Electroacoustic Music as Intercultural Exploration: Synergies of Breath in Extended Western Flute and Malaysian Nose Flute Playing

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ABSTRACT

The Imaginary Space: Developing Models For An Emergent Malay / Western Electroacoustic Music is a Malaysian Government funded research project being undertaken at the Universiti Pendidkan Sultan Idris, Malaysia. This study revolves around the creation and performance of new works for instruments and electronics by Malaysian composers, incorporating and synthesising elements from Malaysian and Western art music cultures. Through ethnographic, performative and compositional explorations, the project is drawing upon aspects of new music and traditional musics of Malaysia to create connections, new knowledge and new musical works. This paper focusses on the divergent practices of the Malaysian aboriginal nose flute, as heard in the rural areas of Perak and Pahang, and the extended Western flute, as explored and manifest in the performance of a new work for flutes and live electronics. Juxtaposing these two instruments in an electroacoustic setting has generated a new musical context and a site for cultural interchange, here articulated from the performative perspectives of instrumentalist and sound designer. Comments from the composer, Valerie Ross, on writing the work, her field work amongst the Orang Asli people, and the pensol flute; reflective critiques and responses to developing and performing the work from the perspectives of the flautist (Jean Penny) and sound technologist (Andrew Blackburn); and some reflections on the first performance by ourselves and from the audience are included.

INTRODUCTION

The Imaginary Space research project is based around finding modes of collaboration between composer, technologist and performer; establishing and testing theories of interaction; exploring performance styles incorporating aspects of Malaysian and Western performance modes; and identifying and fusing elements from each tradition through composition and contemporary music technologies. In this phase of the project, the creation of a new work for flute with electronics by Malaysian composer, Valerie Ross, was used as the foundation for examining organological features and performative practices of extended Western flute and the Malaysian aboriginal nose flute (pensol) of the Semai people. This juxtaposition of the sonic qualities of Western and nose flutes in an electroacoustic setting has generated a new musical context and site for cultural interchange.

We have become interested in cultural distinctions and the quest for points of connection and knowledge since arriving in Malaysia in 2011. We find ourselves in the middle of Malaysia at a university that is currently developing and diversifying but essentially has its roots in local Malay
culture. The choice of music for instrument with electronics, or *musique-mixte*, for this research project derives from our own interests and expertise, and from the fact that this style of music allows unique potential to develop dialogue and exchange, to explore contrasting contexts and aesthetics, rituals and performance practices, and to introduce what could be seen as a Western application of music and ideas with a facility to look at cultural aspects from a new perspective.

One of the issues of concern to us, as Australian musicians, is achieving a true and meaningful exchange through the music. A fusion of sonic materials from different cultures will not always achieve this result. Out of context, or traditional associations, sounds may well lose cultural significance, be lost or distorted. Manuela Blackburn (2011) discusses ‘sonic souvenirs’ as material taken from foreign countries and used in compositions by others – characterised by Simon Emmerson (2000, p.115) as a ‘magpie’ culture that uses bits and pieces from another culture with little understanding. Frederick Lau articulates some of the difficulties of this task of intercultural exchange well:

> The blending of elements cannot be understood easily in polarized terms such as the East versus the West. Nor can it be understood as following a set of predictable behaviours and responses. To understand these processes we need new methods that incorporate cultural analysis with the analysis of music and a new paradigm of cultural flux rather than categorization. Understanding cross-cultural synthesis is about understanding boundary crossing and making room for the need to create multiple identities that transcend and shift the global market of classical music.” (Lau, 2004, p.38-39)

Our project is building on this approach as it works to create opportunities for greater understanding in and through the music.

**QUESTIONS, AIMS AND METHODS**

The following research questions have been posed in this phase:

(i) What organological similarities and differences exist between the Western flute and the aboriginal (Semai) nose flute?
(ii) How can electroacoustic music performance using nose flute, extended Western flute and digital signal processing be used to explore cultural exchange?
(iii) What tuning systems, breath and sound manipulation techniques are used by each; how can these interact and what knowledge can be drawn from this?
(iv) How does the sound and technique of the Semai flute influence the contemporary flute player’s *modis operandi*?
(v) How is compositional and performance creativity influenced by the juxtaposition of musical knowledge acquired from different cultural practices within the realm of electroacoustic music?

