

Rounding, Coarticulation, and Fronting for /u/ and /U/ among Texana, NC and Detroit African American Speakers: Problematizing the Internal/ External Dichotomy

Bridget L. Anderson and Becky Childs, University of Georgia

This paper builds on earlier studies of fronting of /u/ and /U/ in AAE (Anderson et al. 2002, Anderson 2003, Fridland 2003) and reports new findings about the phonetic details of these changes. This comparative study examines patterns of fronting among African Americans in a Midwestern urban center and a small town in the Great Smoky Mountains of North Carolina using well-defined and replicable acoustic methods for each dataset. We analyze vowel-to-consonant coarticulation, duration, and rounding, as well as the interactions between these dimensions, and argue that only a multi-dimensional approach yields an adequate description of the fronting process.

This paper makes several important methodological contributions. F2 distance measures between the front and back vowels allow us to compare the fronting process between speakers and communities. Like Fought (1999), we quantify fronting for /u/, but we also quantify fronting for /U/. The combined effects of backing and rounding are also quantified through examination of F2, F3, and the separation between these formants (Stevens 1998). Context effects from the following consonant are also considered. Our results indicate that these additional dimensions are crucial to the phonological distinctiveness of fronted variants of /u/ and /U/. Vowels which look very similar for F1/F2 values at midpoint or steady state (often the only values analyzed) look quite different from one another when backing and rounding for the offglide are considered.

Both the Detroit and Smoky Mountain AAE speakers show fronting, but they display different patterns for coarticulation (with significance confirmed by ANOVA tests). For the Detroit speakers, following alveolars promote fronting and following labials and velars inhibit it. The Smoky Mountain speakers, in contrast, do not show strong coarticulatory effects.

Finally, we seek to problematize the longstanding distinction between “internal” and “external” factors. Context effects, particularly the relative timing of the articulators as they move into position to execute the following consonant at vowel offset, are different for the two sets of AAE speakers. Our results suggest that fronting is simultaneously physical/ phonetic, cognitive/ phonological, and social and that it is difficult, if not impossible, to draw lines between these dimensions. For African Americans in the South, fronting of these vowels has a social meaning in that they have apparently tended to avoid it (Thomas 2001), at least until recently (Fridland 2003). Ethnographic fieldwork in Texana and Detroit has revealed that AAE speakers in both locations show a strong cultural orientation to and regional affiliation with the South; we argue that these factors play a role in /u/ and /U/ fronting for these speakers and that neither “internal” nor “external” factors alone can account for our findings. We suggest that, in general, a division between internal and external factors in accounting for vowel changes is problematic.

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