Title: The effect of L2 experience on second language acquisition of Mandarin consonants, vowels, and tones

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Previous studies and theoretical models (such as PAM and SLM) have proposed that when acquiring sounds in a second language (L2), the difficulty of acquisition may be determined by how learners assimilate L2 sounds to their first language (L1) categories. The present study thus examines the relationship between L2-L1 mapping and L2 perception among three groups of participants: 18 English-speaking experienced learners of Mandarin, 19 inexperienced learners, and 10 native English speakers with no knowledge of Mandarin. The major difference between the current study and the previous ones is that consonantal, vowel, and tonal contrasts are all examined, expecting to obtain a more comprehensive account on L2 sound acquisition.

The stimuli are nine Mandarin syllables, /ʂɨ/, /sɨ/, /ʂu/, /su/, /ɕi/, /ɕy/, /li/, /lu/, and /ly/, combining with the four Mandarin tones. The three groups of participants’ assimilation patterns of Mandarin consonants and vowels to English categories are assessed by perceptual mapping tasks, while their perception of Mandarin consonantal, vowel, and tonal contrasts is tested using an AXB discrimination task.

Preliminary results show that the experienced and inexperienced learners assimilate the Mandarin sounds similarly, while the naïve listeners’ mapping seems to be less consistent and often influenced by the contexts. It indicates that L2 experience may help learners consolidate the equivalence relationship between L1 and L2 sounds on a more abstract level. The results of the AXB discrimination show that the amount of L2 experience significantly affects accuracy, although the major difference is observed between the learners and the naïve listeners, rather than between the two learner groups. No significant difference between the three groups is found for the consonantal or vowel contrasts, even when there is noticeable difference in the assimilation patterns between the learner groups and the naïve group. It suggests that the L2-L1 mapping relationships may not fully predict L2 discrimination. For example, the participants still achieve high accuracy in discriminating L2 pairs that are assimilated to the same L1 categories. For Mandarin tonal contrasts, which generally receive lower accuracy rates than segmental contrasts, the naïve listeners perform significantly worse than the learner groups. It implies that without Mandarin training, English speakers can distinguish most Mandarin segmental contrasts which may not exist in English. However, the discrimination of tonal contrasts seems to require Mandarin experience. It may suggest interesting differences between segmental and tone acquisition.