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# Grammars for Funk Drumming: Symbolic and Motor-Spatial Aspects

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**Abstract:** Skilled musical performance requires a detailed knowledge of the grammatical patterns of a musical style, but also spatial and motoric skills in coordinating the abilities of the human body with the affordances of musical instruments. This study investigates these aspects of musical performance in the domain of popular music drumming, seeking to understand how drum patterns are constructed and produced by skilled players. It considers drum patterns from two perspectives: abstract grammaticality as revealed in frequency of sequences of drum sounds (via a probabilistic grammar), and also embodied and spatial cognition, as revealed in how patterns are produced by the player by motion sequences across the drumset. To investigate these issues, a combination of corpus analysis and experimental methods have been employed. Results to date indicate that production of drum patterns is based partly on articulatory constraints (ease of production), but also on a cognitive or acoustic attribute of contrastiveness.