

The production of *hotdog* is not the production of *hot* and then *dog*

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Production of Compound Words

Compound words are composed of two separate morphemes: *hot* and *dog* for *hotdog*. We know from speech error and response time studies that the morphological structure of compounds influences production. Does this extend to the phonological level?



One possibility is that compounds like *hotdog* are sequences of two words with their own discrete planning processes (two sequences of three). Another is that they are planned together (as one sequence of six).



Method

Implicit Priming Paradigm (Meyer 1990, 1991)

- Reveals word form planning processes
- Participants memorize cue-target pairs (e.g. cue=*night*, target=*day*)
- Cue presented alone; participants generate target aloud as quickly as possible (Diagram 1)
- Response times are the dependent measure
- Blocks are *heterogeneous* or *homogeneous*

Homogeneous Blocks

All target items in a list begin with the same sound.

Set 1 (all /d/): dog day down dust door

Set 2 (all /p/): pan pick pipe pole port

Heterogeneous Blocks

All target items in a list begin with a different sound.

Mixed Set 1: dog pan mat ball tail

Mixed Set 2: day pick mill box tack

- 6 blocks alternate homogeneous and heterogeneous lists
- Lists within a block are repeated 5 times for all 5 lists

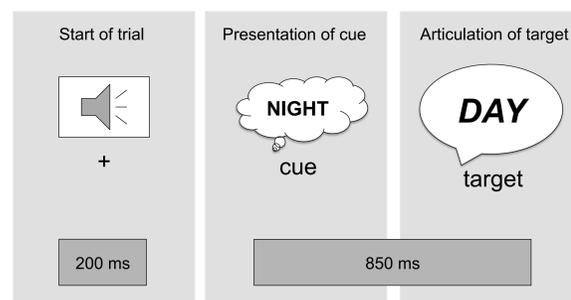


Diagram 1: Structure of a production trial

Experiments

- Modified implicit priming paradigm
- Cues are first halves of words
- Targets are second halves of words
- Homogeneity manipulation on targets
- If the onset of second morpheme or syllable can act as a starting point, priming should be seen
- Experiments 2 and 3 are controls

Experiment 1: Morpheme Cues (Within word)

- Compounds of two free morphemes (e.g. *weekday*)
- Cue: First morpheme (e.g. *week-*)
- Target: Second morpheme (e.g. *-day*)
 - Implicit prime: /d/

Experiment 2: Semantic Cues (Across word)

- Replication of Meyer (1990, 1991).
- Cues are semantically related to targets
- Cue: One-syllable words (e.g. *night*)
- Target: Targets from Experiment 1 (e.g. *day*)
 - Implicit prime: /d/

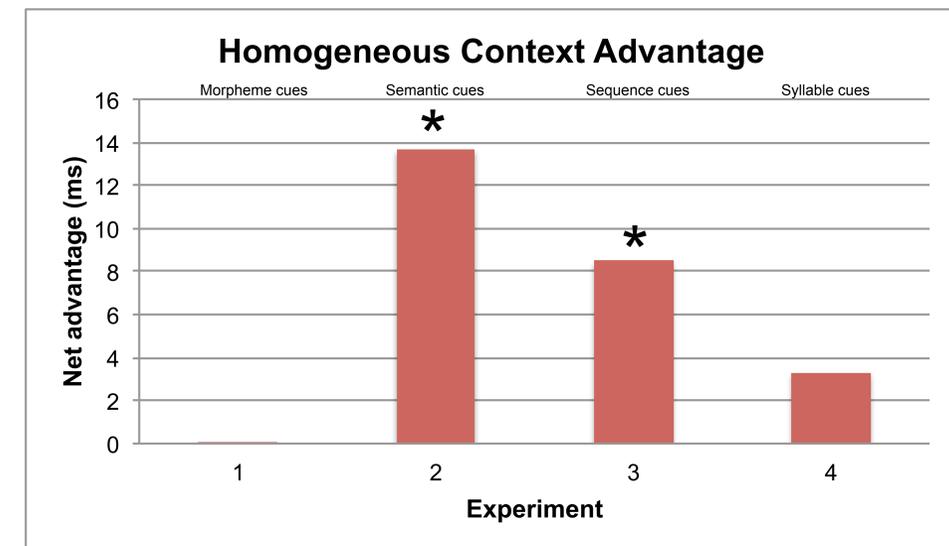
Experiment 3: Sequence Cues (Across word)

- Cues and targets form a sequence (NP)
- Cue: Single-syllable adjective (e.g. *hard*)
- Target: Targets from Exp. 1 (e.g. *day*)
 - Implicit prime: /d/

Experiment 4: Syllable Cues (Within word)

- Disyllabic monomorphemic words (e.g. *bandit*)
- Cue: First syllable of word (e.g. *ban-*)
- Target: Second syllable of word (e.g. *-dit*)
 - Implicit prime: /d/

Results

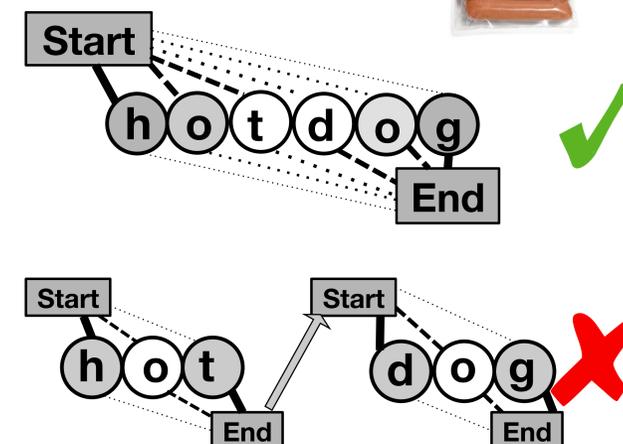


Net RT Advantage of Homogeneous Production Context

We find that being able to predict and prepare the onset of a word for articulation depends on the status of the target as a separate word from the cue. Experiments 1 and 4 both failed to find a difference in the speech onset times between homogeneous and heterogeneous production contexts, suggesting that the second parts of compounds cannot be prepared in advance. However, the onsets of whole words within sequences (Exp. 3) are able to be articulated sooner, just like whole words (Exp. 2).

Conclusions

Our results seem to suggest that compounds like *hotdog* are planned in a single sequence. In the context of serial models like Houghton (1990) and Fischer-Baum et al. (2010), a model for *hotdog* would require the packaging of six hotdogs in a single package, rather than two packages of three.



References

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Acknowledgments

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