The Aquisition and Description of Voiceless Stops of Spanish and English

Marie Fellbaum

This presents the preliminary results from work in progress of a paired study of the acquisition of voiceless stops by Spanish speakers learning English, and American English speakers learning Spanish. For this study the hypothesis was that the American speakers would have no difficulty suppressing the aspiration in Spanish unaspirated stops; the Spanish speakers would have difficulty acquiring the aspiration necessary for English voiceless stops, according to Eckman's Markedness Differential Hypothesis. The null hypothesis was proved.

All subjects were given the same set of disyllabic real words of English and Spanish in carrier phrases. The tokens analyzed in this report are limited to word-initial voiceless stops, followed by a low back vowel in stressed syllables. Tokens were randomized and then arranged in a list with the words appearing three separate times. Aspiration was measured from the burst to the onset of voicing(VOT). Both the first language (L1) tokens and second language (L2) tokens were compared for each speaker and between the two groups of language speakers.

Results indicate that the Spanish speakers, as a group, were able to reach the accepted target language VOT of English, but English speakers were not able to reach the accepted range for Spanish, in spite of statistically significant changes of $p<.001$ by speakers in both groups of learners. A closer analysis of the speech samples revealed wide variability within the speech of native speakers of English. Not only is variability in English due to the wide range of VOT (120 msecs. for English labials, for example) but individual speakers showed different patterns.

These results are revealing for the demands requied in experimental designs and the number of speakers and tokens requied for an adequate description of different languages. In addition, a simple report of means will not distinguish the speakers and the respective language learning situation; measurements must also include the RANGE of acceptability of VOT for phonetic segments. This has immediate consequences for the learning and teaching of foreign languages involving aspirated stops. In addition, the labelling of spoken language in speech technology is shown to be inadequate without a fuller mathematical description.