

Cort Lippe

## **Program Notes**

**Music for Piano and Computer** (1996) was commissioned by the Japanese pianist Yoshiko Shibuya and premiered by her in Tokyo in October of 1996. The electronic part was created at the Hiller Computer Music Studios of the University at Buffalo, New York using the IRCAM Signal Processing Workstation, (a real-time digital signal processor), and the program *Max* which was developed by Miller Puckette and whose technical support helped make this piece possible. Technically, the computer tracks parameters of the piano, such as pitch, amplitude, spectrum, density, rests, articulation, tempi, etc., and uses this information to trigger specific electronic events, and to continuously control all the computer sound output by directly controlling the digital synthesis algorithms. Thus, the performer is expected to “interact” with the computer triggering and continuously shaping all of the computer output. Some of the sounds in the electronic part come directly from the composed piano part, so that certain aspects of the musical and sound material for the instrumental and electronic parts are one and the same. Sound material other than the piano is also manipulated in the time domain via time-stretching and granular sampling. Frequency domain FFT-based cross-synthesis and analysis/resynthesis using an oscillator bank, as well as more standard signal processing such as harmonizing, frequency shifting, phasing, spatialization, etc. are all employed. The instrument/machine relationship moves constantly on a continuum between the poles of an “extended” solo and a duo. Musically, the computer part is, at times, not separate from the piano part, but serves rather to “amplify” the piano in many dimensions and directions; while at the other extreme of the continuum, the computer part has its own independent “voice”. This piece has five sections, and is dedicated to my son Dimitrios, who kindly waited until the piece was completed to be born...

Duration: 15 minutes.