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The Relationship between Musical Experience and Cue Reweighting in Speech Perception

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Abstract

Musical experience may contribute to individual differences in perceptual cue weighting during speech categorization: musicians are shown to emphasize a single cue more than nonmusicians (Symons & Tierney, 2024). The present study examines whether such difference remains even in background noise where listeners usually downweight the primary cue to minimize the interference from noise. Twenty musicians and seventeen nonmusicians categorized resynthesized speech varying in two acoustic cues. The same stimuli were presented in quiet and noise, which severely compromised the primary cue. Logistic regression modeling of listeners' responses suggested that the difference between cue weights was larger in musicians than nonmusicians, regardless of listening condition. Although both groups downweighted the primary cue in noise, the shift was larger in nonmusicians. These findings suggest that musical training enhances selective attention to specific acoustic dimensions, but it may also limit cue reweighting to cope with diverse listening conditions.

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