

ACOUSTICS2008/3337
Bilinguals' and monolinguals' reaction-time in two language contexts: evidence for the double phonetic representation in bilinguals

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The time between the presentation of a stimulus and the response given to it is occupied by a series of mental operations reflecting the decision per-se. Reaction-time (RT) can be thought as the duration of the mental operations behind making a decision. Small RT values involve less mental operations than larger RT values. In speech categorization tasks, sounds with clear phonetic membership produce small RT values, and ambiguous speech sounds produce large RT values. In the present investigation a Go-No-Go task was implemented to assess RT from Spanish-English bilinguals (N=27) and English monolinguals (N=27) in two language contexts. Participants were asked to identify the speech sound "ta" from a 10 token speech continuum varying from -20 to +25ms of VOT. It was expected that bilinguals, but not monolinguals, would perceive +VOT stimuli as clear representations of 't' (faster RT) in the Spanish language context, but as ambiguous representations of 't' in the English language context. The results confirmed the expectations. That is, language contexts affected the speed by which mental operations were produced in bilinguals. This outcome is in agreement with the idea that bilinguals possess a double phonemic representation. Challenges and limitations of the present study are discussed.