
EDITORIAL

This issue of *Organised Sound* is about interactivity, a theme that the journal has often visited in the past. What makes this visit to this very important subject special is that it has been chosen as the first theme within our annual collaboration with the International Computer Music Association (ICMA). The ICMA President, Mary Simoni, has joined the Editors this year as ICMA representative and Mara Helmuth, currently the ICMA's editor of *Array*, has kindly taken on the role of Guest Editor for this issue. The journal Editors would like to welcome the ICMA and thank those ICMA members, and Mara in particular, who helped to make this issue possible. We look forward to further developing this collaboration.

Leigh Landy

Interactive music systems present unique strategies for the realisation of music, and the opportunity for innovative and challenging work in musical system design, performance and composition. While definitions of musical interactivity vary, and are discussed in this issue by several authors, in general technology is employed to respond to or engage in an exchange with human performers or other input, to generate or process music. Entities that interact may be the performers, performer-composers, and hardware-software components developed to initiate, respond to, and or structure musical events. As human performance is enhanced or even sometimes replaced by technology, interfaces and instruments evolve, expanding or intermingling the function of composer and performer.

In performance, the relationship between human action and musical output becomes more complex. If acoustic instruments are modified by an interactive system, the results may be unique to the system and must be learned. If the system responses are modified by previous input, the learning process will be more involved. New instruments may demand new performance techniques. The composer may become the performer; s/he may be the only one familiar with the system. Or, an installation may turn the audience into performers, inviting diverse input without the need for specialised skills.

The role of the composer is similarly expanded or altered. The composer may be the performer, and often

the designer of the performing technology. What is composed is frequently an instrument, with or without acoustic physical models. Software interfaces are also designed to mediate between performer and sound generation. The interface must be navigable during performance and provide control over the selected sound generation strategies, which of course must be performable in real time and aesthetically appropriate for the composition. In a system with some degree of indeterminacy, the composer designs a field of choices with all of their possible consequences rather than a sequence of events, creating an environment or space with certain properties.

Several of the strategies discussed here were developed individually by a composer or collaborators for the realisation of their work. Tomie Hahn and Curtis Bahn have developed a unique interactive system based on the composition of a sonic character inspired by Japanese pop animation and cartoons. The movements of *Pikapika*, an aggressive female character, emerge from Hahn's background in Japanese traditional puppet theatre and dance. Bahn's machine-based sounds and interface with Hahn's movement vocabularies create the audio component of *Pikapika*'s noisy, wireless interaction with the world. *Pikapika* is discussed as both instrument and 'meta-composition'; a challenger of dualities in conceptions of musical and social roles.

Yolande Harris and Bert Bongers explore the transformed roles of composer, performer and instrument as well as the score, in the design of 'interactivated spaces'. The description of two of these interfaces, the Video-Organ and the Meta-Orchestra, covers both aspects of performance with technology, and the larger space in which the audience perceives the work.

Looking back at an early electronic music experiment of Henry Cowell, Margaret Schedel investigates a precursor of today's complex time-related experimental systems: the rhythmicon was never widely used, the story of its conception and development is significant because of their influence on composers of interactive works.

Dylan Menzies discusses the use of dynamic control in instrument design, and proposes that the term 'mapping' be updated to a broader term, 'dynamic control processing', reflecting the inclusion of systems in which the output depends not only on input values, but also the history of input. He provides examples and techniques

for dynamic processing with first- and second-order control filters.

Nick Collins' genetic algorithm library for SuperCollider is used to explore the output of various synthesis algorithms. This interactive evolution tool provides information about reverberation algorithms, synthesis of percussive sounds, and an analysis of the plucked stiff string.

Ivica Ico Bukvic, a graduate student, compares two categories of software applications for performance: object-oriented applications with graphical user interfaces, and linear applications with script-based interfaces. After analysing strengths and weaknesses of each type of design, he describes his own Linux software solution for coordinating acoustic and electroacoustic performance components, RTmix.

Approaches to the use of space in composition, and the impact of conflicts between projected spaces and the performance space on the listener are addressed by Nick Fells. He discusses two of his own compositions, and interactive installation *Words on the streets are these* and the concert piece *Stiff Life* in terms of the role of the 'spectator-listener'.

Garth Paine argues for a new approach to interactivity which avoids the predetermined musical outcomes of merely responsive environments. He advocates the use of streamed data and accumulated user input to provide unique, dynamic listener experiences.

Several articles are included which are not specifically on the topic of interactive music, but address concerns also dealt with in on-theme contributions: Flo Menezes addresses a morphology of interaction in composing contrasts as well as fusion states in the sound spheres of acoustical instruments and of electronic components of electroacoustic music; Natasha Barrett explores spatio-

musical compositional strategies in structuring electroacoustic music; and Richard Polfreman describes Modalys-ER, a graphical user interface for physical modelling instruments implemented in OpenMusic.

This issue is the first collaborative issue between the International Computer Music Association and *Organised Sound*. The ICMA Array Newsletter Editor or their delegate co-ordinates the third issue of the year on a topic of mutual interest. Providing an established connection between the journal and ICMA will give an in-print forum for work done by members in a respected journal, and allow related material to be published in the online ICMA newsletter, *Array*, both preceding and following publication of an article in *Organised Sound*. As 'Interactivity' is a topic of strong interest for many musicians working with technology, this theme was chosen for this issue 7(3), with a focus on the activities of the Interactive Systems and Instrument Design in Music Working Group of the ICMA (ISIDM), with chair Marcelo Wanderley. Contributors Curtis Bahn, Bert Bongers, Dylan Menzies and Garth Paine are members of this group. I hope you will find the diversity of submissions engaging and stimulating. We invite responses in the form of submissions to *Organised Sound*, or to *Array*, the online ICMA newsletter at ARRAY-ed@notam.uio.no.

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