous studies that convinced subjects about an event having occurred within their past. According to the popular press article, Loftus and Pickrell (1995) was able to convince a quarter of her participants that they were previously lost at a shopping mall as a child, and Wade, Garry, Read, and Lindsay (2002) tricked half of the participants into believing they had taken a hot air balloon ride as a child by showing them doctored photographs as “evidence”.

The article continues on into a section about eyewitness testimony, and how these can often lead to misidentification and false imprisonment. Related to false imprisonment, the author informed the reader about the Innocence Project, a campaign started to exonerate wrongly convicted criminals through DNA testing.

The author finishes the article discussing the evolutionary reasoning behind our brains creating memories in such a way, through the help of a cognitive neuroscientist at the University of Edinburgh, UK. Concluding in the end that false memories are actually a sign of a healthy brain, which is able to make inferences very quickly.

From the scientific perspective, it is logical to first look at the studies mentioned within the article. The first study mentioned was from the article “The Formation of False Memories” by Loftus and Pickrell (1995). This paper starts by discussing previous research into memory alteration, through proactive interference and retroactive interference, where research has primarily focused on retroactive interference since it relates to things like the validity of eyewitness testimony. The idea behind this study, however, was to investigate whether it was possible to insert completely false memories about a fictitious event.

The study was based upon a previous smaller study of a single person, but this newer study was based upon 24 participants. The subjects were given a description of 4 events from their childhood that had occurred with a close family member, however, they were unaware that 1 of the 4 events was fictitious, specifically one about getting lost in a shopping mall, and the others were provided by the family member. The subjects were then informed to write about these events in detail, and then were later interviewed about the events. During their later interviews, the participants were once again reminded of the 4 events and asked to describe them in as much detail, then had to provide a score regarding their clarity of the event, and their confidence of being able to remember more details if given more time. The subjects were then provided a second interview, so that they had time consider more details about the 4 events mentioned, although the participants were strictly informed not to discuss the events with anyone to try and determine more details. In the second interview, the same procedure was followed, but at the end the participants were debriefed that one of the events was actually false and if they could determine which was false.

In this study, there was a vague categorization of having a full or partial memory of an event. A “partial” memory meant that the person had a vague recollection of the event and speculated about how and when the event occurred. The researchers found that participants were able to recall 68% of actual events. This figure held true from the initial writing assignment and through the 2 interviews. In the writing portion, 29% of the 24 participants “remembered” the false event of being lost in a shopping mall, whether fully or partially. During the first interview, one of the above participants decided they actually did not remember the incident, bringing the total number of participants to 25% (6 out of 24) claiming to remember the incident, and then this figure held for the second interview. The results also showed that subjects used more words when describing memories of true events, even when partially recalled. All subjects that “remembered” the false memory also had much lower clarity ratings for this memory than true memories, though some of these subjects’ “clarity” ratings increased between the first and second interview, which did not occur for true events. At the end of the last interview, when informed that one of the memories was fake, 19 of the 24 participants chose the correct false memory, while the others incorrectly thought a true memory was the fake one.

Loftus and Pickrell (1995) ended the article by making it clear that the number of subjects that “remembered” the false memory was not important, and that this is not supposed to be important, but merely showing that it is possible to implant false memories in some people, and that the study was not intended to show how many people could be misled into believing a fake memory.

When comparing the study by Loftus and Pickrell (1995) to the popular press article, there is a mixed bag of correct and incorrect information, but this is in part because the summary was so short. The popular press article correctly identified that 25% of the participants thought the fake memory was true, but did not mention some key points about this figure. Specifically, the popular press article did not mention how the false memory was created by the researchers, and that it was still a plausible event that had occurred within their childhood, using identifiable information provided by a family member, and the popular press article also did not mention that these memories were still known to be much less clear than the true memories. More importantly however, the popular press article used the 25% figure as if it were a significant, or accurate figure, when the author tried to make it very clear that the number could not be relied upon, and that this study was designed to simply show whether it was possible to implant false memories, not how many people may be duped.

The second study mentioned in the popular press article was “A picture is worth a thousand lies: Using false photographs to create false childhood memories”, by Wade et al. (2002). This study started off by discussing the previous research regarding implanting false memories into participants, and how doctored photographs had not been considered as an avenue, and that it had mostly been through narrative (Hyman & Billings, 1998; Hyman, Husband, & Billings, 1995; Hyman & Pentland, 1996; Loftus & Pickrell, 1995).

This study involved 20 subjects being given 4 photographs of various events they had experienced as a child, but one of the photographs was actually a false childhood memory of a hot air balloon ride. This false image was created by using a real photo of the subject as a child and inserting it into an image of a hot air balloon ride. At this point, the participants were then given 1-2 weeks to ponder over the experience in the photos, to try and recall further details.

