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Multilingual Vowel Perception

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The multilingual vowel perception research project is a study of the reactions of speakers of different languages to the same set of synthetic vowels. The purpose is to see how different vowel systems are reflected in the answers to this set, which includes strange vowels for many languages. Of special interest is the question of possible "universal" vowels, vowels which could be called the same in several languages. In time the study will yield information about individual and dialectal differences, and effects of language contacts. It is also interesting from the point of view of the testing technique. The test consists of 389 monophthongal vowels produced with the Klatt synthesis program, and checked against the Praat analysis program. The vowel space was created by varying F1 from 250 to 800 Hz in steps of 30 mels, and F2 from 600 (970) to (2000) 2800 Hz with steps of 40 mels, the figures in parentheses referring to high F1 vowels. The duration of the vowels is 350 ms. The F0 is rising (100 to 120 Hz) during the first third and falling (to 80 Hz) during the last two thirds of the duration. The vowels are presented in random order. The first tests have been made in the multi-media class of the Language Center of the University of Turku. There have been more than 150 informants, mainly students, who represent 20 languages. Individual and combined maps of the informants' answers have been drawn. They form very consistent fields in the vowel space for many languages. Finnish and German reveal neat 8-vowel-fields; some Italians clearly distinguished 7 vowels while others produced only 5 fields. Vowels of the [y]-type were interesting: Spaniards heard them as /u/s and Czechs as /i/s. Problems are met in languages with a non-phonetic orthography, diphthongised long vowels, important tense/lax differences; English is an example of such a difficult one. Statistical methods are being developed for analysing many aspects of the answers. The test itself, its material, and some results can be found at the address <http://www.utu.fi/hum/fonetiikka/> on the Internet. Welcome to do the test!