A first attempt at modeling social preferences in perceptual learning

Molly Babel, Brianne Senior, and Karina Wong
Department of Linguistics
University of British Columbia
Contact email: molly.babel@ubc.ca

Humans possess an impressively robust and reliable speech recognition system. In the face of immense variability, listeners (generally) comprehend spoken language with ease. A trademark feature of the human speech recognition system is that it is stable, yet flexible. What affords us with this talent? A key mechanism claimed to provide this combination of flexibility and stability is *perceptual learning:* a change as a result of sensory exposure to a deviant or unexpected signal. Simply, what was previously not recognized as a member of a particular sound category or as an interpretable pronunciation of a particular word is now categorized or recognized as such (e.g., Norris et al., 2003). Here we ask whether social preferences impact perceptual learning. Listeners do not weight all incoming phonetic information equivalently (Johnson, 1997), with familiar accents, for example, benefiting from improved encoding (e.g., Clopper et al., 2016) and claims that listeners attend less to dispreferred accents (Lippi-Green, 1997). Listeners in our study were presented with a passage from Pinocchio where the back vowels were participating in an F1 raising chain shift (Weatherholtz, 2015). An actor-phonetician produced this story in a pleasant style (with shifted vowels), an unpleasant style (with shifted vowels), and control condition (with unshifted vowels). Perceptual learning was assessed with lexical decision endorsement (n=60, 20 per condition) and cross-modal priming (n=60, 20 per condition). The results of this study are a first step in understanding whether the mechanisms of perceptual learning may be affected by social preferences.

References

Clopper, C. G., Tamati, T. N., & Pierrehumbert, J. B. (2016). Variation in the strength of lexical encoding across dialects. *Journal of Phonetics*, *58*, 87-103.

Johnson, K. (1997). Speech perception without speaker normalization. *Talker variability in speech processing*, ed. by Keith Johnson and John W. Mullennix, 145–65. San Diego: Academic Press

Lippi-Green, R. (1997). *English with an accent: Language, ideology, and discrimination in the United States*. Psychology Press.

Norris, D., McQueen, J. M., & Cutler, A. (2003). Perceptual learning in speech. *Cognitive Psychology*, *47*(2), 204-238.

Weatherholtz, K. (2015). *Perceptual learning of systemic cross-category vowel variation* (Doctoral dissertation, The Ohio State University).