

Intraspeaker Competition of Two Phonological Subsystems

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When phonological change such as an allophonic split or restructuring occurs in a language, there is some debate about the representation of such a change in the individual speakers. It has been argued that change may occur through incremental phonetic changes (e.g. Ohala, 1981), through instant phonologization for a language learner (e.g. Fruehwald, 2013), or through phonological competition akin to syntactic competition (Fruehwald et al. 2013, Kroch 1995). Due to the unpredictability of phonological change, as well as the myriad measurable factors required in order to fully characterize such changes, such as obtaining data from individuals before, during, and after initiation of the change, testing these theories remains a substantial challenge.

However, recent work in Philadelphia (Labov et al., 2015) has found evidence of a radical phonological change currently in progress: the complex traditional Philadelphia /æ/ system (PHL) is rapidly being replaced by the supraregional standard nasal /æ/ system (NAS), within the timespan of only a couple generations. Both PHL and NAS comprise a tense and a lax allophone of /æ/ (Kiparsky 1995; Labov et al. 2015), but the linguistic conditioning factors governing which tokens are tense or lax differ between the two systems. Labov et al. (2015) argues for competition between these two phonological subsystems on the level of the speech community.

The current paper expands on the work of Labov et al. (2015), finding evidence that not only are PHL and NAS in competition on the community level, but they are also in competition within individual speakers. Data come from 54 sociolinguistic interviews conducted with white Philadelphians born after 1985. Interviews were transcribed in ELAN, and vowel measurements obtained using the FAVE program. Because the conditioning factors differ somewhat between the two /æ/ systems, it was possible to classify individual tokens from each speaker as adhering to the PHL system, NAS system, or as adhering to both systems (for tokens such as “MAN”, which are produced the same under both systems). The /æ/ tokens that were informative as to underlying system were classified as either tense or lax using a binomial regression classifier.

Results show three main types of speakers: traditional speakers who exhibit /æ/ tokens consistent with PHL (Figure 1a), vanguard speakers who exhibit /æ/ tokens consistent with the new NAS (Figure 1b), and transitional speakers who exhibit informative tokens consistent with both PHL and NAS (Figure 1c). As shown in Figure 1c, these informative tokens for transitional speakers comprise both tense and lax allophones from PHL and NAS, even producing tense and lax tokens of the same lemma; this indicates that speakers are not simply applying a surface rule (e.g. laxing tense tokens), but rather are switching between phonological subsystems within a single interview.

We argue that this data supports an extension of the competing syntactic grammars of Kroch (1995) to the phonological domain, and provides evidence that categorical language change in both syntax and phonology may occur through the same mechanism of intraspeaker grammar competition.

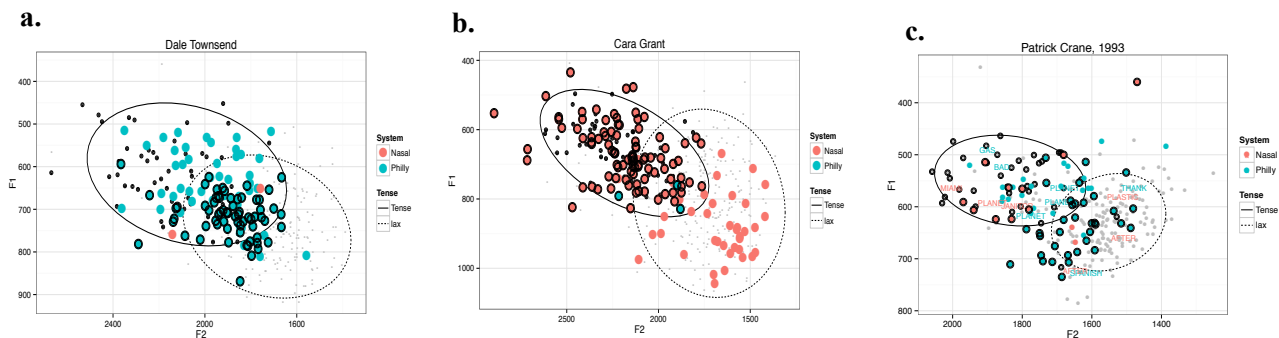


Figure 1: a) example of a traditional speaker, b) example of a vanguard speaker and c) example of a transitional speaker. In all plots: F1 (y-axis) and F2 (x-axis) of tense (solid ellipse) and lax (dotted ellipse) allophones of /æ/. Tokens that adhere to PHL-only in blue; tokens that adhere to NAS-only in red; tokens that are uninformative as to underlying system in gray. Tokens preceding a nasal segment highlighted in black.