

Sustainability in Music and the Performing Arts: Heritage, Education and Performance.

Edited by
Clare Chan Suet Ching
and Jean Penny

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INTRODUCTION

Clare Chan Suet Ching and Jean Penny

[This section still to be finalized.

The aims and rationale of the book to be outlined, a position (or 2) on the theme and overview of book contents]

Ecology and music research in the twenty-first century: Facing the challenges of diversity and sustainability in a globalised world

Huib Schippers,
Director, Queensland Conservatorium Research Centre

Globally, music research has gone through exciting conceptual and practical developments over the past few decades. The discipline seems to be gently moving away from a heavily Eurocentric approach inherited from the nineteenth century, driven by the place of music in the academy (with music practice and thinking about music institutionally separated). Now, the cluster of subdisciplines we refer to as music research is finding its feet in the twenty-first century, with increased attention to cultural diversity, community and education, the impact of technology on virtually every aspect of creating, performing, learning and disseminating music, and the role and potential of artistic practice as research. Each of these have raised far-reaching questions on the topics of our studies, the approaches we choose, and how we work with industry, communities, and individuals as music researchers in the networked, globalised, and mediated world of music today.

Related to each of the areas above, issues of sustainability and the potential role of the researcher in that realm have emerged since the early 1990s. Applied (ethno)musicology is rapidly developing as a subdiscipline, perhaps even as a vision of the future of music research as a whole. In this chapter, I will endeavour to elucidate the rise of applied ethnomusicology as it relates and could relate to the sustainability of music cultures, using the five-year international research collaboration *Sustainable futures for music cultures: Towards an ecology of musical diversity* (2009-2014) as an example. From the data of that study, I will propose a framework to increase our understanding of the complexities of sustainability in music, its contribution to music scholarship, and most importantly its potential to empower communities to forge musical futures on their own terms.

In 1885, Guido Adler published his influential and visionary essay ‘Umfang, Methode und Ziel der Musikwissenschaft’ on the scope, methods and aims of musicology (Adler, 1885). Concise and highly relevant for understanding the approaches to music research we have inherited from Europe resonating to this very day, it roughly divides music research into historical musicology (including the history of instruments), and systematic musicology, which includes theory, pedagogy, and comparative musicology, *Vergleichende Musikwissenschaft*, which later became the basis of ethnomusicology (cf Nettl, 2010, pp. 4-5).

Three important contextual factors influenced this structure and the approaches that emerged from it: 1) Research was conducted in the conviction that researchers could be dispassionate, objective observers of the phenomena they studied; 2) Musicology was very eager to “prove” itself among other academic disciplines, particularly after Von Humboldt had cemented the separation of the theoretical and practical study of music in the 1820s, relegating the latter to professional training institutes (Musikhochschulen and Conservatoires) rather than universities; and 3) There were no challenges to the idea that Western art music was at the top of an evolutionary ladder from ‘primitive’ music in Africa and Australia through folk music of various cultures to the art musics of Asia and the Middle East and finally the Western canon, leading to an “evolutionary” approach to other music cultures.

While I do not want to spend too much time on the history of musicology, I hope it is clear that I mention these building blocks to help define where we are standing in music research today. For those interested in how nineteenth century constructs regarding music influenced specific aspects of music to this very day, I am happy to refer you to my essay “Blame it on the Germans” (Schippers, 2006), where I add Herbart, Hanslick and Schenker to

those I blame – maybe a little tongue-in-cheek – to various failings of our higher music education system. But my central point is serious: we tend to organise music research in a way that may not make optimal sense to how we see music in the world at large today.

Looking at what is generally regarded as musicology, and particularly its organisation in academia, its main contours are still formed by three pillars: historical musicology (with a focus on Western art music), theory and analysis (of Western art music), and ethnomusicology. In addition, a number of substantial subdisciplines have emerged that – depending on the country and academic culture – are often linked to their non-musical components in terms of approach and place in the academy, such as music education, music psychology, music therapy, sonology, music technology, music business, popular music, film music, and cultural studies (addressing issues including race, gender, community, semiotics, globalization and post-colonialism, to name but a few).

