

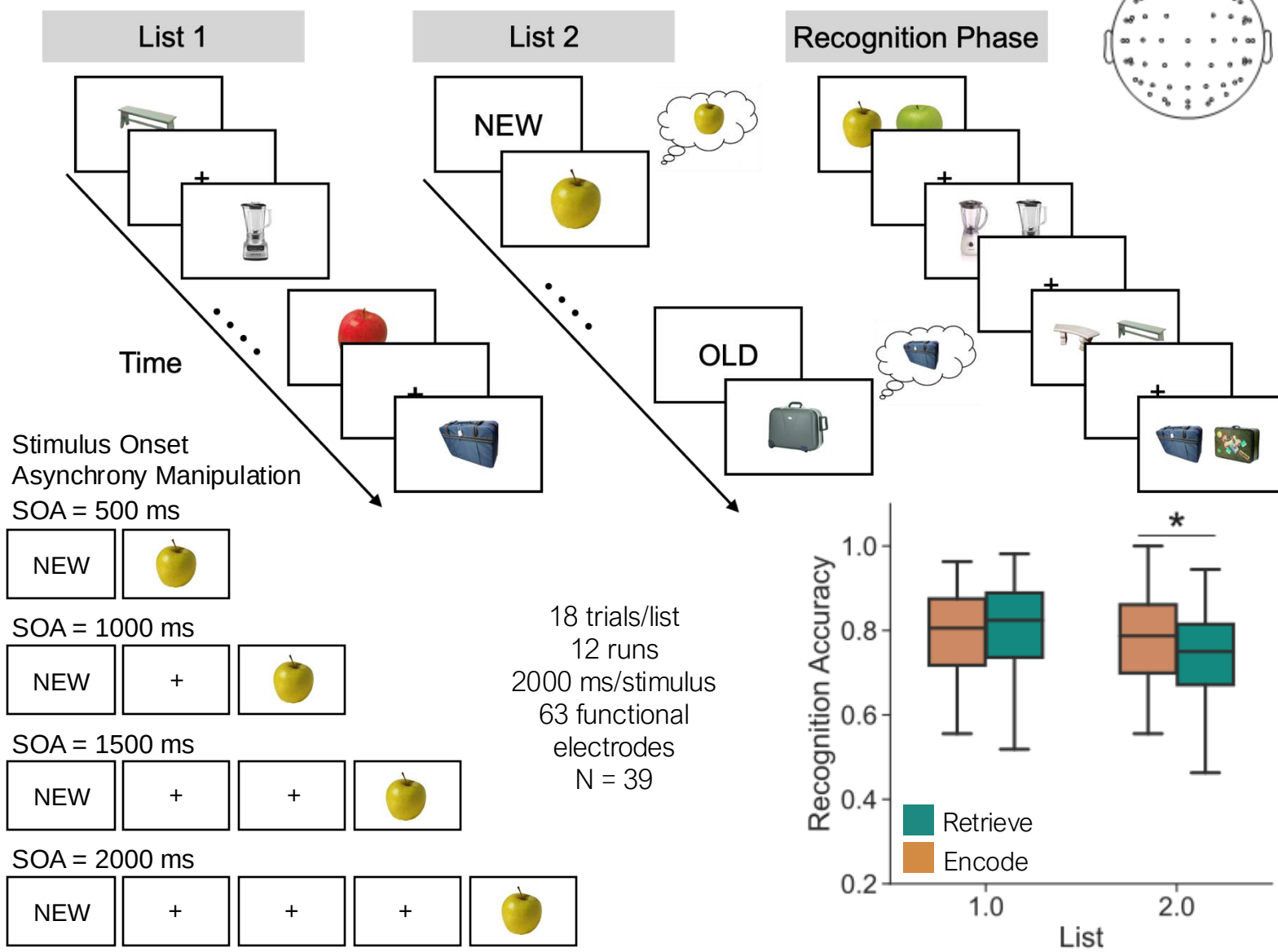
Introduction

- 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)
- Engagement of a retrieval state is theorized to be a precursor to successful retrieval (Tulving, 1983; Rugg & Wilding, 2000)

