Innovations in percussion and technology

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I am a percussionist specializing in performing pieces with technology. My interests are preserving and developing a performance practice for pieces that use electronic media or multimedia, and creating a method for integrating technology and music pedagogy. In the future I hope to develop more robust signal analysis tools for percussionists, creating performance realizations of past works and continuing further development of artistic and pedagogic relationships between music and technology.

A past project of mine is a re-realization of Philippe Boesmans' *Daydreams,* a work for marimba and real-time electronics. This piece was composed in 1991 and at the time used large amounts of hardware that rendered the piece unplayable in recent years. My realization of the work focused on preserving the composer's intentions but also allowed performers to manipulate the computer in order to reflect their own personal interpretation. I also created a realization of Karlheinz Stockhausen's *Solo for Melody Instrument and Feedback Loop* of which I performed on a vibraphone and a computer. Even after 40 years Stockhausen challenges performers to implement extremely complex structures by the use of technology. In the future I plan to create versions of Stockhausen's *Sprial* and *Mikrophonie I* that continue to provide performers methods of controlling the electronics while still promoting different interpretations.

A recent and ongoing project is an application for percussionists to learn extremely complex rhythmic languages such as in Brain Ferneyhough's *Bone Alphabet* for solo percussion. This work represents some of the most complex music in the percussion repertoire and challenges the performer to unravel an intricate matrix of rhythmic patterns. My approach was to remove the fear of notation and to translate the score into aural components based on how a musician would behave during practice and rehearsal. What resulted was an application that: 1) sequences complex rhythms using the exact instruments of the piece, 2) change the speed and voicing of these sequences in real-time and 3) give a basic graphical representation of what was sequenced. If desired the performer can also see a graphical representation of their playing. The goal was to give performers tools to uncover complex rhythms without having to resort to cumbersome handmade graphs and calculations. This tool is meant to give performers an alternative means of understanding music and provide an exploration of music pedagogy and technology.

A continuing process for me is to discover new ways in which to use and perform with technology. One unique example has been working on David Birchfield's *Community Art: Resonant Energy,* an algorithmically derived piece for percussion and computer. This work uses a genetic algorithm as its core process and generates a score in real-time which the performer sight-reads. Learning and developing this piece has been a challenge and has encouraged me to define a viable performance practice of algorithmic computer music. Pieces of this nature have inspired very little discussion and it is my belief that this genre will continue to grow as a musical form and practice.