The North Indian Sarode and Questions Concerning Technology

MATTHEW JAMES NOONE

University of Limerick, Ireland
Email: matthew.noone@ul.ie

In three previous issues of OS (10/1, 2005, 13/3, 2008 and 19/2, 2014) a range of scholars explored non-Western instrumentation in electroacoustic music. These issues addressed concerns about sensitive cultural issues within electroacoustic music. This article builds upon this discussion through an examination of a number of electroacoustic composer-performers using non-Western instrumentation. This discussion will include the voices of 'Western' electroacoustic composers using non-Western instruments or sounds sources. It will also document some of the work of non-Western electroacoustic composers who incorporate traditional material or indigenous instruments in their music. Special attention will be given to the complexity of being in-between musical cultures through a critical engagement with theories relating to hybridity, orientalism and self-identity. In particular, this article will focus on my own practice of composing and performing electroacoustic music with the North Indian lute known as the sarode. It will discuss both cultural and artistic concerns about using the sarode outside the framework of Indian classical music and question whether Indian classical music can ever be 'appropriately appropriated' in an electroacoustic context. Two of my recent compositions will be explored and I will outline the development of my practice leading to the creation of a new 'hybrid' instrument especially for playing electroacoustic music.

1. QUESTIONS CONCERNING TECHNOLOGY

In an earlier issue of *Organised Sound*, John Croft argued that when it comes to the use of technology to make music, the first question should surely be 'Why?' (Croft 2007: 60). Heidegger (1977) has suggested that the essence of technology is a way of revealing through that which is asked as a question. However, most questions concerning the use of technology in electroacoustic music to date have been predominantly from a Western-centric viewpoint. Blackburn acknowledges that 'theories pertaining to cultural theory, orientalism and otherness are still severely under-documented' in electroacoustic music (Blackburn 2014: 108). In recent years, a number of artists, scholars and composers have begun to redress this imbalance. Many scholars now agree that the use of technology within a non-Western context deserves specific consideration due to the 'cultural issues' of such an endeavour (Blackburn 2014: 107). There is a small but growing discourse on electroacoustic music using non-Western instrumentation. This discourse ranges from broad surveys in an Asian context (He, Kapur and Carnegie 2014) to more specific cases dealing with traditional Chinese instrumentation (Keyes 2005), Japanese sonic aesthetics (Ishii 2018), collaborations involving traditional instruments from areas such as Brazil (De Souza 2005), Malaysia (Blackburn and Penny 2014) and the electronic extension of traditional Persian and Jewish instruments (Gluck 2004, 2005, 2007, 2008). These discussions range in their scope and focus but one thing that they have in common is a challenging of assumptions that the aesthetics of electroacoustic music transcends cultural boundaries (Gluck 2008).

Increasingly in electroacoustic music scholarship, there is an acknowledgement that in order to understand any music requires attention to cultural specificity. As Gluck (2004) writes, there is an imperative in electroacoustic music 'for extensive dialog about how to locate cultural particularism within a musical tradition that historically defined abstraction as a universal'. At the same time, we should not assume that technology is in opposition to traditional non-Western aural musical traditions. Burtner describes this as a 'political conditioning' of Western culture which gives us opposing stereotypes' where technology is seen as 'an oppressively encroaching force' (2005: 3). The question concerning technology and non-Western instrumentation requires both sensitivities to cultural specificity and an acknowledgement of the complex hybrid 'nature of contemporary culture' (Gluck 2005: 28).

He et al.'s (2014) article is a useful broad survey of performance-based electroacoustic music across Asia and attempts to locate this discourse within a cultural and also a global framework. Their perspective, which looks not just at performance practices but also musical robotics and analysis tools, is an optimistic interpretation of hybridised global culture as a phenomenon which has allowed the 'cross-pollination of cultures [and] enabled the exchange and influence of ideas' (He et al. 2014: 136). They argue that inter-cultural exchange has many positive outcomes, particularly in the field of music and technology. These technologies

(such as the extension of acoustic instruments through digital processes and also computer-based analysis) have the 'potential to be tools or methods for preservation and cultivation, as well as to sustain the developments of traditional Asian music' (2014: 144). Rather than viewing technology as the antithesis of traditional Asian music, they suggest that 'the aesthetics and theory of traditional Asian music can co-exist with audio technology' and in fact 'complement each other' (2014: 138).

2. QUESTIONS CONCERNING ORIENTALISM

At the same time, most scholars agree that there are also many ethical issues concerning the use of technology in non-Western musics. Keyes, who has written about the use of traditional Chinese instruments in electroacoustic composition, confesses that non-Western material can sometimes be used 'in a rather superficial manner' resulting in mere 'Orientalist' works (Keyes 2005: 51). Similarly, Yadegari has raised concern over electroacoustic music in which there is a marginalisation of 'the non-Western tradition within the Western frame of mind' (Yadegari 2002: 130). Yadegari argues that the computer is 'a product of mechanization of logical processes [and] has always been portrayed as a Western instrument. Thus, computer music has often been produced based on Western ideas' (2002: 8). Gluck reports that it is 'common for non-Western sounds to be utilised to suggest the "exotic" or to allow the Western artist to garb oneself in a cloak of difference and thus gain a certain mystique. Such usages often treat the adopted culture's heritage as a commodity' (Gluck 2005: 26).

