

**Comparative Phonetics: The Prosody of
the American, Japanese, Korean, and Chinese Speaker**

June-ko Matsui

1.0 Introduction

The foreign language speaker makes numerous unnatural uses of pitch, vowels, and consonants in the production of a second or third language. This study looks at characteristics that form a basis for this unnatural production, and tries to analyze the various aspects that make the utterance sound foreign.

Major factors leading to the awkward pronunciation are: failure to reset the baseline, no upstep/downstep, too many intonational pitch phrases, wrong accent, incorrect formants, use of the native language syllabification in the second and/or third language, and differing energy levels in the consonants.

The native speaker of a language is able to detect a foreign accent in the speech of a second-language speaker, but it is still unclear exactly which aspects of the speech lead to this sense of "foreign-ness". The native tongue of a speaker is one major element that influences the speech of a second language. Features of the first language are often manifested in the production of a second and third language. Clinical analyzes of speech productions are needed to more fully understand what it is that impedes the natural production of a foreign language. Laboratory testing of such foreign speech traits is still in its elementary stages, and experiments dealing with the topic are relatively few.

This research attempts to objectively account for differences in the prosody of the American, Japanese, Korean, and Chinese speaker, and provide and explanation for why the speech of a foreign speaker sounds intuitively "foreign".

One speaker of American English, the Tokyo dialect Japanese, Seoul Korean, and standard Chinese were asked to read a list of 35 sentences. The sentences were extracted from a travel conversation book which had translations for the 35 sentences in all four languages. The utterances were recorded on a Sony TCD-D3 Digital Audio Tape-corder, processed with a Kay Elemetrics Digital Sonagraph, and printed with a Kay Elemetrics Gray Scale Printer Model 5511. Each speaker was requested to read the sentences as naturally as possible. The informants

read each sentence twice. The second recordings of the Japanese, Korean, and Chinese informants, and the first recording of the American informant were printed. The American informant read the English sentences and five Chinese sentences (35 + 5). The Japanese informant read the English and Japanese sentences (35 sentences x 2 languages). The Korean and Chinese informants read the English and Japanese, and the sentences of their native languages (35 sentences x 3 languages x 2 informants). A total 320 sentences were printed (40 + 70 + 210). The length of each utterance was measured, and input on a Lotus 1-2-3 chart. Comparisons were made between the informants.

2.0 The Japanese Informant

The Japanese speaker manifests several typical Japanese characteristics in his English: too many pitch phrases, use of the Japanese sentence intonation, use of the Japanese syllable structure, incorrect vowel types, and failure to upstep. The above phenomena is related to the tendency to place pitch accents on content words.

The Japanese informant's Japanese, on the other hand, manifests more sentential level use of pitch. The Japanese informant tries to match word accentuation and sentential-level intonation to the greatest extent possible. Such simultaneous realization of word-accent and sentential phrase setting is seen in many Japanese sentences.

Also, the Japanese informant resets the baseline for many Japanese sentences. This is because a new semantic phrase frequently requires a new intonational phrase.

3.0 The Korean Informant

The Korean informant's English performance resembled the Japanese informant's in many ways. The Korean's English was very good, but like the Japanese, she had too many focuses in a sentence, frequently because of a second syllable pitch rise similar to the Japanese informant's. Also, the informant did not upstep correctly, and her triphthongs were not always correct.

The Korean informant's Japanese sentences were foreign-like because the informant changes the pitch range of some syllables too much, fails to reset the baseline to begin a new phrase, has extremely high pitch for some words, fails to realize certain accents in Japanese, does not raise or lower the pitch

of certain words enough, and has too many pitch phrases.

4.0 The Chinese Informant

The Chinese speaker, like the Japanese and Korean speakers, had various traces of a foreign accent in her speech. The native Chinese language, which has tones, was probably the basis for allowing her to realize the pitch accent of many words, but she also manifests many traits that are not consistent with the English and Japanese systems.

The Chinese subject's English was unnatural in that: she used an oversimplified, wrong intonation pattern; she used native language phonological patterns by not including the past tense ending -ed and the -er endings of some words; and she did not delineate the pitch in the same way that the native informant did.

The Chinese speaker also exhibited several negative traits in her Japanese: some sounds were too forcefully pronounced, she did not reset the pitch for new phrases, failed to accent some words, and had strong fricatives.

5.0 Conclusion

Factors leading to a foreign pronunciation were analyzed for the Japanese, Korean, and Chinese speaker. The foreign speaker failed to use the appropriate prosody and segments of the second/third language. Major impediments to a natural production were: failure to reset the baseline, no upstep/downstep, too many intonational pitch phrases, wrong accent, incorrect formants, use of the native language morphology in the second and/or third language, differing energy levels in the consonants, large pitch range, and high maximum pitch.