

Acoustic Analysis of English Diphthong /oʊ/: Comparison of Korean Speakers' and Chinese Speakers' Sound Production

BoRam Kim (boramkim530@gmail.com)
Ewha Womans University

The influence of L1 on L2 phonetic acquisition is well known and has been proved in various studies. According to the Perceived Assimilation Model (Best, 1991) and Speech Learning Model (Flege, 1995), the greater the discrepancies between L1 and L2, the easier the learners distinguish sounds and produce new phonetic categories for new L2 sounds. This study investigates how the similarity of a new L2 sound to its closest corresponding L1 sound affects language learners, with a special focus on the English /oʊ/. For the experiment, English learners with different L1s, Chinese and Korean, were chosen. Chinese has its own diphthong /oʊ/ similar to that of English, whereas Korean only has the monophthong /o/, which would be the closest correspondent sound. In this study, the similarity of sound pairs of L1 and L2 were first analyzed. The performances of Chinese and Korean learners of English were then compared.

In the first experiment, I recorded the Chinese diphthong /oʊ/ and Korean monophthong /o/ from native speakers, respectively. Secondly, I put four English-speaking Koreans and four English-speaking Chinese into two groups and recorded their sound production of the English /oʊ/. I used the Praat to obtain data and analyzed duration and formants. I normalized diphthong duration by comparing the ratio of the vowel's time length to each sentence's time length. I measured the ranges of F1, F2, and F3 and compared the variations.

Results showed that the Korean monophthong was greatly different from the English /oʊ/ in its formant values, but the Chinese diphthong /oʊ/ differed only in F2 and F3 values. From this result, it was predictable that Chinese speakers are more likely than Korean speakers to perceive the English /oʊ/ as a similar sound to the Chinese sound and consequently assimilate it to the existing L1 phonetic category. This was further proved through the second experiment. Koreans outperformed Chinese and were closer to native English speakers both in terms of the duration and range of formant values. Moreover, the English /oʊ/ and Chinese /oʊ/ from Chinese speakers resembled each other in formant values. Taken together, the findings of this study suggests that when learners have an L1 sound similar to an L2 sound, there is a high possibility that the L2 sound will be assimilated to the correspondent L1 phonetic category, instead of forming a new phonetic category.