Word Frequency and Phonotactic Pattern Frequency Effects in Free Recall of Words by Children with and without Specific Language Impairments

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Abstract

Children with SLI have difficulty with verbal recall. In recall tasks, children with SLI recall fewer items than their typically developing peers. Some theories view this as an underlying cause of SLI, while others view memory deficits as resulting from a more pervasive linguistic deficit.

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Previous studies have reported that children with SLI have difficulty with verbal recall. This evidence suggests similar memory deficits in SLI and in children with central auditory processing difficulties.

Methods

Participants

16 monolingual English-speaking children with SLI and 16 age-matched control children participated. All children had highly intelligible articulation. The children with SLI included 2 with E-SLI and 14 with ER-SLI, 9 females and 7 males aged 8.7 to 11.8. The age-matched control children included 8 females and 8 males aged 8.5 to 12.3.

Stimulus Materials

Eighty lists of CVC words were created for both children with and without SLI. Lists were created for each of the three word frequency conditions and for each of the two phonotactic pattern conditions.

Procedure

Children were told that they’d be hearing lists of words, and that their job was to repeat them back in any order. In a blocked design, two-item lists were presented first, with list length increasing, concluding with six-item lists. Children’s responses were recorded for subsequent scoring.

Results

Children with SLI show a larger similarity effect for low-frequency items, but CA-matched controls show a larger effect for high-frequency items. Obvious confound of overall recall performance.

Conclusions

Nonsignificant main effects and interactions raise the possibility that children with SLI use efficient phonological encoding strategies. However, the lack of significant effects is more likely the result of low statistical power.

The 3-way interactions provide evidence that children with SLI differ from typical controls in how they use long-term language knowledge to support short-term memory. Lexical uniqueness drives the performance of children with SLI, while familiarity drives the performance of children acquiring language typically.

Differences in phonological processing suggest that children with SLI are more vulnerable to competition from other high-frequency items. Since lower-frequency items generate less competition, children with SLI can process them more efficiently.