

Cross-Language Study of Vowel Perception (Abstract)*

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This study examines the discrimination and identification of synthetic rounded and unrounded vowels by speakers of two languages (English and Swedish). The unrounded vowels are phonemic in both languages, whereas the rounded vowels are phonemic only in Swedish. A subsidiary aim of this study is to compare the perception of the synthetic vowels with that of

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synthetic consonant-vowel syllables in which the consonants are stops arranged along a continuum from /b/ to /d/ to /g/. The data indicate that the ability of subjects to discriminate between the vowels is relatively independent of their linguistic experience: Swedish and American English subjects exhibit similar performance in the discrimination tests, though they have somewhat different identification functions. The discrimination functions are characterized by peaks and valleys, suggesting that listeners can discriminate given shifts in the vowel formant frequencies more readily in some vowel regions than in others. Comparison of the data on stop-consonant and vowel perception is consistent with earlier findings: the number of discriminable tokens along the stop-consonant continuum is roughly equal to the number of absolutely identifiable items (three in this case); on the other hand, the number of discriminable vowels is much greater than the number that can be absolutely identified. The data are in accord with the view that a human listener uses different modes in the perception of steady-state vowels and stop consonants.