This kind of discourse is reflective of Said's (1978) heavily cited critique of the commodification of non-Western culture through the lens of Orientalism. Said's primary argument is one of a power imbalance where Western nations (and also individuals) culturally appropriate from the 'exotic' East to help define themselves. Said suggests that the construct of the Orient and the Oriental is one of the most dominant tropes of cultural commodification in the modern era. He argues that Orientalism 'has helped to define Europe as its contrasting image, idea, personality, experience' (Said 1978: 1–2). Much of the existing scholarship on electroacoustic music and non-Western instruments is influenced by Said's interpretation of cultural borrowing. Primarily, electroacoustic music discourse in this area falls into two categories: either a critique of sonic appropriation from a Western composer's viewpoint (Keyes 2005) or alternatively the use of technology by 'native' performers (Ishii 2018). This kind of discourse sets up a cultural dichotomy where musical traditions are viewed as discreet monoliths and it does not account for the hybrid nature of cultural genesis.

It also makes us complicit in perpetuating Orientalist essentialism. While Blackburn has argued that 'making sense of sound [is] different for insiders and outsiders to a given culture' (2014: 107), Said himself has said that 'survival in fact is about the connection between things' (Said 1993: 408). So, how do composer-performers make sense of sound when they are in-between multiple cultures, a hybrid, both inside and outside at the same time? Bhabha (1994) argues that the in-between-ness of hybridity is an emergent space of new cultural formation. The hybrid artefact, in this case electroacoustic composition, can be understood as an 'insurgent act of cultural translation' (Bhabha 1994: 10). However, Bhabha's theories of hybridity have focused heavily on the art object rather than the embodied knowledge of individuals themselves who exist between cultures. As well as surveying hybrid composition in electroacoustic music, I suggest that it is equally important to include the voices of individuals who inhabit this in-between space of emergent cultural enunciation.

3. QUESTIONS CONCERNING THE SELF

Robert Gluck has spent considerable energy in this self-questioning space in his own practice as a performer/composer electronically extending the Turkish saz (2005) and Jewish Shofar (2007). His work primarily focuses on the artistic and theoretical implications of what he labels as 'cross-cultural adaptation of a non-Western acoustic instrument' (2005: 22). The centre of Gluck's argument is the importance of 'reflective practice and self-questioning' (2008: 142). He describes this as a '*reflective compositional process* ... an approach by which the composer engages in a repeated process of self-reflection, carefully considering motivations, context and implications of compositional decisions, complementary to considerations of formal and aesthetic artistic criteria' (2008: 142). Importantly, Gluck argues that the self-questioning which arises from using technology with a non-Western instrument is crucial to develop consciousness around the issues of appropriation. He implores, 'artists to adopt a self-reflective stance ... to carefully assess the legitimacy of their own cross-cultural borrowing' (2005: 26). Paradoxically, through this self-reflexivity, it may in fact be possible to find ways of overcoming the ethical creative paralysis which arises from this kind of questioning.

Gluck asks whether 'an objectification of other cultures [is] a necessary consequence of cross-cultural borrowing?' Furthermore, he questions whether 'all cross-cultural borrowing be viewed within the context of colonialism?' (2005: 26). While confessing to high levels of anxiety over the ethical issues of his own electroacoustic adaptations, Gluck concludes that all musical culture is a result of cross-cultural borrowing.

The increase in the rate of cultural borrowing in electroacoustic music is arguably a natural consequence of postmodernity.

In an age of expanding globalism, some look to the past for a sense of belonging and a connection to what is perceived as an authentic, as opposed to mass commercial culture. This should not be surprising in a time of increasingly porous concepts of personal identity, when people can voluntarily don and doff cultural ethnic, religious, political and even racial identification (2004).

Making peace with the hybrid nature of culture can perhaps lead to developing an acceptance of the positive dynamics of cultural borrowing. While a critical cultural perspective is useful, Gluck also argues that cross-cultural borrowing in electroacoustic music can 'help build respect for traditions other than one's own, as well as debunk the notion that one's own cultural tradition is superior or universal' (2005: 26). To achieve this level of insight, Gluck proposes that artists inquire into their motivations for using non-Western instrumentation as a first step (2004) and has outlined a detailed methodology for his 'reflective compositional process' (2005, 2008). He proposes that three main elements 'must be present to achieve respectful adaptation: an appreciation of the contents and value of the other culture on its own terms; a desire to speak from one's own personal artistic voice without mimicking the other culture, and an awareness that can be articulated to an audience of the fine line between creative borrowing and disrespectful appropriation' (2005: 27).

Gluck's 'reflective compositional process' resonates with much of my own artistic practice with electroacoustic composition and the North Indian lute called sarode. I have been studying the sarode for over 15 years with Sougata Roy Chowdhury in Kolkata and K. Sridhar based in the UK. However, I am not Indian, rather I inhabit a space in-between multiple musical cultures. I was born in Brisbane Australia and started my musical career as a post-rock guitarist. As well as playing guitar-based music, I have performed in multiple genres ranging from experimental electronic music, free improvisation, West African percussion and even zen chant. However, since 2006 I have predominantly performed North Indian classical music with the sarode. At the same time, I have increasingly been involved in exploring inter-cultural musical projects, most notably with Irish traditional music (Hayes and Noone 2018). These inter-cultural explorations arose out of my own questions around the 'authenticity' of being a non-native performer of the sarode outside of India. This is what ethnomusicologist Laurent Aubert (2007) describes as the 'duck in the henhouse' syndrome, namely the suspicion that ones own credibility is always in doubt because of 'outsider' status.

