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 (Johnson, 1975; Buskist, 1978)
- Temporal Contiguity Effect (TCE): recall of one event triggers recall of other events originally experienced nearby in time (Kahana, 1994)
  - 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