Our aims include to:

(i) Compare organological properties of Western flute and Malaysian aboriginal nose flute.
(ii) Explore musical origins, identities and experience to find points of connection between two musical aesthetics.
(iii) Evaluate breath, tuning and timbral manipulation through acoustic and electronic techniques.
Document the performers’ experience, uncovering responses, actions and understandings as they occur within the act of performance. Apply new knowledge to the creation and performance of an electroacoustic work embodying techniques of both traditions.

Methodologies are practice-led, incorporating elements of ethnography, auto-ethnography, phenomenology, sound and performance analysis. The compositions are generating a broad sequence of explorations – for example, locating and generating sound sources, sonic experimentation, interactive technologies, designing spatial structures (including sound diffusion), testing and refining process and music development. Theories underpinning each work are tried and validated in the development and presentation of performances, and further modelled in a variety of cultural contexts and locations. Ethnographic studies of sonic materials, observation of traditional music and deepening knowledge of current global practices (such as technological processes for composition and performance), is occurring through trips into various Villages of Malaysia (at locations such as Northern Perak and Kelantan), as well as highly developed international electroacoustic laboratories, and bringing our electroacoustic technological experiences into the works.

APPROACHING MALAYSIAN TRADITIONS

*The Imaginary Space* project includes studies of musical instruments, not just as sounds, but also as symbols with cultural meanings, as modes of interaction between the body and the morphology of instruments - their shape, physical features and values. We have looked closely at the Serunai - both as sound source and cultural artifact; we have observed and talked with nose flute players; and we have heard many performances involving transverse flutes, gambus, gamelan, percussion and traditional violin. As we have experienced these styles, we have reflected on ways of achieving connection. We are making choices of areas to explore within compositions, looking at aspects of difference - such as the nature of instrumental timbre, the use of breath, the divergent tonalities and tunings, and performance modes - not just in techniques, but also in the perceived significance of each performance and the spaces for performance.

Experiencing the performance of traditional players is imperative for not only the appreciation of the sounds of the music, but to gain understanding of the underlying attitudes and the place of music in the society. Below (Figure 1) is an image of a nose flute player from the Orang Alsi or aboriginal people of the state of Perak in Malaysia, in a village near where we live, playing for us when we visited there. Watching and listening to this performance in the village communicated a huge amount of cultural information to us - the importance of the playing, the love of the sound and familiar tunes, and the activity of those around - who are always talking but at the same time show great respect and pride in the music.

Figure 1. Nose flute player, Perak.
For the Orang Asli, the acquisition of cultural and musical heritage is transmitted in a naturalistic environment by practitioners of that culture. Nature plays a significant role in how music and sounds are perceived, received and recreated. The creation of a new piece is humbly attributed to the ‘spirits’. They will not take credit as ‘composers’ but as conveyers of abstract communication and inspiration from the spirit world. The pensol flute sound recordings used in \textit{Synergies of Breath} are taken from the Semai tribe of Peninsular Malaysia during ethnographic studies on how musical practices shape a communities’ perception of who they are, and how people define their musicality within and outside their community.

Organological studies concerning the pensol become intertwined with perspectives and understandings outside straight facts and figures. Our Western perspective of organology: traditionally examined through instrument, performer, or performance with an emphasis on data collection and measurability can be applied in this study but it is a style of research that will only partly answer our questions. Orang Asli organological studies must include reference to attitudinal studies - perhaps based on the feel for the piece of wood used to make the instrument, the symbolic bird represented by the music, as well as ear, intuition, and belief structures.

The photographs below are of a pensol construction. The maker of the pensol or nose flute, Alang, collects the bamboo from the Cameron Highlands in Malaysia. He selects the best bamboo, sawing and shaping the end, tuning, and finger hole making. The flute is measured, more with a knowledge of tradition and experience than with fine measuring tools. Tuning may be influenced by the soundscape of the Semai musician’s natural environment. Alang ’s pensol has four holes, however only three holes are normally utilized in pensol music repertoire.

Figure 2. Pensol construction.

\begin{center}
Pensol (Nose Flute) : Tuning System
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\text{(G3: 196.00-open hole; C4:261.63; D4:293.66; E3: 329.63 - approximate pitch of a pensol)}
\end{center}
The beautiful sounds that we hear from the newly made pensol are thus emanating from inherent cultural understandings and traditions. As we take this knowledge into our own practice, we look for a synthesis that reflects our desire for connection and dialogue. This is not always easy. Working with the compositions that have thus far developed have caused us to reflect deeply on what we are trying to achieve, to drag ourselves into a zone that is not always comfortable, and to see what we can discover in that zone, and how we can respond to it.

