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Effects of Language Change in Voice Quality. An Experimental Contribution to the Study of Bilingualism

Several experiments have dealt with the idea that voice quality may be influenced by the speaker's language. Many authors in this field have tried to objectivate voice quality by means of long-term average spectra (LTAS), and their results reveal that part of the LTAS variability can be explained by language variations. A powerful method allowing an accurate evaluation of those effects has been developed and applied to French-Dutch and Catalan-Castilian bilingual subjects. Some preliminary results (Harmegnies et al., 1987; Harmegnies et al., 1989) have confirmed LTAS sensitivity to language change in bilingual speakers using closely related languages (i.e. Catalan-Castilian) or languages belonging to different groups (i.e. French-Dutch).

The purpose of this paper is to obtain more data to support the conclusions of the preliminary studies quoted below. A statistically representative sample of bilingual speakers for each language pair will produce a high number of readings of phonetically balanced texts. Language dominance and the degree of bilingualism are taken into account in the choice of the speakers. A 400-line LTAS is then computed for each utterance, and the LTAS thus obtained are compared by means of the SDDD dissimilarity index (Harmegnies, 1988). It is hoped that this analysis will contribute towards a better understanding of speech production - particularly of voice quality - in bilinguals.

HARMEGNIES, B. (1988) "SDDD: A New Dissimilarity Index for the Comparison of Speech Spectra", *Pattern Recognition Letters* 8: 153-158.

HARMEGNIES, B. - LANDERCY, A. - BRUYNINCKX, M. (1987) "An Experiment in Interlanguages Speaker Recognition Using the SDDD Index", *Proceedings of the XIth International Congress of Phonetic Sciences*. Tallinn: Academy of Sciences of the Estonian SSR. pp. 241-244.

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