

Demonstration: A meta-pianist serial music comprowiser

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Computational processes which produce meta-human as well as seemingly-human outputs are of interest. Such outputs may become apparently human as they become familiar. So I write algorithmic interfaces (often in MAXMSPJitter) for real-time performative generation of complex musical/visual features, to be part of compositions or improvisations. Here I demonstrate a musical system to generate serial 12-tone rows, their standard transforms, and then to assemble them into melodic sequences, or into two part meta-pianistic performances.

Serial rigour of pitch construction is maintained throughout. This means here that 12-note motives are made, each of which comprises all the pitches within an octave on the piano (an octave comprises a doubling of frequency of the sound, and notes at the start and end of this sequence are given the same note name CDEFGABC etc). Then a generative system creates a rigorous set of transforms of the chosen note sequences. But as in serial composition at large, when these are disposed amongst multiple voices, and to create harmonies (simultaneous notes) as well as melodies (successions of separated notes), the serial chronology is modified. Furthermore, the system allows asynchronous processing of several versions of the original series, or of several different series.

A range of complexity can result, and to enhance this I also made a companion system which uses tonal major scale melodies in a similar way. Here the original (Prime) version consists only of 12 notes taken from within an octave of the major scale (which includes only 7

rather than 12 pitches), thus permitting some repetitions. Chromatic inversion is used, so that for example, the scale of Cmajor ascending from C becomes the scale of Ab major descending from C, and major tonality with change of key centre is preserved.

The performance patch within the system provided a default stochastic rhythmic, chordal and intensity control process; all of whose features are open to real-time control by the user. The patches are used for generating components of electroacoustic or notated composition, normally with equal-tempered or alternative tuning systems performed on a physical synthesis virtual piano (PianoTeq); and also within live solo MultiPiano performances involving acoustic piano and electronics.

The outputs are meta-human in at least two senses. First, as with many computer patches, the physical limitations of playing an instrument do not apply, and Xenakian performance complexities can be realised. Second, no human improviser could achieve this precision of pitch transformation; rather we have evidence they tend to take a simplified approach to atonality, usually focusing on controlling intervals of 1, 2, 6, and 11 semitones. The products of these patches are also in use in experiments on the psychology of expectation (collaboration with Freya Bailes, Marcus Pearce and Geraint Wiggins, UK).

References

MultiPiano, by Roger Dean; Tall Poppies TP225, Double CD (2012).