



The Processing of Pitch and Scale: An ERP Study of Musicians Trained Outside the Western Musical System

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The current study extends the efforts of Bischoff Renninger, Granot and Donchin (2003) to non-Western musical systems and focuses specifically on Event-Related Potential (ERP) responses to scalar deviations within the Javanese pélog scale by groups of musicians trained within the Western and Javanese systems. The principal aim is to ascertain whether results found in previous experiments may be obtained crossculturally. Participants include five subjects trained in the Western system only (control group) and five subjects trained in both the Western and Javanese systems (experimental group). Tasks include identifying scalar deviations within the Western diatonic scale, identifying scalar deviations within the Javanese pélog scale, and identifying target letters in a visual control task. ERP and overt behavioral responses are recorded. Results show significant differences between group responses to diatonic and Javanese scale conditions. Interesting results also arise in terms of how tones and intervals in the different scales are conceptualized by subjects in both groups. Control subjects especially tend to assimilate pélog scale intervals to intervals in the Western equaltempered scale.

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