

The Temporal Dynamics of Gist & Perceptual Encodings in Younger and Older Adults



Anna K. Lawrance, Jalene R. Plamondon, Tarek Amer — Memory & Visual Attention Lab, Dept. of Psychology, University of Victoria
 Jamie Cassels Undergraduate Research Award — Research Fair | March 19, 2025

INTRODUCTION

Episodic Memory

A contextually-based memory that includes the *what/where/when* information related to an event. Can range in their level of detail.

Low-Specificity ← High-Specificity

Gist Representation

Going to the beach with friends.



Perceptual Representation

Going to Willows Beach with Sarah, Joe, Amelia and her son Trevor.



	Gist	Perceptual
Encoding time required	Less	More
Basic semantic content	✓	✓
Includes specifics of event	✗	✓

Age-Related Differences?

Older adults form more gist-representations, even when provided with more encoding time.

Motivation for the present study?

Previous work investigating gist- and perceptual-representations has largely tested memory using explicit measures.

Aim of the present study?

Examine whether age-related differences in gist representations reflect a true loss of episodic specificity with age or arise from retrieval demands imposed by explicit tasks.

PARADIGM CONFIG.

3 tasks repeated over 9 blocks. 3 blocks/encoding duration.

Experiment conducted online.

Gender: 16 F, 13 M
 Mean Age: 21.34 (SD=3.71)

4 Retrieval Pair Types

- Intact:** exact same scene-object pair as encoding.
- New:** completely new scene category and object.
- Related:** Recombined scene-object pair that is highly-semantically related to pair seen at encoding.
- Unrelated:** Recombined scene-object pair that is not semantically related to pair seen at encoding.

DISCUSSION

Key finding:

Observed evidence for gist-like representations in all encoding durations.

Evidence of learning:

Reaction time for intact and recombined pairs were significantly faster than new pairs at all encoding durations.

Absence of perceptual representations?

Given the lack of explicit instruction to study scene-object pairs, participants may have avoided expending unnecessary cognitive effort to encode specific details related to scenes.

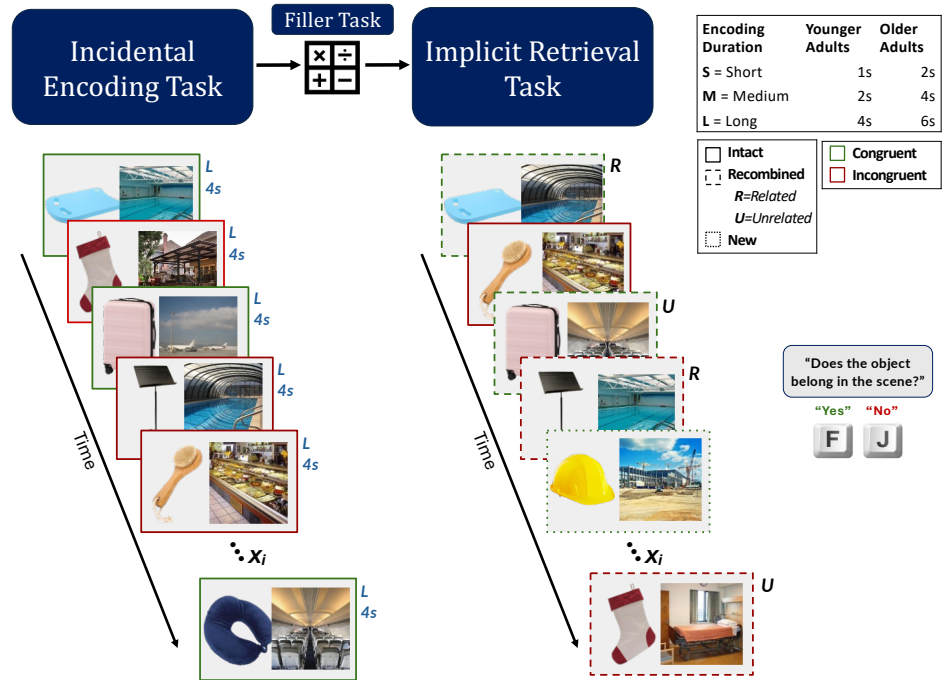
Acknowledgements

This research was supported by the Jamie Cassels Undergraduate Research Award & NSERC, and supervised by Dr. Amer
 NSERC Undergraduate Student Research Award — A. Lawrance; Jamie Cassels Undergraduate Research Award — A. Lawrance; NSERC Discovery Grant — T. Amer.

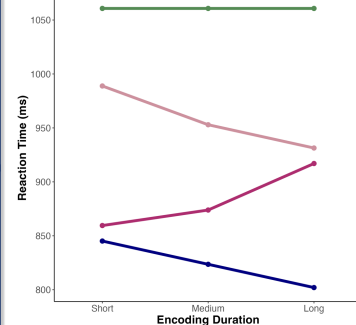
References & Supplementary Materials



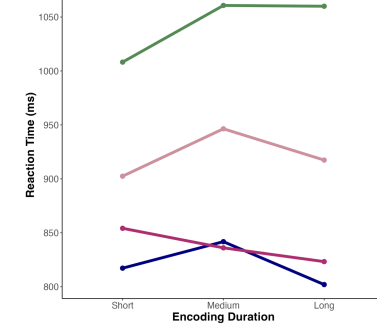
3 TASKS



Hypothesised



Observed



Significant effect of pair type.
 $(\chi^2 = 181.36, p < .001)$

Interaction between pair type & encoding duration was non-significant ($\chi^2 = 6.41, p = .3786$)