

Epitaph (Four Voice Canon #21) (tmfg)

Polansky
2006
quad tape
4:00

Written for Third Practice

Technical Notes

The source material for *Epitaph* (and *Study for Epitaph*) consists of five short improvisations for fretless electric guitar, with very limited material (harmonics, open strings, slides, etc.). The guitar parts were played without any attention to musical form, continuity, or narrative: simply lists of sounds.

Each improvisation uses a different guitar tuning, based on the harmonic series, with fundamentals A-C-Eb-F-G (tuned as 5:6:7:8:9). Each tuning uses (often octave-shifted) the harmonics 1, 3, 5, 7, 11 of its fundamental. The five improvisations are successively shorter, with durations proportionate to their fundamental frequencies relationships (in the manner of my four voice canons).

Those five sound files were segmented and sorted by Dan Ellis and Douglas Repetto's MEAP software, which attempts to identify features of segments, and apply various reorderings according to those features. The features used were: pitch, length, chroma, and a combination of spectral centroid and spectral stability. In all cases (with the exception of length, which went from long to short), the segments of the original files were resorted from low to high. This process resulted in 20 new soundfiles, 5 of which went from low to high, 5 from (the pitch chroma) C-B, five from long to short, five from "dark" to "bright." A number of other small adjustments were made in the software to enhance the saliency of these trajectories.

Next, some simple Java software was used to impose a staggered fade (a half-cosine interpolation) on each of the files, so that the 20 files gradually enter in from softly and reach their loudest point at the end of the work. No two files have the same trajectory or starting time/amplitude value. Each of the five original voices is a kind of "group" which enters in at a proportionally later time in the piece (and whose fade is thus accelerated).

For the *Study*, these 20 files were mixed to stereo, in such a way that movement in the stereo space was random over the life of a voice, but gradually, each of the four types of sorts moved to a "home" position in the stereo space (hard left, hard right, mid-right, mid-left). In this way, types of trajectories of the five voices joined together in groups of four features. At the end, each guitar voice appears in all four speakers, but sorted in a different way.

In *Epitaph* itself, a similar process was done in a more formal and precise manner. I wrote some Java software to stochastically migrate the "sorts" to their "home channels."

To do this, four copies of each file were made (now 80 soundfiles), and the software deleted events from each file over time in a particular way, so that by the end of the piece, all the “pitch” sorts (but five different guitar tunings) end up in one speaker, chroma in another, and so on.

As such, I think of this piece as “5 into 4.” There are 5 guitar voices, but four processes, and four spatial locations. All of the formal movement is from loud to soft, low to high, dark to bright, long to short.

In the four voice canons, I’ve always been interested in the heterophony of contrary, but related processes. For a long time I’ve imagined how that might work in a piece that used spatial location as one of the parameters. I was particularly interested, not having explored spatial location much in my computer generated and composed works, in what a “reason” might be for putting one sound in one place, one in another. In *Epitaph* I tried to explore what my own reasons might be.