INTRODUCTION

- Prior research using intracranial EEG recordings revealed increased high frequency power and decreases in lower frequency power in the moments leading up to spontaneous verbal recall (Burke et al. 2014)
- Existing methods use contrast between power during deliberation periods or leading up to intrusions
- We aim to better isolate spectral features of successful recall using extreme manipulation of retrieval demands

BEHAVIORAL DATA

Immediate recall performance is high across all task phases and produces modest performance on surprise delayed test

Biomarkers

Spectral contrast difference scores show distinct patterns of high and low frequency activity associated with successful recall

Spectra

- Immediate Recall vs. Deliberation
- Delayed Recall vs. Immediate Recall
- Delayed Recall vs. Deliberation

SUMMARY & CONCLUSIONS

- Contrasts of delayed recall with immediate recall and deliberation replicate the finding of spectral tilt in the moments leading up to successful recall reported in Burke et al. 2014. To our knowledge, this is the first replication of these findings using scalp EEG in non-epileptic participants.
- Observation of spectral tilt is not due to motor artifact, as contrast between delayed and immediate recall shows a stronger spectral tilt than contrast between delayed recall and deliberation. Further, contrast between immediate recall and deliberation shows inverse signal compared to other contrasts.

REFERENCES


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