AHRC ICT Methods Network Activity

OPENING THE CREATIVE STUDIO

ROYAL ACADEMY OF MUSIC, 12 OCTOBER – 23 NOVEMBER 2007

Report by David Gorton

Introduction

'Opening the Creative Studio' was a series of four research events held at the Royal Academy of Music between 12 October and 23 November 2007. Much of the research at the Academy in recent years has been concerned with the interactions between composers and performers, and with the means that facilitate, or come in the way of these interactions in the production of music. The role of technology has become increasingly important, especially for the 'Modelling Creativity in Music' research network (http://www.ram.ac.uk/facilitiesandcollections/Research/Modelling+creativity/), which is made up of staff from within the Academy in collaboration with researchers from a range of partner institutions. The aim of the 'Opening the Creative Studio' series has been to take stock, explore, and reflect upon the design, development, and creative application of technology in musical practice, using the collaborative activities of the network as case studies that act as a focus for debate in the relationships between musical and technological innovation.

Opening the Creative Studio 1 *held on 12 October 2007*

The first event was concerned with the interactions between music and visual media, and was introduced by Simon Shaw-Miller (School of History of Art, Film and Visual Media, <http://www.bbk.ac.uk/hafvm/>, Birkbeck College, University of London, and Honorary Research Fellow at the Academy) who set out contexts and questions regarding the analysis of music and image. His talk concluded with discussion of the recent work of Mariele Neudecker, an artist who couples images of landscape with pre-composed music, including *Winterreise* by Schubert and Mahler's *Kindertotenlieder*. This was followed by a talk by Mike Allen (also of Birkbeck) who spoke on the history, technology, and aesthetics of non-synchronized film sound. A number of film excerpts were shown, with audience discussion noting that an analysis of the historical development of film technology can help reassess our approaches to contemporary practice. The final session of the day showcased the collaborative projects that have been taking place between student composers at the Academy and student film makers and animators from Leeds Metropolitan University and the Bristol School of Animation. Robert Szymanek (research student at the Academy) gave a presentation on his recent project *Mud*, a music-film in which a sequencing programme had been used as a part of the collaborative processes to create analogies between the film and the music's visual representation. Philip Cashian (Head of Composition at the Academy) introduced the screening of a number of projects from the last four years, and the event concluded with discussion on the working methods used in such collaborations, and the role of technology in the development of new methodologies.

Opening the Creative Studio 2 *held on 2 November 2007*

The second event examined the nature of musical instruments, through the extension of acoustic instruments with electronics, and the interaction between live instrumental performance and intelligent computer systems. The event began with an experimental workshop using the 'SoundSpotter' system developed by Michael Casey (Goldsmiths College, University of London). SoundSpotter is able to store large amounts of audio material, which it draws upon to find the closest match to a live audio input. In this

case the database comprised the audio track from Hitchcock's *Vertigo*, linked to each individual frame of the video from the same film. This allowed the cellist Neil Heyde (Royal Academy of Music) to improvise, recalling fragments of the film in response to his playing. A very different kind of relationship between the cellist and SoundSpotter was observed when Neil Heyde could see and hear the 'Vertigo' response, and respond to it in turn, and when he deliberately turned away from the screen. Similar experiments were tried using the audio and video from Hitchcock's *The Birds* (which has a sound track but no music), and with the oboe player Chris Redgate.

After a break Patrick Nunn (research student at the Academy) demonstrated his work for clarinet and electronics *Coalescence* with clarinet player Lucy Downer (postgraduate student at the Academy). This piece uses three-dimensional movement sensors on the bell of the clarinet to communicate with a Max/MSP patch through Bluetooth technology, thus affording the clarinet player emotive and emphatic control of the live electronic sound environment through her performance gestures. The discussion that followed debated where the different types of control lay: with the performer, the composer (through the score), or the computer system. The next presentation involved Paul Archbold (Kingston University) and Chris Redgate in the demonstration of a Max/MSP patch designed for improvised duets between oboe and computer. The patch allows for the capture and treatment of live audio in real time, and is operated through a midi interface. The following discussion concentrated on the instrumental nature of computer systems, and highlighted the expanding possibilities of 'laptop performance'.

The event concluded with a workshop of David Gorton's (Royal Academy of Music) *2nd Cello Sonata* for solo cello and live electronics, played by Neil Heyde. The electronic component of this piece again uses Michael Casey's SoundSpotter system, with the audio database comprising a studio recording of Gorton's first *Sonata for Solo Cello*, also performed by Neil Heyde, with the piece therefore encapsulating a dialogue between two sets of acoustic materials played by the same performer. The piece was designed so that the 'window size', the parameter that controls the duration of each match and fragmentary response, could be related to the general frenetic activity of the live cello material. This mapping was controlled by a separate Max/MSP patch written by Milton Mermikides (Royal Academy of Music) that measured frequency and amplitude of attacks in the live cello material. The presentation functioned as a public rehearsal and workshop, in which the relation between the electronics and live cello were demonstrated, tested and experimented with.

