Does Depth of Processing Affect Temporal Contiguity?

Abigail M. D. Mundorf, Mitchell G. Uitvlugt, & M. Karl Healey

CBCC LAB
DEPARTMENT of PSYCHOLOGY
MICHIGAN STATE UNIVERSITY

Introduction

- Levels of Processing Effect: deep processing tends to result in better memory than shallow processing (Craik & Tulving, 1975)
  - Mechanisms involved are not well understood (Eysenck, 1978; Baddeley, 1978)
- Temporal Contiguity Effect (TCE): recall of one event triggers recall of other events originally experienced nearby in time (Kahana, 1996)
  - Recall and the TCE are typically correlated (Healey, Long, Kahana, 2019)
  - Many models include specific TCE-generating mechanisms

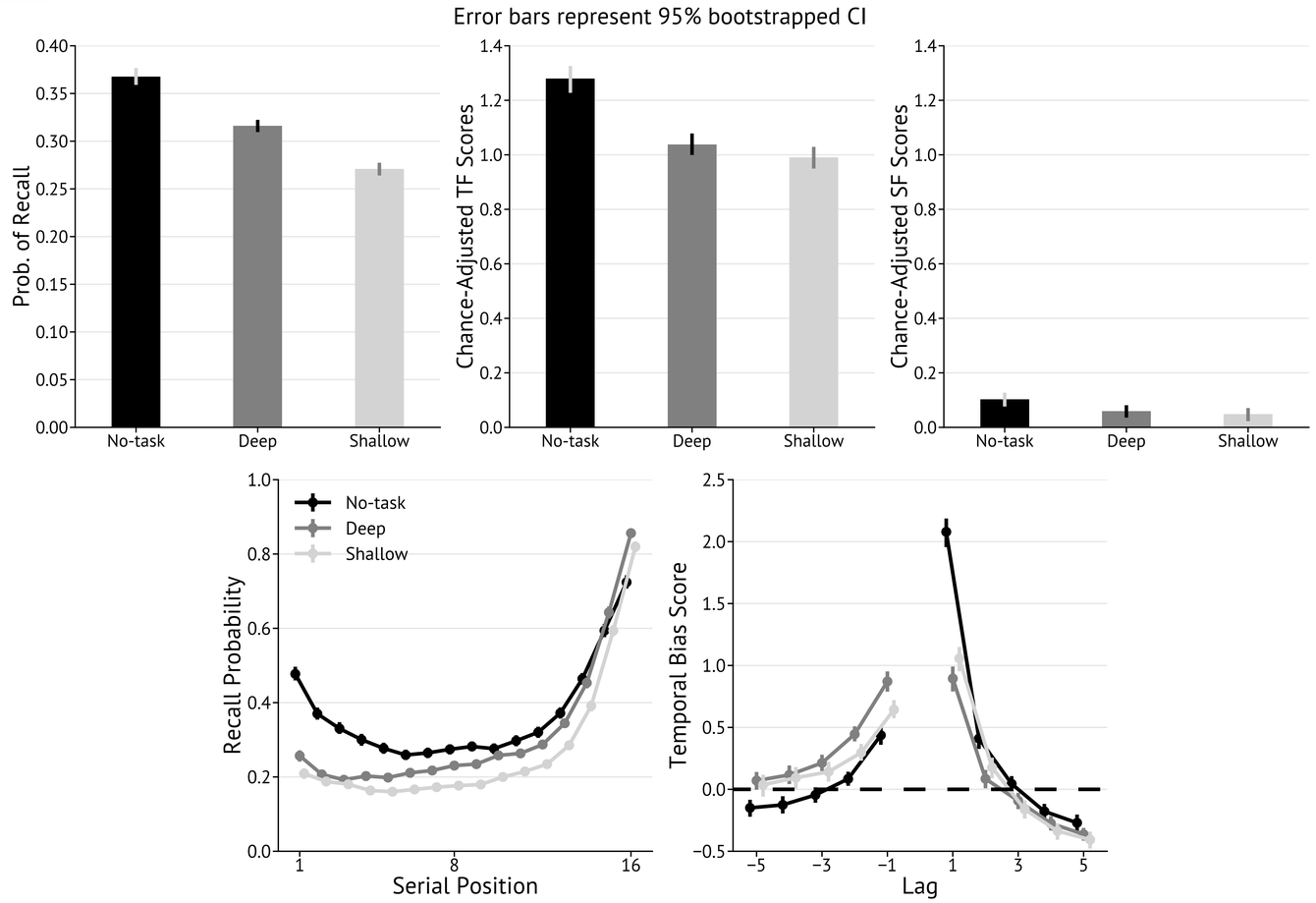
Research Question: How does a deep processing task affect temporal contiguity?

- Theory-based predictions
  - Retrieved Context Models — deep processing task may increase the rate of context drift during encoding, **increasing the TCE** relative to shallow processing (Healey & Kahana, 2016)
  - Item-Order Account — deep processing task may prioritize item information over order information, **reducing the TCE** relative to shallow processing (McDaniel & Bugg, 2008)
  - Accounts based on control processes — **any** assigned task may interfere with order-based strategies, **reducing the TCE** (Healey & Uitvlugt, 2019)

Design

- N = 680
- Immediate free recall of 16-item lists
  - 30 lists; 10 lists each for deep, shallow, and no-task
  - Deep: Does this word refer to a living thing?
  - Shallow: Does this word contain the letter T?

Results



- Recall highest in no-task; higher for deep than shallow processing (Craik & Tulving, 1975; Hyde & Jenkins, 1969; Long & Kahana, 2017)
- TCE highest in no-task; higher for deep than shallow processing (Long & Kahana, 2017)
- Semantic contiguity higher in no-task than shallow processing

Conclusions

Any assigned task reduced both recall and the TCE.
Deeper processing improved both recall and the TCE.

- Results support accounts based on control processes and retrieved context models
  - Contrary to item-order account