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Volume 16, 2013 - [Issue 1](#)

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

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Pages 46-54 | Published online: 19 Jul 2013

 Cite this article  <https://doi.org/10.1179/2050571X12Z.0000000003>

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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

Acknowledgements

The authors thank Yu Zhang and Yuh-Fang Lee for assistance in administering the experiment, Alexander Sergeev for advice on statistical analysis, and Juliana Gursky for editorial assistance. We also thank two anonymous reviewers for their helpful comments. This research was partially supported by a faculty development fund from the Honors Tutorial College at Ohio University.

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