Music performance, by which I don't mean research *into* performance using analysis or ethnographic methods, but research *through* performance or “artistic research” (Borgdorff, 2012), where the person who makes the music is the researcher, and the musical product is likely to be the primary research outcome. We can witness this type of research emerging in various parts of the world, largely where music training institutions have been incorporated into universities (most notably in the Anglo-Saxon world), inevitably raising the question: “What do you guys do in the time we pay you for research?” As a result, the UK, New Zealand and Australia have reasonably well-developed structures for recognizing artistic research in their national research quality assessment exercises, while the US recognises artistic research at an institutional level.

Combined, the subdisciplines I just mentioned have yielded a wealth of approaches to exploring all aspects of music, from hard-core scientific measuring of pitches and timbres to wildly subjective auto-ethnographical accounts of learning, making and experiencing music. Across music research, we borrow methodologies from physics, from biology, from medicine, from psychology, from education, from statistics, from sociology, from anthropology, from business, and a wealth of other disciplines. Each research question may require a different mix of approaches. Some may be best answered by recording, measuring, and comparing sounds or other data in a quantitative way. Others may be best served by spending time in libraries finding historical documents. Many research projects in music nowadays use an ethnographic approach, focusing on how *people* deal with the ideas, the values, and all the actions and relationships that comprise what Christopher Small calls “musicking”: “to take part, in any capacity, in a musical performance, whether by performing, by listening, by rehearsing or practising, by providing material for performance (what is called composing), or by dancing” (Small, 1998, p. 9).

Ethnomusicology has probably evolved most significantly since it shook off the comparative and implicitly evolutionary approach of *Vergleichende Musikwissenschaft*. Renamed ethnomusicology by my compatriot Jaap Kunst in the 1950s, it shifted from a primary focus on musical sound, structure and instruments to the study of “music in culture” (Merriam, 1964). While the majority of the research focused on single, “traditional” musics – and still does to a large extent –, ethnomusicology widened its gaze to ideas of music travelling, interacting with other musics, constituting a substantial industry, and impacting on society from a global perspective. This required new approaches and ways of working with communities, musicians and other stakeholders (Barz and Cooley, 2008).

In this new reality, it is difficult to escape the question whether the traditional division of (Western) musicology and ethnomusicology still makes sense. Much of the work that is done in historical musicology strongly resembles ethnomusicological studies: the study of music in culture. Ethnomusicologists analyse the structure and sounds of the music they study in great detail, much like their colleagues in music theory. Once we have rejected the evolutionary idea of music with Western music at the peak of the pyramid, the position that musicology and ethnomusicology are different disciplines or even subdisciplines is hardly tenable. I am not the first person to suggest that we call all music research musicology: Charles Seeger did so famously, eloquently and with much more authority than I will ever have, in the 1970s (A. Seeger, 1977), but failed to convince enough of his contemporaries to

make the shift. The realities in the first decades of the twenty-first century do drive the point home more and more. Increasingly, we are looking at various aspects of each musical culture or practice or object we study on its own terms, finding methodologies that are fit for purpose and sensitive to context.

Hence my use and strong preference of the overarching term “music research” for what most of us are doing, which I take to refer to the entire range of subdisciplines which focus on any aspect of music practice and experience.

