Differences between sequential ordering in speech and typing

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When and where do we slow down when producing similar sequences?
- When typists and speakers produce two overlapping words (e.g. CAT-CAP) they slow down (Snyder & Logan, 2014; Yiu & Watson, 2015)
- Response competition is common to both typing and speaking.
  - Typing – slowdowns at the divergent key
  - Speech – slowdowns throughout the word (Sevald & Dell, 1994)

Goals:
- Understand response competition differences between speaking and typing.
- Is typing most consistent with chaining or lexical theories?

Exp. 1: Visual cues prime production

Goals:
- Replicate Snyder and Logan (2014)

Task:
- 4 letter sequence presented on the screen (e.g. HAIR)
- Typists either produce prime from memory (GO) or they are given a different TARGET (another 4 letter sequence) to type
  - Targets overlap completely (HAIR) OR share the first 3 (HAIL), 2 (HAND), 1 (HOME), or none (BLUE)
- Chaining theories predict slowdown only at the first divergent letter

Chaining theories versus lexical theories

Repetition priming in a chaining theory
- "cat" → "cap" = facilitation on transitions and keys or phonemes
- "cat" → "cap" = interference at the connection between "a" and "p"

Repetition priming in a lexicalized theory
- "cat" → "cap" = facilitation on retrieval of first sound ("c")
- Interference throughout the word ("cap" competes with "cat") (Yiu & Watson, 2015)

Exp. 2: Primes produced prior to production

Goals:
- Identify whether task demands contributed to this distributed slowdown
- See if results replicate using a task more analogous to speech production experiments (e.g. Yiu & Watson, 2015)

Task:
- Participants type the prime instead of using it as a cue to production.

Conclusions
- Sequencing problems of speech production and typing are similar
- Typists slow down throughout the word when a prior motor plan differs from the current one.
- Typing slowdowns analogous to speech production
- The data are most consistent with a lexicalized theory of typing
- Less consistent with chaining theories

References