

Syllabic affiliation of prevocalic glides in Sonoran Spanish

The study is concerned with the syllabic affiliation of prevocalic glides in Spanish, e.g., ‘i’ in *mie.do* ‘fear’, in particular, it seeks to determine whether prevocalic glides are parsed as a complex onset in some varieties of Spanish. Existing accounts of Spanish syllable structure posit that prevocalic glides cannot be in the onset because when they are, they surface as obstruent consonants, generally fricatives, i.e., *-iendo* [-jen.do] ‘-ing’, *com-iendo* [ko.mjen.do] ‘eating’, vs. *creyendo* [kre.jen.do] ‘believing’ (Hualde 2005, Colina 2009). Additional arguments in favor of the nuclear status of prevocalic postconsonantal glides have to do with rhyme restrictions, vowel harmony and hypochoristic formation (cf. Hualde 2014, Colina 2009). While this accounts for prevocalic glides in many varieties of Spanish, in particular those with glide fricativization in the onset, other varieties, such as the Spanish of Sonora, Mexico, allow for glides in the onset (Canfield 1981, Alvar 1996), i.e., *creyendo* ‘believing’ [kre.jen.do]. Consequently, a glide preceded by a consonant (e.g., *i* in *tiara*) could in principle be parsed as the second element in the onset [tj] (i.e. an onset cluster), rather than in the nucleus [ja]. In more general terms, the question is: are prevocalic glides always part of an onset or can the glide be parsed in a complex nucleus preceding a full vowel (in a diphthong)? Onset parsing would suggest cross-dialectal variation in the syllabic affiliation of prevocalic glides. This finding would also bear out the predictions of an optimality-theoretic factorial typology in which constraint reranking predicts possible patterns of variation: (i) ONSET, *ONSET/glide >> *COMPLEX NUC, MAX-IO_μ, IDENT(cons) (nuclear glide) (ii) ONSET, *COMPLEX NUC >> *ONSET/glide, MAX-IO_μ, IDENT(cons) (onset glide) (Colina 2009).

In order to test the hypothesis that postvocalic glides are in the onset in Sonoran Spanish, oral data were collected from 10 speakers of Sonoran Mexican Spanish (with limited English proficiency) using two tasks: an oral recorded phrase reading (e.g. “Digo ____ porque sí”) and an oral syllable division task. Stimuli in both tasks consisted of 23 nonce words (alongside 23 fillers) containing a C+G+V sequence. Two sets of stimuli were designed according to two hypotheses. The first hypothesis relies on a well-known restriction on the Spanish rhyme, namely that Spanish only allows a maximum of three rhyme segments (Harris 1983). Thus, if a sequence of CGVGC (Consonant + Glide + Vowel + Glide + Consonant) is allowed (e.g., nonce words *lacap[jaj]sto*, *lacap[waj]sto*) the glide should be in the onset, because otherwise the rhyme would contain four segments and would be illicit. Stimuli in this group consisted of 14 four-syllable nonce words that contained a postconsonantal high vocoid followed by a diphthong (four segment rhyme or complex onset + three segment rhyme). Four syllable words were created to avoid a glide + vowel sequence too close to the beginning or end of the word, positions known to favor hiatuses in some dialects (Hualde 1999, 2005). The second set of stimuli was designed around the hypothesis that, if the glide is in the onset, there should be onset co-occurrence restrictions, i.e., only some combinations of consonant + glide should be possible as complex clusters. For instance, a palatal consonant + homorganic glide [j] (e.g., **ch[j]aba*, *[j]ape, **ma[nj]ala*) should be disallowed because their articulations are too similar.

