Introduction

- Verbal short-term memory (STM) tasks typically rely on phonological codes, and long-term memory (LTM) tasks on semantic codes.
- Semantic information may take longer to access.
- Semantic information may not be available at initial encoding.
- Discrepancy in early access to phonological over semantic information may be most marked for low STM loads fitting easily within focus of attention.
- LTM also affects verbal STM tasks: psycholinguistic variables, neuropsychological patients, neuroimaging studies.
- Questions remain about whether verbal STM also depends on semantic encoding and retention.
  - Language-based account: temporary activation of (semantic) LTM along with phonological representation at exposure.
  - Redintegration account: Semantic information accessed at retrieval via phonological reconstruction of stimuli.

Research Questions:
- Is semantic information as easily accessed as phonological information in STM recognition tasks?
- Is there a phonological information advantage for low STM loads?

Results

Scores on synonym > rhyme task, 
F(1,30) = 13.05

Scores on shorter > longer lists, F(4,30) = 7.67, p < .001
Interaction between cue type & list length, F(4,30) = 3.75, p = .007, with a semantic advantage for lists of 3, 5, 9 words.

Conclusion

- Both phonological and semantic information are represented independently in verbal STM.
- Immediate encoding or reporting from focus of attention suggested by:
  - Better recognition of semantically processed words.
  - Semantic advantage present even at short list lengths.
- Consistent with language-based models for direct activation of LTM rather than redintegration account.

Future Directions

- Investigate whether the effect of a dual task (e.g., articulatory suppression) will impair phonological information over and above semantic information.
- Contrast task demands of a item recognition vs. serial oral recognition.

References

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Materials:
- Sample items
  - RHYME: (orthographically similar/dissimilar)
    - probe word ‘card’ - list word ‘hard’
    - probe word ‘throat’ – list word ‘note’
  - MEANS (synonym)
    - probe word ‘sound’ – list word ‘noise’

Participants: 31 healthy, young adults

Procedure:
1. 10 lists of 3, 5, 7, 9, 11 words presented individually
2. After the list, a cue word was given to signal the type of recognition: ‘RHYME’ or ‘MEANS’
3. Probe word displayed, participant judged relation to any list word based on type of recognition cued

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