

Stress Production in the Spanish of Heritage Speakers
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It has been shown that heritage speakers (HS) of Spanish hold a phonological advantage over second language (L2) learners due to naturalistic exposure to Spanish at home as children (Au & Romo 1997; Au et al. 2002, 2008; Knightly et al. 2003; Oh & Au 2005). However, variation from monolingual speakers can be created by different educational and social experiences with the language (Valdés 1995; Lynch 2003; Polinsky & Kagen 2007; Rothman 2009).

One feature that may contribute to a ‘heritage accent’ is stress, which is acoustically cued in Spanish via fundamental frequency (F0) rises, duration, and/or intensity (Quilis 1993; Hualde 2007; among many others). One factor that affects the placement of cues to stress is a language’s segmental phonology. In non-inflected nouns in Spanish, final syllables ending in vowels (i.e. open/light) lead to penultimate stress while those ending in consonants (i.e. closed/heavy) result in final stress. Focusing on such distinctions, Face (2005) shows that L2 learners’ ability to use differences in syllable weight corresponds with an increase in the acoustic perception of stress.

This study fills a research gap by examining syllable weight’s influence on stress production in HS Spanish, as well as how external factors such as educational background and Spanish language use correlate with native-like productions.

10 undergraduate HS of Mexican descent participated in the study. They first filled out a language history questionnaire and a pair of self-assessment surveys. Next, participants read 60, 2-3 syllable nonce words resembling nouns that varied in number and position of heavy and light syllables (see (1) for examples). As a control group, 3 speakers who moved from Mexico to the US during adulthood also took part in the study. Spectrographic and waveform analyses of HS and control group recordings were done via Praat (Boersma & Weenink 2011). Syllables produced as stressed were identified mainly via increases in F0, vowel duration, and/or intensity relative to other syllables in the same word. The perception of such increases was corroborated by a separate native speaker. Finally, the use of the R software package (R core team 2008) allowed for comparisons of the acoustic data from both groups of speakers, and revealed relationships between HS’ production abilities and questionnaire/survey results.

Main observations indicate that all HS cued stressed syllables with longer vowel durations than speakers of the control group; however, the former group shows overall lower intensities and flatter F0 contours in such syllables than the latter group. With regard to placement of these acoustic cues to prominence, the individuals that specifically attended bilingual education programs in elementary school and spoke only Spanish at home as children were those whose responses most closely matched the control group, with syllable weight clearly being used to determine final or penultimate stress. The HS that did not attend bilingual education programs but do have strong social ties (past and present) to Spanish were control-like in the location of stress in bisyllabic words but showed less accuracy in trisyllabic words. Finally, the speakers without bilingual education, whose parents emphasized English during childhood, produced the lowest frequency of responses matching those of control speakers.

The study contributes to bilingualism research by commenting on: i. extralinguistic factors playing a role in where HS fall on a language proficiency continuum relative to monolingual and L2 speakers; ii. a new phonological approach to how at-home and educational experiences during childhood provide long-term benefits in the heritage language; iii. how the current results fit in with work on HS of other languages (e.g. Godson 2004; Chang et al. 2011).

(1) Examples of nonce words differing in syllable weight (from Face 2005), presented in a random order to participants; H = Heavy, L = Light

- a. HH- *bansil, fontal, pensor, reldon, tertur*
- b. HL- *benca, fumpa, nonca, pirta, terpa*
- c. LL- *desa, lula, noca, paba, tana*
- d. LH- *nijad, paton, posal, tagul, tifor*
- e. HHH- *combaltur, landanson, linlenton, mentertad, jurlandil*
- f. HHL- *birsanca, dintalda, fandolta, pontumba, jorrenca*
- g. HLH- *bordanor, dortipor, fundamil, contabal, salmedad*
- h. HLL- *fandula, calseba, polcada, tortina, jansoda*

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