

Effects of the treatment of linguistic intruders on vowel duration in bilinguals. An exploratory study

PAPER

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This paper presents an exploratory study about the effects produced by the cognitive treatment of linguistic intruders on the vowel duration in productions of bilingual subjects. The originality of this psycholinguistic approach lies in the fact that high-level processes (cognitive treatments due to the confrontation to linguistic intruders) are studied by low-level processes (vowel duration variations) observation and analysis. Sixteen bilingual speakers were recorded on two tasks: a reading task and a repetition task. All the subjects have a good mastery of Castilian Spanish. Some are natives, others are not. Among the non-natives of Spanish are natives of Italian, French, German and Catalan. All the subjects have been living in the bilingual (Castilian-Catalan) region of Spain for at least 15 months. The experimental design is based on Castilian texts in which selected linguistic intruders (i.e. not Castilian words) were inserted by a specific procedure. These intruders are of different kinds: Catalan words, French words, Castilian words with limited deviations from the phonological target and pseudo-words. The hypothesis is that the variations in vowel durations in the neighbourhood of the intruders would reflect a cognitive treatment of them. Those variations would consist in a punctual increase of the vowel duration around the intruders. The duration of every vocalic production for each speaker in each task (32000 measurements) was measured using a temporal acoustical analysis thanks to the Kay Multi-Speech 3700 version 2.30 analysis software. Statistical comparisons between “potentially contaminated” (i.e. in the intruder neighbourhood) and “potentially not contaminated” (i.e. far from the intruder) vowel durations were computed for each subject. Since they involve different cognitive processes, the two tasks were analysed separately. The results obtained in the present study confirm the hypothesis. Actually, a majority of significant differences between duration of “contaminated” and “not contaminated” vowels showed up for each task. Furthermore, intruders generate an increase of the vowel durations in their neighbourhood. For the reading task, the group of Catalan natives shows specific reaction to the intruders, which differentiate them from other subjects. For the repetition task, 3 subgroups appear, i.e., the Catalan natives, the Castilian natives and the natives of other languages. Using vowel duration variations as a clue to the diversification of the cognitive treatment of the task seems to be relevant for further investigations.