The development of perception and production of stops in L3 leaners – does it go hand in hand?

Whereas third language acquisition of phonology has received considerable attention in the literature, few studies have compared L3 perception and production (e.g., Wrembel et al. 2022), especially from the developmental perspective. Previous data on stop production show that learners tend to keep their language systems separate (e.g. Geiss et al. 2021), which is particularly visible in the voiceless series, whereas in perception, there is a possibility of progressive and regressive cross-linguistic interactions (e.g. Liu et al. 2019). However, much uncertainty still exists about the relationship between the two modalities in these sounds. Thus, the current contribution aims to address this gap while examining the development of both perception and production of L3 stops by trilingual speakers of the same linguistic repertoire across three testing times. The main objective was to observe whether the development of VOT durations and perceptual boundary locations change throughout the first year of learning the new L3 and to what extent the performance in two modalities differ from one another. Participants included 11 learners of L1 Polish L2 English L3 Norwegian, aged 20, who had recently started learning their L3. The experiment consisted of two tasks – word reading and VOT continuum categorisation that were administered in three testing times across one year of studying L3. The stimulus for the production part included tokens in L3 Norwegian with both voiced /bdg/ and voiceless stops /ptk/ in the initial position in L3 Norwegian. For perception, VOT continua were created separately for the three places of articulation. They were based on stop-initial words produced by native speakers of Norwegian and ranged from -130 to 80 ms with a 10-ms difference between each token. The production results show gradual increase of VOT values in voiceless stops and the opposite tendency in the voiced series. The perceptual results, on the other hand, did not show any specific developmental trend of the development, except for the velar stops, whose perceptual boundary location became lower with time. These findings might suggest that there is little or no direct link between the two modalities, which will be further discussed with relation to cross-linguistic similarity.

References:

Geiss, M., Gumbsheimer, S., Lloyd-Smith, A., Schmid, S., & Kupisch, T. (2022). Voice Onset Time in Multilingual Speakers: Italian Heritage Speakers in Germany with L3 English. *Studies in Second Language Acquisition, 44*(2), 435-459.

Liu, Z., Gorba, C., Cebrian, J. (2019). Effects of learning an additional language on VOT perception. *Proceedings of the 19th International Congress of Phonetic Sciences, Melbourne,* 260-264.

Wrembel, M, Gut, U., Kopečková, R., Balas, A. (2022). The relationship between the perception and production of L2 and L3 rhotics in young multilinguals; an exploratory cross-linguistic study. *International Journal of Multilingualism.* Published online https://doi.org/10.1080/14790718.2022.2036158