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Cue integration in speech and music

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Abstract

Listeners attend to multidimensional cues in pitch processing, including the spectral shape. While work has shown that listeners normalize voice quality cues in linguistic pitch processing, listeners did not show normalization in non-speech (sawtooth waveform) sounds. It remains unclear whether speaker normalization is unique to speech, or common across all natural sounds, including musical sounds. This study uses manipulations to the spectral slope to compare listener's cue integration in pitch perception in speech vs. music. A forced-choice pitch classification task was conducted. Listeners were given either speech or violin stimuli pitch contour pairs that varied in combinations of F0 and spectral slope cues. They judged whether the second contour was higher or lower in pitch than the first. Results show that listeners integrated spectral cues in speech and violin conditions similarly, and listeners with higher musicality had more categorical responses. Overall results imply overlapping speech and music pitch processing domains.