

## A bunch of BULL shift: Patterns of pre-/l/ FOOT merger in Kansas City

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Conditioned mergers of vowels occurring before /l/ are widespread across the United States (e.g., Thomas 2001; Labov, Ash & Boberg 2006). Thus, in various regions, minimal pairs like *steel-still*, *bail-bell*, *pool-pull*, and *bowl-bull* might be homophones, despite the maintenance of distinctions between the relevant vowels in other phonetic contexts. In the Midland dialect region, the vowel in FOOT in pre-/l/ contexts (BULL) has been shown to merge with both the high (POOL) and mid (BOWL) tense back vowels (e.g., Thomas 2001; Ash 2006). These conditional mergers result in a variety of vowel configurations including systems with two-way mergers of either POOL-BULL or BOWL-BULL, as well as three-way mergers across the vowel classes (e.g., Bowie 2000; Arnold 2014).

The research presented here examines configurations of BULL, POOL, and BOWL in Kansas City, a large metropolitan area in the Midland dialect region. It draws on acoustic analyses of more than 2,300 vowel tokens from sociolinguistic interviews with fifty-one Kansas Citians. This large sample affords a nuanced examination of the vowels across a range of social factors, including age, gender, and socioeconomic status. Additionally, responses to minimal pairs tests allow for acoustic productions to be explored according to speaker perceptions of the phonemic status of the vowels.

Results show that BULL frequently merges with either POOL or BOWL in Kansas City, though there is little evidence of speakers merging all three vowels together. Moreover, the two mergers behave differently from one another in apparent time in terms of both production and perception. Apparent-time evidence indicates that the merger of BULL and BOWL has been spreading gradually in terms of production, but took hold rapidly (in a single generation) in terms of perception. By contrast, the perception of BULL and POOL as merged has spread gradually, but their production as merged has actually retreated in apparent time. Acoustic analyses suggest that the relevant changes are in the F2 of POOL and BOWL—BULL appears to have reached a very back production in Kansas City at an earlier stage in the development of the city's dialect, but continued backing of POOL and BOWL among younger Kansas Citians is pushing POOL away from merger with BULL and drawing BOWL into merger with BULL.

To seek explanations for the different patterns of merger, the paper concludes by examining case studies of individual interviewees. These include, for instance, two sisters born in the 1990s, one of whom is BULL-POOL merged and the other BULL-BOWL merged. Cultural and meta-linguistic comments from them and from other interviewees may help shed light on the social and cognitive mechanisms for these mergers which appear to be progressing—in very different ways—in Kansas City. Finally, this research notes some practical issues that arise in using automated vowel alignment and extraction programs to measure pre-/l/ vowels, and offers relatively simple strategies that researchers might implement while conducting such a study.

## References

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