Variation in Children's Vowels Due to Dialect and Phonologic Disorder

Rebecca McCauley
Julie Robergs
Christine Arena
Department of Communication Sciences
University of Vermont
Burlington, VT

Abstract

This poster will report on a pilot exploration of vowel variability in children using methods taken from the sociolinguistic study of dialect acquisition (e.g., Labov, 1994; Roberts, 1997) and from the study of children's sound system disorders (Robb et al., 1999; Smith et al., 1994). In child sound system disorders, a high level of variability in vowel production is seen as indicative of deviant development (Reynolds, 2002), and, more specifically, as potentially diagnostic of Developmental Apraxia of Speech (Davis et al.,1998). Because this interest in vowel variability within phonologic disorders has proceeded with little attention to sociolinguistic findings, the five children in the study were selected to allow preliminary examination of the effects *on variability* of phonologic ability and dialect (Northern Vermont versus Boston, MA) and methodologies used in both disciplines were applied.

The five children studied comprised one 5 year old boy with a severe speech disorder (suspected Childhood Apraxia of Speech) from Vermont and four typically developing boys (ages 2 and 5) from Vermont (n = 2) and Boston (n= 2). The younger children were included to allow for a comparison of the target child 's productions to those of two children whose phonologic

development was similar. Stimuli consisted of vowels produced as part of an imitated word list (Pollock & Keiser, 1990) and spontaneous productions of the same words, elicited in play. Transcriptions and acoustic measurements of formants 1-3 for all English monophthongs and diphthongs were the major sources of data used in the two analysis methods. Outcomes will differentially implicate the roles of severe speech disorder versus age versus developmental level as a "cause" of higher variability—a finding that could be pursued in larger subsequent studies.

References

Ball, H. & Gibbon, F. (2002). *Vowel disorders.* Boston: Butterworth Heinemann.

Davis, B.L., Jakielski, K.J., & Marquardt, T.P. (1998). Developmental apraxia of speech: Determiners of differential diagnosis. *Clinical Linguistics and Phonetics*, *12*, 25-45.

Labov, W. (1994). *Principles of linguistic change*. Cambridge, MA: Blackwell.

Pollock, K., & Keiser, N. (1990). An analysis of the vowel misarticulations of five children with developmental apraxia of speech. *Clinical Linguistics and Phonetics, 4*, 161-168.

Reynolds, J. (2002) Recurring patterns and idiosyncratic systems in some English children with vowel disorders. In H. Ball & F. Gibbon (Eds.), *Vowel disorders.* Boston: Butterworth Heinemann.

Roberts, J. (1997). Hitting a moving target: Acquisition of sound change in progress by Philadelphia children. Language Variation and Change, 9, 249-266.

Robb, M., et al. (1999). A phonetic analysis of vowel errors during the course of treatment, *Clinical Linguistics and Phonetics, 13*, 309-321.

Smith, B. et al.. (1994). Vowel variability in Developmental Apraxia of Speech. In J.A. Till, K.M. Yorkston, & D. R. Beukelman (Eds.), *Motor speech disorders: Advances in assessment and treatment* (pp. 81-89). Baltimore: Paul H. Brookes.

Key Words: dialect in children, child language, phonologic disorder