Re-evaluating the contextual variability hypothesis of free recall

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Introduction

Contextual variability is the concept that increasing the lag between two presented items decreases the correlation between the contexts in which they occur. Thus, the number of different retrieval cues for recall increases. Ross and Landauer (1978) found no advantage associated with contextual variability.

OR score is the probability that at least one of two items (one item and/or the other) is recalled.

Re-evaluation of Ross and Landauer’s (1978) null result

<table>
<thead>
<tr>
<th>Experiment</th>
<th>Lag-OR score correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Murdock (1962), LL = 30</td>
<td>0.86</td>
</tr>
<tr>
<td>Murdock (1962), LL = 40</td>
<td>0.85</td>
</tr>
<tr>
<td>Howard and Kahana (2005)</td>
<td>0.95</td>
</tr>
<tr>
<td>Bridge (2006)</td>
<td>0.89</td>
</tr>
<tr>
<td>Polyn et al. (2009, unpublished)</td>
<td>0.83</td>
</tr>
</tbody>
</table>

All correlations are significant for p < 0.05.

Context maintenance and retrieval model (CMR)

The CMR model predicts both OR score and contiguity effects

- A reanalysis of the OR score effect provides strong support for contextual variability
- The CMR model of free recall accounts for the OR score effect, as well as temporal, semantic and source clustering
- CMR also predicts spacing and lag effects, but these reflect both contextual variability and study-phase retrieval

References