

Phonological change via probabilistic variation

Betsy Sneller

Phonological change results in a dramatic structural difference in a language, but often without a corresponding dramatic difference in the intelligibility between speakers. Precisely *how* individual speakers represent and produce language to result in a diachronic structural change is a well theorized question within linguistics (e.g., Bybee, 2002; Fruehwald et al., 2013; Janda and Joseph, 2003; Kiparsky, 2015; Ohala, 1981), but one without much empirical evidence: Phonological change is difficult to observe in real time since it occurs relatively infrequently and requires a corpus of considerable time depth, spanning from before the change to after the change.

How individuals in a speech community drive phonological change is a question best answered by combining insights from both quantitative sociolinguistics and generative theory. Different theories, such as phonetic incrementation (Ohala, 1981) vs. spontaneous phonologization (Janda and Joseph, 2003) make distinct predictions about individual “transitional cohort” speakers, whose production drives community-level phonological change, but the lack of real-time data on such speakers makes it difficult to disambiguate between models of change. Using the techniques and analysis methods of variationist sociolinguistics provides a way to disambiguate between possible mechanisms of change posited by distinct theoretical approaches.

Taking advantage of the large-scale Philadelphia Neighborhood Corpus (PNC) and a recently identified allophonic restructuring of /æ/ in that dialect (Labov et al., 2013), I provide such an analysis of phonological change in progress. Using natural speech production from 46 speakers who acquired language during the period of allophonic change, I find that while some speakers adhere only to either the older traditional /æ/ split or the new nasal /æ/ split, there are some individuals who variably produce *both* systems. Taking social network into account further demonstrates that these variable speakers are in fact the drivers of this change across the Philadelphia speech community. These findings suggest that phonological change occurs not via the more traditionally posited mechanism of phonetic incrementation, but rather via within-speaker probabilistic variation.

References

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