Applied ethnomusicology

In my introduction, I mentioned the idea that research in the nineteenth century (and the first half of the twentieth century) was conducted with the conviction that a researcher could be objective. That is no longer considered a tenable position. Inevitably, researchers bring to their explorations a set of beliefs, backgrounds, as well as their position in society. Some people call this “researcher bias”, as if it is a pollutant of good research. Many others accept its inevitability and acknowledge as well as they can where they come from. In many cases, the perspective that each researcher brings to his or her projects is a strength, leading to unexpected insights. Related to the idea of researcher bias is the idea that researchers cannot influence the music or people they study. Somewhat flippantly, Deborah Wong likens this to the Star Trek’s value system in an interview:

For some decades, ethnomusicologists have been careful not to interfere with the cultures in which they’re working, kind of like ‘Star Trek’s’ ... ‘prime directive,’ you know: “Do not harm, do not interfere, do not change what you’re engaged with.” I think many of us have come to the understanding of that this is not only impossible, but that it might be side-stepping a very important ethical investment that we need to make in the musics that we study. (QCRC, 2008)

Indeed, we cannot avoid influencing the music and people we study. It is silly (and unethical) to stand behind a tree and secretly point the video recorder at a ceremony in a village without alerting anybody to your presence. As soon as you do, you are part of the picture. The very fact that you have chosen to examine that ceremony, in that village, on that day, with those people has an impact. Depending on your status and the culture, it may make people perceive of that music as more important (or, in extreme cases, tainted and robbed of its meaning –we always need to be careful). Again, it is better to recognise this influence than to try to ignore it.

Perhaps even more importantly, we may consider whether we have some obligation to reflect on giving back to the people we work with. Gone are the days that ethnomusicologists visited a culture, observed, talked to people, made recordings, and went back to their first world country publishing and bringing out (sometimes commercial) recordings without ever giving back to the community. It is now common practice to make available recordings and findings to musicians and/or communities, and if possible deposit material in relevant archives to which they have access. At the next level, there is the question of whether what we give back to people is perceived as useful to them. The most detailed overview of subtle differences in gamelan tunings in Bali may be of scholarly interest, but very few musicians or even builders would consider it vital to their practices. They actually know what they are doing and have been doing it for a very long time.

This is where applied music research (or applied ethnomusicology) comes in. While we can find examples of excellent practice since the middle of the last century, the past two decades have seen increasing awareness of a responsibility to return something to the communities that is of value to *them*. This may be musical or non-musical. Some people arrange international tours for the musicians they work with. Other may take on social agendas involving poverty, health care or equal rights. Tony Seeger fought for land rights for the Amazonian Indians he worked with in Brazil. Hence, sometimes the terms “public sector”

and “engaged” ethnomusicology are used. Harrison, Mackinlay, and Pettan, (Eds). show the wide range of this engagement in their edited volume *Historical and Emerging Approaches to Applied Ethnomusicology* (2010).

Dan Sheehy’s 1992 article on “A few notions about philosophy and strategy in applied ethnomusicology” in the leading journal *Ethnomusicology* is often seen as the first formal recognition of the importance of this approach. In it, he advocates for “providing community members access to strategic models and conservation techniques” (1992, p. 331). This constitutes a logical and practical way of “giving back”, potentially close to the direct needs of the musicians and communities ethnomusicologists work with, and close to the realm of expertise of the researchers. In the same volume, Jeff Todd Titon (1992) discusses “Music, the public interest, and the practice of ethnomusicology.” Over the next few decades, he becomes the most prominent voice for what can be termed an ecological approach within applied ethnomusicology, culminating in his blog <http://sustainablemusic.blogspot.com/>, and a themed edition of the *World of Music* he guest-edited (Titon, Ed., 2009).

We are living in an era where we can begin to see clearly both the positive and negative effects of globalisation and the stunning development of technology. While we often focus on the negative, it is important to note that the last century, and particularly the past sixty years (let’s say from Elvis to the present), has seen an increase of access to music of all kinds for the majority of the world’s population unparalleled in the history of the planet. The consequence of that development is that the global musical landscape has changed. That has created opportunities for some genres, but challenges for others. In particular, many “small musics” are in danger of “being disappeared” –in Tony Seeger’s words. In that sense, we have a situation akin to that of many species of plants and animals on the verge of extinction. It is worth exploring the ecology of music cultures in relation to sustainability.