In an effort to find my personal artistic voice, I have begun composing contemporary material for the sarode and extending the acoustic sound of the sarode through electroacoustic processes. In my current research project, I have been exploring real-time processing writing code using ChucK run on a single board Raspberry Pi microcomputer.

Despite the increasing acceptance of my musical hybridity, I am still left with difficult questions concerning technological manipulation of the sarode. In using a non-Western instruments to generate data for computational music, is it abusing the instruments specific cultural and spiritual origins? Am I, as Naylor as has questioned, 'guilty of appropriating cultural expression, turning it into my own "capital" to be parlayed for my own gain'? (Naylor 2014: 115). For sensitive and reflective performer-composers working with non-Western instruments in electroacoustic music, is there ever a way to appropriate appropriately'? (Naylor 2014: 115). To begin to answer these questions, we first must understand what is appropriate performance practice for an instrument in its original cultural context. For questions about cultural appropriation must be answered within the specific cultural frameworks involved.

4. QUESTIONS CONCERNING THE SARODE

The sarode is a prominent lute used in North Indian Classical music (Figure 1).[1] It traditionally is fretless and has four main melody strings which are accentuated by a further 21 sympathetic or resonant strings running along the neck of the instrument. The sarode's most striking characteristics are its resonance and its ability to bend notes and create beautiful glissando effects. Its historical origins are ambiguous, but it is generally accepted that the sarode developed in the early twentieth century from similar lute designs of Persian origin such as the *rabab* and also from other Indian stringed instruments such as the *been* and *sursingar*. In his account of the historical genesis of the sarode, McNeil (2004) argues that the sarode represents philosophical attitudes which illustrate the instrument as a site of cultural capital. McNeil explains that the very sound of the sarode 'is philosophically located in culturally grounded idealized forms or archetypes' (2004: 1). In Indian classical music, instruments are often viewed as the embodiment of a deity such as the goddess Saraswati. Therefore, the sarode is an archetype for spiritual

[1]The spelling 'sarode' is used in this article throughout as opposed to the more common 'sarod' in deference to the tradition of the Maihar Gharana. The great Ustad Ali Akbar Khan initiated this spelling of the instrument after settling in the United States in the 1960s. It is used by his disciples to respect the Bengali pronunciation of the word.
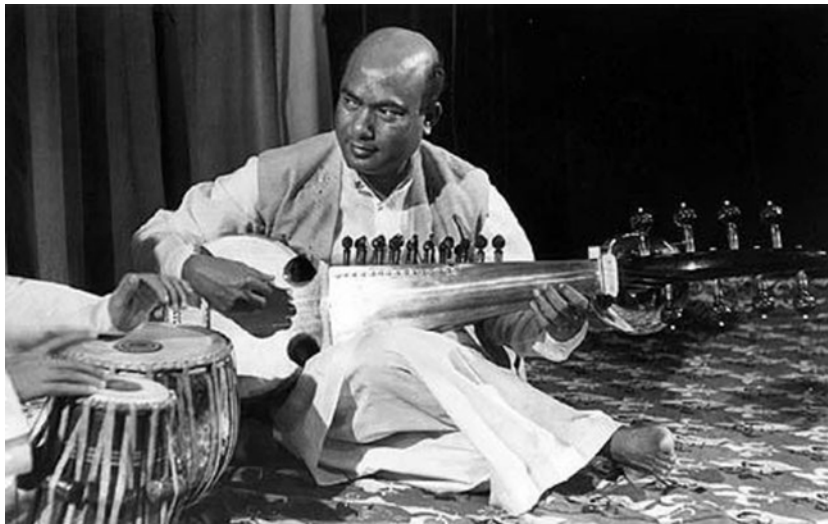
Figure 1. The north Indian *sarode* (Ustad Ali Akbar Khan).

communion and can be understood as a vehicle for achieving transcendent states. There is often great reverence and respect given to an instrument and varieties of cultural etiquette about its use. The traditional performance etiquette of the sarode involves playing sitting down, in a clean space and without shoes. The instrument is often kept methodically clean and if placed on the ground should never be stepped over or touched by the feet. Some musicians will have their instruments ritually blessed and recite a small *puja* or prayer every time they pick up the instrument. These ritualistic behaviours have their origins in antiquity and are part of the complex integrated cultural and musical philosophy of North Indian classical music.

5. QUESTIONS CONCERNING NEW SHRUTI

Electroacoustic composer Manuella Blackburn, who has worked extensively with Indian instruments including the sarode in her work, confesses that '[c]onfronting concepts of cultural sound use, ethics, borrowing and appropriation within new works and theories is not an easy task' (2014: 109). In 2013, Blackburn worked with sarode player Rajeeb Chakraborty in an electroacoustic piece entitled *New Shruti* (Blackburn 2013a). The concept of *shruti* in Indian classical music relates to a nuanced philosophy of microtonal aesthetics (Holryde 1964; Jairazbhoy 2011). In this piece, Blackburn creates an electroacoustic drone comprising field recordings of various Indian instruments to accompany the live playing of Chakraboty. The sarode is then processed via various Max/MSP patches, hence creating new tones or *shrutis*. In this collaboration, the composer states, she 'discovered the beauty of both the timbres of Indian instrumental sounds [and] was able to interpret

stylistic features associated with the tradition into my own music language' (Blackburn 2013b).

