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Sensitivity to Natural Pairing of Musical Pitch and Timbre

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Sensitivity to Natural Pairing of Musical Pitch and Timbre

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ABSTRACT

Two of the primary perceptual properties of music are its pitch and timbre (sound quality). While musical instruments vary widely in their pitches and timbres, there is a tendency to hear higher pitches with “brighter” timbres and lower pitches with “darker” timbres. Here, listeners labeled musical pitches as high or low when played by one of four instruments. In the canonical blocks, instruments with “brighter” timbres (trumpet, oboe) played the higher pitch, and instruments with “darker” timbres (trombone, tuba) played a lower pitch. In the reversed block, these pairings were switched. Performance was excellent in the canonical blocks, but accuracy was worse in the reversed block. Accuracy performance was significantly correlated with a measure of musical training. This pattern of results parallels that seen in speech, suggesting a general perceptual sensitivity to natural pairings between sound characteristics.