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Proceedings of the Annual Meeting of the Cognitive Science Society

Title
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Permalink
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Journal
Proceedings of the Annual Meeting of the Cognitive Science Society, 33(33)

ISSN
1069-7977

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Publication Date
2011

Peer reviewed

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The Impact of Musical Experience on Statistical Language Learning

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Abstract: Musical experience has been found to improve language (Schön, et al., 2007) and literacy skills (Anvari, et al., 2002). Here, we consider whether musical experience contributes to an important component of language learning, namely segmentation of novel sound sequences. Participants with varying degrees of musical experience were exposed to two statistically-defined languages, one consisting of Morse-code sequences and one of pure-tone sequences. In addition, conflicting cues were introduced to determine which auditory features musicians use when learning a novel language. Results show that participants with a higher degree of musical experience were more likely to learn Morse- and tone-based words, and those that learned did so primarily via temporal information. Effective temporal processing is likely to be useful in natural language learning (e.g., acquisition of voice-onset time and vowel length discriminations). We conclude that the mechanisms that underlie successful musical processing may also play a key role in language learning.