



A Brief Interaction with Joel Chadabe

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We congratulate Joel Chadabe, the 2007 SEAMUS Award recipient. His pioneering work with interactive composing; long history of developing approaches to instrument and software design; authorship of many articles and *Electric Sound, The Past and Promise of Electronic Music*; tireless advocate/disseminator of electronic and computer music as president of the Electronic Music Foundation; and his involvement with elevating public awareness of environmental issues through art (Ear to the Earth) include only a few of the activities that make him one of America's most vibrant figures. At SEAMUS 2007, he took a few moments to share some of his thoughts about the development of interactive composition.

When asked in what direction he sees the field of computer music developing in the near future, Chadabe immediately responded with "structuring new musical instruments." Included in this notion are all of the parts of the instrument and how they function as a whole in relation to a performer's actions. Obvious elements include the human interface and the process that generates a sound, yet Chadabe warned: "Wrongly, instruments are too often defined by their interface. What defines an instrument is its behavior and what role it puts the performer in. How does the instrument behave in relation to the performer's actions?" Chadabe proceeded by providing several models of performer/instrument interaction.

- 1) Simple model: Press a key and something happens – action/reaction - the instrument provides a simple, predictable response to an input.
- 2) Fly-by-wire: In a Boeing 777, the pilot has voluntary access to a digital flight control system. This system includes sensors that monitor various aspects of the airplane's performance and current states as software calculates differential equations in response to the pilot's input. This allows the pilot to operate the plane at a higher level of abstraction while giving control of complex local variables over to the system. Here the 'instrument' assists the performer pilot to solve the problem of getting a vastly complex vessel from origin to destination.
- 3) Interactive model: Here, instruments have thoughts of their own and react autonomously to input supplied by the performer, just as in conversation when another person responds to what you do. In this case, the instrument supplies more information than is given by the performer alone (here Chadabe credits the work of George Lewis in Voyager and the work of Robert Rowe as composers who have made significant strides in this area).
- 4) Interacting with life model or "sailing a boat in windy seas": Here Chadabe reminisced about steering a sloop through windy seas. This provided the perfect analogy for him of how one lives. As one interacts with the "winds and waves" of life, these currents don't respond to what you do but rather share control with you as you 'steer your boat'. This reminds me of Chadabe's description of what it was like to perform his work "Solo" (see picture below): "And because I could not predict the instrument's contribution, I could not completely predict the result, so I would be reacting to what I heard in deciding how to perform yet the next event" (Chadabe, J. 1997. *Electric Sound*, p. 292. Upper Saddle River, New Jersey: Prentice Hall).

(Chadabe continued)



Joel Chadabe performing
Solo in 1979.

The distance of his hands to each of the Theremin antennas (made by Robert Moog) activated zones of control. These zones affected relative durations of individual events and also allowed Chadabe to reveal different timbres resembling acoustic instruments.

The event stream of the piece was generated algorithmically and was synthesized (using FM) via a Synclavier I.

Listen to an excerpt of
Solo at seamusonline.org

These models suggest a fundamental questioning of what it means to compose and realize computer music. He makes a clear distinction between the rendering model and the interactive model. The ‘rendering’ model uses technology to create an idealized performance of the composer’s structured ideas. The interactive method defines a system of instrument behaviors associated with varied input from performers whereby the process of mutual engagement through performance forms the work. In line with systems developed to support this way of composing, he mentioned the visionary developers of the Kyma/Capybara system (Scaletti and Hebel) where real-time, open-ended responsiveness to live input was an initial design goal of this integrated digital system extending back to the late 1980’s.

When asked to look back even further to identify some of the roots of interactive composing prior to his own work in the early 1970’s, Chadabe mentioned Cage and Tudor and their activation of unpredictable, dynamic systems along with other composers like Xenakis and Lejaren Hiller who were working with intermediary systems like statistics and algorithms to regulate and, in some cases, automate decision making. He also credits Salvatore Martirano as one of the early pioneers of interactive work as Martirano was independently developing interactive performance techniques with his digital/analog hybrid system, the SalMar Construction in the early 1970’s.

After having a few minutes to look forward and back with Chadabe, I asked him what was in his immediate future. He hesitated, but then talked about a new book in the works. The topic? Structuring New Musical Instruments. I look forward to him steering that project towards completion. (Ed.)

SEAMUS President Russell Pinkston with Kyong Mee Choi at the SEAMUS 2007 Award Banquet. Choi’s “It only needs to be seen” for guitar and electronics was commissioned by ASCAP/SEAMUS and was premiered on the Friday night concert.

