Perception of Creaky Voice in English by L1 Polish Speakers

Ewelina Wojtkowiak, Geoffrey Schwartz, Kamil Kaźmierski, Maral Asiaee
Experimental Phonology and Phonetics Laboratory, Faculty of English, Adam Mickiewicz University in Poznan, Poland

Much of the research on L2 speech acquisition has centered on segmental aspects of language. However, relatively little attention has been given to how vocal quality itself may differ across languages and whether L2 learners adjust to the target language's conventions for non-modal phonation, such as creaky voice. This topic has gained significance in light of the increasing prevalence of creaky voice among native English speakers in recent years (Yuasa 2010; Wolk et al. 2012).

Polish and English differ notably in their typical phonation patterns. Polish primarily relies on modal phonation, whereas English allows for a slightly wider range of phonation types, with creaky voice becoming increasingly common. Given this contrast, Polish speakers acquiring English may experience a shift in their use of non-modal phonation. A recent production study of Polish-English bilinguals found that, despite creaky voice carrying social stigma in English (Anderson et al. 2014), these speakers incorporate it into both their L1 and L2 productions (Schwartz et al. 2024). Interestingly, its usage in English becomes more consistent as their phonetic training in the L2 progresses, despite it not placing much focus on practising different types of phonation.

The present study builds on these acoustic findings by investigating Polish-English bilinguals' perceptions of creaky voice in English and their attitudes toward creaky phonation. In a survey study implemented in Qualtrics, we asked 56 Polish-English bilinguals to rate English speech stimuli (which differed with respect to accent – British vs. American, as well as creak type – continuous, phrase-final, or absent) on several Likert scales.

Statistical analysis was conducted using ordinal regression in R. The key predictor of interest was *stimulus type* (i.e. creak type), with *stimuli accent, stimuli sex,* and *respondednt accent* included as control variables. P-values were then adjusted using the Benjamini-Hochberg correction for multiple comparisons.

Significant differences were found in four of the six scales: lack of creakiness appeared to make people sound more energetic (p=.002), more approachable (p<.001), more compassionate (p=.003), and more cheerful (p=.01). Therefore overall, speakers were rated more positively when the stimuli did not contain creaky voice. The next step involves conducting an acoustic analysis of the stimuli using VoiceSauce to examine potential factors influencing listener ratings. In some cases, individual speakers were rated more negatively for non-creaky productions compared to those containing creak. This analysis aims to identify specific acoustic properties that may have contributed to these patterns.

References:

Anderson, R.C., Klofstad, C.A., Mayew, W.J. & M. Venkatachalam. 2014. Vocal Fry May Undermine the Success of Young Women in the Labor Market. *PLOS ONE* 9(5): e97506.

Wolk, L., N. Abdelli-Beruh & D. Slavin. 2012. Habitual use of vocal fry in young adult female Speakers. *Journal of Voice* 26(3), e.111-e.116.

Yuasa, I. 2010. Creaky voice – a new feminine voice quality for young urban-oriented upwardly mobile American women? *American Speech* 85 (3).