Hypothesis

- The retrieval state is reactionary and selectively engaged only after there is a target for retrieval
- Alternative: The retrieval state is preparatory and is engaged in response to the instruction cue to retrieve

Mnemonic state task



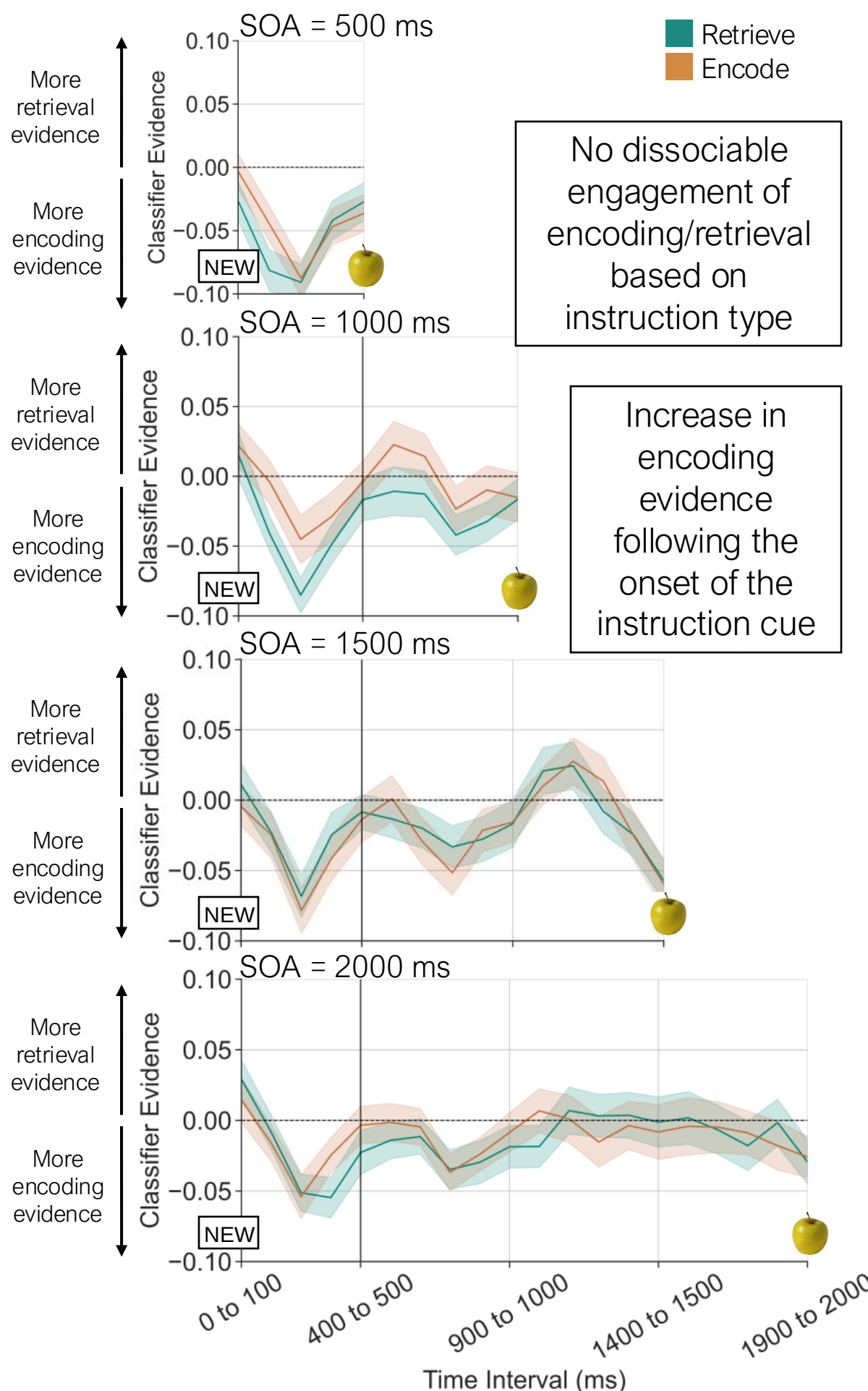
References

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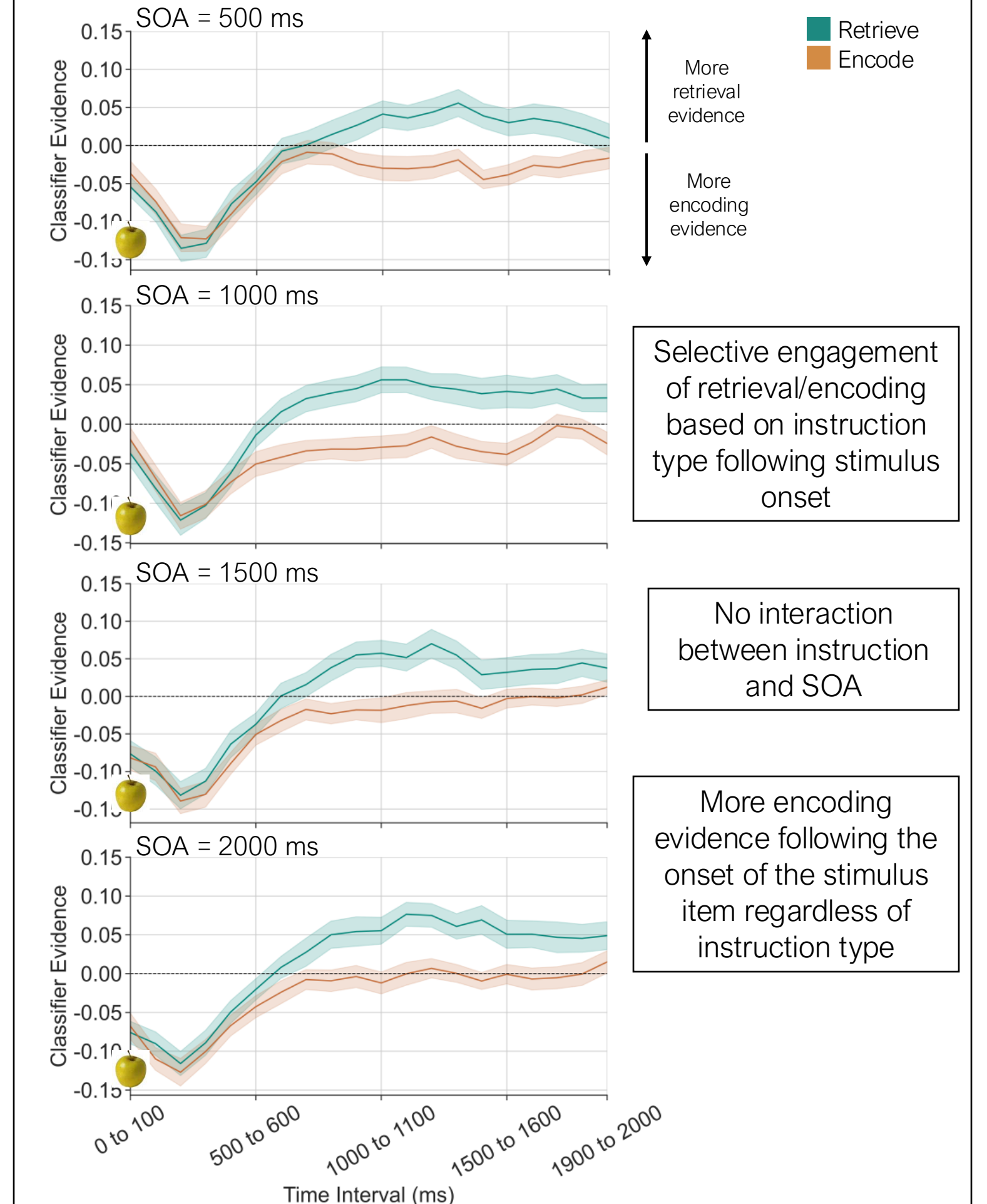
Acknowledgements

