The Analysis of Musically Expressive Algorithms Guided by Physical Movement

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Abstract

Although there has been some study of the concept of analysis of generative music programmes and their outputs, this has generally concentrated on programmes that with each run vary their output allowing for little or no human input. These creations are distinguished from those which allow for real-time interaction, often assumed to take place via GUIs, live-coding or other ubiquitous interactive devices such as keyboards and touch-pads.

In addition, there has been significant experimentation with the role of human factors in computer interaction and how they can and should influence generative music.

Combining these two approaches in hybrid systems can help us significantly in the development of our understanding of the musical creative process. These amalgamations also raise some fundamental questions about the nature of music and the role of physical control in its performance. Should one analyse the music created by generative programmes, or the algorithm itself (which, after all, is what the composer/programmer will have created)? Is there a clear distinction between outputs created via generative processes solely and those also controlled by physical activity? Are physical gestures that are more familiar within established performance environments (music, dance, etc.) more 'interesting' musically and analytically than their more 'bureaucratic' colleagues (keyboard, mouse, etc.)? Where does the distinction lie in music between events and gestures, and, indeed, between physical acts made using declarative or procedural knowledge?

This paper seeks to illuminate these issues with practical examples of custom-developed devices controlling generative processes through physical movement.