NaN - Not a Number
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Program Notes

NaN (2018) for harp, ondes martenot, double bass, percussion, disklavier piano and live electronics, is a commission from the Americas Society, to commemorate the anniversary of exiled American composer Conlon Nancarrow. Nancarrow, who lived a majority of his life in Mexico City, pioneered the creation of solo works for pianola showing pitch and rhythm patterns created by mathematical calculations punched into paper rolls. The title *NaN* is a computer term for "Not a Number," which reflects the fact that the music produced through numerical procedures is in fact not a number, but a complex affect irreducible to the process with which it was created.

In NaN, I designed several algorithms that together conform the "composing software" and which compose the whole piece. The main algorithm models the pedalling technique of the harp and the resulting pitch sets, as well as the harpists plucking technique. As the harp algorithm moves forward it guides the rest of the ensemble. During performance, a "performance software" continually analyzes the sounds produced by the ensemble to create the Disklavier part. For example, during the percussion solo in the first half, the software uses attack and spectral information from the afro-cuban percussion to generate simultaneous and independent piano chords, and in the final section, the computer performer is able to analyze the performance of all the instruments at will to create small Disklavier melodies and chords based on the materials these instruments are performing at the time.