

The Effects of False Memory On Recognition Tasks

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Abstract

To study the effects of false memories on word recall and recognition, participants were exposed to 6 word lists and immediately asked to perform a recognition task after being exposed to each list. The results showed that participants were more likely to recognize items from the original list and items related to the original list of words. We can conclude from this study that related items, that were never seen on the original list can be falsely recognized. Evidence for false memory is still seen even when participants are aware of these effects.

Have you ever gotten in an argument with a parent or close friend about details of an event that you are so sure happened in a certain way or do you have a shared memory with someone and they remember details that you can't? Well the culprit of all this confusion may be something us psychologist refer to as false memory. False memory is defined as, "either remembering events that never happened, or remembering them quite differently from the way they happened" (Roediger & McDermott, 1995).

Roediger and McDermott examined evidence for the false memory effect in their 1995 study, *Creating False Memories: Remembering Words Not Presented in Lists*. In this article researchers expanded the findings of Deese, who used a standard list learning paradigm to reveal false memory (Roediger & McDermott, 1995). These researchers examined the extent to which the initial false recall of items lead to false recognition of those same items later in time.

Two experiments were conducted in this study. The first was a replication of Deese's observations. As the original study suggested, the researchers found that related items not presented were recalled at the same rate as items that were presented, and that the rate of false alarms was higher for the related items than the unrelated items (Roediger & McDermott, 1995).

The second experiment was designed to determine effects of recall on recognition. Participants were exposed to list of items, and asked either to freely recall the items right after exposure or do math problems right after exposure. Researchers wanted to see if the recall of items had an effect on the later recognition of these items. Shortly after completion of these tasks participants were given a list of items, that contained both previously shown and not previously shown items. Participants had to determine if they had previously studied these items or not, and recorded their confidence in that decision. They were instructed to record that they either

remember (can reexperience exposure to item) or just know (cannot reexperience exposure to item) that they had seen each the item before. They found that recall increased both accurate recognition of studied items and false recognition of non-studied items (Roediger & McDermott, 1995). They also found that the highest rates of false recognition occurred after the false recall of an item.

The current study is a replication of the original study that was conducted by Deese in 1959. We predict that participants are going to falsely recognize words more often when the word is related, compared to unrelated, to the the original list of words.

Method

Participants

Participants were 37 undergraduate psychology students attending Longwood University. Their participation was required as a part of a class assignment, for Psychology 322, Cognitive Psychology.

Materials and Procedures

The experiment was administered through the Cognitive Psychology Online Laboratory known as CogLab. CogLab is a collection of online demonstrations of classic experiments and concepts from cognitive psychology (Francis & Nealth, 2007)The experiment was administered through the use of personal computers, in the participants homes. Participants were shown a sequence of words that had some relation to one another (ex: sleep, dream, pillow, etc). Each word in the sequence was presented for one second at a time. After being presented with a full sequence of words, a set of buttons appeared. Each button was labeled with a word that was from

either the original sequence of words, related to the original sequence, or completely unrelated to the original sequence. Participants task was to select only the words that were included in the sequence they just saw. Participants were allowed to select words in any order, and were not permitted to correct mistakes. This experiment included 6 trials.

Results

As Figure 1 shows, a repeated measures Analysis of Variance (ANOVA) indicated significant results for the false memory lab, $F(2, 72) = 248.945, p < .001$. Bonferroni-adjusted post-hoc dependent t - tests suggest that participants reported significantly different amounts of words from the original list, ($M = 74.26, SD = 14.04$) when compared to the amount of words from the unrelated list, $t(36) = 31.27, p < .001$. Participants also reported a significantly different amount of words from the related list of words ($M = 72.52, SD = 26.99$), when compared to the unrelated list of words, $t(36) = -15.35, p < .001$. However, participants reported similar amounts of words from the original list ($M = 74.26, SD = 14.04$), compared to the related list of words ($M = 72.52, SD = 26.99$).

Discussion

The results show that participants are reporting just as many words from the original list as they are the related list, and that they are reporting not nearly as many words from the unrelated list. These results support my hypothesis that related words are going to be reported more frequently than unrelated words. False recognition in this experiment could have happened for many reasons. The participant may not remember all the words in a list but they would remember that they all had something in common or belonged to a particular category. So the participant is more likely to choose a word that also fell in that same category but wasn't actually

shown. Also, the participant could have seen a word and automatically associated it with another the word, for example “peanut-butter” is often associated with the word “jelly” because they are often thought of together. Thus the participant may actually think they saw the associated word when they actually did not. The only possible problem I can find with this study is that the participants didn’t do the experiment at the same place or time. I feel like external factors and distractions could possible cause someone to under-perform on this task. Personally I think this topic of false memory is very interesting, and I would like to see future research expand to everyday life. A possible future study could research ways that an individual could decrease the chance of false memories from occurring in the first place.

References

- Francis, G., Nealth, I. (2007). CogLab: Cognitive Psychology Online Laboratory (Version 2.0 [Software]. Available from <https://coglab.cengage.com/index.shtml>
- 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 (4), 803-814. doi: 10.1037/0278-7393.21.4.803

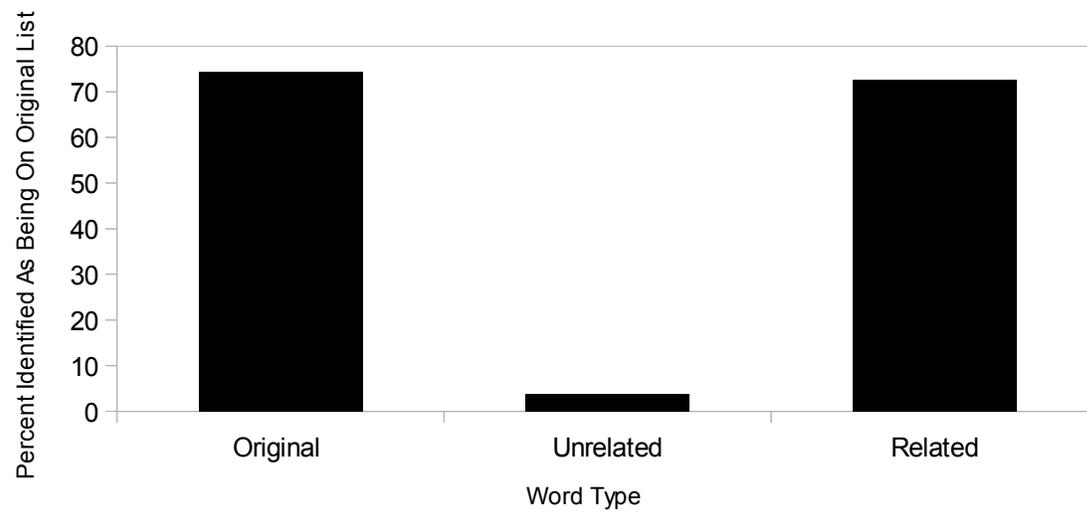


Figure 1. There was a significant difference when comparing the original, to the unrelated of words. There was also a significant difference when comparing the unrelated words, to the related words. There was no significant difference when comparing the original, to the related words.