For sarode player Dr Chakraboty, the experience was 'full of musical challenges' and while he describes discovering in himself 'a new light, in a new idiom of music', he confides that overall it was a 'big learning curve' (2013b). This interaction is problematic as it seems the agency relating to the use of technology was predominantly with the composer. While Chakraboty had free licence to 'ad lib', the sarode was primarily used as sound material for Blackburn to manipulate. In an interview with Blackburn, Chakraboty described that the sarode was 'like the spices and ingredients — but you did the cooking' (2013b). Are collaborative projects between a composer and a performer such as *New Shruti* 'appropriate appropriation'? What kind of relationship does the sound of the sarode have with the Indian classical tradition after it has been stretched via a computer? Does this relationship between traditional and computational aesthetics even matter or should we simply hear sound on its own terms? Also, what kind of relationship does the sarode musician/performer have to the new materials emanating from the computer interaction? Is it possible that technology can be 'culturally shaped' to conform to non-Western traditions?

6. QUESTIONS CONCERNING RESPECT

Similarly to Gluck's notion of 'reflective compositional process', Blackburn argues that in making electroacoustic music with non-Western instruments, 'respect and consideration are the highest currency'. She proposes that this respect is not just for gaining greater artistic insight but also a way of 'negating naivety' (Blackburn 2017: 107). There are many forms

of respect to consider when working with non-Western instruments and what constitutes appropriate respect is also culturally specific. In Indian classical music, respect for the traditional culture of an instrument and its accompanying rituals are a vital first step before making any sound. Understanding these cultural rituals is in itself a kind of questioning. Respect for the integrity of the elders of the tradition, the authorship of its repertoire and techniques are also important to consider. From these broader forms of respect arises what I suggest could be a primary focus for integrating non-Western instruments and technology, namely respecting the acoustic 'tone' of the instrument.

Gluck writes that the 'distinct features of some Eastern instruments, particularly stringed instruments, suggest the possibility of close attention and creative treatment to timbre … [and] the timbral control allowed by some instruments can be enhanced and extended through the use of electronics' (2004). Perhaps then, attention to timbre is the sonic equivalent of respect of the in-between-ness in cultural hybridity? As Gluck puts forward, '[t]imbre bridges traditions' (2004). This is not to suggest that timbre is a universal musical paradigm. Values attached to timbral aesthetics vary greatly from musical cultures and even across genres. My argument is that in the question concerning technology and non-Western instruments (and particularly with the sarode), the most important consideration should be one of respecting and inquiring into timbre. More important than melody or rhythm, timbre is often the subtle basis for a unified musical aesthetic. In-depth questioning and investigation of timbre can provide useful insight into appropriate cultural integration in electroacoustic music.

Ishii (2018) has discussed the importance of tone or timbre in relation to electroacoustic music using traditional Japanese instruments. She describes four timbral tendencies of traditional Japanese music: single tone-dominant, resonance dominant, noise-dominant and vocal-dominant (2018: 54). In Japanese music, 'priority is not given to clearly-pitched melodies … [n]oise or unpitched sounds are the most important musical elements. Every moment of a timbral event and its consequences, from the attack to the end of resonance in a single tone, is important' (2018: 59). In an electroacoustic context which respected Japanese-ness, this would mean 'giving priority to timbral expression [for] accessible parameters for transforming sounds' (2018: 59–62). Ishii in fact argues that attention to timbre is the most salient mode of meaningful engagement in a non-Western electroacoustic hybridisation as 'electroacoustic music has a more similar listening attitude to the Japanese sense of listening than to that of Western conventional music' (2018: 56).

Jin Hi Kim, who has pioneered the use of electronics with the Korean stringed instrument *komungo*, suggests that if a musician is well educated within their instruments cultural tradition then 'the traditional aesthetic of music can be preserved [while using] music technology' (cited in Gluck 2004). Due to this, Kim argues that she can preserve 'the meditative energy' of traditional *komungo* while extending the timbral quality of the instrument using a variety of electronics. In Kim's concept of *Living Tones* (Kim 2019), each note is treated 'with reverence' in line with the traditional aesthetics of Korean music. She describes that 'the conceptual basis for living tones … is that each tone is alive, embodying its own individual shape, sound, texture, vibrato, glissando, expressive nuances and dynamics … The precise timbral persona of each tone generated is treated with an abiding respect … a reverence for the life of tones' (2019).

In another cultural context, Keyes's *Li Jiang Etudes* explore the tonal world of traditional Chinese instrumental repertoire. In these works Keyes has 'attempted to honour the Chinese tradition of basing a "new" work to a large extent on pre-existing repertoire' (2005: 53). This is most successfully achieved when he was able to 'incorporate far more of the subtle and yet essential elements of Chinese music' aided by technology (2005: 53). Keyes's etudes explore the combined sounds of piano, gongs, qin, pipa and live zheng, Xiao and real-time DSP. He discusses the difficulties in matching the tempered tonalities of the piano to the more complex acoustics of Chinese stringed instruments, particularly when amplification is involved. In this case, technology served as a mediator between sonic worlds as 'DSP techniques [were] used to bring the sound quality and tuning of the piano closer to that of the zheng' (2005: 54). This use of technology to integrate timbre, Keyes argues, resulted in 'a true synthesis of musical material rather than a mere superficial reference' (2005: 56).

