August 9, 2018

Dear JoVE Peer Review,

We are grateful to the editor, reviewers, and peer review staff for their time and constructive comments regarding the initial submission of our manuscript *Using a Classroom-Based Deese Roediger McDermott Paradigm to Assess the Effects of Imagery on False Memories.* We thoroughly considering each comment and implemented all recommendations possible. While using actual track changes was not feasible through our collaboration in Google docs, we took special care to highlight all changes made in response to the peer review in red, as we did not want to confuse highlighted edits with highlighted protocol text for production. Below, we provide the initial editorial and reviewer comments followed by our response to each one, including detail of any revisions. We hope that you find our revisions sufficient and informative.

Best regards,

Merrin Oliver, Brooke Bays, and Cameron Miller

**Editorial comments:**  
**1. Please take this opportunity to thoroughly proofread the manuscript to ensure that there are no spelling or grammar issues. The JoVE editor will not copy-edit your manuscript and any errors in the submitted revision may be present in the published version.**

*Our response*: Thank you, we have done our best to ensure there are no remaining spelling or grammar issues.

**2. Please revise lines 60-65 and 69-73 to avoid previously published text.**

*Our response*: We paraphrased the lines cited to avoid any previously published text.

**3. Please upload Table 1 to your Editorial Manager account. It is missing from the current submission.**

*Our response: We uploaded the table as an .xls file, per the instructions.*   
**4. Please ensure that all text in the protocol section is written in the imperative tense as if telling someone how to do the technique (e.g., “Do this,” “Ensure that,” etc.). The actions should be described in the imperative tense in complete sentences wherever possible. Avoid usage of phrases such as “could be,” “should be,” and “would be” throughout the Protocol. Any text that cannot be written in the imperative tense may be added as a “Note.” However, notes should be concise and used sparingly. Please include all safety procedures and use of hoods, etc.**

*Our response*: We revised all protocol text to be in the imperative tense. Most often, this included replacing “should” phrases with “ensure” or “are” phrases.

**5. Please revise to explain the Representative Results in the context of the technique you have described, e.g., how do these results show the technique, suggestions about how to analyze the outcome, etc.**

*Our response*: While we attempted to do this in the first submission, we revised the entire results section to be more descriptive in terms of relating the materials and procedure to our outcome, typical outcomes, and their interpretation. In an effort to provide results that were more representative of traditional DRM procedures, we revised the results section to focus on recall and recognition using typical (non-imagery) instruction before detailing the effects of our imagery modification. In addition to focusing more on standard DRM analyses and outcomes, we added more detail to the description of the analyses being used and the variables themselves. For instance, instead of saying “Repeated measures analysis indicated that participants recognized critical lures at significantly higher rates than other non-list words” we revised to say “To measure the effects of DRM procedures on the recognition of critical lures during the final recognition test, we compared the proportion of critical lures remembered (number of “yes” recognitions/10) to the proportion of all other non-studied words remembered (number of “yes” recognitions/40). Repeated measures comparisons of these proportions indicated that critical lures were recognized at significantly higher rates than distractor words, F (1, 48) = 149.52, p < .001.” We made these types of changes throughout.

**Reviewers' comments:**  
  
**Reviewer #1:**  
 **General impression:  
This is - as far as I can see - a clear and detailed description (with minor exceptions that could be easily addressed, see below) of the DRM (Deese-Roediger-McDermott) procedure with an added imagery manipulation and also using both phonologically and semantically similar word lists. As such, I can't see any reason why it shouldn't be suitable as a Visualized Experiment in JoVE.  
  
Having said that, and keeping in mind that JoVE aims for contributions that allow the audience to learn a certain scientific technique, I should add that the particular study/procedure the authors present in their manuscript is a rather special implementation of the general DRM technique (i.e. with the added imagery manipulation that is not a core part of the DRM procedure). It might be worth considering, therefore, a revision of the manuscript that also includes a more basic DRM procedure (or that separates the essential DRM parts from the optional added manipulation in the presentation), i.e. a sort of construction kit approach, which would enhance the usefulness of the contribution for the JoVE audience in my view.**

*Our response: We agreed that our modified version of the DRM paradigm is somewhat specific (as a result of our research questions) and may not be as useful as standard DRM procedures to a wider audience. Thus, we revised the protocol to include a more construction-kit type approach as suggested. We could not revise the primary protocol to demonstrate standard DRM procedures and then detail how to add in imagery or list type, because our results are not necessarily representative of that. However, we did add in protocol section* ***3. Optional Modifications to Protocol,*** *which details how to modify the protocol if imagery instructions and/or list type are not of interest. We subsequently discuss the possible modifications throughout the results and discussion as well.*

**Specific points:  
\* Protocol, 1.1.4.: I didn't understand the idea behind the two versions A and B - what is the benefit of rotating the sequence of the lists by just one list? I can't see any at the moment. Please either explain what the reason behind your particular order manipulation is or come up with a more convincing one (or perhaps none at all? I'm not sure if the procedure would lose anything, and it would be easier to administer with just two versions instead of four …). (…) Much later I found the answer in line 375 of the manuscript - phonological and semantic lists are alternated in the presentation, and the order manipulation makes sure that half of the participants start with a phonological list and the other with a semantic one. That makes sense, but it would have been easier if the authors had said that right away …**