Opening the Creative Studio 3 *held on 9 November 2007*

The third event focused on the application of digital resources that allow musicians to create their own personal trace through sources and events. The event began with a presentation of the newly developed 'RAMline' project given by Antony Pitts, Hannah Riddell, and John Drinkwater (all of the Royal Academy of Music). Antony Pitts describes the RAMline as a unique multi-dimensional index of music and musicians linked to local digitized archives and other online resources, such as manuscript sources and published editions, live performances and recordings, musical criticism and comment. Still in its infancy, this index can potentially be used to display a timeline of musical history and the lifecycle of any piece of music, from antiquity to the present, as well as to chart musical profiles of individuals and organizations. The presentation involved a practical demonstration, where audience members were asked to write down the most recent piece of music they had heard, where and when they had heard it, and who the performers were. This information was added to the RAMline by students during the presentation, allowing the audience members to search for their own musical experiences in the index. The rest of the event consisted of two talks given by Tim Crawford and Geraint Wiggins (both from Goldsmiths College). Tim Crawford spoke about the kind of computing tools that are available to musicologists, and how developments in this area can create new methodologies in research. Examples of searchable datasets and large corpuses of music were given from projects that have recently been undertaken by the Intelligent Sound and Music Systems Group at Goldsmiths, based in the Computing department. Geraint Wiggins

expanded on this by discussing how computers can be taught to make musically intelligent decisions, thus creating new possibilities for the role of computers in the scanning, editing, and archiving of music.

Opening the Creative Studio 3 *held on 23 November 2007*

The final 'Opening the Creative Studio' event explored the questions raised by the investigation of creative translations between musical creativity and scientific data. Geraint Wiggins began the event with a presentation about how developments in science can help us understand human creative behaviours. This raised the further question of whether such knowledge affects creativity, and if so, does that have positive or negative implications. This was followed by the presentation of a collaborative project involving the composer Milton Mermikides and microbiologist Simon Park (University of Surrey). Simon Park showed a number of close-up images of different types of bacteria, and spoke about how they had been used in various art projects. Milton Mermikides then demonstrated the compositional procedures involved in the creation of his installation *Microcosmos*, in which various scientific properties of the bacteria shown in the film were used to generate musical material by being fed into pre-composed musical processes. The Max/MSP patch that generated the electronic music could also be used in an improvisatory manner by the composer, allowing him to point to different areas of the image and change the music accordingly. The event and series as a whole concluded with a roundtable discussion, hosted in association with the Institute of Musical Research, summarizing the issues raised throughout the series. The discussion responded to three questions raised by David Gorton at the start of the session:

- How can the use of new technologies help us to reassess our understanding of the aural and the visual, and how this new understanding can be used as a stimulus for new creativity;
- Where might we draw the line between technology enhancing or extending an existing instrument, and where that technology becomes an instrument, or a performer in its own right;
- When does musical innovation respond to technological innovation and vice versa, i.e. what is the balance between the creation of new tools and the creation of new uses?

Conclusions

The series as a whole raised a great deal of questions making it clear that the opportunity to reflect upon the role of technology in creative practice was invaluable. As the nature of musical production is often end-orientated, it is unusual for unfinished work to be presented and subject to experiment in a public arena, and in the context of more general enquiry into the creative process, these presentations helped to make visible the collaborative methodologies that might otherwise remain behind closed doors. It is hoped that the combination of workshops, presentations, and critical reflection will prove useful both for the participants and the wider research community. All of the 'Opening the Creative Studio' events were filmed and are archived in the Academy's Performance Research Collection, with highlights to appear on the Academy's website.

List of Presentations

Opening the Creative Studio 1 held on 12 October 2007

- Simon Shaw-Miller, Birkbeck College, University of London and Honorary Research Fellow, Royal Academy of Music: 'Contexts for the Analysis of Music and Image'
- Mike Allen, Birkbeck College: 'History, Technology and Aesthetics of Non-Synchronized Film Sound'
- Robert Szymanek, Research student, Royal Academy of Music: 'Making the Music-film *Mud*: Technology at the Interface of Sound/Image Collaboration'
- Screening of Academy animation/film collaborative projects

Opening the Creative Studio 2 held on 2 November 2007

- Neil Heyde, Royal Academy of Music and Michael Casey, Goldsmiths College: 'Acoustic Call and Video Response: Playing Hitchock's Films on the Cello'
- Patrick Nunn, Research Student, Royal Academy of Music: '*Coalescence*: Techniques in Clarinet Gesture Control'
- Paul Archbold, Kingston University and Chris Redgate, Oboist: '...the sting in the machine...'
- David Gorton, Royal Academy of Music, Neil Heyde, Royal Academy of Music, Michael Casey, Goldsmiths College, and Milton Mermikides, Royal Academy of Music: 'Dialogues and Hyperactivity: Gesture and Response in David Gorton's *2nd Cello Sonata*'

Opening the Creative Studio 3 held on 9 November 2007

- Antony Pitts, John Drinkwater and Hannah Riddell, Royal Academy of Music: 'Rewriting Musical History'
- Tim Crawford, Goldsmiths College: 'New Tools for Musicology: Beginnings of a New Future?'
- Geraint Wiggins, Goldsmiths College: 'On Representing Musical Knowledge and Reasoning'

Opening the Creative Studio 4 held on 23 November 2007

- Geraint Wiggins, Goldsmiths College: 'Towards a Science of Musical Creativity'
- Milton Mermikides, Royal Academy of Music and Simon Park, University of Surrey: '*Microcosmos*: the Amazing Hidden World of Bacteria, in Image and Sound'
- Simon Shaw-Miller, Birkbeck College and Honorary Research Fellow, Royal Academy of Music and David Gorton, Royal Academy of Music: 'Opening the Creative Studio'
- Roundtable discussion in association with the Institute of Musical Research (Michael Young representing the IMR).