Deese - Roediger - McDermott Paradigm

Created by Krisztina Peres
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Experiment software: PsychoPy
Estimated running time: ca. 5 minutes
Reference for the original experiment:
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
Watson, J. M., Balota, D. A., & Roediger III, H. L. (2003). Creating false memories with hybrid lists of semantic and phonological associates: Over-additive false memories produced by converging associative networks. *Journal of Memory and Language*, *49*(1), 95–118. doi:10.1016/S0749-596X(03)00019-6

Warning

Reading the description of the Deese - Roediger - McDermott paradigm (DRM) may influence the completion of the task.

Theoreical background

The Deese - Roediger - McDermott paradigm is a memory testing method: it demonstrates that even in the laboratory it is possible to generate false memories (Pezdek & Lam, 2007). Participants in the task have to study lists of words, and after the presentation of each list the participants have to recall the words. A list contains 12-15 associations of a keyword, but the keyword itself is not presented. For example, the keyword is “sleep”, and the words that will be presented are “bed”, “snore”, “nap”, etc. Results show the usual primacy and recency effect (serial position effect), so participants recall first and last words better. More importantly, the unpresented keywords are recalled with the same frequency as the presented words in the middle of the list. Inclusion of the unpresented keyword is even stronger in recognition task: participants tend to claim that they remember words that actually were not presented (Roediger & McDermott, 1995, Pezdek & Lam, 2007).

One explanation for the effect is that spreading activation in the semantic network might activate unpresented words. Because of the associations, the node of the keyword receives stimulation from the associated words, and finally it becomes activated. This theory assumes, that activation spreads automatically and unconsciously. An alternative hypothesis assumes, that confusion of source monitoring account for false memories: participants generate the keyword internally, because it is related the presented words, and later they cannot tell whether it was generated by themselves or they have seen it before, thus, they confuse the source of the memory (Roediger, McDermott & Robinson, 1998).

Procedure

The present demonstration is based on the original DRM experiment Roediger & McDermott, 1995) with some modifications presented in a recent study (Watson, Balota, & Roediger III, 2003). Participants had to listen to these lists, and after each list they had to write as many words as they could remember. After listening all lists experiment continued with a recognition task presented in blocks (one block for each list). A recognition block contained two studied word, two unrelated item, two weakly related item, and the key word. In the demonstration the recognition part of the task is not present.

Stimuli and presentation procedure are from the recent version of the DRM paradigm (Watson, Balota, & Roediger III, 2003). In the demonstration there are six association lists (15 words in each list) presented, and after each list participants have to recall as many words as they can remember.

Words are presented visually and participants have to type in their responses. Words remain on the screen for 1500 ms, and after 250 ms delay the next word appears. After the end of the list presentation the participants have 90 seconds for recalling and typing the words. This procedure is repeated 6 times for the six lists of words.

Expected results

In the task it is expected that the result will show serial position effect, and more importantly, the not presented keywords would appear with a frequency of the middle words in the list (Roediger & McDermott, 1995).

Recommended readings

Gallo, D. A. (2006). *Associative Illusions of Memory*. New York: Psychology Press.

References

Pezdek, K., & Lam, S. (2007). What research paradigms have cognitive psychologists used to study “false memory,” and what are the implications of these choices? *Consciousness and cognition*, *16*(1), 2–17. doi:10.1016/j.concog.2005.06.006

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 (http://psych.wustl.edu/memory/research/)

Roediger, H. L., McDermott, K. B., & Robinson, K. J. (1998). The role of associative processes in producing false remembering. In M. A. Conway, S. Gathercole, & C. Cornoldi (Eds.), *Theories of memory II (pp. 187–245*). Hove, Sussex: Psychological Press.

Watson, J. M., Balota, D. A., & Roediger III, H. L. (2003). Creating false memories with hybrid lists of semantic and phonological associates: Over-additive false memories produced by converging associative networks. *Journal of Memory and Language*, *49*(1), 95–118. doi:10.1016/S0749-596X(03)00019-6