The effects of mood valence and intensity on false memory

Kristina M. Oganesian, Daniella Budetti, Jaclyn Smit, Allina Babu and David R. Gerkens
California State University, Fullerton

Introduction

List types – DRM and Categorical
- Roediger and McDermott (1995) designed a paradigm (DRM) to test false memories.
- This paradigm contained word-lists that were associated semantically.
  - The researchers found a high level of false recall for the critical lure (the most related word)
- Smith, Gerkens, Pierce, and Choi (2002) investigated the Denise Hypothesis and the Kirkpatrick Hypothesis.
  - The Kirkpatrick Hypothesis states that false recall occurs from errors in encoding whereas Denese claimed errors occurred during retrieval.
  - The results for associative lists (DRM) supported the Kirkpatrick Hypothesis.
  - One explanation for the DRM results is the implicit activation theory - The strong association
    between the presented words and the critical lure causes the lure to be activated during encoding
    without being presented.
  - The interconnectivity of items has also been found to influence false recall
    - DRM lists have high backwards associative strength (BAS) but low interconnectivity of items
  - Categorical lists have low BAS but high interconnectivity of items (Knott, Desmond, & Howes, 2011)
  - Thus, DRM lists are predicted to have higher levels of false recall overall.

Mood and Arousal
- One factor found to influence memory is mood (Storrebeek & Clore, 2005), but others were not able to replicate this effect (Van Danum, Menten, & d’Ydewalle, 2010).
  - Possible explanations for why it’s difficult to replicate this effect include males and females
    having different feelings concerning the mood of a song, especially for classical music (Sopchak, 1995),
    and people enjoying listening to sad music (Gardino & Schabert, 2001).
  - Storebeck and Clore (2005) investigated the relationship between mood induction and influencing false memory creation in the DRM Paradigm.
  - The researchers hypothesized that the positive mood condition would produce greater critical lure recall than the negative mood condition.
  - The results confirmed the initial hypothesis and explain the phenomenon through the “affect-as-information” hypothesis.
  - Positive mood promotes relational processing during encoding; relational processing facilitates false memory formation.
  - In contrast, negative mood promotes item-specific processing at encoding.
  - Therefore, reducing the production of false memories

Hypothesis
- Storebeek and Clore’s (2005) results would be replicated; DRM critical lure recall would be greater in the positive mood than in the negative mood condition.
- We also hypothesized that high levels of arousal would further effect false recall
- We were also interested in investigating whether mood induction had an effect on categorical lists.
  - Categorical lists have been found to induce false memories due to errors in retrieval, consistent with the Denese Hypothesis (Smith, Gerkens, Pierce & Choi, 2002).
  - Therefore it was hypothesized that categorized list critical lures would not be affected by the mood state during encoding.

Materials & Procedure
- Participants: 79 undergraduate students from California State University, Fullerton, participated in the experiment for partial fulfillment of the course research requirement.

Methods
- Participants were given five minutes to recall words on the lists that were presented to them
  - After the recall test, they rated how confident they were that the words they recollected were presented
- ANOVAs were also conducted with arousal ratings in place of mood ratings, but there were no significant
  - Three-way interaction between list type, recall type, and condition was not significant, F (1, 39) = .04.
  - Pairwise comparisons revealed that there were no differences in false recall between list types, p > .05.
  - The three way interaction between list type, recall type, and condition was not significant, F (1, 39) = 2.29, p > .05 (see Figure 3).

Discussion
- Some standard findings were replicated. Participants had greater correct recall rates for categorical lists, but also having higher false recall rates for DRM lists.
  - However, mood effects were not observed in Experiment 1, and mood effects were only approaching significance in experiment 2.
  - ANOVAs were also conducted with arousal ratings in place of mood ratings, but there were no significant
    main effects or interactions to report with regard to intensity of arousal.

References