Educational attainment and the actuation of sound change

Much recent research has focused on presenting possible solutions to the actuation problem, as posed by Weinreich et al. (1968), through the application of new analytical methods or theoretical frameworks (e.g., Ahern 2013, Baker et al. 2011, Bermúdez-Otero and Hogg 2003, Cheshire et al. 2013). Thanks to such work, we now have a better understanding of the potential linguistic causes for sound change; however, there are still many instances where the actuation of change remains elusive. One such recently-documented case is the retreat from traditional Philadelphia vowel features described by Labov et al. 2013. They characterize the reversal in trajectory of five vowels, beginning in the 1940s, as the result of a general "retreat from Southeastern features in favor of Northern features." The population shifts associated with WWII are mentioned as one possible cause, but no satisfactory conclusion regarding the actuation of these changes is reached.

Throughout their analysis, however, Labov et al. note that these reversals are generally led by speakers with more than twelve years of education; i.e. at least some college. We propose that this finding is crucial to understanding the actuation of these sound changes, arguing that a significant shift in education attainment beginning in the 1970s is the driving force behind them. U.S. Census data on educational attainment from 1940 to the 2011 shows a sea change in the highest level of education attained; while less than 3% of Philadelphians went on to college in 1940, nearly 50% complete some college by 2011. The trend towards higher education appears to begin in 1970; between the 1960 and 1970 census, college education jumps from 3% to 12%, and steadily increases from there. This accords well with Labov et al.'s finding that these reversals are begun by speakers born in the 1940s.

Furthermore, analysis of the Philadelphia data using a more fine-grained categorization of the education variable allows us to pinpoint the leaders of these changes. A closer examination of college-educated speakers reveals that with regards to participation in these sound changes, the effect of a college education is not uniform. We utilize the more detailed education index of Prichard and Tamminga (2012), which distinguishes between local, regional, and national colleges, and show that these reversals are specifically led by speakers who attended the most prestigious national universities. Figure 1 presents the application of this index to three of the vowels analyzed in Labov et al. 2013 (those in the *bad*, *bout*, and *bought* classes), using data from 195 white adult speakers in the Philadelphia Neighborhood Corpus. National college speakers lead the reversals of all three vowels, followed by regional and local college speakers.

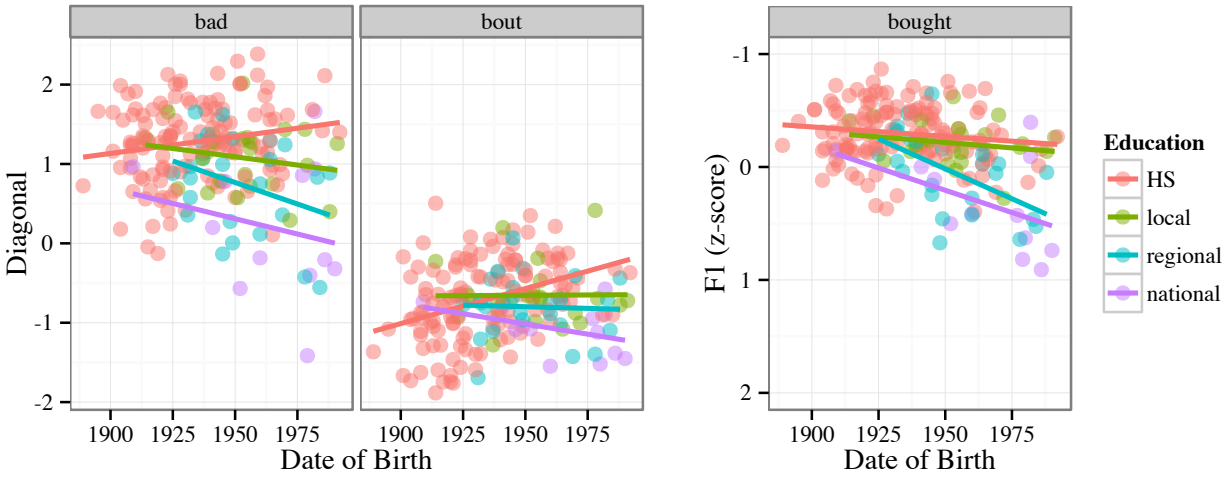

Figure 1: Speaker means for five Lobanov normalized Philadelphia vowels, plotted on a diagonal (Z2-Z1)

Given the synchronic interaction between education and the use of socially-salient linguistic variables demonstrated by De Decker 2006, Prichard and Tamminga 2012, Wagner 2012, Labov et al. 2013 amongst others, this work explores how such effects may lead to diachronic reversal of socially-salient sound changes. Future work should investigate the degree to which the actuation of such changes are the result of accommodation processes among national university-educated speakers during the college years. (472 words)

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