

L1 morphosyntactic attrition in bilinguals: triangulating evidence from production, interpretation, and processing data

The interaction of two languages in the bilingual brain generally leads to bidirectional influence and thus, generally differential L1 and L2 outcomes. While most research to date has examined bilinguals' L2 outcomes, research on the bilinguals' L1 within L1 attrition has received considerably less attention, although it has certainly gained ground in recent years (Schmid & Köpke, 2019). L1 attrition has mainly investigated long-immersed bilinguals who have spent a considerable time in an L2 environment and bilinguals in an L1-dominant setting have largely been overlooked. To address previous gaps, this study will explore the production, interpretation, and processing of subject referring expressions (REs) in L1 Spanish-L2 English instructed and immersed bilinguals, a domain that has been shown to be vulnerable in L1 attrition (Chamorro & Sorace, 2019; Gürel, 2019).

81 L1 Spanish-L2 English advanced instructed bilinguals in Spain, 93 L1 Spanish-L2 English immersed bilinguals in the UK, and 33 L1 Spanish functional monolinguals completed two oral video-retelling tasks, a picture selection task (PST), and a self-paced reading task (SPR) which tested the predictions from the Position of Antecedent Strategy (Carminati, 2002), i.e., whether null pronouns bias towards subject antecedents and overt pronouns prefer object antecedents. Additional information was collected from the *Bilingual Language Profile* (Birdsong et al., 2012), a background questionnaire that provided a continuous language dominance score.

Firstly, the production tasks were used to analyse differences in the distribution of 3rd person subject REs in topic continuity (TC) in the three groups using a fine-grained tagset in the *UAMCorpusTool* (O'Donnell, 2009). The PST (adapted from Tsimplici et al., 2004) contained 20 experimental items where a main clause, with two same-gender antecedents in subject and object position, was followed by a subordinate clause containing either a null or an overt pronoun. Participants selected the picture (subject vs. object bias) that best matched their interpretation. The SPR task presented the same sentences and biased towards a subject or an object interpretation using one of the two pictures presented in the PST task. The data from the PST and SPR were analysed using (generalised) linear mixed-effect models in R (Bates et al., 2015), and the final models of best fit included fixed effects as well as the maximal converging random-effect structure allowed by the design (Barr et al., 2013).

The results from the production tasks show that instructed and immersed bilinguals significantly produce more unexpected overt REs in TC than functional monolinguals overall, with additional significant differences between the two bilingual groups. The results from the PST and the SPR tasks indicate that 1) the two bilingual groups differed from functional monolinguals only in the overt pronoun condition, as predicted by the Interface Hypothesis (Sorace, 2011, 2012) and the Activation Threshold Hypothesis (Paradis, 2007) and 2) variability in interpretation preferences of overt pronouns was modulated by language dominance.

These results provide further evidence on the nature of L1 morphosyntactic attrition at the early stages as well as new results on the variability found in L1 instructed bilinguals, which has been overlooked in previous research.