Music cultures as ecosystems

It is very fashionable to speak about ecology in relation to a wide variety of natural and man-made phenomena. In addition to the ecology of rain forests or reefs the term is used colloquially for cities, business, and buildings. In order to gauge the extent of its applicability to music, it is worth tracing back the origins of the concept, as I have done in my forthcoming chapter in the *Oxford handbook of applied ethnomusicology* due to appear in 2015 (Schippers, in press), on which much of the following section is based.

Haeckel introduced the concept of *ecology* in 1870 as “the study of all those complex interrelations referred to by Darwin as the conditions of the struggle for existence” (quoted in Stauffer, 1957, p.140). In doing so, he did not only introduce a framework for understanding the realities of sustainability and extinction in a way that resonates with contemporary thinking in complexity theory (e.g. Dekker, 2011), but he also created a fertile philosophical and metaphorical framework to explore the many forces that interact and jointly determine whether an organism –or an art form– survives or disappears.

Sixty-five years after Haeckel’s the term *ecosystem* was launched, which I would argue invites more concrete reflections on forces impacting on a phenomenon. While the latter developed in botany as well, the term ecosystem is both derived from and applicable to a wider intellectual space. As I point out in the publication mentioned above, A.G. Tansley borrowed from the sciences when he first used it, arguing to consider

the whole system (in the sense of physics), including not only the organism complex, but also the whole complex of physical factors forming what we call the environment of the biome, the habitat factors in the widest sense. Though the organism may claim our primary interest, when we are trying to think fundamentally we cannot separate them from their special environment, with which they form one physical system (1935, p. 299).

In parallel with the broad application of ecology, the term ecosystem has since been used to describe animal habitats, use of energy, cities, and increasingly other environment

which can “include humans and their artefacts” to the point “that it is applicable to any case where organisms and physical processes interact in some spatial area” (Pickett and Cadenasso, 2002, p.2). That provides fruitful ground for looking at music cultures.

As I have argued elsewhere (Schippers, in press), ethnomusicology –and to some extent historical musicology– have already used this approach: primarily in regard to localised genres with a wealth of focused ethnographic studies from the 1960s, and regarding individual music cultures and genres more in their diasporic and global contexts since the 1980s. Individual musicians, instrument makers, communities, educators, the music industry, opinion leaders and public authorities are among the direct actors, while the physical environment, climate, but also war, discrimination, disease are among the indirect forces in such ecosystems.

Undeniably, it is both easy and tempting to appeal “to natural imagery to justify critiques of the detrimental impact of transnational industry practices on sub-dominant music cultures and styles” (Keogh, 2013, p.11), and to make facile links between music ecosystems and sustainability efforts, imbued with a sense of moral justness, perhaps much like the word “authentic” is used in music performance contexts (cf Cook, 1998; Taylor, 2007; Schippers, 2010). Similarly, it is easy to succumb to an historically and intellectually unsound tendency to impose a static, preservationist approach on music genres as objects. While many archiving efforts, recording projects, festivals and even the highly visible *Masterpieces of Intangible Cultural Heritage* initiatives of UNESCO still seem to approach music genres as artifacts rather than organisms, there is increasing consensus that a dynamic approach to processes of music sustainability and change is imperative. It is broadly acknowledged that instruments, styles and genres have been emerging and disappearing throughout history and across cultures as a largely “organic” process.

In fact, the concept of ecosystem fits current thinking on how music sits within its environment remarkably well, almost to the point that can be considered literal rather than metaphorical. We don’t have to stray far from Tansley’s 1935 definition on the previous page to define a “music ecosystem” as:

The whole system, including not only a specific music genre, but also the complex of factors defining the genesis, development and sustainability of the surrounding music culture in the widest sense, including the role of individuals, communities, values and attitudes, learning processes, contexts for making music, infrastructure and organisations, rights and regulations, diaspora and travel, media and the music industry (Schippers, in press).

It is easy to argue after Tansley, that though historically *music genres* may have claimed our primary interest, when we are trying to think fundamentally, we cannot separate them from their special environment, with which they form one physical system.

