Memory Treachery: How False Memories Are Formed

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False memories are memories that the brain recalls incorrectly due to errors in its encoding and recalling mechanisms. The purpose of this study was to analyze those two mechanisms, with the hypothesis being that if manipulated questions and media (intended to create false memories) are asked to a person, their brain will conceive false memories. The participants (n = 40) were shown lists of semantically-related words and images. After ten seconds, they were asked to correctly recall the semantic words/images. They were also shown three videos that were followed by a set of questions: one for creating false memories and two neutral, effect-less. The participants conceived many false memories of the semantics of the word lists (average accuracy = 41%) and of the videos (average accuracy = 38%), however they did not conceive any with regards to the image lists (average accuracy = 71%). Age played a significant role in this experiment; the oldest age group had far more false memories than the youngest one (p = 0.023). However, there were no statistically significant differences between males and females (p = 0.43). The results supported the hypothesis—that false memories can be easily created through manipulated questions and media—and have uses in the real world, such as addressing accidental perjury by witnesses in court cases due to false memories. False memories are dangerous because they affect everybody and very few people know of their existence, so this project will hopefully raise awareness about them.

Awards Won:
Fourth Award of $500