Dialects in contact: A study of the acoustic-phonetic properties of /l/ among Albuquerque Anglo and Hispanic English monolinguals

Spanish and English lateral approximants share the feature of a tongue tip gesture raising toward the alveolar ridge, however, the common “dark” English /l/ allophone also involves a co-occurring dorsal approximation in the velar region, resulting in a more vocalic sound than its “clear” Spanish counterpart (Sproat & Fujimura, 1993). The darkness, or vocalization, of English /l/ is contextually based on the height of the second formant (F2) and the distance between F2 and F1, with darker /l/ most often occurring in proximity to back vowels and in coda position (Barlow, 2014; Simonet, 2010, etc.).

Cross-linguistic transfer of Spanish /l/ acoustic-phonetic features to L2 English spoken by early and late bilinguals, including heritage speakers, is well documented across a variety of minority communities and geographic regions (Barlow, 2014; Rao & Ronquest, 2015, Vanhofwegen, 2009). Less research has focused on the spread of non-native acoustic-phonetic features to monolingual speakers of the dominant language. This study addresses that gap by comparing the acoustic-phonetic properties of /l/ in naturalistic English speech produced by four language groups in Albuquerque, New Mexico: Anglo English monolinguals, Hispanic English monolinguals, early Spanish-English bilinguals, and transplant English monolinguals (e.g. “army brats” as detailed in Clopper & Pisoni, 2004).

Participants aged 28-40 were recruited from a non-profit at the University of New Mexico to wear recording devices during monthly employee team-building activities. F2 and F2-F1 values were extracted from the first 30 tokens not occurring in tautosyllabic consonant clusters for each speaker (N=480) and F2 values were separately normalized and analyzed following the S-procedure of Watt & Fabricius (2002) as applied by Barlow (2014) and Simonet (2010). Lexical frequency was quantified as the number of occurrences/1,000,000 words reported by the Corpus of Contemporary American English (Davies, 2008). A two-way MANOVA was conducted using group, frequency, age, gender, speaker, and syllable position (onset/coda) as predictive factors and raw F2, raw F2-F1, and normalized F2 as dependent variables. Results revealed significant main effects of group F (9.786) = 6.81, p <.001, partial η² = .33; frequency F (432, 470) = 1.63, p <.001, partial η² = .421; and age F (18,914) = 9.78, p <.001, partial η² = .153. Interaction effects were also significant for group*gender and group*frequency.

Post-hoc tests revealed that Albuquerque Anglo English monolinguals (AAEM) and Albuquerque Hispanic English monolinguals (AHEM) differed significantly from Albuquerque Spanish-English bilinguals (ASEB) and transplant English monolinguals (TEM) in raw F2 production (p <.001, SE = 28.9) and normalized F2 values (p <.001, SE = .03), with a more complex pattern between groups emerging for F2-F1 values. These findings are discussed in the context of a usage-based theoretical framework (Bybee, 2001, 2007).

Word Count: 437
References:


