The role listeners and speakers in sound change: Afrikaans devoicing and tonogenesis as a case study

Andries W. Coetzee\textsuperscript{a,b}
(in collaboration with Pam Beddor\textsuperscript{a} and Daan Wissing\textsuperscript{b})

The relation between speech perception and speech production is a foundational issue in the study of the phonetic bases of sound change. Contemporary experimental approaches to sound change investigate how the phonetic variants in the ambient language might serve as a source of new sound patterns that spread through a speech community. In these approaches, when the listeners’ systematic perceptual biases are argued to be the source of the change, it is (often tacitly) assumed that listeners-turned-speakers will manifest those biases in their own productions. But how closely yoked are production and perception? Our current research addresses this broad issue through the more specific question of whether language users who produce more innovative variants also weight the innovative property more heavily in perception.

As a case study, we report production and perception data for older and younger speakers of Afrikaans, which is undergoing a change by which an earlier voicing contrast for obstruents is in the process of being replaced by a tonal contrast. The production measures show that devoicing (production of /b d/ as [p t]) is more common for younger speakers than for older speakers. However, there is not an age difference for production of post-stop fundamental frequency (f0): for all speakers, regardless of phonetic voicing, vocalic f0 is systematically higher following phonologically voiced /b d/ than phonologically voiceless /p t/. The perception findings for these same participants parallel their production data: although all listeners use both f0 and voicing to perceptually differentiate /b d/ from /p t/, older participants rely more than younger ones on voicing cues. In addition, production and perception data for individual participants are correlated: participants who produce more voicing also weight voicing more heavily in perception. We will interpret these findings both with respect to the specific change of emergent tonogenesis in Afrikaans and a more general consideration of the contributions of innovative listeners-turned-speakers to sound change.

\textsuperscript{a} = University of Michigan, USA
\textsuperscript{b} = North-West University, South Africa