

Merger just wasn't in the CARDS in St. Louis: CORD-CARD as a near-merger

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Historically, a distinctive feature of English in St. Louis, Missouri, has been the context-specific merger of /ɔr, ar/, as in *cord*, *card* (Murray 2002, Labov et al. 2006). In recent decades, however, a puzzling development has emerged: the CORD-CARD vowel classes have separated, giving way to the more general American English merger of /ɔr, or/ (Goodheart 2004, Gordon and Majors 2006). If we are to hold to the principle that completed mergers cannot be reversed (Labov 1994), that St. Louis' CORD-CARD merger has seemingly reversed represents a potential counter-example as described. In this paper, I offer phonetic evidence that the merger in question never fully reached completion. Rather, raising of CARD resulted a great deal of overlap between the two vowel classes. I suggest that CORD-CARD instead was a near-merger, in which the vowels were perceived as merged yet remained distinct targets in the vowel space for St. Louisans.

I utilize oral histories from collections held by the State Historical Society of Missouri in order to conduct a sociophonetic analysis. I rely on eight white men born between 1929-1945 who grew up within the St. Louis speech island described by Murray (1986). The first half hour of each was transcribed and run through the FAVE program (Rosenfelder et al. 2011). Tokens containing CORD-CARD were extracted, excluding function words. The data was examined for overlap between vowel classes using Bhattacharyya's Affinity (Johnson 2015) and Pillai-Bartlett trace (Hay et al. 2006). Measurements were additionally tested for significant differences using t-tests and smoothing spline analysis of variance (SS ANOVA: Gu 2014).

Speakers vary in the amount of overlap between vowel classes, with three speakers showing near complete overlap in F1/F2 ($BA > .81$, Pillai $< .12$). These speakers were considered to be a subset of merged speakers for significance testing (106 tokens CORD, 125 tokens CARD). Within the subset, t-tests found significant differences between vowel class means for general tendencies of both F1 and F2 ($p < .001$). On average, F1 of CARD in this subset is 32 Hz lower in the vowel space than CORD, and F2 is 74 Hz fronter. SS ANOVA looks for significant differences over the course of the formant trajectory (Nycz and De Decker 2006); the vowels were significantly different in F1 and F2 over the entire duration of the vowel. Additionally, tokens of CARD were raised in comparison to tokens containing /a/ in other environments (125 Hz, $p \ll .0001$).

Given the overlap between CORD/CARD and small differences in F1/F2, it is not surprising that the vowels would be perceived as merged. However, similarly small yet significant differences were reported for the MERRY-MURRAY near-merger in Philadelphia (Labov et al. 1991). I hypothesize that CORD-CARD in St. Louis represents a near-merger as well. This gives us a solution to the problem of the undoing of the St. Louis merger: there never was a completed merger to be undone. Rather, the raised CARD was quite similar to CORD, but speakers maintained distinct targets in production.

References

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