**SYNERGIES OF BREATH: PERFORMANCE PERSPECTIVES**

Our methodology has consisted of performer - composer discussions, workshopping and refinement of ideas for cultural and musical elements, receiving a copy of the score (a conceptual structure of the music) and taking this material into the studio to create a performative outcome. The piece was developed from a series of layered textures, including a fixed sound track made up of Malaysian instruments – Jew's harp and pensol flute, textural shades, live flute motifs and electronic effects, all worked into a strict layering and timeframe of seven sixty-second increments. Blocks of colour also influenced the composer's construction.

Initially, the flute motifs were used to explore tonal colour which later become elements in the dialogue with the fixed sound track. These tonal colours were further extended through applying various electronic effects to the live flute sound through the computer program *Plogue Bidule*. The narrative of the work – a story about the Cameron Highland environmental changes and the search of the flute player for bamboo for his flute – sits behind the sonic explorations; we find the directness of some sounds surprising, but potentially expressive with creative approaches to the sounds and movement of the piece.

**THE FLAUTIST**

Exploring the musical origins, identities and performance practices of the Orang Asli of Malaysia generated a re-evaluation of aesthetics and the meaning of synthesis in performance approaches. This included, in *Synergies of Breath*, questions of breath, sonority, and the score. Working on the flute part, the playing brought forward new performative issues for investigation and discussion. As mentioned earlier, the pensol player thinks of his music as spirit. It is not him. Western performers are more likely to consider the music as representation of ideas that may be tied up with the identities of both composer and performer (for further discussion of this, see Penny 2009, pp. ). The potential for finding new expressive notions, of experimenting playfully with micro sounds, expanding these out to highly amplified, timbrally manipulated sounds, or blending with normal resonant sounds can further blur senses of identity in performance. How then to use these elements as a basis for exchange?

To think of the use of breath as a means to intercultural exchange opens up questions of physical, aesthetic and sonic meaning, of different approaches to music and expectations of expression. The breath - or, more specifically, the performance breath - may be something to struggle with, to work to control physically, but it is also a significant element of the musical expression. Breath influences almost every part of a performance, creating a centrality of mental and physical response. Breath for a pensol or serunai player (who plays with circular breathing all of the time) is somehow approached as something outside the player, as spirit or nature, almost beyond. In *Synergies of Breath*, breath tones emerge and disappear, expand and reduce in the flute line as an encircling and underpinning theme. The sound of breath tone may be imbued with an extraordinary lightness, or mysteriousness, or even weight and power. Connecting these to the recorded sounds ultimately become the role of the electronics.
When listening to the computer-generated soundscape of *Synergies of Breath*, a sense of weight and directness is evident in the recorded sound and sound placement, in context as well as in structure and tone quality. This feeling transfers over into the flute part – not so much in the score, as in the feelings evoked and the approach to the meaning, the distance and the power of the exchanges taking place. Further influences occur through reflections on the aesthetic and expression of the pensol flute in the context of playing. Questions of sonority arise: whether to incorporate the tonal characteristics of the pensol in the playing? Whether to retain a distance from this and assume a character of observation and inquisitiveness? Whether to embrace the new context and try to integrate emotional responses to connection with a musical synthesis of sound? How to balance the use of breath and notated motifs as dialogical elements in the piece? Is it possible to engender a sense of the history and place of the Western flute in this Malaysian sound environment?

With the addition of electronic manipulation of the flute sound these issues are given a new context in which the identity of the player may come to the forefront. Here, the ‘Western’ performance perception of self through sound, what Naomi Cumming refers to as the signification of the performer’s presence in the sounds and ‘presence’ in performance as interpreted effect (Cumming 2000, p.160), can be called into question as alteration of those sounds and contexts occur. Altering traditionally recognisable sounds generates altered questioning of identity, meaning and interpretation as the performers research the piece and presentation of that piece. Additionally, the electronics are providing a new layer for interaction and new spaces to think and respond to both narrative and impressions of the composer’s ideas, such as mysticism and tradition. From the performer’s perspective, there is a re-orientation in the space; reassessments of projection and tone colour occur, responses to the dialogues of spatialisation and interaction, and a turning in towards the instrument (Penny 2011, p.190). Fusing these elements with conceptions of Malaysian music and thought becomes intertwined with the narrative accompanying this work, *Synergies of Breath*. The story is set in the Cameron Highlands, the environment there is under threat from encroaching developments, land slides and loss of forest. The Senai people who live there carry on their lives regardless of ‘progress’. The nose flute maker will walk for hours into the forest just to find the ever receding supply of appropriate bamboo for the instrument; he will carry his good nature with him, and construct an instrument true to his tradition. He will play melodies from his own people’s tradition – happy tunes, often wistful, always with a beautiful clear, direct tone that goes straight to the heart of the listeners. He will laugh as he finishes, shyly and modestly, but with a certainty of the power of the music.

