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Acoustic cues to distinctive features are modified in the speech of typically-developing versus atypically developing children

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ABSTRACT

Non-word repetition tasks have been used to diagnose children with various developmental difficulties with phonology, but these productions have not been phonetically analyzed to reveal the nature of the modifications produced by children diagnosed with SLI, autism spectrum disorder or dyslexia compared to those produced by typically-developing children. In this study, we compared the modification of predicted acoustic cues to distinctive features of manner, place and voicing for just under 30 children (ages 5-12), for the CN-Rep word inventory, in an extension of the earlier analysis in Levy *et al.* 2014. Feature cues, including abrupt acoustic landmarks (Stevens 2002) and other acoustic feature cues, were hand-labeled and analysis of factors that may influence feature cue modifications included position in the word, position in the syllable, word length measured in syllables, lexical stress, and manner type. Results suggest specific patterns of modification in specific contexts for specific clinical populations. These findings set the foundation for understanding how phonetic variation in speech arises in both typical and clinical populations, and for using this knowledge to develop tools to aid in more accurate and insightful diagnosis as well as improved intervention methods.

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