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# Perception of a phoneme contrast in Singaporean English-Mandarin bilingual adults: A preregistered study of individual differences

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## Abstract

Chinese phonology features a contrast between alveolar and retroflex places of articulation, particularly in the standard Beijing variety of Mandarin. However, studies have shown that ‘outer-circle’ varieties (such as in Taiwan and Singapore) have a less clear contrast, termed “deretroflexion”, which results in poor contrastive perception for Taiwan Mandarin speakers. However, our previous study did not find this deficit in Singapore Mandarin speakers. In this preregistered follow-up study, we investigate how Singapore Mandarin speakers perceive the alveolar-retroflex contrast and examine if differences in perception are linked to Mandarin understanding proficiency. Our results (N = 62) reveal that while Singapore Mandarin speakers perceive an alveolar-retroflex phoneme contrast, there is a wide range of differences in ambiguity resolution across the alveolar-retroflex acoustic spectrum. We did not find a link between perceptual differences and Mandarin understanding proficiency, indicating that highly ‘tuned’ perceptual sensitivity is not needed for high Mandarin understanding proficiency.