

Phonetic accommodation on the segmental and the suprasegmental level of speech in native-non-native collaborative tasks

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Numerous studies have previously shown interaction of both phonetic and phonological categories of two (or more) languages in the speech obtained from multilingual individuals. Evidence for a phonetic drift and/or accommodation effects of systematic characteristics has frequently been presented in recent publications (Flege, 1995; Sancier & Fowler, 1997; Jiang, 2010; Fabiano-Smith, Viswanathan, Olmstead, 2010). Observed changes are usually attributed to aspects of bi-directional influences between languages. However, they fail to account for inconsistent accommodation effects. In addition, issues still debated in this context are (1) the question whether or not experience and language mastery have an effect on the extent of such changes (Chang, 2013), (2) what source causes these phonetics drifts or changes (Tobin, 2015) and a (3) what levels of spoken language representations may be affected most, segmental characteristics or suprasegmental characteristics.

This paper presents an investigation of productions data obtained from 12 native Spanish speakers of L2 German and 6 native German controls. Recordings were done during a collaborative map-task performed by a Spanish or by a mixed pair of interlocutors. The Spanish-Spanish map-tasks were carried out twice, in one map-task we recorded speakers of the same proficiency level and in a second we recorded the interaction between one highly proficient speaker and a beginner. The map task was designed in a way that specific target words and phrases appeared in the beginning and at the end of the collaborative tasks. We analysed several aspects of the speech signal, derived from contrastive analyses of Spanish and German (Lleó et al., 2003; Hirschfeldt, 1988):

- (i) /r/-realisation
- (ii) neutralisation of final voicing contrast in plosives
- (iii) realisation of initial /h/
- (iv) intensity, duration and pitch range and pattern of accented vs. unaccented syllables
- (v) speech and articulation rate

Two main objectives were pursued in the study: (1) we aimed to shed light on the question whether there is a decreasing interference of Spanish phonology on L2 German productions in the utterances produced by speakers of higher proficiency levels and (2) whether segmental and suprasegmental characteristics are affected to different degrees. To allow for a quantitative assessment of short-term drifts speech samples were segmented, annotated and acoustically analysed using PRAAT. The statistic analyses shows that both L1 and proficiency level of the interlocutor have an effect. However, we found that not all aspects are affected by the accommodation effect to the same extent. In most highly proficient speakers' utterances a shift from tapped and/or trilled /r/ to more fricative like /r/ realisations was found. Neutralisation of the final voicing contrast was not found whereas some speakers started to produce the glottal fricative in initial position however with more spectral energy compared to the German target. The perceptual relevance was tested in an XAB similarity judgment task carried out by 17 native speakers of German. X was a selected utterance (word or phrase) from one speaker. A and B were early and late utterances from the interlocutor. Phonetic drift was observed in native-native and non-native-native conversations. However, in conversations between less proficient non-natives with native Speakers of German drift was indexed to a lesser extent and none of the native speakers converged towards a non-native partner, Greatest convergence was found in conversations of highly proficient non-natives with native speakers of German. The results suggest that phonetic accommodation can occur cross-linguistically, and that it may be constrained both by speakers' dialect and by their language proficiency. In line with previous findings the results can best be account for by an adaptation of a dynamic system approach.

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