Illusive Recall: The Ability to Implement False Memory

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Abstract

This study examined the levels of self-invented memories created from the false recognition and recall of a variety of words that were related or unrelated to words presented in a list. The sample included 37 participants from Longwood University. Participants viewed a list of words, then presented with buttons labeled with words that were on the original list, related lure words, and unrelated lure words. Participants then selected the words that they believed to be on the original set of items. My hypothesis was that the participants would not identify unrelated lure words as often as they would recognize words from the original list. However, I anticipated the participants to falsely recall and select related lure words almost as often as they selected words from the original list.

*Keywords:* false, memory, recall, recognition, related, unrelated, words

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The original study of false memory consisted of two experiments (Roediger & McDermott, 1995). The first experiment was comprised of 36 students from Rice University. The participants heard sets of words. After the experimenter read each set of words (each word read for one and a half seconds), the participants had two and a half minutes to record on paper every word they believed they heard. After the experimenter read all six lists, the participants completed a recognition test that consisted of viewing 42 words that they rated as either hearing the word on one of the six lists, or not hearing the word before. The test was based on a 4 point rating scale. Their results indicated that participants falsely recalled related lure words almost as often as they recalled words that were actually represented in the lists. The participants also rated related lure words as being heard on the original lists at nearly the same level as they rated words that were represented on the original lists.

The second experiment involved the participants hearing a series of word lists from tape recorder. After listening to each list, the participants either heard a knock or a tone. Based on what they heard, they either took a recall test or a math problem test. (Roediger & McDermott, 1995). Five minutes after taking the test, the participants completed a 96-item recognition test and made judgments on whether or not they remembered the word or knew the word. The participants did not hear half of the items that were on the recognition test. Even though the lists of words in the second experiment were longer than the lists in the first experiment, the percentage of false recall of the words displayed by the participants still increased.

For the replication study, Longwood University undergraduate students completed an online lab assignment on the effects of false memory (Francis & Neath, 2007). The participants viewed a series of word lists, and then viewed and selected words from a collection of buttons that they believed to have been on the original lists of words prior to the appearance of the buttons. The independent variable for this experiment was the type of word that the participants viewed. There were three levels to the independent variable: word from the original list, related lure word, and unrelated lure word. The dependent variable was the percentage of words that the participants recalled seeing. My hypothesis was that the participants would not claim to recognize unrelated lure words as often as they would identify the words from the original list. However, I predicted the participants to falsely recall the related lure words comparably as often as they recalled the items from the original list.

**Method**

**Participants**

Participants for this study consisted of 37 Longwood University students acquired from a cognitive psychology class. The participants earned five points to their cognitive psychology grades for completing the lab at the time that the assignment was due.

**Materials and Procedure**

For this experiment, the participants logged onto their individual CogLab accounts to complete the false memory lab. At the beginning of the semester, they received their own access codes, usernames, and passwords to gain entry to the CogLab site where all of the labs are housed. Access to the Internet was required for this study to take place. After selecting the lab from the various other labs on the website, the experiment was briefly explained in text, and the lab began. During the lab, a series of words were presented one by one, each word being displayed for one and a half seconds. After all of the words were viewed, a group of buttons appeared, each button displaying a word. The participants selected the words that they recalled viewing in the original list. The independent variable in this study was the type of word that each button displayed. There were three levels of the independent variable: words from original list, unrelated lures, and related lures. The dependent variable was the percentage of each type of word that the participants reported as viewing.

**Results**

A one-way repeated measures Analysis of Variance (ANOVA) indicated that the type of word that was presented during the test phase of the experiment significantly affected the percentage of items that were reported by the participants, *F*(36) = 248.945, *p* < .001. A paired samples post-hoc test revealed that when compared to the words that were on the original list (*M* = 74.2600; *SD* = 14.03930), the percentage of unrelated lure words were reported less often, (*M* = 3.8, *SD* = 4.21107), *t*(36) = 31.269, *p* < .001. When compared to the unrelated lures, the percentage of related lures were reported more often, (*M* = 72.5197, *SD* = 26.99531), *t*(36) = -15.352, *p* < .001. However, when the words from the original list were compared to the related lures, there was not a significant difference in the percentage of those words being reported, *t*(36) = .469, *p* = .642. Figure 1 describes these outcomes.

**Discussion**

The results concluded that the type of word that the participants viewed significantly related to the amount of words that the participants reported as viewing. As predicted, the unrelated lure words were not reported as often as the related lure words and the original words were. The related lure words and the original items from the lists showed to be very similar in the percentage of items reported by the participants. Therefore, the results from the replication study coincide with the results from the original study, as well as with my hypothesis. If the study were to be replicated again, the results could reveal an improved outcome if the sample size increased and if the amount of men and women in the sample were more comparable in size.

References

Francis, G., & Neath, I. (2007). *CogLab online: with access code, version 2.0*. California, USA: Wadsworth Cengage Learning.

Roediger, H. L., & McDermott, K. B. (1995). Creating false memories: remembering words not presented in lists. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 21,* 803-814.

*Figure 1.* The type of item that the participants viewed during the test phase of the false memory lab significantly affected the percentage of items that were reported.