

Exploring the bilingual advantage in the acquisition of intonation: the case of Quebec French-English bilinguals

This study explores the bilingual advantage in certain aspects of linguistic processing, specifically phonetic/phonological production. Several studies have underscored the positive effects of bilingualism on both nonlinguistic and linguistic cognition, e.g. multitasking, selective attention (e.g., Kovacs and Mehler 2009, Colzato et al. 2008, Costa et al. 2008), cognitive function (Bialystok et al. 2007, 2004, Bialystok 1999), delayed onset and slower rate of decline in dementia as compared to monolinguals (Bialystok et al. 2007), manipulating language in terms of discrete phonemic units (Bialystok et al. 2005; Bruck and Genesee 1995), novel word acquisition (Kaushanskaya and Marian 2009), auditory processing (Krizman et al. 2012), and vowel space restructuring when learning novel accents (Kondratenko and Spinu, 2014). Our study examines the learning of intonation patterns in second dialect learners.

29 speakers (17 English monolinguals and 12 French-English bilinguals) from Montreal, QC, were trained to reproduce a novel accent of English, specifically the variety spoken in the Sussex region of England. The experiment included a pre-test, an imitation task and a post-test. Here, we focus on the results of the imitation task. The imitation task consisted of a passive and an active learning phase. In the passive phase, the participants were asked to listen to native Sussex English productions for 5 minutes. In the active phase, they heard the same sentences and were asked to imitate them one by one. To eliminate any doubts with respect to phonemic representation, the sentences to be read out loud were also presented on the screen in orthographic transcription. They produced sentences with distinct intonation patterns, i.e. declaratives, yes-no questions, and tag questions.

1305 tokens were produced. The preliminary results are based on 270 intonation contours that we manually examined and extracted using the Praat software for acoustic analysis. Similarity scores were assigned by dividing each sentence contour into 4 equal-sized regions and comparing each of these, as well as the overall pattern, with the contours of native pronunciation. We used general pitch patterns (flat, falling, rising) as well as pitch excursions such as sudden rises and falls in order to determine similarity and compute a final score for each sentence. A one-way between subjects ANOVA was conducted to compare the effect of language status (bilingual and monolingual groups) and intonation pattern (declarative, yes-no question, tag question) on similarity scores. Preliminary results show a significant main effect of language status ($F(1, 72) = 19.2, p < 0.05$), with bilinguals (mean similarity score = 77%) having outperformed monolinguals (mean similarity score = 58%). Post hoc tests using the Bonferroni correction revealed the existence of significant differences among the three intonation patterns examined, with the mean similarity score for Yes-No Questions being significantly higher as compared to Tag Questions. No other significant differences were found. The results are presented in Figure 1.

In conclusion, this study contributes to our understanding of the acquisition of both second language and second dialect intonation patterns and shows that the bilingual advantage previously reported for segmental acquisition also exists with respect to the acquisition of intonation.

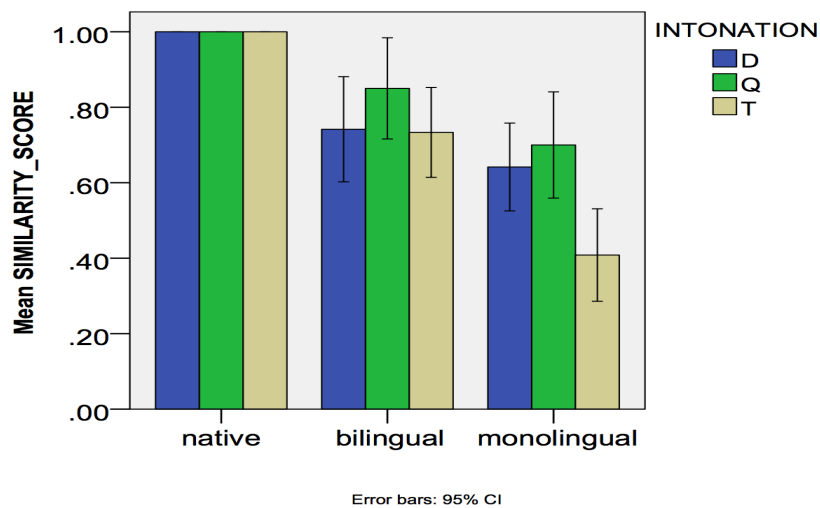


Figure 1. Estimated marginal means of similarity scores for intonation patterns for bilinguals, monolinguals and native speakers (D = declarative, Q = Yes-No question, and T = Tag question).

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