

Examining the role of input and output in the Spanish heritage speakers' grammars

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Spanish heritage speakers (HSs) present divergences in their speech production when compared to monolingually-raised Spanish speakers, in some cases suggesting transfer from the majority language into the heritage language (HL) (Amengual, 2012; Kissling, 2018; Rao, 2014; Ronquest, 2013, among others). A possible cause for this divergence may be the interrupted input to the HL during the school years, as heritage speakers become systematically exposed to the majority language. In order to investigate the effects of language exposure across the HSs' lifespan, this study examines the relationship between exposure to the HL and speech production in Spanish and English in groups of child HSs and adult HSs. I investigated whether language exposure has an effect on the rates of glottal phonation produced in CV sequences across word junctures (e.g., *an apple*). While Spanish speakers produce closed junctures by resyllabifying the coda consonant into the following syllable (i.e., /C#V/ *un oso* [u.no.so] 'a bear') (Harris, 1983; Hualde, 1991), English speakers optionally insert a glottal stop between the consonant and the vowel in prosodically prominent positions (e.g., *an [ʔ] apple*) (Cruttenden, 1994).

Thirty-eight child Spanish HSs (Age range: 5;2 -11;11 years old) and 21 adult HSs (Mean age = 20;7) participated in a Spanish and an English production tasks. The child HSs were divided into a group of 19 younger children (Mean age = 6;3 years, age range = 5;2 to 7;7) and a group of 19 older children (Mean age = 10;2 years, age range = 8;2 to 11;11). The tasks elicited 24 pairs of function and content words in two stress conditions: initial primary stress and non-initial primary stress (e.g., Sp: *un ojo* 'an eye' vs. *un espejo* 'a mirror', Eng: *an onion* vs. *an umbrella*). The resulting tokens were categorically coded as containing modal phonation or glottal phonation (i.e., visible presence of glottal stop or creaky voice). Relative percentages of input and output in the HL were elicited using a linguistic background questionnaire.

Amount of Spanish input and output were highly correlated ($p < 0.001$). To avoid collinearity, the results for output and input were combined into the variable *language exposure*. A logistic linear regression for each language with the fixed effects: Spanish exposure, age, and initial primary stress. In Spanish, the results showed a main effect of language exposure ($p < 0.03$), suggesting a negative relationship between exposure to the heritage language and rate of glottal phonation, a main effect of age group (i.e., younger child HSs [$p < 0.04$] - adult HSs, older child HSs - adult HSs [$p < 0.04$]), and a main effect of stress ($p < 0.001$). In English, no main effect of language exposure was found ($p = 0.68$). However, stress position showed to be a predictor of glottal phonation ($p < 0.001$).

My findings show that the HL is affected by the amount of language exposure in the heritage language, in line with studies showing effects of language use and exposure in bilingual children and adults (Gildersleeve-Neumann, Kester, Davis, & Peña, 2008; Ruiz-Felter, Cooper, Bedore, & Peña, 2016, among others). English, however, is not affected by language exposure in the HL, suggesting an asymmetrical effect of language exposure in the heritage and the majority languages.

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