Another point of differentiation between Western classical music and traditional Malaysian music is the presence or absence of the notated score. In much Western experience and practice, the score is critically important as a vehicle for communication between the composer and performer, as the temporal and physical realisation of the music is attempted. Electroacoustic scores may well be highly complex, with multiple instructions, sometimes graphic notation, expressive variation in many styles, various timing indications, and a plethora of other words and instructions for performance. As a performer, it is always an exciting time when one begins to intersect with a new piece of music, and imagines what might proceed from this initial contact. Without an established soundscape or set of expectations for a piece already, new music, in particular, can feel truly adventurous. Daniel Barenboim (2007, p.54) calls the score an ‘infinite substance’. From this, he says, comes the performer’s inner hearing of the work - the internalisation of the music - the ability to analyse and to imagine the sounds and interpretations, then to return to an instinctive unfolding of the piece as new knowledge, self-knowledge or metaphysical understanding of the score and one’s relationship to it. This is our natural Western approach - one which we love, but that can be challenged in new situations.
Developing the flute score of works created in *The Imaginary Space* project was an intense collaborative exercise, as new ideas were formulated and defined through notation of the score. An earlier work in the project began with a very inexplicit score that demanded significant cross-cultural understanding as both performer and composer worked to articulate different expectations in its realisation. Ross' score is more precise, see Figure 3, although it also left many decisions to both performers within the rigid timeframe of the piece. The layered elements are immediately apparent, and the tight timeframe clearly marked. Short flute motifs are juxtaposed with a visual representation of possible sound effects, and components of the fixed sound track. The familiar processes of deciphering the notational meanings here are easy; discovering an integrated sense of the sounds, the synthesis of ideas and meaningful exchange required a forthright approach and was, ultimately, a much greater challenge.

**Figure 3.** Valerie Ross *Synergies of Breath*, score excerpt.

**THE TECHNOLOGIST**

An interplay between the parts of *Synergies of Breath* was created as dialogue and reflection of multiple strands. With parameters initially defined, developing the digital signal processing of live flute could proceed. It was a process of discussion, and trial and error. Using the software *Plogue Bidule* (www.plogue.com) a shell was created that allowed quick and easy experimentation with the sounds. Musical interactions revealed difficulties with sonic characteristics, the meaning of the spatialisation of sounds, integrating the lines into a whole, and adding a new dimension through the electronic sound manipulations that result in an integrated, satisfying musical work. In the early stages difficulty with technology occurred. The sounds on the fixed track were not conducive to pick up or melding with electronic functions and programs. The flute line was also restricted, and required re-setting to create effective presence of the sounds. Playing techniques were adapted, and are continually changing in the quest for aesthetically pleasing results.
In order to create the new sound environment, harder edged sound effects that were morphing dynamically and in real time were preferred. Granular synthesis, reverberation and harmonisers seemed to highlight the programmatic elements that had guided the construction of the piece. Personal experience has shown that the flute input is best achieved using a headset microphone (in this case, Danish Audio) allowing the flautist freedom to move rather than needing to continually align to a fixed microphone on a stand. There are a few effects that come through the end of the flute tube, so for these a microphone on a stand (SM55 condenser) is most effective. The audio was routed into a mixing desk, and from there a direct send to the DA converter (Digi 003) into and out of the software (Plogue Bidule).

In performance there is an organized but improvised quality to the dsp. Although inefficient in processing power, the most reliable method was to maintain the computer processing of all the effects continuously throughout the performance, bringing up the volume of each as desired and mixing them using the software mixer on the screen. Start states for each were arranged as presets, and an effect was brought into play, its parameters were manipulated using the windows shown in Figure 4 below.