*Our response: We added in an explanation immediately after describing the two versions in 1.1.*

***\* Line 325, "This finding suggests the distractor activity employed in this study was effective" - I can't follow this logic; recognition is almost always higher than recall, this doesn't need to have anything to do with a distractor activity between the two measures; i.e. I'd reconsider this sentence.***

*Our response: We deleted this sentence.*

**\* Figure 1: I personally find the two bars on top of each other quite confusing, certainly they make it difficult to see the associated interaction the authors report in the results section (apart from this, they are non-standard in psychological journals, and psychologists would be the main audience for this paper).**

*Our response: We revised figure 1 to depict imagery comparisons using a standard bar chart with error bars.*

**\* Table 1?? - I couldn't find Table 1 anywhere in the manuscript.**

*Our response: We made sure to include Table 1 in the submission. Although per instructions, it is not included in the manuscript itself.***Reviewer #2:**

**This presentation with slide is already used for collecting data when the DRM lists are visually presented, I do not understand what it is new in this procedure? (See, Gallo, D. A. (2006). Associative illusions of memory)**

*Our response: We are not claiming that our manner of presentation is new, and we cite (page 3, line 12) that we adapted this powerpoint encoding procedure specifically from a previous Ballou and Sommers study varying list types. However, we do make a claim that this protocol is the first to look at the impact of imagery instructions on such presentation of alternating semantic and phonological lists.* **Imagery ratings should be made after each word because concrete words are not equal in their ability to evoke a visual image (see norms of imagery values for concrete words).**

*Our response: It is our understanding that we are writing this protocol to describe the procedures in previously published work. While we might agree in hindsight that adding an imagery rating after each individual word might increase the sensitivity of that measure, we are reporting on something that has already been done. In the original study, we were concerned that we would not be able to control for the processing that occurred as a result of making so many evaluations of imagery ease. This would cause participants in the imagery condition to engage in 100 additional instances of evaluative processing that the non-imagery group would not be engaging in. Thus, it would be hard to disentangle the effects of imagery from the effects of making imagery ratings.*  **It would be interesting to estimate the participants' imagery abilities before the study because this variable could affect the ease which they use imagery during the study phase.**

*Our response: Yes, this would be very interesting!* **Imagery value of words are not been estimate. This factor affects the creation of visual images.**

*Our response: We were not able to report on something here that was done in the originally published work.* **The procedure causes problem because visual presentation of words interferes with the imagery instruction. Indeed, it is well known (Kosslyn & Swartz, 1977; Kosslyn, Brunn, Cave, & Wallach, 1984; Kosslyn et al., 2006) that imagery is an activity closely related to visual perception. There are functional and structural similarities between perception and imagery suggesting that the two faculties share resources and cognitive processes.**

*Our response: Again, we cannot change the method for the previously published work. However, we would be very interested to see a study that varied presentation modality across imagery instruction.* **(1.1.2.2.) the slide duration of 5 seconds is too long. DRM studies have shown that false memories decrease according to the presentation time. A presentation time over than 3 seconds decreases false memories significantly, like it was also the case with DRM lists fewer than 10 words or with a visual presentation compared to an oral presentation.**

*Our response: We have added notes throughout the results and discussion that shortening the encoding duration or increasing the length of lists would likely increase false memory rates. Additionally, we added option modifications to the protocol to use longer lists or shortened presentation durations.*  **(1.1.4.) It would be better to use two order of lists presentation: the following order 1-2-3-4-5-6-7-8-9-10 for the half of participants in the imagery and non-imagery conditions A & B and the order 10-9-8-7-6-5-4-3-2-1 for the other half of participants in the imagery and non-imagery conditions A & B**

*Our response: We made this change to the protocol.*  **Theoretical limits:  
According to the Paivio's dual coding theory, words are verbally represented (i.e. a graphemic or phonological representations) and concrete words can be represented by a visual image (i.e. a visual image of the object designated by the word). These both representations (verbal vs. imagined) are different. Verbal representations are arbitrary whereas visual images are analogical (see for a review Finke, 1983; Paivio, 1991). The authors of the present paper confuse these representations when they wrote "visual images of word". In fact, visual images of words correspond to graphemic or phonological representation that both result from a verbal coding. In addition, elaborate an image from a word implies first a semantic processing (automatically) and then an imagining coding (which depends on imagery value of words, individual imagery abilities and the task)**

Our response: While the semantics here are rather nuanced, we changed the phrase cited here to more accurately reflect the instructions that participants received (i.e., create mental images of the word in your mind).  **One reference to be corrected and a more recent on this thematic:  
Robin, F. (2011). Imagination and False Memories. Imagination, Cognition and Personality, 30(4), 407-424. https://doi.org/10.2190/IC.30.4.e  
Robin, F., & Mahé, A. (2015). Effects of image and verbal generation on false memory. Imagination, Cognition and Personality, 35(1), 26-46.** [**https://doi.org/10.1177/0276236615574488**](https://doi.org/10.1177/0276236615574488)

*Our response: We corrected the reference and added the newer reference into the representative results reporting the impacts of imagery.*