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Phonetic Interference

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It is often possible to detect traces of a foreign accent in second language speakers. The unnaturalness stems from a variety of factors which are able to be clinically measured and assessed. This study attempts to account for several differences between native and non-native pronunciation.

The purpose of this report is to objectively account for phonetic interference in Japanese informants when speaking in English, especially differences in length of vowels/inter-syllabic boundaries/inter-word boundaries, and use of pitch to realize accents.

One Japanese informant and one American informant were asked to read a list of 121 phrases twice. Informants were asked to read the phrases as naturally as possible in the first session, and as clearly as possible in the second session. The utterances were recorded on a Sony TCD-D3 Digital Audiotape Walkman and processed with a Kay Elemetrics Digital Sonagraph. Numerical data was then input on a Lotus 1-2-3 chart, and analyzed.

Six different types of data were used in the experiment.

- (1) Type A: V # C (ashore, arrange, apart, etc.)
- Type B: V ## C (a shore, a range, a part, etc.)
- Type B': V ## C (a shice man, a rice man, a pice man, etc.)
- Type C: VC ## (ash ice man, ar ice man, ap ice man, etc.)
- Type D: C ## V (sash ask, bar abort, cap acrobat, etc.)
- Type E: ## CV (mimosa Shasta, Abba rob all, Inca pact, etc.)

Types A and B differ in boundary types: intersyllabic and inter-word boundaries. Types B' and C are different in the position of relevant consonant. Types D and E also differ in the consonant position.

Comparisons were made between Types A, B, and B', C. Types D and E were compared for the two informants.

Results showed that the Japanese informant places more importance on pitch than the American informant, while the American places more importance on time than the Japanese. In order to indicate that the intersyllabic/inter-word boundary has changed, (i) the Japanese informant lengthened the vowel, and the intersyllabic/inter-word boundary, and varied the pitch (pitch is critical in differentiating between inter-word boundaries for the Japanese informant) and (ii) the American informant lengthened the intersyllabic/inter-word boundary (boundary length is more prominent than initial vowel length and pitch when differentiating between different types of boundaries; previous studies indicate that length is necessary to determine accent). When requested to enunciate the phrases clearly, the Japanese and the American informants differentiated the intersyllabic/inter-word boundaries based on properties which can be considered inherent to their native languages, namely, pitch and boundary length, respectively.