Attention to tone or timbre is also extremely important in Indian classical music. Tone consciousness is fundamental to present the many nuances of *raga*. While every raga 'consists of a fixed and unchangeable set of notes, presented in the form of an ascending and descending scale … it must be remembered that the raga is also something more than these … the raga is a total tonal complex' (Bagchee 1998: 38–9). A combination of complex relationships to single tones is the basis for Indian classical music aesthetics. This fundamentally *tonal* aesthetic is manifested in esoteric concepts such as the aforementioned *sruti* and also the principles of *nada*. *Nada-Yoga* is a philosophy which understands the world to be made of vibrational tones, which ultimately are sounds. My own teacher, K. Sridhar is a master of *Nada-Yoga*. Sridhar (2013) suggests that our bodies are composed of and influenced

by sonic properties. Through deep attentive listening to tones, Sridhar believes that sound can produce profound transcendental states. He describes that in the context of Indian classical music, if a musician can play the correct tones (*shrutis*), the performer activates energy centres in the body. These energy centres, according tantric philosophy, are called *nadis*, which are what Sridhar describes as an 'eternal conduit for *pranic* energy' (Sridhar 2013). This energy, he suggests, is experienced not just by the musician but also by other listeners. Sridhar argues that this affect generated by attention to 'tone' can also happen in different cultural contexts. My question is how might the principles of *nada* be applied to electroacoustic music? Is it possible to think that a computer-generated tone might lead to spiritual transcendence? How might the tonal qualities of the sarode be upheld in an electroacoustic context?

7. QUESTIONS CONCERNING TRADITION

Kim warns that it is a delicate balance to know how to use technology without overstepping the acoustic ideals of an instrument and in the process end up 'destroying the tradition' (Kim cited in Gluck 2004). Addressing this balance is not usually a question or concern for mixed music involving Western instruments; for example, clarinet and electronics. This is because mixed music has its own culture and idioms which are predominantly based upon Western-centric thinking. Therefore, mixed music more easily integrates the use of Western instrumentation. The cultural aesthetics of electroacoustic composition do not necessarily align with the traditional cultural framework of a non-Western instrument. In the case of the sarode, too many effects can easily distort the natural 'tone' of the sarode which is fundamental to its traditional aesthetic. Similarly, Taylor asserts that in much popular 'world music' the use of effects such as reverb is a result of 'new age tendencies' and 'mystification' where 'the world is distanced in production' (Taylor 2004: 150). Alam Khan (2018), who performs both Indian classical and contemporary music on the sarode, warns that naive use of digital effects can 'compromise' the sound of the sarode. He argues that without an appropriate understanding of the acoustic nature of the instrument, by over processing the sarode it loses its characteristic voice and 'you'll get a better sound out of a guitar'. Adding effects such as digital reverb to the sarode is also technically problematic as the instrument already contains a significant amount of natural resonance because of the sympathetic strings. In an amplified setting, it is difficult to control feedback using the sarode, especially if reverb has been added to the signal chain. The instrument has a large resonating sound chamber which is covered in a goat skin

membrane. The difficulty of microphone placement on a traditional sarode further complicates electroacoustic performance.

Electronically modifying the sarode is also complicated if the performer is cognisant of respecting the tradition. He and colleagues discuss that many Asian instruments 'are regarded as prized objects, and their status as a representation of nature and spirituality often discourages the modification of the physical entity' (2014: 138). In other contexts, this difficulty has been overcome by attaching a sensor to an instrument (such as the *Hyper Pipa* by Yoichi Nagashima or Kapur's *Hyper tabla*) or by creating entirely new instruments (such Echo Ho's *Slow Qin*). Kim argues that 'essentially [a] new instrument is created when the timbral possibilities of a traditional instrument are electronically expanded' (cited in Gluck 2004). Yet importantly she describes that it is important that the electroacoustic instrument somehow maintains 'the atmosphere of a traditional instrument' (cited in Gluck 2004). In many of the above examples, the artists are navigating an in-between cultural space. There is a negotiation between the instinct to uphold traditional aesthetics and yet at the same time dismantle them. Rather than viewing this space as antagonistic, perhaps they offer an example of an emerging symbiotic cultural space. Burtner suggests that a unique 'symbiosis' can evolve from the integration of Western technology and indigenous aesthetics in sonic art (2005: 3). This symbiosis results from the suspension of a simplistic notion of cultural traditions and their boundaries. Kim's work in particular, suggests that it is possible to extend the performance context of a non-Western instrument through technology without having to completely obscure its spiritual tradition.

8. SARODE NA SÚILL

In my own work, I have designed an instrument specifically for electroacoustic composition, one which is not intended for the performance of Indian classical music. My teacher K. Sridhar (2013) has argued that when trying to make new music on the sarode, it is better to keep it separate from 'pure' Indian classical playing. The instrument is called *sarode na súill* (or 'sarode of the eye' in Irish; Figure 2) as a reference to the eye carved into the headstock.[2] This new instrument overcomes some of the impediments of the physical size of the traditional sarode while still maintaining its important timbral characteristics produced by the fretless neck and skin resonator. The resonating chamber is much smaller (and has a flat back) which creates less problems with feedback when using

[2] It was made by Canadian luthier Edward Powell.

