

Introduction

- Healthy older adults typically have an intact semantic memory but show deficits in episodic memory (Wingfield & Kahana, 2002)
- Healthy older adults have difficulty switching between tasks and inhibiting the retrieval of task-irrelevant information (Kray & Lindenberger, 2000; Hamm & Hasher, 1992; Corbett & Duarte, 2020)
- Memory encoding and retrieval brain states can be decoded from whole-brain activity patterns (Long & Kuhl, 2019; Smith, Moore & Long, 2022)
- Retrieving the past comes at the expense of encoding the present (Long & Kuhl, 2019)

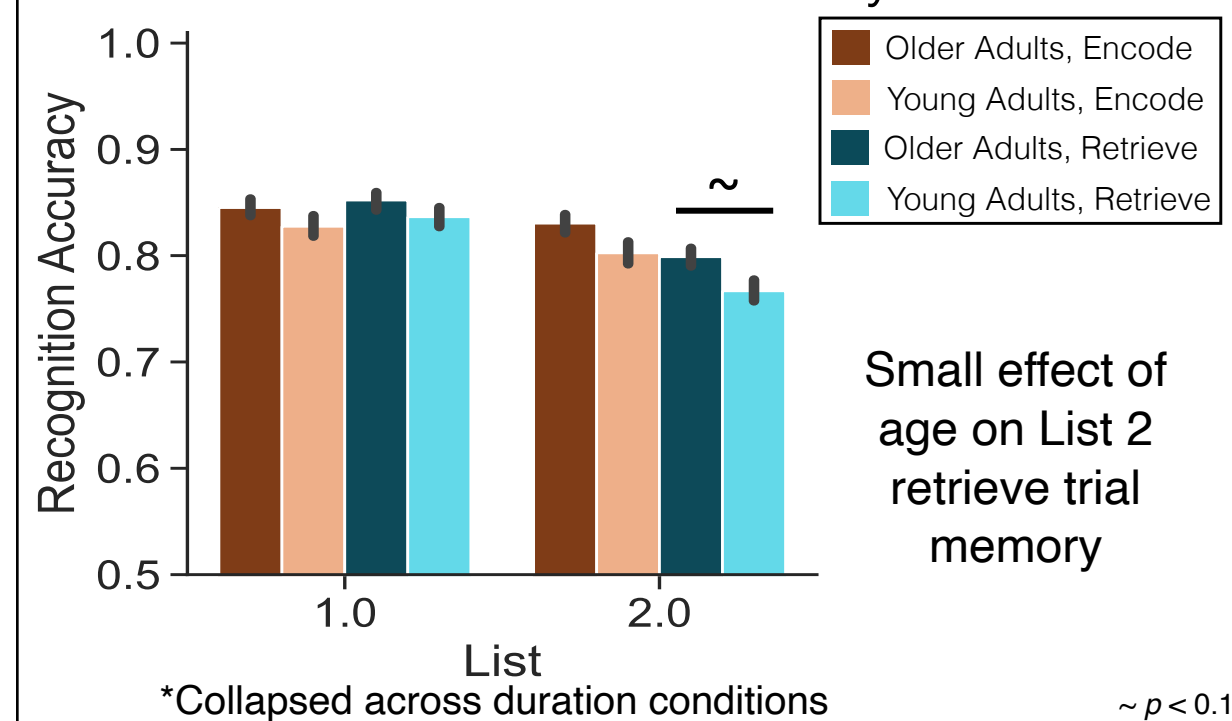
Hypothesis

- Older adults experience episodic memory impairments due to deficits in tasking-switching coupled with a bias towards the retrieval state

