Gierut / Learnability Project

The Learnability Project was founded in 1985 by Judith A. Gierut, Professor Emerita of Speech and Hearing Sciences, Indiana University. Through funding from the National Institutes of Health, the project served as a test site in evaluation of the efficacy of clinical treatment for preschool children with functional (nonorganic) phonological disorders. Children who enrolled contributed longitudinal descriptive phonological samples for linguistic analysis. They also received clinical treatment, designed as single-subject experiments, to establish the optimal teaching conditions to promote phonological learning. Experimental studies were based on the triangulation of theoretical models of linguistics, psycholinguistics, and speech-language pathology, with the aim of bridging theory with application and science with best practices. The Gierut / Learnability Project collections accord with the data-sharing plan of the National Institutes of Health and are intended for broad use by scientists, clinicians, and students interested in language and learning.

Content Statement

The truth about transitions: What psycholinguistics can teach us about writing »

Grab that mat, Bat Rat, said Fat Cat! How rhyming words help children with phonological disorders

BY KATIE, ON AUGUST 27TH, 2015

Blog post written by Judith A. Gierut based on an article in the latest issue of *Journal of Child Language*

It has long been thought that children's acquisition of the sound system of a language follows directly from lexical learning. Indeed, some words are better than others in promoting mastery of new sounds and generalized productive use of those sounds across the lexicon. In particular, rhyming words (dubbed lexical neighbors) provide distinct advantages to phonological learning, but the learning mechanism responsible for the effect is not well understood. Some suppose that rhyming words afford a naturalistic case of long-term auditory priming, such that repeated exposure to similar sounding words of the input enhances phonemic distinctiveness. Others suggest that rhyming words benefit phonological working memory, such that exposure to similar sounding words helps retention of sounds and sound sequences.

These hypotheses take on added intrigue when considered relative to the population of children with phonological disorders, which happens to be the most prevalent language learning disability of childhood. We wondered whether it might be possible to take advantage of rhyming words to jumpstart phonological learning for these children, and in the process, to disambiguate hypotheses about relevant learning mechanisms.

Two intervention studies were conducted enrolling preschool children with phonological disorders. We crafted two sets of illustrated stories, one comprised of rhyming words akin to Dr. Seuss books and a second, using the same illustrations but comprised of non-rhyming words that were phonologically unrelated. Children were exposed to either stories with rhyming words or those with non-rhyming words in treatment. In Study 1, stories were presented before teaching production of sounds in error as a test of the priming hypothesis. In Study 2, stories were presented after teaching production of sounds in error as a test of the phonological working memory hypothesis. Results showed that rhyming words promoted greater phonological learning when compared to non-rhyming words, but only when stories preceded production training. The magnitude of phonological gain was on the order of 2:1. By comparison, there was little phonological learning and no differential effect when rhyming or non-rhyming words were presented after production training. The findings are consistent with priming as a mechanism of learning with benefits to phonological acquisition. There is also new promise for treatment of

children with phonological disorders in that rhyming words may be employed before production training to advance broader phonological gains.

We invite you to read the full article 'Dense neighborhoods and mechanisms of learning: evidence from children with phonological delay' here

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