Sentential Contextual Effects on Word Production in Children Who Stutter

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ABSTRACT

The effect of sentential contexts on picture naming speed and accuracy was examined in 52 children who do (CWS) and do not stutter (CWNS). Findings revealed no significant difference between CWS and CWNS in response to the experimental manipulation of lexical selection, suggesting that conceptual selection processes are not a likely source of difficulty for CWS (funding, NIH grant [DC006805]).

INTRODUCTION

- Lexical retrieval has been examined in CWS and CWNS using lexical priming tasks, whereby the speed and accuracy of children's responses to pictures are examined in the absence and presence of single word primes (Hartfield & Conture, 2006; Pellowski & Conture, 2005).
  - Findings from these studies suggest that CWS may have difficulties or delays with lexical retrieval processes, motivating the need for further investigation.
- The purpose of this study is to further assess lexical retrieval processes in CWS versus CWNS using a picture naming task.
  - This study differs from previous studies in that lexical processes are manipulated in a sentential context.
  - If CWS have difficulty with lexical retrieval, then they are expected to perform differently than CWNS in response to this manipulation.

RESEARCH QUESTION

- Does experimentally manipulating the conceptual representations that drive lexical selection result in differences in picture naming speed and/or accuracy between CWS and CWNS?

METHODS

Participants

- 26 CWS and 26 CWNS (2;11 to 5;11) with no history of speech-language, neurological, hearing, or intellectual problems.
- All scored > 16th percentile on four speech-language tests and passed a hearing screening.

METHODS (continued…)

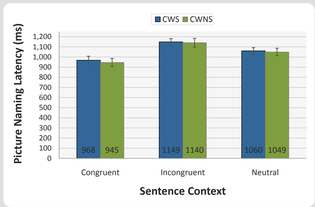
Procedure

- Conversational interaction, speech-language tests, hearing screening, and **computerized picture naming task**, consisting of 12 pictures paired with 3 sentence types:
  - **Congruent:** highly constrained
    - "Peter eats his soup with a… [SPOON]".
  - **Neutral:** contextually unbiased
    - "I want you to say… [DOG]".
  - **Incongruent:** semantically inappropriate
    - "Mary is out walking her… [CAR]".
- Pictures arranged in 3 blocks, each containing 4 congruent, 4 neutral, and 4 incongruent sentence types (36 pix total).
- Pictures presented immediately after the sentence stem, displayed for 2000 ms, and followed by a 2000 ms interval.

RESULTS

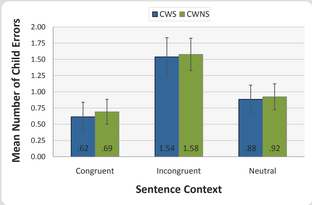
Picture Naming Latency

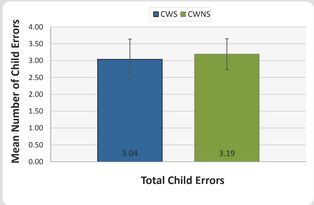
- Significant main effect of sentence context ($p < .001$), but no group ($p = .78$) or context x group interaction ($p = .91$).
  - Congruent faster than incongruent ($p < .001$) and neutral ($p < .001$) contexts; neutral faster than incongruent context ($p < .001$).



Child Errors

- More errors in incongruent than congruent ($p < .001$) and neutral ($p = .005$) contexts; no difference between congruent and neutral contexts ($p = .12$).
- No between-group differences in errors across sentence contexts ($p = .57$ to $.75$) or total errors ($p = .52$).





CONCLUSION

- The manipulation of lexical selection influenced the temporal processing speeds of preschool children, a finding consistent with those of previous studies (Griffin & Bock, 1998; Roe et al., 2000).
  - Pictures preceded by highly constrained contexts were named more rapidly and accurately.
    - May decrease competition among lemmas by reducing the number of competitors or augmenting the strength of a given word (Griffin & Bock, 1998).
  - Pictures preceded by less constrained contexts were named pictures more slowly and less accurately.
    - May activate many lemmas, resulting in an increase in competition (Griffin & Bock, 1998).
- No difference between CWS and CWNS in the speed or accuracy of picture naming across sentence contexts.
  - Findings contradict those of previous studies (Hartfield and Conture, 2006; Pellowski & Conture, 2005) in suggesting that lexical selection processes are not likely to be a source of difficulty for CWS.

REFERENCES

- Griffin, Z.M., & Bock, K. (1998). Constraint, word frequency, and the relationship between lexical processing levels in spoken-word production. *Journal of Memory and Language, 38,* 313-338.
- Hartfield, K.N., & Conture, E.G. (2006). Effects of perceptual and conceptual similarity in lexical priming of young children who stutter: Preliminary findings. *Journal of Fluency Disorders, 31,* 303-324.
- Pellowski, M.W., & Conture, E.G. (2005). Lexical priming in picture naming of young children who do and do not stutter. *Journal of Speech, Language, and Hearing Research, 48,* 278-294.
- Roe, K., Jahn-Samilo, J., Juarez, L., Mickel, N., Royer, I., & Bates, E. (2000). Contextual effects on word production: A lifespan study. *Memory and Cognition, 28,* 756-765.

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Handouts for this session (0997) are available on the ASHA website: http://convention.asha.org/handouts.cfm.