Figure 2. *Sarode na súill.*

amplification. I have also added an extra bass string to allow for further chordal possibilities and the potential to explore extending techniques. The acoustic design is augmented by the use of a pickup (inserted in the bridge) and a microphone fixed inside the body of the instrument under the skin. The acoustic signals are sent through a blended preamp (where the bright sound of the pickup can be mixed with the more 'airy' sound of the internal microphone) and then sent to a set of stereo speakers.

By amplifying the sarode, particularly through the use of the internal microphone, it is possible to clearly hear subtle harmonics created by the sympathetic string system. This feature has encouraged me to investigate new approaches to improvisation and composition using the resonant textures and harmonic buzzes reverberating under the skin of the sarode which can then be manipulated and extended using electronics. Likewise, the amplified sound of the instrument allows for using new plucking techniques, such as string dampening, which would otherwise be inaudible. The impetus for this instrument design is similar to Gluck's description of his work with the *eShofar*:

> The dominant aesthetic is simplicity and respect for the elemental qualities of the acoustical instrument. Electronics are used to emphasize and expand upon sonic elements inherent in the nature of the acoustical instrument and that instruments' traditional performance practice . . . The use of electronics reflects and encourages

close listening to the acoustical qualities of the instrument, traditional performance practice, meditative nature, and accumulated symbolism. (2007: 15)

9. *FOR HERE THERE IS NO PLACE*

As an example of the above discussions, I would like to explore my composition for sarode and electronics entitled *For Here There Is No Place*. I use electronics (using the music coding software ChucK) as an extension of my own instrument and also as a sound generator which replicates some of the basic principles of Indian music aesthetics. I utilise digital processes which help retain the meditative and introspective acoustic nature of the sarode. This is done primarily through an extension of tones in the creation of drones. More specifically, I am focusing on the extension of acoustic 'tones' of the sarode to amplify microtonal nuances encapsulated in the Indian concept of *shruti*. By enlarging the parameters of these subtle tones I am attempting to use technology to experiment with sonic affect through an appropriation of the principle of *nada*.

The impetus for *For Here There Is No Place* came from a collaboration with visual artist Timothy Emlyn Jones. Jones's large-scale black and white, minimalist, landscape drawings are inspired both by the landscape of the Burren in the West of Ireland and by his own diverse musical tastes. Jones asked me to
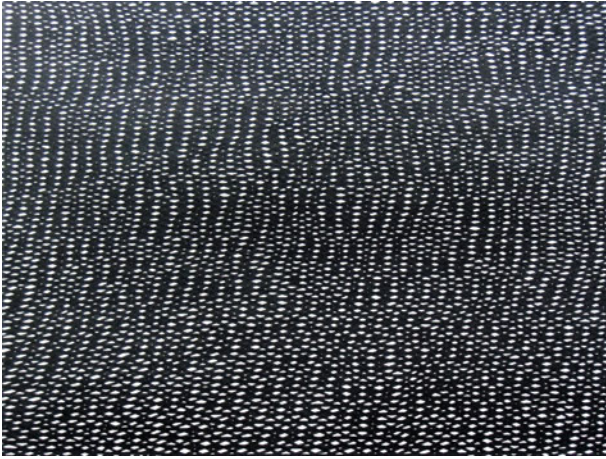
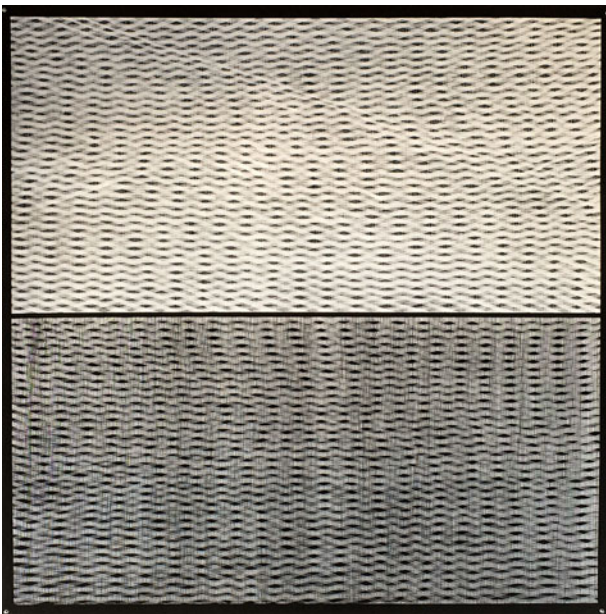**Figure 3.** *Slow Air Nocturne Beta.*

Figure 4. *For Here There Is No Place.*

respond sonically to several of his paintings whilst I was artist-in-residence in the Burren College of Art in 2018. To achieve this aim, two of his paintings were hung for a period of several weeks in my studio where I worked everyday at improvising, coding, composing, recording and also responding though my own printmaking.

