

Cort Lippe

Program Notes

Music for Tuba and Computer (2008) was commissioned by the ZKM (Zentrum für Kunst und Medientechnologie), Karlsruhe, Germany, realized in the studios of the ZKM Institut für Musik und Akustik, and premiered in the Cubus performance space at ZKM in 2009. The piece was written for and dedicated to the tuba virtuoso Melvyn Poore, whose encouragement, patience, and musicality were “instrumental” in making this piece happen.

The electronic part was created using the software *Max*, originally developed by Miller Puckette, whose scientific support made this piece possible. The computer tracks parameters of the tuba during performance, such as pitch, amplitude, spectrum, density, rests, and articulation, and uses this information to continuously influence and manipulate the computer sound output by directly affecting digital synthesis and compositional algorithms in real-time. Thus, while interacting with the computer system, the performer shapes all of the computer output. The intent is to create a level of interactivity between the performer and the computer in which the performer influences the computer output based on aspects of the musical expressivity of his/her interpretation of the score. Much like chamber music playing, in which individual expressivity has a fundamental influence on the entire ensemble; the feedback loop between performer and computer hopefully has a positive influence on the final musical result.

Standard signal processing such as sampling, harmonizing, frequency shifting, phasing, spatialization, and reverb are employed. Less standard, frequency domain spectral processing of individual FFT channels is also explored, including spectral filtering, delay/feedback, spectral spatialization, timbral snapshots, cross-synthesis, noise reduction/enhancement, and component reordering. In addition, phase aligned format synthesis, significant use of analysis/resynthesis via oscillator banks, and FFT-based control of oscillator amplitudes is exploited.

Formally, the piece is in two sections, and the instrument/computer relationship moves on a continuum between the poles of an extended solo and a duo. Musically, the computer part is sometimes inseparable from the tuba part, but serves rather to amplify the tuba in multiple dimensions and directions; while at the other extreme of the continuum, the computer part also has its own independent musical voice.

Music for Tuba and Computer is recorded by Melvyn Poore on the Wergo Label CD entitled *Death Be Not Proud*. Duration: 16 minutes.