Cort Lippe
Program Notes

Music for Hi-hat and Computer (1998) was commissioned by the American percussionist J. Landy Cosgrove, and premiered in Denmark in March of 1998. The electronic part was created at the Hiller Computer Music Studios of the University at Buffalo, New York using the software *Max*, which was developed by Miller Puckette, whose technical support helped make this piece possible.

The computer tracks parameters of the hi-hat, such as pitch, amplitude, continuous pitch change, rests, articulation, timbre, tempi, etc., and uses this information to continuously control and influence all the electronic sounds via compositional and digital synthesis algorithms. Time-stretching, granular sampling, FFT-based cross-synthesis, and analysis/resynthesis using an oscillator bank, as well as more standard signal processing such as harmonizing, phasing, spatialization, etc., are employed. The intent is to create a certain degree 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 the performer and the computer should have a positive influence on the final musical result.

Some of the sounds in the electronic part come directly from the composed hi-hat part, and are transformed by the computer in real time during the piece. Sound material from other than the hi-hat part is also manipulated. Thus, in certain cases, the musical and sound materials for the instrumental and electronic parts are one and the same, while at other times the parts differ. This instrument/machine relationship moves constantly on a continuum between the poles of an extended solo and a duo. Musically, the computer part is sometimes not separate from the hi-hat part, but serves rather to amplify the hi-hat in multiple dimensions and directions; while at the other extreme of the continuum, the computer part has its own independent musical voice.

Music for Hi-hat and Computer is recorded on the ICMA/ICMC 2000 CD, Berlin, by J. L. Cosgrove; and by Diego Espinosa and *the Electronic Hammer* on the EMF label.
Duration: 13 minutes.