

A preregistered investigation of language-specific distributional learning advantages in English-Mandarin bilingual adults

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Abstract

Language-specific accounts of bilingual learning advantages suggest that advantages in language learning are tied to an individual's linguistic experience, with learning advantages stemming from transfer effects between known and to-be-learned language features. To test this hypothesis, we trained Singapore English-Mandarin bilinguals on a synthesised alveolar-retroflex [ts^huán]-[ʈs^huán] contrast with a bimodal distributional learning paradigm. We reasoned that participants with higher Mandarin understanding proficiencies would show larger distributional learning effects due to transfer between real-world Mandarin experience and the training stimuli. We examined overall learning effects in a pilot study (N = 20) and a preregistered main study (N = 50). We found evidence of learning in both the pilot and the main study. We also found evidence of a transfer effect tied to individual Mandarin skills, with larger learning effects linked to higher Mandarin understanding proficiencies. This study demonstrates specific advantages of language background on perceptual learning at the individual level.