

Comprehension of Ambiguous Relative Clauses in Spanish, English, and Codeswitching.

This project explores language activation effects on the comprehension of ambiguous relative clauses by early Spanish-English bilinguals in the U.S. Ambiguous relative clauses (as in the translation equivalents 1-3b) follow complex Noun Phrases (NPs) and have two mutually plausible interpretations: high attachment, when assigned to the upper NP, and low attachment, when assigned to the lower NP. Numerous languages exhibit attachment preferences; For instance, Spanish typically yields high attachment while English yields low attachment (e.g., Grillo & Costa, 2014). For bilinguals, access to each language's attachment preference may depend on age of acquisition of bilingualism, where early bilinguals present monolingual-like strategies in each language (e.g., Jegerski, Keating, & Van Patten, 2016).

However, early bilinguals do not always use their languages in unilingual contexts. Spanish-English codeswitching, using both languages in the same dialogue, is widespread in several bilingual communities. Proficient and systematic use of codeswitching often correlates with advanced competence in both languages and can serve as a marker of bilingual identity (e.g., Guzzardo Tamargo, Mazak, & Parafita Cuoto, 2016). Moreover, codeswitching use has been found to influence processing (e.g., Beatty Martínez & Dussias, 2017) as well as production tendencies (e.g., de Prada Pérez, 2018). As such, codeswitching use and exposure constitute an important individual difference to consider in language comprehension, potentially affecting the salience of attachment options. Also, it is unclear how processing of ambiguous relative clause manifests when processing mixed input, which have been traditionally researched in unilingual contexts, yet may offer more fine-grained insights into the role of language dependence on attachment preferences.

To explore whether processing and resolution of ambiguous relative clauses vary between contexts of language use, we conducted a visual world eye-tracking study in three contexts: unilingual Spanish, unilingual English, and bilingual Spanish-English codeswitching. 39 early Spanish-English bilinguals listened to ambiguous relative clauses while looking at referents to make attachment decisions. We compared the time-course of fixations to low and high attachment images as well as the likelihood of selecting high versus low attachment between contexts. Participants also completed the Assessment of Code-Switching Experience Survey (Blackburn, 2013) to compare individual differences in codeswitching use and exposure within each context.

Initial findings from growth curve analysis suggest that there are significant differences in the shape of processing attachment options between contexts (see figure 1). Also, the likelihood of selecting high attachment is significantly different between codeswitching and English as well as between Spanish and English, but not between Spanish and codeswitching (see figure 2). Moreover, the effects of codeswitching use and exposure vary in magnitude within each language mode. Notably, these effects appear to be weaker in Spanish. Findings suggest that bilinguals tend towards Spanish-like processing strategies in codeswitching, which may suggest increased salience of high attachment in the presence of Spanish input in a more general sense, or that low attachment preference in English may be weaker than initially expected. Future directions for this research include uncovering potential motivations behind this pattern based on research on codeswitching effects (such as grammatical convergence, priming, or facilitative simplification).

Examples and Figures

- (1) Someone called [NP1 the lawyer of [NP2 the defendant]] that was by the elevator.
- (2) Alguien llamó [NP1 al abogado [NP2 del acusado]] que estaba por el ascensor.
- (3) (a) Someone called the lawyer of the defendant QUE ESTABA POR EL ASCENSOR.
(b) Alguien llamó al abogado del acusado THAT WAS BY THE ELEVATOR.

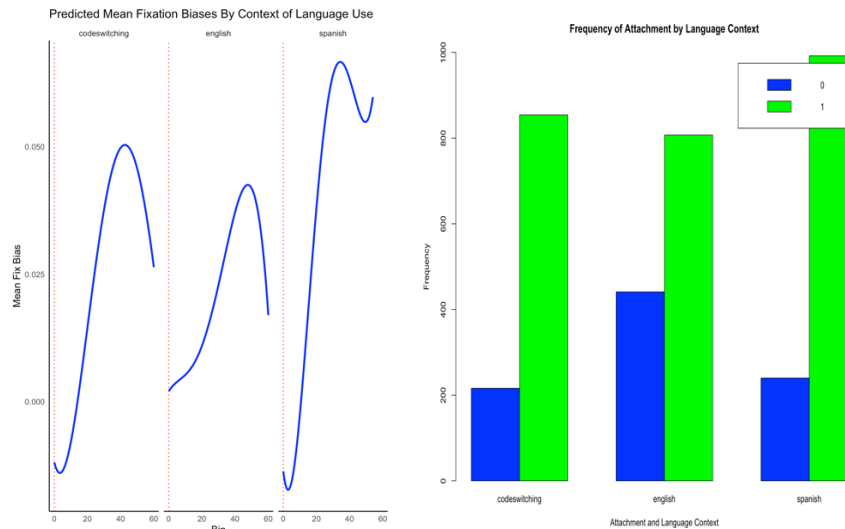


Figure 1. (Left) Predicted Mean Fixation Bias towards high attaching (positive) versus low attaching (negative) images by language context. The temporal period starts at the onset of the ambiguous relative clause. *Figure 2.* (Right) Distribution of High attachment (1) and low attachment (0) responses by language context.

Selected References

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