Acoustic analysis of L1 and L2 production of Mandarin coronal sibilants

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Mandarin and Korean both contain fricatives and affricates, but contrast them in distinctive ways. Previous research on L2 perception of Mandarin coronal sibilants by Korean speakers find that place distinction, especially such as that between alveolar and retroflex, seems more challenging than that between manners or aspiration. Accuracy of L2 production of these sibilants also reveals Korean speakers' inadequate mastery of phonetic cues to Mandarin sibilants even at more advanced levels.

In this study we examined and compared phonetic characteristics of Mandarin homo-organic sibilants in legit and meaningful CV syllables produced by native speakers of Mandarin and by Korean learners of Mandarin from beginner to bilingual levels. We measure acoustic parameters that have been previously identified as robust cues to Mandarin sibilant distinction, such as F2 at vowel onset and centroid frequency. Our results reveal that categorization in terms of acoustic distances between pairs of neighboring sibilants becomes more noticeable and native-like as learners' proficiency levels increase. We also notice effects of other phonetic variables on L2 sibilant production.