The function of the electronics in Synergies of Breath became clearer as rehearsals progressed. They served to create a link from live flute to the sound track, they provided the setting from which to explore and develop sonic material, and they created an extraordinary atmosphere that succeeded in evoking a soundscape of expanded Malaysian sounds.

Figure 4. Main patch window Plogue Bidule.

PERFORMING INTERCULTURALISM

Throughout this research project, we have found that developing a style of music that incorporates elements of traditional music, new electroacoustic works seem to establish points of contact, recognition and acceptance amongst audiences in Malaysia. Some student responses to the premier performance of Synergies of Breath (16 March 2013) from the Universiti Pendidikan Sultan Idris Music Appreciation class illustrate this. These students are inexperienced in Western Classical music, and their responses (included here with permission) come straight from the heart.

When I heard this music, it feels scary music. The music like tells a story about someone lost in the jungle. And
the jungle was full of danger and surprises that no one ever know it. But it still the best music that I have heard because it was a combination of quiet East and West music and culture. - Siti Aisyah Binti Mohd Syah

We were introduced to the new trend of music which was the ... combination of only flute and electronica sounds. Truth be told, it was alien to me but nevertheless, it was fantastic. When hear the music played, I was carried away to different dimension because the music had a very personal, unique and distinct aura about it. I can imagining myself in a deep forest, surrounded by trees and at the same time I can hear the overflowing river, the sound of water running through the rocks and the sound of the wind howling. - Azreena Anak Ardy

This is my first time seeing an electronic performance live. It was interesting to see how live instruments can merge with the electronic sounds from the computer . . . The piece is entitled “Synergies of Breath” and I noted that there was this ethereal breathing sound in the piece. I’m not quite sure whether there was a clear melody in the piece, because it felt like a mixture of sounds which reminded me of the rainforest, especially with the echoing effects and the sound of the flute. It was also interesting to see the flute being used in different ways, such as tapping it to make a percussion sounds and blowing air into it to give out the sound of the wind. The use of the computer to add layers of sound into the piece also helped shape the mystical quality of the piece. - Hannah Koh Pei Fern

After the choir it was now the most anticipated performance and that was Synergies of Breath for flute and electronics .... This song really touches my soul. When I listened to it, I feel like I was in an area full of greenery. This song causes my hair bristled. This song is very melodious and compelling ..... I was very impressed when I saw and heard ...the flute because it was so soft blown. - Ainaa Syafiqah Binti Abd Rahman

Figure 5. World premier performance, Ross Synergies of Breath. Jean Penny, flute, Andrew Blackburn, electronics. Universiti Pendidikan Sultan Idris, Malaysia. 16 March 2013.

CONCLUDING COMMENTS

The piece is thus bringing together lively ideas of background, sonic differences and similarities, exchanges of techniques and ideas as new sonic worlds are created and the shifting experience of the performers is defined and articulated. An outcome essential to the whole project is the identification and synthesis of three existing ontologies: traditional Malaysian music, what we can describe as ‘new’ music, and electroacoustic music. Electroacoustic music, in this case music for live instrumentalist and electronics, is common throughout the Western world, but in Malaysia it is not. Through developing a style that incorporates elements of traditional musics, new electroacoustic works are establishing points of contact, or recognition, amongst audiences. Bringing the mixture of music traditions and cutting-edge contemporary techniques (realtime digital signal processing) into a performance environment in Malaysia is, therefore, largely unexplored territory. The performance space can be re-imagined, the interaction of the performers modified and the combination of meanings, aesthetics and new perceptions has been shown to create a context and potential for intercultural response.
By working on the creation and performance of works such as Ross’ *Synergies of Breath*, and incorporating a live-electronic performance dimension, the two backgrounds are coming together with a new dialogue which is both culturally significant and musically exciting. In this the performers, in partnership with Malaysian composers, are adding to the local cultural musical practice and heritage. Through these actions we are establishing models of process, and extensions to our all own thinking.

The significance of this research can be seen in the developing strength of interdisciplinary and international collaboration from these different fields of expertise (electroacoustic, performance and composition) within a practice-led artistic research environment. The composition and performance of this new intercultural work represents an application of new knowledge, presented as a musical work, as personal explorations, and as a method for creating a broader awareness of understandings of interculturalism, East/West connections and *musique-mixte* amongst Malaysian practitioners. This project will see further explorations of these areas through more new compositions as *The Imaginary Space* project continues. The next phase will create new challenges for Malaysian composition experiences as the pipe organ is incorporated into the study.

REFERENCES


