

Generational Change in Sociophonetic Perception
Lily Obeda and Benjamin Munson

Two signature contributions of laboratory phonology have been to document socially driven variation in sound structure, such as the variation across talkers that occurs as a function of macro-sociological categories, and to show how this socially driven variation affects phonological processing ([2]). This study examines the influence of sexual orientation on sociophonetic variation. Individuals' sexual orientation can be reflected in the acoustic and articulatory details of speech sounds, and this variation can be perceptually salient to listeners ([1], [5], [6], [7], [8]). One representative study in this area is by [4], who found that judgments of gay-soundingness of men's speech were stronger for words with non-high front vowels than for words with back vowels. In the dialect in question, these vowels were undergoing sound change in progress, suggesting that gayness judgments were based in part on an assessment of individuals' engagement in ongoing sound changes. That hypothesis is consistent with research showing gender differences in engagement in sound change (e.g., [3]).

The current study reruns [4]'s experiment with two new sets of listener data collected in 2018-2019. Our goal was to examine whether the perception of sexual orientation through speech had changed in the intervening 15 years since [4] data was collected. The primary focus was whether ongoing sound change since [4] had reduced the extent to which variation in non-high front vowels can cue judgments of sexual orientation in this dialect. A secondary focus is whether the general increased visibility of queer individuals in the intervening 15 years has affected how readily listeners attribute phonetic variation to talkers' sexual orientation.

Stimuli were the same 44 talkers' productions as in [4]. There were three groups of listeners in total. The *2003 listeners'* data have already been described in [4] (N=40). They were 18-30, and were recruited in 2002-2003 from the same metropolitan area where the talkers were recorded. The *2019 younger listeners* were (N=44) were recruited using identical criteria and materials as in [4]. The *2019 older listeners* (N=25) were recruited using the same criteria as the 2003 listeners except that they were 33-48 years of age, which matches them in birth year to the 2003 listeners. These three groups allow us to examine whether any changes from 2003 to 2019 were reflected only in younger people's perception, or whether the individuals drawn from the same set of birth years also changed their perception over the intervening 15 years.

The listeners rated talkers' sexual orientation on a five-point scale. Ratings from this task were fit to a linear mixed-effects model, examining the effects of two talker-related variables (sex and sexual orientation) and two stimulus-composition variables (presence/absence of front vowels, presence/absence of fricatives) on ratings in the three listener groups. The best-fitting model had a strong interaction between listener group and talker sexual orientation, and in particular for the coefficient contrasting the 2003 listeners' ratings with the 2019 younger listeners' ratings ($\beta=-0.0231$, $t[105.6]=-3.772$, $p<0.001$). The effect of sexual orientation on ratings was markedly smaller for both groups of 2019 listeners than for the 2003 listeners (Figure 1). There was not a significant interaction between group and either stimulus composition measure, suggesting that changes in listener ratings were not due to qualitatively different perception of stimuli containing sounds undergoing changes in progress in 2003.

Together, these findings show that the perception of sexual orientation through speech have changed in the intervening years. These findings highlight the fluid nature of the assignment of phonetic variation to social categories, and suggest that work in sociophonetic variation must be sensitive to changing social norms.

References

- [1] Campbell-Kibler, K. (2011). Intersecting variables and perceived sexual orientation in men. *American Speech*, 86, 52-68.
- [2] Docherty, G., & Foulkes, P. (2000). Speaker, speech, and knowledge of sounds. In N. Burton-Roberts, P. Carr, & G. Docherty (Eds.), *Phonological knowledge: Conceptual and empirical issues* (p. 105-129). New York: Oxford University Press.
- [3] Labov, W. (2011). *Principles of Linguistic Change, Volume 3: Cognitive and Cultural Factors*. Marblehead, MA: John Wiley & Sons.
- [4] Munson, B., McDonald, E.C., DeBoe, N.L., & White, A.R. (2006). Acoustic and perceptual bases of judgments of women and men's sexual orientation from read speech. *Journal of Phonetics*, 34, 202-240.
- [5] Pierrehumbert, J. B., Bent, T., Munson, B., Bradlow, A. R., & Bailey, J. M. (2004). The influence of sexual orientation on vowel production (L). *The Journal of the Acoustical Society of America*, 116(4), 1905-1908.
- [6] Podesva, R. J., Roberts, S. J., & Campbell-Kibler, K. (2002). Sharing resources and indexing meanings in the production of gay styles. In K. Campbell-Kibler, R. Podesva, S. Roberts, & A. Wong (Eds.), *Language and Sexuality: Contesting Meaning in Theory and Practice* (p. 175-189). Stanford: CSLI Publications.
- [7] Smyth, R., Jacobs, G., & Rogers, H. (2003). Male voices and perceived sexual orientation: An experimental and theoretical approach. *Language in Society*, 32, 329-350.
- [8] Tracy, E. C., Bainter, S. A., & Satariano, N. P. (2015). Judgments of self-identified gay and heterosexual male speakers: Which phonemes are most salient in determining sexual orientation? *Journal of Phonetics*, 52, 13-25.

Figure 1. *Median Ratings for Gay/Lesbian and Heterosexual Men and Women, separated by Listener Group (2003=2003 Listeners, 2019y=Younger 2019 Listeners, 2019o=Older 2019 Listeners).*