The two paintings were entitled *Slow Air Nocturne Beta* and *For Here There Is No Place*. I discussed with Jones his process of making the paintings and sought to apply parallel principles in musical composition. He described that his first piece, *Slow Air Nocturne* (Figure 3), was a repetition of three continuous lines dissecting the page. Each line was drawn by hand and the spacing was sought intuitively but with a

continuous flow to complete the end of line at the pages end. The three lines consisted of one horizontal axis and two diagonal lines (one from left to right and the other right to left, both at an angle of approximately 25 degrees). Once the initial line was drawn, Jones would simply repeat a parallel line ad infinitum in the same direction until the whole page was full. His second painting, *For Here There Is No Place* (Figure 4) is basically an inversion of the same process using white but it spans across two hemispheres.

In our initial discussions, Jones compared his technique with my own practice of using a random loop functions in ChucK and looping simple melodic lines based on a limited number of tones which are slowly built up and textured over time until the sonic space is full. My own version of *Slow Air Nocturne* (Sound example 1) did not use ChucK or any other electronics except for a loop pedal.[3] This 'slow air' was an improvised composition using a set number of tones loosely based on the scale material of *Raga Manj Khammaj* and the Mixolydian mode commonly used for many Irish traditional laments. The structure of this improvisation is an interpretation of the both the meditative introduction called *alap* in the tradition of North Indian classical music and also the slow instrumental styles of Irish fiddle playing. A recording of this improvisation was then entered into ChucK as a sound file. This sound file became the basis for a drone texture of the next piece, *For Here There Is No Place*. I was able to manipulate this drone using a variety of filters and also by playing the file at a slower buffer rate. In the recorded performance, the drones were introduced sequentially using a MIDI controller.

Drones are used in many musical cultures around the world and often have extra-musical associations (Cowdery 1990: 39). The drone is ever present in Indian classical music and as a compositional framework, it 'generates energy from which music can be drawn [and] given back' (Bhagwati 2019). In North Indian classical music, the drone is normally played on the four buzzing open strings of the tambura. Traditionally, a tambura emphasises the ground note of the tonic material which constitutes the particular raga or what I define as a melodic gestalt. According to Sridhar (2013), the drone in Indian classical music as well a being a reference for tuning is also a representation of the primordial omnipresent sound of the Divine or *Nada-Bhrama*. This aesthetic is primarily focused on tone as the totality of reality. This is reminiscent of Ishii's Japanese electroacoustic work which 'concerns not only the "sounding entity", but also the "not-sounding entity", namely 間ma' (2018: 63). Similarly, my own drones are constructed of what Ishii might describe as 'resonant or noise dominant'

[3] https://matthewnoone.bandcamp.com/track/slow-air

sounds. I make drones using a range of extended technique such as soft continuous scraping of a string, the use of harmonics, singing into the internal microphone and by plucking an open string on the sarode, sampling it and playing the tone back at half or quarter speed. These live evolving drones reference the sonic timbre of traditional Indian tambura but draw upon a different sound palette.

In *For Here There Is No Place* (Sound example 2), I used another function of ChucK which allows for live recording playback and manipulation called LiSa devised by Dan Trueman. LiSa also allows for the creation of unfamiliar textures using the acoustic 'tones' of the sarode. These sampled tones can be played back during a live performance and altered using a variety of effects. I have also been experimenting with writing code which has an ever increasing element of randomness using LiSa. I would call this process the composition of live evolving drones based on improvised tones. These ambient textures invoke similar feelings from my experiences of Indian classical music. In particular, I am reminded of the interaction between the main vocalist, the fleeting echoes of the supporting melody (by another singer, sarangi or harmonium) and the thick *tanpura* drone.[4]

In this compositional example, it may be possible to consider that the technology has been 'culturally shaped' to conform to a non-Western tradition. Importantly, the sarode in this piece, whilst in part is manipulated by a computer it also retains its acoustic properties. The electronic element, rather than being antagonistic, offers a supportive role which creates timbral space that has much in common with the Indian tradition. This is similar to Keyes's reflection on his own electroacoustic composition which he suggests 'belongs more with the Chinese musical tradition than it does my own' (2005: 54). However, my use of technology with the sarode represents a slightly more complex relationship than either belonging to Indian classical culture or the Western art tradition. I do not identify myself as a Western composer operating outside the Indian classical tradition. Nor would I ever define myself as a 'native' performer. I am betwixt and between cultural musical categories, neither fully Indian, nor purely Western. My own musical culture is mixed, an intentional dis-identification of cultural binarism. Even the term 'hybrid' seems too sterile for me, for it seems to imply the merging of two discrete entities. I prefer to characterise my own cultural melange through the metaphor of the 'mongrel' (Noone 2016). I employ the 'mongrel' as a self-referential term which embraces the complexities of cultural in-between-ness. The use of technology allows me to explore this in-between space. The questions

which arise for me in using technology help to clarify my own evolving and unique 'mongrel' sense of artistic purpose.

10. FUTURE QUESTIONS

Questioning the use of technology in electroacoustic music is a way to further Croft's invitation to understand 'what it might mean to be truly serious about the idea of an instrumental relation between performer and live electronics' (2007: 65). The questions that arise in making electroacoustic music with the sarode (such as how to respect the tradition, the culture and the tone of the instrument) have helped to shape my own definition and reclamation as a mongrel identity. This kind of questioning reveals ways to respect and integrate some of the cultural frameworks of Indian classical music while also acknowledging the importance of personal artistic agency. While it has been important for me to embrace my own artistic 'mongrelity' in making electroacoustic music with the sarode, my ultimate touchstone is the embodied relationship I possess with the instrument itself. For to learn to play the sarode is a 'metaphysical matrix of endeavour [where] beliefs on the cosmology of sound, the properties and effects of sound guides' the musician to form beliefs about what is good and meaningful in sonic art' (McNeil 2004: 2). Therefore, the questions raised by the use of live electronics and the sarode is a case study of, 'what more there is to music than sound' (Croft 2007: 65). It is hoped this article may generate interest and a foundation for more questioning in this area in the future.