The subjects were interviewed 3 times over a 7-16 day period, at their availability, to go over the experiences in the photos. Interview 1 included providing the photos to the subjects, asking for them to provide details of the event, and then having the subjects provide a confidence score about whether the event actually occurred or not. If the participant could not recall the event, then they were provided with guided imagery to help the subject remember the event. After interview 1, subjects were given a copy of the photos provided to them and were asked to take a few minutes every night to focus on trying to recall the event.

Interview 2 was shorter, and only went over the same procedure again for any photos that could not be recalled in interview 1. This time no confidence score was provided.

Interview 3 repeated the procedures from the first interview. After interview 3, the interviewer admitted that one of the photos was fake, and of an event that had not actually happened to them, and the subject was asked which one they believed was fake.

Wade et al. (2002) came up with a clearer classification of memory for this study. “Clear false memory” meant that the subject remembered the event along with details not provided in the photo. “Partial false memory” meant that the subject consistently gave details about what showed in the photograph, but did not specify that they recalled the event specifically. “Trying to recall” meant that the subject claimed to have images of the event in their mind and tried to recall the event but could not. Lastly “no memory” meant that the participant had no memory at all and failed to attempt recall.

Of the true events, subjects recalled 93.3% of these in interview 1 and 96.7% of these in interview 2. For the false memories, after interview 1, 1 subject had clear false memory, 6 partial false memory, 3 trying to recall and 10 no memory. After interview 3, 4 subjects had clear false memory, 6 partial false memory, 5 trying to recall, and 5 no memory. Regarding confidence ratings for true memories, participants were 90.8% confident that the event had occurred, and the average rating for true events that the participants could not recall was 41.7%. Similar to this, participants who “remembered” the false event had a confidence of 44.5% that the event had actually occurred. Of those that had no recall of the false event, they had a 10% confidence of the event actually occurring. Subjects with clear false memories were significantly more confident than others with partial false memories, as well as those subjects classified as “trying to recall”.

The analysis by Wade et al. (2002) showed that participants reported more information about the setting of false memories rather than emotion-related information to begin with, but this trend inverted over the course of the interviews. Wade et al. (2002) concludes the article by discussing why this is an important topic, with some examples of where this could be critical information to understand.

When comparing this article to the information provided in the popular press article, again there is very limited details on what exactly the study showed. The popular press article claims that “half of the participants were tricked”, which is somewhat true, however there is an important omission of the categorization here. 50% of the participants were either in the “clear false memory” or “partial false memory” categories at the end of the study, however the popular press article describes the study method as “simply by showing them doctored photographic ‘evidence’” (Hogenboom, 2013, para. 10) and this is not the case. Even within the first interview, where the subjects were provided the photos, they were made to think about the event and the interviewer used guided imagery techniques to try and help them “recall” the event if they could not. After the first interview, which is closest to the summary provided in the popular press article, there was only 1 subject with a clear false memory and 6 with partial false memories, a much lower percentage of subjects, which likely would have been lower still if the time to reflect and guided imagery techniques had not been included. The final result that was summarized in the popular press article only came after 3 interviews, and a couple of weeks of self-reflection.

After summarizing the above two studies, the popular press article leads into a section discussing eye witness testimony, and how false memories can lead to false convictions. However, eye witness testimony in this regard is unrelated to the articles mentioned previously. The two journal articles that were mentioned were specifically about the insertion of completely false memories, not about how true memories could be altered, especially those within traumatic experiences. Loftus and Pickrell (1995) actually explained within the introduction of her article, elaborating on some research regarding proactive interference and retroactive interference, the latter being very important within the case of eye witness testimony. The journal articles mentioned were related to creating completely new memories about false events, but in each scenario, they at least had to be somewhat plausible and involved having friends or family members present. This is unlikely the case for false eye witness testimony, which is more likely to do with retroactive interference, and other, more suitable, articles are available that provide further depth around modifying actual experienced events, such as Deffenbacher, Bornstein, & Penrod (2006), covering meta-analyses of this research.

In conclusion, the popular press article was made for light reading, and the author did not want to get bogged down in the details of studies, and although studies it mentioned may have been relevant to some parts of the discussion within the article, large sections were completely unrelated to these studies, despite there being a link suggested in the article. The popular press article seemed to find studies related to people involved with the art project by AR Hopwood rather than focusing on the science of the subject, which is also most likely why they related the information to such old articles (18 years prior and 12 years prior, respectively), and was therefore more of an advertisement for an art exhibition, rather than a scientifically-based article. Although the article did give some useful insights into the fact false memories are possible, the author did gloss over some important details, and it seemed as though some sections were included to get to a certain word count, rather than being related to the rest of the article, or the articles related therein.

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