Examing Whether Warnings and Integration Instructions Alleviate Retrieval-Induced Forgetting

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Introduction

Retrieval-induced forgetting (RIF) is a phenomenon wherein practicing items for recall impairs recall of unpracticed semantic associates (Anderson, Bjork, & Bjork, 1994). This occurrence has been explained in multiple ways, with the majority of recent research focusing on inhibitory (Anderson et al., 1994) and non-inhibitory accounts (Anderson & Spellman, 1995). The RIF paradigm involves four phases: encoding, retrieval-practice, distractor, and recall. The inhibitory account of RIF suggests that forgetting occurs during the retrieval-practice phase, while the non-inhibitory account suggests that forgetting occurs during the recall phase. These differing accounts combined with the warning literature to yield differing predictions regarding when warnings should be introduced to have maximum impact on RIF rates.

Warnings have helped alleviate memory problems in a variety of paradigms (e.g., false memories; Neuschatz, Benoi, & Payne, 2003; eyewitness suggestibility; Chambers & Zaragoza, 2001) when presented before encoding, but have never been examined in the context of the RIF paradigm. We manipulated the timing of a warning about RIF to occur either before encoding, practice, or recall to examine the impact on RIF rates relative to a control. We also instructed all but the baseline condition participants to integrate items.

Baseline:
Integration:
Pre-Encoding:
Pre-Practice:
Pre-Recall:

Hypotheses

We hypothesized that if integration helps reduce RIF, then those in the Integration condition should have the lowest rates of forgetting. If the warning literature holds true then the participants warned pre-encoding should have the lowest RIF rates. If inhibition drives RIF then participants who are warned before practice should have the lowest RIF rates. We also hypothesized that if interference drives RIF then participants who are warned at recall should have the lowest RIF rates.

Method

Participants
- 130 UAH students (Ages 17-25; Mage = 19.81, SD = 1.76)

Design
- 5 (Condition) x 2 (Trial) x 3 (Item Type)
- Between-subjects: Condition
- Within-subjects: Trial and Item Type
- Three Item Types
- Strengthened (Rp+): Items practiced in retrieval-practice phase.
- Non-strengthened (Rp-): Items semantically related to Rp+ items, but not practiced
- Unpracticed (Nrp): Items from categories where no items are practiced

Dependent measures: Recall accuracy of items (Rp+, Rp-, and Nrp), used to calculate Facilitation and RIF effects.

Trees
(Practiced)
Distance
(Unpracticed)
Oak (Rp+)
Inch
Elm (Rp-)
Centimeter
Maple (Rp+)
Foot
Pine (Rp-)
Decimeter

Integration Example

Trees
Oak
Elm

Trial 1

<table>
<thead>
<tr>
<th></th>
<th>Rp+</th>
<th>Rp-</th>
<th>Nrp</th>
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<tbody>
<tr>
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<td>39</td>
<td>49</td>
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<tr>
<td>Integration</td>
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<td>38</td>
<td>46</td>
</tr>
<tr>
<td>Pre-encoding</td>
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<td>43</td>
<td>52</td>
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<tr>
<td>Pre-practice</td>
<td>69</td>
<td>36</td>
<td>44</td>
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<tr>
<td>Pre-recall</td>
<td>70</td>
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Trial 2

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<tr>
<td>Pre-recall</td>
<td>78</td>
<td>44</td>
<td>56</td>
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</tbody>
</table>

Facilitation Effects

Mean Facilitation Effects

Pre-Recall
Pre-Practice
Pre-Encoding
Integration
Baseline

Conclusions

-Recall Rp+ > Nrp = Rp- in both trials.
-Warnings and integration instructions did not reduce RIF
-RIF rates increased across trials suggesting awareness increases rather than decreases RIF.
-Underlying mechanism is still unclear.

References


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