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Effects of speaker variability and noise on Mandarin tone identification by native and non-native listeners

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Abstract

The purpose of this study was to examine whether speaker variability and noise affect native and non-native listeners differently in Mandarin tone perception. Multi-speaker tone stimuli embedded in speech-shaped noise were presented blocked by speaker or mixed across speakers. The listeners included 20 native listeners and 33 non-native listeners with various degree of Mandarin proficiency, defined by years of Mandarin instruction and baseline performance. The results showed that the mixed-speaker presentation did not affect non-native listeners disproportionately, suggesting that

speaker variability did not pose a special challenge to non-native listeners. In contrast, noise disrupted native and non-native perception differently, but it was the listeners with higher Mandarin proficiency that were affected disproportionately. These findings suggest that that not all sources of acoustic variability are equally disruptive to native and non-native speech perception.

Keywords:

Mandarin tones | Speech perception | Speaker variability | Noise

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