Participants

- Older adults: 60-85 years old, N = 42
- Young adults: 18-35 years old, N = 44

Behavioral evidence of memory state shifts*



References

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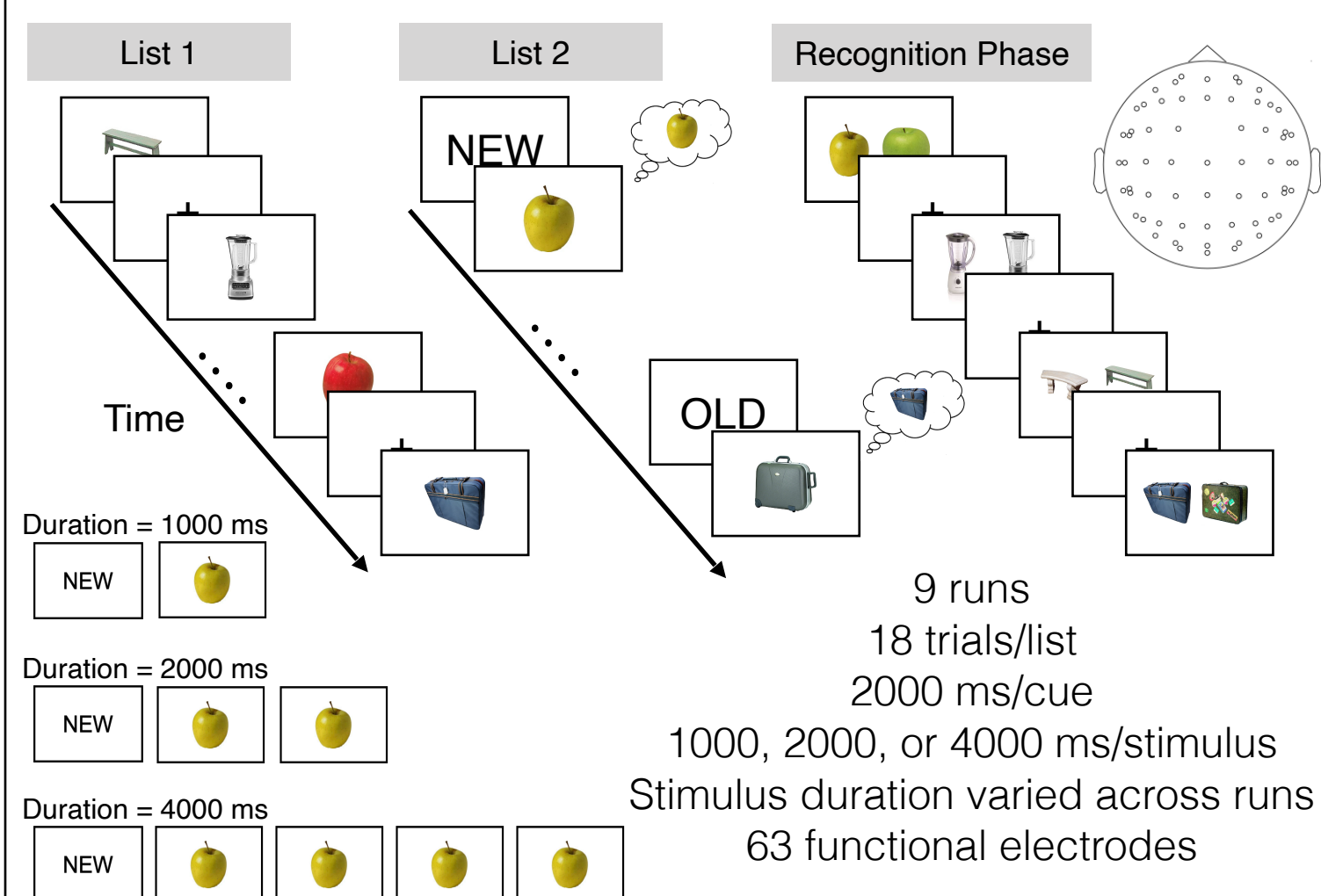
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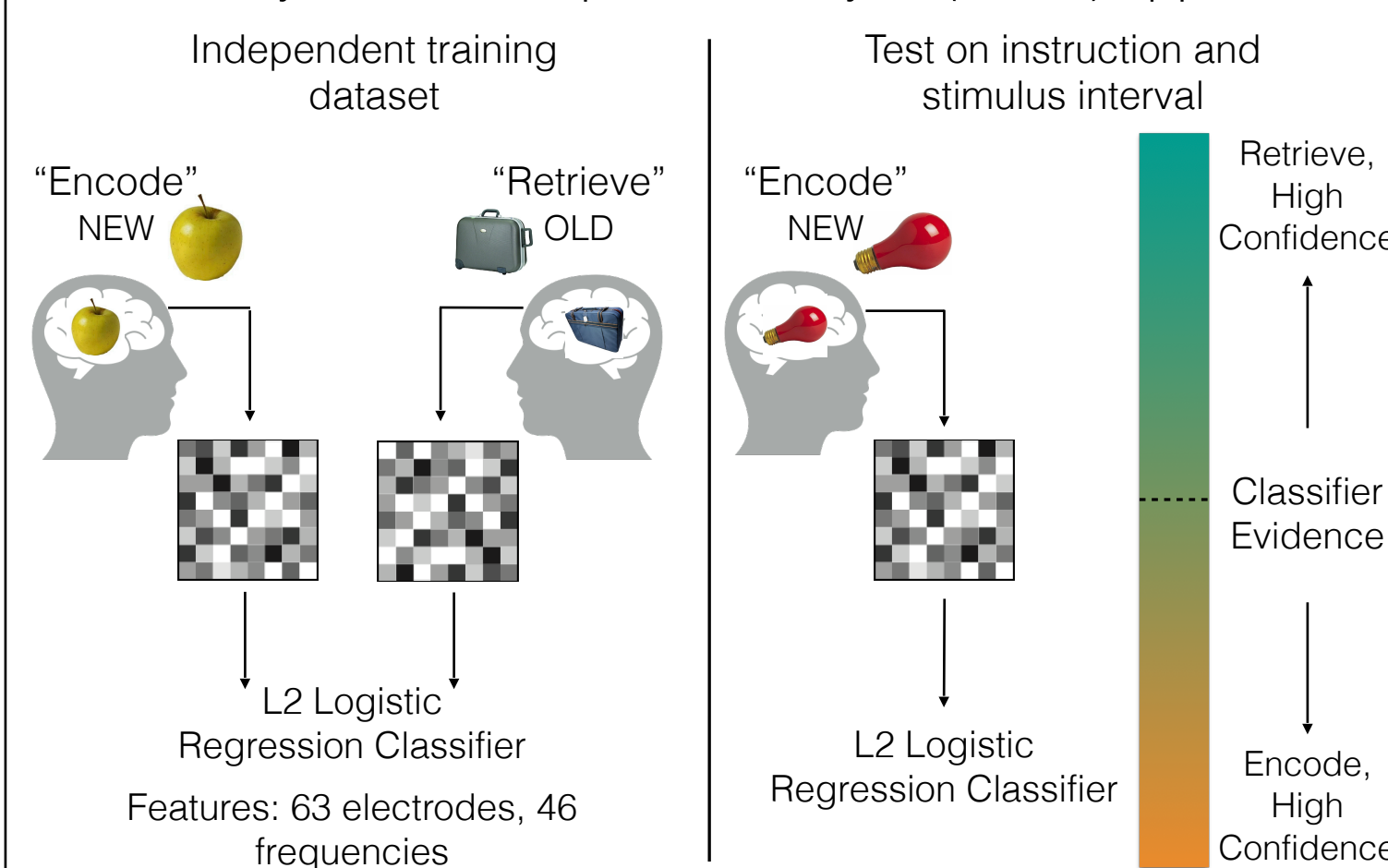
Acknowledgements

