Live, algorithmically generated notation, creativity and performance

Keywords: algorithms, notation, improvisation, supercollider, performance

Paper abstract

Notation and its relationship to performance are central issues in modern western music, in particular how notation, where it exists and it what form, influences the composer/performer relationship. Does the use of fixed notations restrict or liberate a performer's expressive potential? Composers have often sought ways of expanding and refining the functionality of notation and in doing so they have re-shaped the very music they were aiming to describe. Many other musical traditions have used notation very differently, have used little or no notation and in the process have created diverse musical experiences.

The developing role of electronics and computers in music has both questioned and influenced the nature of notation and its function, and particularly how it relates to performance, improvisation and creativity. More traditional 'live' notation of note/pitch-based music generated algorithmically has proved particularly problematic: musical notation is itself a very complex subject. Instead composers and technologists have used libraries of graphics, pre-composed modules of material or simplified notations that are designed to be used as the basis of a more improvisatory performance.

This paper, which will include practical demonstrations, presents work involving the live presentation via (computer) screen of varying types of common practice music notation created from algorithmically generated expressive musical material. This notation is then performed by a human musician alongside the same computer generated material (or indeed other 'real' musicians). The resulting performances are then analysed and the performers encouraged to provide their own insights into their experience with the process. Do they feel that the process encourages creative, improvisatory performances where there are more opportunities for the performer's talents, or are they, from a more critical perspective, relegated to the position of a mere sight-reader?

Technologies used include the SuperCollider audio programming environment, OSC and the INScore notation project. As well as providing a fascinating and creative musical experience of preparation and performance, the process highlights a number of issues concerning performance practice, instrumental technique, rehearsal and the balance between notation, now no longer fixed in time, and improvisation. Examples of non-specialist improvisation through physical computing and the impact of machine listening are also introduced.

Videos (including live notation) are available at the following locations (these contain the author's name):

https://vimeo.com/42338675

https://vimeo.com/31335230

https://vimeo.com/43080498