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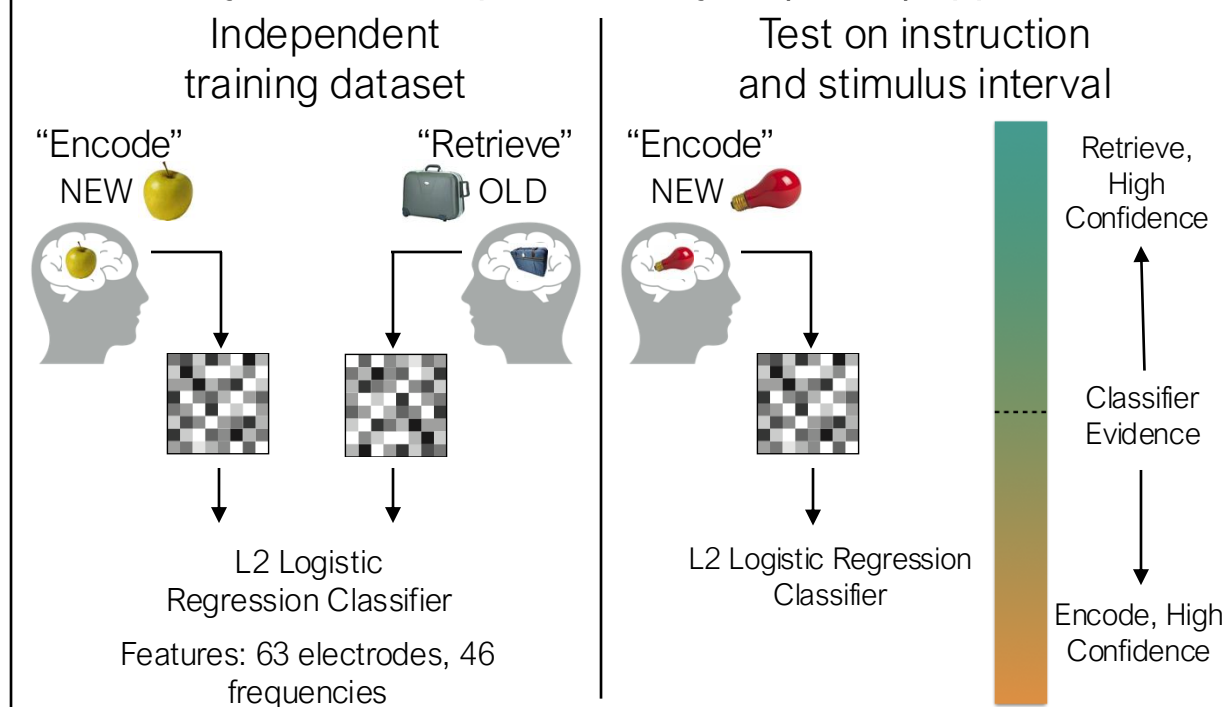
Memory brain state engagement during the instruction interval



Memory brain state engagement during the stimulus interval



Cross-study multivariate pattern analysis (MVPA) approach



Summary

- Participants shift between memory encoding and retrieval
- Memory states do not dissociate based on instruction type during the instruction interval
- Memory states dissociate at approximately 500 ms after stimulus onset, supporting the hypothesis the retrieval state is reactionary
- The reactionary account is consistent with the interpretation that the retrieval state reflects internally directed attention

Future directions

- Explore the relationship between encoding evidence and externally directed attention