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Mnemonic state task



Cross-study multivariate pattern analysis (MVPA) approach



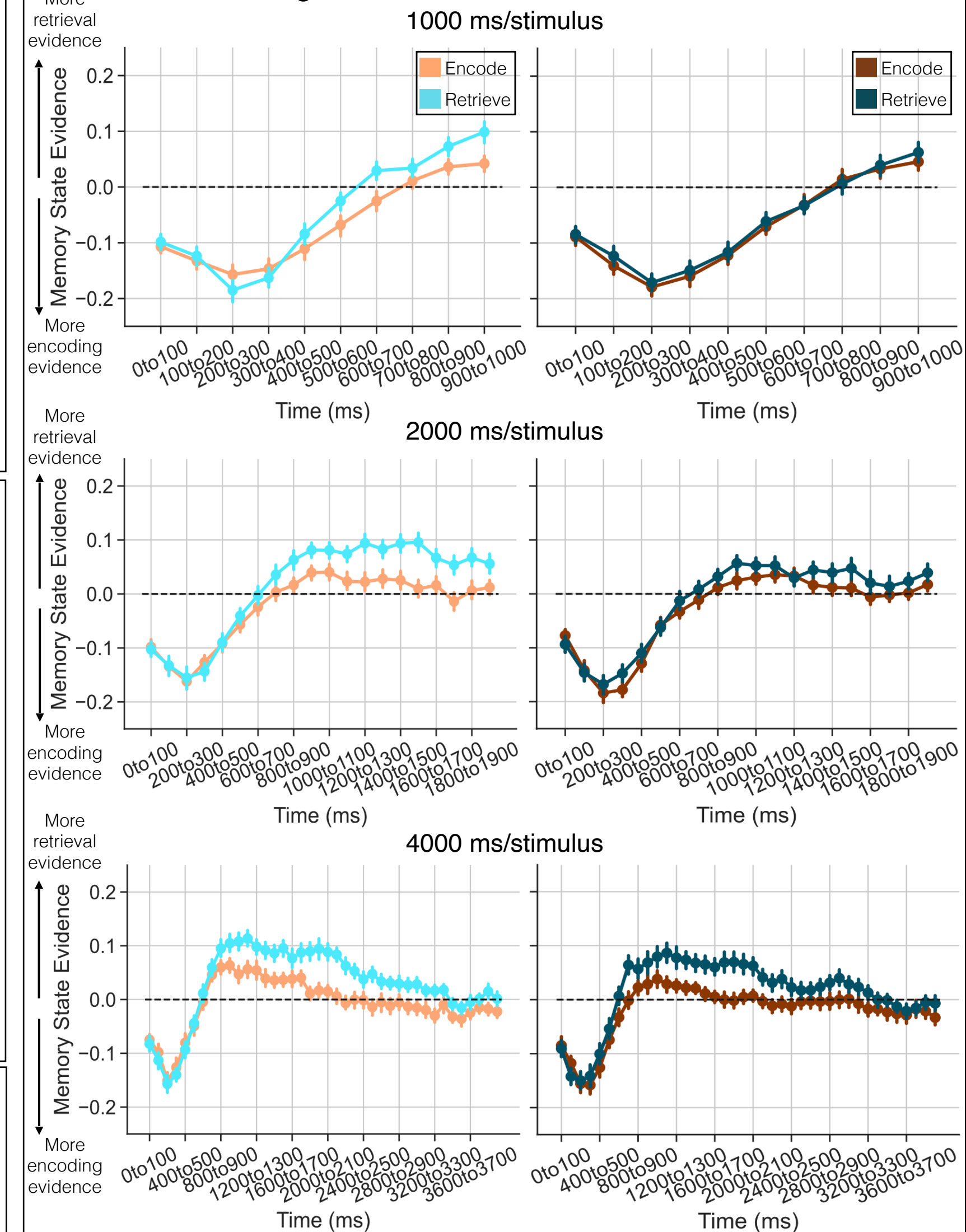
Summary

- Both age groups shift between memory encoding and retrieval
- Young and older adults differ in terms of the timing of memory state engagement
 - Young adults show memory state dissociations even at short (1000ms, 2000ms) durations
 - Older adult memory state dissociations are strongest with the longest (4000ms) duration
- Slower initiation of task-relevant brain states in older adults may reflect domain-general difficulty in task-switching and inhibiting task-irrelevant information

Memory state engagement varies as a function of stimulus duration

Young Adults

Older Adults



Future directions

- Further investigate compensatory mechanisms that older adults may be using to close the gap in memory state engagement