

# How Cantonese listeners process Mandarin tones: Implications for the second-language phonological lexicon

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## Abstract

There are major corresponding relationships between the tones in Cantonese and Mandarin words. For example, 93% of the words that are pronounced as tone 1 in Cantonese are pronounced as tone 1 in Mandarin (e.g., 光 ‘light’, pronounced *gwong1* in Cantonese and *guang1* in Mandarin). Pronunciation errors arise when Cantonese speakers overgeneralize these regularities to ‘irregular-tone’ words. For example, the character 詢 ‘inquire’ (pronounced *soen1* in Cantonese and *xun2* in Mandarin) may be mispronounced as *xun1* in Mandarin by Cantonese speakers due to the inappropriate application of the major corresponding rules. A disyllabic word transcription task was carried out on Cantonese and Mandarin listeners to examine whether non-native listeners are better than native listeners in understanding Mandarin tone-mispronounced words which show characteristics of Cantonese accent. Listeners heard mispronounced (e.g., *xun1wen4*) or the correctly pronounced version (e.g., *xun2wen4*) of words (e.g., 詢問 ‘inquire’) spoken by a native Mandarin speaker and wrote down the words in Chinese characters. They were told that the speaker was from a Cantonese background and were asked to guess the intended words spoken by the speaker. Results showed that Cantonese listeners understood these mispronounced words better than Mandarin listeners, supporting an interlanguage speech intelligibility benefit (c.f. Hayes-Harb et al., 2008). When Cantonese listeners’ phonological proficiency improves, their recognition accuracy for the correct pronunciation improves while that of the mispronounced word does not deteriorate. A dual-route second language spoken word recognition and production model is proposed to account for these findings. Word recognition is purely sublexical while production is both lexical and sublexical, and the strengths of the two routes depend on language proficiency.

Hayes-Harb, R., Smith, B.L., Bent, T. and Bradlow, A.R. (2008). The interlanguage speech intelligibility benefit for native speakers of Mandarin: Production and perception of English word-final voicing contrasts. *Journal of Phonetics*, 36, 664-679.

## Summary:

With low L2 proficiency, Cantonese/Mandarin bilinguals often incorrectly pronounce Mandarin words with corresponding Cantonese tones. However, ability to understand tone-mispronounced Mandarin words is unaffected by L2 proficiency. A dual-route L2 spoken word recognition and production model is proposed whereby recognition is purely sublexical while production is both lexical and sublexical.