False Memory Lab

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Abstract

False memory is the reconstruction of current memories or creation of new memories that are believed to be true. The participants saw a sequence of words and then completed a recognition test, which included the original words and lure words, to report which words they remembered from the original sequence. The participants chose more words from the original list and the related word list than from the unrelated word list. This study found that participants experienced false memory and incorrectly reported seeing words that were only related to the original list.

*Keyword*s: false memory, recognition, remember

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False memory is a phenomenon that occurs when people remember things that did not actually happen. These inaccurate memories include anything from small details to entire events. This is an important concept to study because juries listen to eyewitnesses to find a verdict but these witnesses may develop false memory about the event and give inaccurate details. Roediger and McDermott (1995) found high levels of false recall and recognition from their experiment. The participants in their study showed false memory after hearing a list of words and recalling words that only related to the original list. For example, they falsely recalled *chair* after seeing *sit*, *legs*, and *seat*. They also found higher rates of false alarms for the weakly related items than for the unrelated items. Their results suggest that false memory is a result from meanings associated with words (Roediger & McDermott, 1995). The current study attempts to replicate the previous findings by providing the participants with a recall task after viewing a list of words.

**Method**

**Participants**

The sample included 37 undergraduate students (5 males, 32 females) in a cognitive psychology class at a small university. The participants received class credit for completing the experiment.

**Materials and Procedure**

The participants used a personal computer and their personal account on coblab.cengage.com, both required material for the class. The participants logged onto their CogLab accounts and selected the False Memory lab. They read the background information provided before beginning the six trials. The students scrolled down to see the full area of a white rectangle with a black outline. At the beginning of the experiment and after each trial, the participants clicked “Start Next Trial” to proceed to the next sequence of words. During every trial, each word appeared for one second in the center of the white rectangle. After the participants viewed the words, gray rectangle buttons appeared below the screen containing both words on the list and not on the list. The words not on the original list included related stimuli and unrelated stimuli. The participants chose the words they remembered seeing during the trial by clicking on the button with the corresponding word. The words could be chosen in any order and once the participant selected the word, he or she could not unselect it. The participants clicked “Finished Responding” when they finished choosing the words. The independent variable is the type of word with three levels including words from the original list shown during the trial, words related to the original list, and words not related to the original list. The researchers measured the dependent variable by the percent of times the participants reported that word on the original list (CogLab, 1999).

**Results**

A repeated measures Analysis of Variance (ANOVA) showed a significant difference, *F*(2, 72) = 248.945, *p* < .001. Bonferroni-adjusted post hoc dependent *t* tests showed a significant difference between choosing the words from the original list (*M* = 74.260; *SD* = 14.039) and the unrelated lure list (*M* = 3.8595; *SD* = 4.211), *t*(36) = 31.269, *p* < .001. There was also a significant difference between the unrelated lure list and the related lure list (*M* = 72.5197; *SD* = 26.995), *t*(36) = 15.352, *p* < .001. There was no significant difference between the original list and the related lure list, *t*(36) = .469, *p* = .642. See Figure 1.

**Discussion**

The results from this study support the hypothesis and provide evidence for false memory. The participants reported a high percentage of words from the original list and also from the related list. These results are important because the participants reported the incorrect words because they experienced false memory. The participants chose a high percentage from the related words because the meanings related to the words on the original list. The participants responded with a low percentage to the unrelated list because these words that did not share meaning with the original list. They experienced false memory by reconstructing their memory into a picture or image from the original words they saw and, as a result, they remembered the gist of the words. These images confused the participants and caused them to falsely recognize words that were related to the original list because the same image was produced. Future research should examine the use of pictures to produce false memory. The researchers could show pictures of similar items and ask the participants to report what they saw through a recognition task. This is important to examine because previous research only contained lists of words that allowed the participants to create their own image, which may be a reason that false memory occurs. This future research may provide more evidence for why eyewitnesses experience false memory for events they saw, not just an image created from words they heard.

References

CogLab. (1999). *False memory*.

Roediger, H. L., & McDermott, K. B. (1995). Creating false memories: Remembering words not

present in lists. *Journal of Experimental Psychology*, *21*(4), 803-814.

*Figure 1.* The participants reported that they saw more of the original words and the related words than the unrelated words.