Prosodic patterns of code-switching in Spanish-Basque bilinguals

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The present study investigates the prosody of code-switching in Spanish-Basque bilinguals, which has not been previously documented. As the Basque Country has growing numbers of Spanish-Basque bilinguals, previous work has provided evidence of linguistic influence and contact-induced change between these two unrelated language. For example, code-switching or borrowing of Spanish swear words discourse markers into Basque was found by Lantto (2012, 2014), and evidence of peak alignment transfer from Basque to Spanish in Lekeitio, a Basque-dominant region, was found in Elordieta & Calleja (2005) and Elordieta & Irurtzun (2012, in press). However, no previous studies consider the possibility of bidirectional phonological influence between Spanish and Basque while code-switching. Peninsular Spanish and Basque have several prosodic differences, including peak alignment in pitch accents in which Spanish has delayed peaks (Estebas Plana & Prieto (2008)) and Basque has early peaks (Elordieta & Hualde (2015)). The present study investigates if the occurrence of code-switched words is conditioned by prosodic (i.e. phrasal) position and whether the peak alignment and f0 maximum of a pitch accent differs between monolingual context (Spanish only) and code-switched context (from Spanish to Basque and vice versa). Bilinguals (aged 21-31) from a Basque-dominant region (Lekeitio, $n = 3$) and a Spanish-dominant region (Bilbao, $n = 4$) participated in the present study to examine possible effects of regional language dominance.

Participants completed four tasks in the present study: a semantic verbal fluency task (SVF) to determine language dominance; a reading task in Spanish to establish a monolingual baseline; a discourse completion task (DCT) modeled on Prieto & Roseano (2010) which elicited semi-spontaneous answers to prompts ($n = 70$) containing Basque nouns ($n = 15$) to trigger code-switching; and an interview (10-20 minutes) in Basque, with Spanish words inserted by the interviewer to trigger code-switching. The data was transcribed and analyzed in *Praat* 6.0.10 (Boersma & Weenink (2016)) coded for the following predictor variables: prosodic position (phrase-medial or phrase-final), peak alignment duration (in ms from syllable offset), and f0 (Hz) maximum in pitch accents.

Preliminary results from 4 speakers show that when prosodic position was considered, 61% of code-switches occurred in phrase-final position, with more phrase-final code-switches occurring in the DCT than in the interview (in which only 48% were phrase-final). This difference may be due to task type; that is, the most informal task (interview) may have provided a context for more variation. With respect to peak alignment, the alignment of the f0 peak in pitch accents in the monolingual (i.e., not code-switched) Spanish data matches norms for Peninsular Spanish. When speakers code-switch from Spanish to Basque, speakers from Bilbao produced early peaks (typical of Basque norms), whereas speakers from Lekeitio produced delayed peaks (Spanish-like norms). When code-switching from Basque to Spanish, speakers from Bilbao produced early peaks (Basque-like), whereas the Lekeitio dialect produced delayed peaks (Spanish-like). These results suggest that speakers may be defaulting to the less dominant language of their region, which may be more difficult to suppress in a bilingual interaction. Results for f0 max during code-switches reveal greater f0 during Basque code-switches for Lekeitio speakers when compared to Bilbao speakers, which may indicate a strategy of contrasting languages while code-switching. Work in progress will add additional analysis on

pitch range to disentangle individual and dialectal variation and consider anticipatory effects of code-switching by examining distance from code-switched words. Implications for language dominance will be discussed as well as bilingual phonological strategies when code-switching.
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