

## Cort Lippe

### Program Notes

**Duo for Tenor Steel Pan and Computer** (2011) was commissioned and premiered by the percussionist and virtuoso steel pan player Kenyon Williams, who was a fiscal year 2010 recipient of an Artist Initiative Grant from the Minnesota State Arts Board. The composition was funded, in part, by the Minnesota Arts and Cultural Heritage Fund as appropriated by the Minnesota State Legislature with funds from the vote of the people of Minnesota on November 4, 2008.

The computer part was created at the Hiller Computer Music Studios of the University at Buffalo, New York, using the software Max/MSP. The digital synthesis algorithms focus on various kinds of analysis/resynthesis, along with delay/feedback, spatialization, frequency shifting, frequency modulation synthesis, harmonization, and sample playback. Technically, the computer tracks parameters of the pan performance using Miller Puckette's *sigmund~* object, which does an analysis of the incoming pan signal and gives out information as to when the pan is struck, how loud it is struck, and the pitch and timbre of each strike (including details about relative loudness across the frequency range in 40 independent frequency bands).

All this information, from larger scale rhythmic and phrase tracking of pitches and attacks, down to micro-level frequency band information, is used to continuously influence and manipulate the computer sound output by directly affecting digital synthesis and compositional algorithms in real-time, giving the performer an active role in shaping all of the computer output. The intent is to create a certain degree of intimacy and interactivity between the performer and the computer, in which the performer has the potential to influence the computer output based on aspects of the musical expressivity of his/her interpretation of the score. The instrument/computer relationship moves on a continuum between the poles of an extended solo and a duo. Musically, the computer part is at times not separate from the pan part, and serves to amplify the pan in multiple dimensions and directions; while at the other extreme of the continuum, the computer part has its own independent musical voice. These solo/duo relationships exist simultaneously; yet have a certain level of musical and technical ambiguity. Much like chamber music playing, in which individual expressivity sometimes is meant to serve the whole and at other times has a fundamental individual influence on the entire ensemble; the musical relationships between the performer and computer are fundamental to the musical results.

**Duo for Tenor Steel Pan and Computer** is recorded by Kenyon Williams on his 2013 CD *Homage*, made possible as part of his 2010 Artist Initiative Grant.