

Effects of Native Tone System and Dual-tone Experience on Non-native Tone Perception

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Abstract

Previous research indicates the effect of tone experience on non-native tone perception, whereas it remains less clear whether a larger native tone inventory facilitates or hinders non-native tone perception, and how dual-tone experience modulates non-native tone discrimination and identification. This study explored whether and how native tone system and dual-tone experience influenced non-native tone perception.

Cantonese-Mandarin speakers and Mandarin speakers with limited music experience were recruited to the experiment. Different from previous studies, Northern Vietnamese tones were chosen as stimuli because this tone inventory, including one level tone and five contour tones, does not contrast level tones. The stimuli consisted of six Northern Vietnamese tones carried by open syllables. Three perception experiments were conducted to provide a comprehensive understanding of non-native tone perception. Participants were asked to discriminate whether two Vietnamese sounds belong to the same tone, identify Vietnamese tones by selecting corresponding image, and categorize Vietnamese tones into their native tone categories.

The results revealed no significant main effect of group in the discrimination and identification tasks. However, a significant interaction effect between tone and group was found. Cantonese-Mandarin speakers significantly outperformed Mandarin speakers in discriminating some level-falling tone pairs while Mandarin speakers were significantly better at identifying level and rising tones.

The findings suggest that additional tone experience may not facilitate non-native tone perception. Instead, the effect of L1 tonal size and dual-tone experience reported by previous research might be modulated by tone inventories of native languages and target language, as well as cue weighting shaped by native tone system. These findings highlight the importance of considering learners' native and target languages in tone language education.