Musical structure and spatial cognition as revealed in gesture and talk

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Abstract: Music's rich structure makes it an excellent domain for cognitive research. We report here on a study which reveals significant aspects of musicians' cognitive representations of whole pieces of music. A group of highly trained musicians were asked to describe pieces of classical piano music which they know very well and have committed to memory. Their descriptions were videotaped and these recordings were the data used for analysis. All participants used spatial language to describe significant aspects of musical structure, including pitch, rhythm, and form; of particular interest, however, is the way in which their co-speech gestures further indicate ways in which musical structure and spatial thought are related. Specifically, these gestures' use of 3-dimensional space show ways in which complicated structures such as multiple simultaneous lines, rhythmic phenomena, and harmonic progressions, are represented mentally, in a way not revealed by the verbalizations alone.