Effects of aging on semantic and episodic contributions to false memory

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Introduction

- Older adults are more susceptible to false memory than young adults (Koutstaal & Schacter, 1997)
- Healthy older adults typically have impaired episodic memory but intact semantic memory (Wingfield & Kahana, 2002)
- False memory increases with semantic overlap (Gutchess & Schacter, 2012)
- Young adults can utilize temporal information to support memory (Kahana, 1996);
- Older adults may have difficulty utilizing temporal information (Wingfield, Lindfield, & Kahana, 1998)

Hypothesis

Older adults rely more heavily on semantic versus episodic processing, which promotes false memory

Participants

- Older adults: 60-85 years old, N = 41
- Young adults: 18-35 years old, N = 49

Predictions

Unlike young adults, older adults' false memory rate will not be impacted by temporal overlap strength

References

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Wingfield, A. and Kahana, M.J. (2002). The Dynamics of Memory Retrieval in Older Adulthood. *Canadian Journal of Experimental Psychology, 56*(3), 187-199.

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$^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

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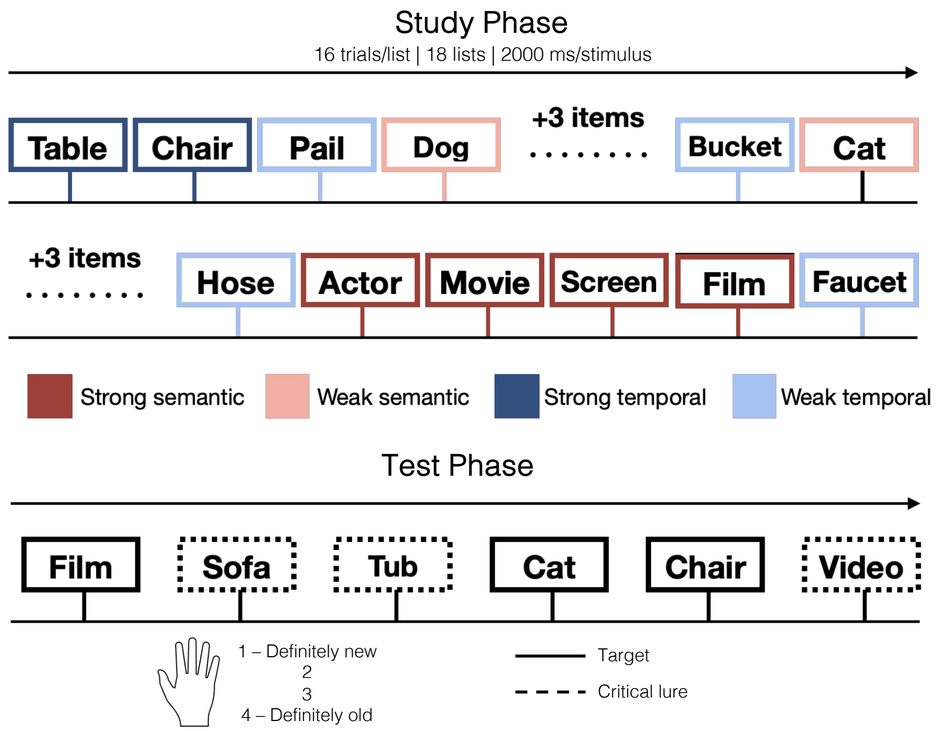
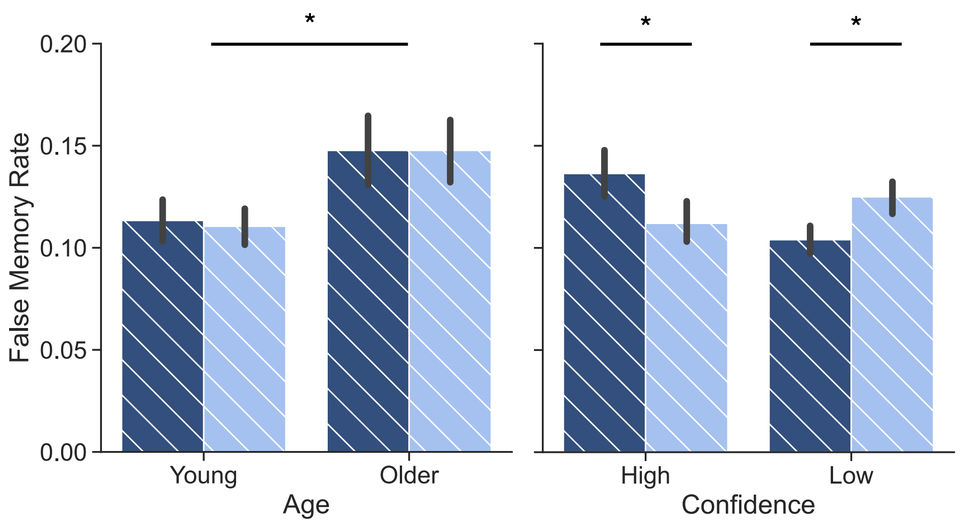
Recognition memory task



False memory rate by temporal overlap strength



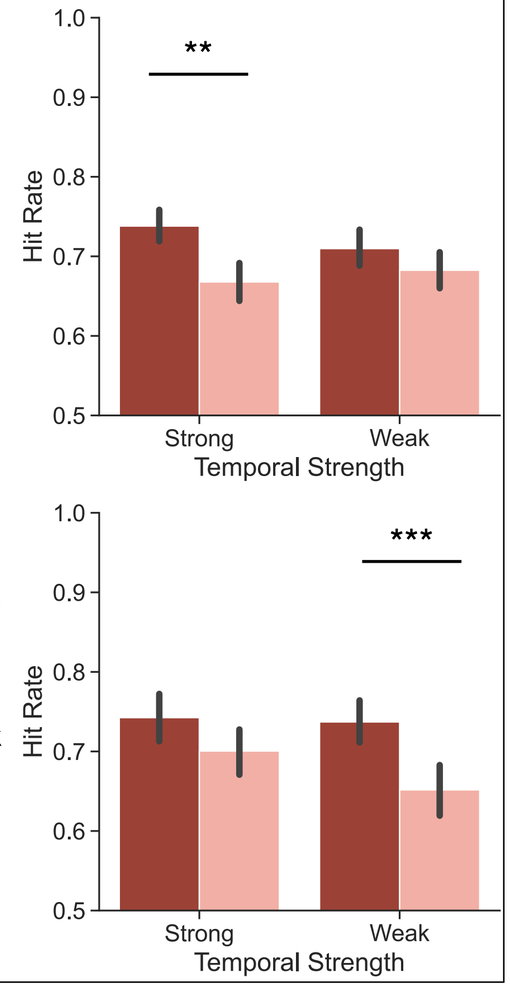
False memory rate for strongly semantically overlapping words is modulated by age group but not by temporal overlap strength

High confidence false memory is greater for strong than weak temporal overlap;
low confidence rate is greater for weak

Hit rate by semantic and temporal overlap strength

Young adults have a greater hit rate for strong than weak semantic overlap with strong temporal overlap, but not with weak temporal overlap

Older adults have a greater hit rate for strong than weak semantic overlap with weak temporal overlap, but not with strong temporal overlap



Summary

- When events overlap temporally and semantically, young and older adults may rely more heavily on semantic versus temporal information, leading to increased false memory susceptibility
- In true memory, young adults may be naturally oriented toward the episodic dimension of events
- Older adults' baseline orientation may bias them toward the semantic dimension of events in true memory

Future Directions

- Investigate the neural mechanisms underlying semantic and episodic contributions to false memory