Phonetic L2 acquisition and L1 attrition in full and partial L2 immersion

Antje Stoehr1, Titia Benders2, Paula Fikkert3

1Radboud University Nijmegen & IMPRS for Language Sciences, Netherlands
2Macquarie University, Australia
3Radboud University Nijmegen, Netherlands

Adults speaking a second language (L2) often are identified as non-natives as their speech contains phonetic properties from their native language (L1; Scovel, 1969). With increasing L2 proficiency, the L2 can also influence the L1, leading to a foreign accent in L1. To understand linguistic behaviors of bilinguals, it is important to characterize phonetic properties in both L2 and L1 (Sancier & Fowler, 1997).

This paper studies one phonetic aspect – voice-onset time (VOT) – that is implemented differently in L1 and L2 (e.g. Flege, 1984): Dutch uses prevoiced and short-lag plosives, whereas German uses short-lag and aspirated plosives.

Recordings in both languages of German-Dutch binational couples (N=41+56 monolingual controls) in the Netherlands show the following: Fully immersed L2-speakers of Dutch with L1-German divide their phonetic space into four language-specific categories: Dutch voiced (prevoiced), German voiced (short-lag 10ms), Dutch voiceless (short-lag >20ms), and German voiceless (aspirated). The two short-lag categories equal the respective native-speakers’ VOT, but the prevoiced and aspirated categories deflect away from native speakers’ VOT (German: 946;=-6.94, t=-2.47, p<0.01; Dutch: 946;=-3.73, t=-2.19, p<0.05). The partially immersed L2-German speakers with L1-Dutch maintain Dutch native-like VOT, which they transfer into German (voiced: 946;=-1.27, z=-4.23, p<0.001; voiceless: 946;=-4.95, t=-2.54, p<0.05).

Success in acquiring a native L2 accent and in maintaining a native L1 accent may be constrained by frequency and context of use. Moreover, success in acquiring and maintaining target VOT in L2 and L1 might be limited to the short-lag VOT range. Consequences of non-native speech productions for the participants’ children’s speech will be discussed.


Keywords: L2 ultimate attainment, L1 attrition, VOT, Phonetics, Immersion.