The participants’ productions from the oral syllable division task were categorized as a triphthong in 45% of the data, a hiatus in 30%, or as a simplification (eliding the prevocalic glide) in the remaining 25% (see Figure 1, left panel). Thus, prevocalic glides were produced as part of the onset, at least some of the time. Given the ternary nature of the responses, the productions were analyzed using multinomial mixed effects models to determine if the participants’ syllabification strategies varied as a function of the phonetic environment (i.e., the

preceding consonant) or the glide in prevocalic position ([j], [w]). Neither of the predictors favored responding one way or another. The data from the oral recorded phrase reading were segmented and analyzed using Praat (Boersma & Weenink, 2018). We extracted total duration (ms), and F1 (hz) and intensity (dB) values in 10% increments over the time course of the prevocalic glides. These metrics were compared to those from prevocalic glides that were not preceded by a palatal consonant. The duration data were analyzed using linear mixed effects models and showed that duration varied as a function of the preceding consonant. Specifically, palatal + glide sequences showed longer durations. The F1 and intensity time course data were fit using generalized additive mixed models (GAMMs). Glides preceded by a palatal consonant showed lower intensity values over the time course, suggesting a more consonant-like production (see Figure 1, right panel).

Taken together, the data from the two tasks support the hypothesis that prevocalic glides can be produced as part of a complex onset in Sonoran Spanish. The syllable division task illustrates that this production is possible, though highly variable. The data from the phrase reading task suggest that co-occurrence restrictions apply to palatal consonant + homorganic glide [j] sequences, and a possible repair strategy is to lengthen the onset, thus longer durations and more consonant-like productions. By testing whether or not these speakers adhere to the segmental restrictions in nonce words, we gain insight on the status of glides in this variety of Spanish and in Spanish phonology in general. Additionally, the findings have potential implications for research on monolingual and bilingual acquisition and on acquisition errors (e.g., language learning, speech pathology, etc.).

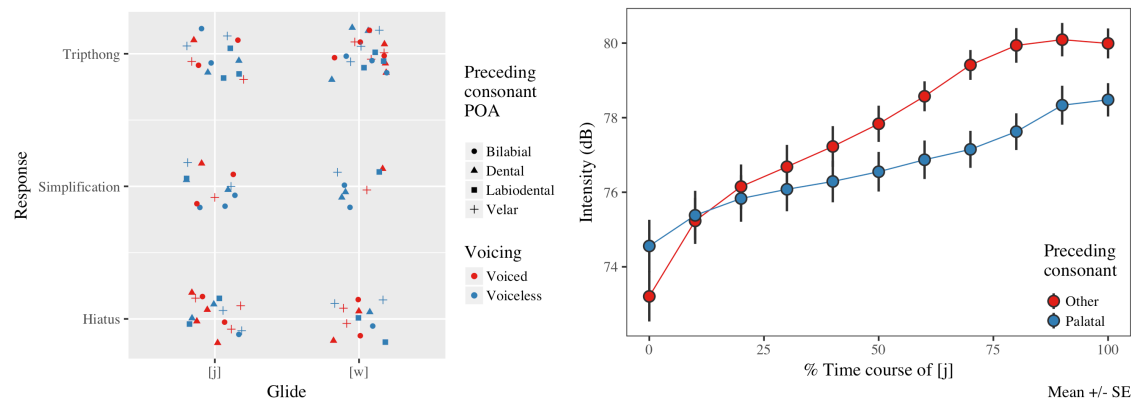


Figure 1: Responses as a function of glide, preceding consonant place of articulation and voicing (left panel), and intensity as a function of preceding consonant over the time course of [j] (right panel).

References

- ALVAR, M. (1996). *Manual de dialectología hispánica*. Barcelona: Ariel.
- CANFIELD, L. (1981). *Spanish Pronunciation in the Americas*. Chicago: U. of Chicago P.
- COLINA, S. (2009). *Spanish Phonology: A syllabic perspective*. Washington, DC: GUP.
- HARRIS, J. W. (1983). *Syllable structure and stress in Spanish*. Cambridge, MA; MIT Press.
- HUALDE, J. I. (2005). *The Sounds of Spanish*. Cambridge, UK: CUP.
- HUALDE, J.I. (2014) La silabificación en español. In NÚÑEZ-CEDENO, et al. (Eds.). (2014). *Fonología generativa contemporánea de la lengua española*. Washington, DC: Georgetown UP, pp. 195-215.
- BOERSMA, P. & WEENINK, D. (2018). *Praat: doing phonetics by computer*. Version 6.0.39, retrieved 3 April 2018 from <http://www.praat.org/>.