

# Heritage Speakers' Production of Palatal Fricatives

Heritage speakers are bilinguals that have learned a language at home that is not spoken by their surrounding community, region or country (Benmamoun, Montrul, & Polinsky, 2013). Despite the recent interest in the production of Spanish sounds by heritage speakers (Amengual, 2017; Rao & Ronquest, 2015), to our knowledge, no research has dealt with their production of the voiced palatal fricative /j/. This sound, nevertheless, is worth investigating given its similarity with the English palatal approximant /j/, which is frequently spelled as <y> and produced with a weaker degree of constriction than the Spanish /j/. The present study explored heritage speakers' production of Spanish intervocalic /j/. The objectives of the project were to find out whether heritage speakers with higher dominance in English produce intervocalic /j/ with a weaker degree of constriction and whether /j/ spelled as <y> is produced with a weaker degree of constriction than that spelled as <ll> due to influence from English. Moreover, we examined whether the jaw aperture of the previous vowel (i.e., vowel height) has an effect on heritage speakers' production of /j/. Eleven Spanish heritage speakers who are first generation US-born Mexican-Americans and who use Spanish on a regular basis participated in this study. The participants read a list of Spanish real words containing /j/ in various conditions: graphemes <ll> vs. <y> and high vs. non-high previous vowel. The participants also completed the Bilingual Language Profile (Birdsong, 2012) which is a questionnaire used to assess language dominance. The degree of constriction of /j/ was categorically coded as fricative and approximant according to the following criteria: absence/existence of frication noise and continuity/discontinuity of the formants in the spectrogram and auditory perception of frication. Two trained phoneticians performed the coding on a subset of the data. Kappa statistics results showed that there was a strong agreement between the two coders ( $K=.93$ ,  $p < 0.001$ ). A generalized linear mixed effects regression was performed to examine the effects of language dominance, vowel height, and orthography on the degree of constriction of /j/. While language dominance did not show a significant effect, there was a marginally significant effect of vowel height (Estimate = -0.923, SE = 0.477,  $z = -1.934$ ,  $p = 0.053$ ) and a significant effect of orthography (Estimate = -1.156, SE = 0.497,  $z = -2.326$ ,  $p < 0.05$ ). That is, /j/ following a high vowel was produced more as a fricative (i.e., stronger constriction) than /j/ following a non-high vowel, and /j/ spelled as <ll> was produced more as a fricative than /j/ spelled as <y>. We also found a significant interaction between vowel height and orthography (Estimate = -1.906, SE = 0.969,  $z = -1.967$ ,  $p < 0.05$ ); the difference in fricative rates between <y> and <ll> was larger when the previous vowel was a non-high vowel than when it was a high vowel. Pairwise comparisons between the two fixed factors revealed that the fricative rates were significantly different between the two graphemes only after a non-high vowel. These findings suggest that while heritage speakers' degree of constriction of /j/ is not affected by their language dominance, it is influenced by English orthography, especially when this sound occurs after a non-high vowel.

## References

- Amengual, M. (2017). Type of early bilingualism and its effect on the acoustic realization of allophonic variants: Early sequential and simultaneous bilinguals. *International Journal of Bilingualism*(0), 0. Retrieved from <https://doi.org/10.1177/1367006917741364> doi: 10.1177/1367006917741364

- Benmamoun, E., Montrul, S., & Polinsky, M. (2013). Defining an "ideal" heritage speaker: Theoretical and methodological challenges Reply to peer commentaries. *Theoretical Linguistics*. doi: 10.1515/tl-2013-0018
- Birdsong, G. L. & A. M., D. (2012). *Bilingual Language Profile: An Easy-to-Use Instrument to Assess Bilingualism*. University of Texas at Austin. Retrieved from <https://sites.la.utexas.edu/bilingual/>
- Rao, R., & Ronquest, R. (2015). The heritage Spanish phonetic/phonological system: Looking back and moving forward. *Studies in Hispanic and Lusophone Linguistics*. doi: 10.1515/shll-2015-0016