SUPPLEMENTARY MATERIAL

To view supplementary material for this article, please visit https://doi.org/10.1017/S1355771819000517

REFERENCES

Aubert, L. 2007. *The Music of the Other New Challenges for Ethnomusicology in a Global Age*. Aldershot: Ashgate.

Bagchee, S. 1998. *Nad: Understanding Raga Music*. Bombay: Eeshwar.

Bhabha, H. K. 1994. *The Location of Culture*. Abingdon: Psychology Press.

Bhagwati, S. 2019. Personal correspondence, 12 April.

Blackburn, M. 2013a. *New Shruti*. http://hira.hope.ac.uk/id/eprint/2186/ (accessed 4 September 2019).

Blackburn, M. 2013b. Interview between the composer and collaborator. www.milapfest.com/news/new-shruti-for-sarod-and-electronics/ (accessed 5 September 2019).

Blackburn, M. 2014. Editorial. *Organised Sound* **19**(2): 107–9.

Blackburn, M. 2017. Other People's Sounds: Examples and Implications of Borrowed Audio. *Electronic Music Studies Network: Communication in/through Electroacoustic Music*, 5–8 September, Nagoya, Japan.

Blackburn, A. and Penny, J. 2014. Imaginary Spaces: New Malaysian Performance Contexts for Intercultural Exploration. *Organised Sound* **19**(2): 164–72.

Burtner, M. 2005. Ecoacoustic and Shamanic Technologies for Multimedia Composition and Performance. *Organised Sound* **10**(1): 3–19.

Cowdery, J. R. 1990. *The Melodic Tradition of Ireland*. Kent, OH: Kent State University Press.

Croft, J. 2007. Theses on Liveness. *Organised Sound* **12**(1): 59–66.

De Souza, R. C. 2005. The Use of Brazilian Folk Instrument Sounds in a Concerto for Computer and Orchestra. *Organised Sound* **10**(1): 31–6.

Gluck, R. J. 2004. Free Sound within Culturally Specific Practice Evolving Culturally-Grounded Creative Practice Motivation for Cultural Specificity. *Proceedings of the International Computer Muisc Conference*, Barcelona, September.

Gluck, R. J. 2005. eSaz: A non-Western Instrument in the Context of a Live Electronic Performance System. *Organised Sound* **10**(1): 21–9.

Gluck, R. 2007. eShofar as a Culturally Specific Live Electronic Performance System. *SEAMUS* **19**(Fall): 10–16.

Gluck, R. J. 2008. Between, within and across Cultures. *Organised Sound* **13**(2): 141–52.

He, J., Kapur, A. and Carnegie, D. A. 2014 Contemporary Practices of Extending Traditional Asian Instruments Using Technology. *Organised Sound* **19**(2): 136–45.

Heidegger, M. 1977. *The Question Concerning Technology, and Other Essays*. New York: Harper & Row.

Holryde, P. 1964. *Indian Music*. London: George Allen and Unwin.

Ishii, H. 2018. Japanese Electroacoustic and Japanese Instruments. *Contemporary Music Review* **37**(1–2): 49–66.

Jairazbhoy, N. 2011. *The Rags of North Indian Classical Music: Their Structure and Evolution*. Mumbai: Popular Prakashen PVT.

Keyes, C. J. 2005. Recent Technology and the Hybridisation of Western and Chinese Musics. *Organised Sound* **10**(1): 51–6.

Khan, A. 2018. Personal Correspondence, 15 August.

Kim, J. H. 2019. *Living Tones* Compositions. www.jinhikim.com/compositions.html (accessed 5 September 2019).

McNeil, A. 2004. *Inventing the Sarod: A Cultural History*. Calcutta: Seagull Books.

Naylor, S. 2014. Appropriation, Culture and Meaning in Electroacoustic Music: A Composer's Perspective. *Organised Sound* **19**(2): 110–16.

Noone, M. 2016. The Mongrel Metaphor: An Arts Practice Response to Understanding Musical Hybridization. *Ethnomusicology Ireland*, 4. www.ictm.ie/the-mongrel-metaphor-an-arts-practice-response-to-understanding-musical-hybridization-matthew-mattu-noone/ (accessed 18 November 2019).

Said, E. 1978. *Orientalism*. New York: Pantheon.

Said, E. 1993. *Culture and Imperialism*. Vintage.

Sridhar, K. 2013. Correspondence, 4 April.

Taylor, T. D. 2004. *Global Pop: World Music, World Markets*. New York: Routledge.

Yadegari, S. 2002. The Radif as a Basis for a Computer Music Model: Union of Philosophy and Poetry through Self-Referentiality. PhD dissertation, University of California at San Diego.

DISCOGRAPHY

Hayes, T. and Noone, M. 2018. *An Tara-Faha Rain*. Realach Records.