The next challenge is to devise an approach to map this complex system. While there are many possible ways of doing so, I would argue for exploring five interrelated domains that demonstrably pertain to sustainability: Systems of learning music; Musicians & communities; Contexts & constructs; Regulations & infrastructure; and Media & the music industry. As the table below aims to demonstrate, these have the potential to cover the majority of forces working on any music genre.

Table 1: ‘Ecosystems of music’: A framework for understanding aspects of sustainability (first published in Schippers, 2010, pp. 180-181).

1. Systems of learning music	This domain assesses the transmission processes that are central to the sustainability of most music cultures. It investigates balances between informal and formal education and training, notation-based and aural learning, holistic and analytical approaches, and emphasis on tangible and less tangible aspects of “musicking”. It explores contemporary developments in learning and teaching (from master-disciple relationships to systems that are technology/web-based), and how non-musical activities, philosophies and approaches intersect with
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	learning and teaching. These processes are examined from the level of community initiatives through music education to the level of institutionalised professional training.
2. Musicians' communities	This domain examines the positions, roles and interactions of musicians within their communities, and the social basis of their traditions in that context. It scrutinises everyday realities in the existence of creative musicians, including issues of remuneration through performances, teaching, portfolio careers, community support, tenured employment, freelancing, and non-musical activities, and the role of technology, media, and travel in these. Cross-cultural influences and the role of the diaspora are also examined.
3. Contexts and constructs	This domain assesses the social and cultural contexts of musical traditions. It examines both the setting of music practices and the underlying values and attitudes (constructs). These include musical tastes, aesthetics, cosmologies, socially and individually constructed identities, gender issues, as well as (perceived) prestige, which is often underestimated as a key factor in musical survival. It also looks at the realities of and the attitudes to recontextualisation, authenticity and context, and explicit and implicit approaches to cultural diversity resulting from travel, migration or media, as well as obstacles such as prejudice, racism, stigma, restrictive religious attitudes, and issues of appropriation.
4. Regulations and infrastructure	This domain primarily relates to the "hardware" of music: places to create, perform, practise and learn, all of which are essential for music to survive, as well as virtual spaces for creation, collaboration, learning, and dissemination. Other aspects included in this domain are the availability and/or manufacturing of instruments and other tangible resources. It also examines the extent to which regulations are conducive or obstructive to a blossoming musical heritage, including grants, artists' rights, copyright laws, sound restrictions, laws limiting artistic expression, and adverse circumstances such as obstacles that can arise from totalitarian regimes, persecution, civil unrest, war or the displacement of music or communities.
5. Media & the music industry	This domain addresses large-scale dissemination and commercial aspects of music. In one way or another, most musicians and musical styles depend for their survival on the music industry in its widest sense. Over the past 100 years, the distribution of music has increasingly involved recordings, radio, television and, more recently, internet (e.g. downloads, Podcasts, iTunes, YouTube). At the same time, many acoustic and live forms of delivery have changed under the influence of internal and external factors, leading to a wealth of new performance formats. This domain examines the ever-changing modes of distributing, publicising, and supporting music, considering the role of audiences (including consumers of recorded product), patrons, sponsors, funding bodies and governments who "buy" or "buy into" artistic product.

It is evident that "Musicians and communities" and "Contexts and constructs" have been at the centre of much ethnomusicological research for five decades. "Systems of learning music" is the realm of music education, and "Media and the music industry" has gained increased attention since the 1980s. "Regulations and infrastructure" has only attracted sporadic attention in the discipline, but has been the realm of public authorities and NGOs. For example, the International Music Council report on musical diversity instigated by UNESCO (Letts, 2006) provides a wealth of information on a number of important non-musical factors that affect the viability of specific music cultures, such as copyright, politics and regulations.

Television and radio broadcasting policies, like those that attempt to encourage or protect local music through laws that require they are allocated a percentage of airplay, have a wide and deep influence on sustainability. The same can be said for music being banned from media. These policies are of course dependent on politics, lobbying, and the ideologies of those in power, and consequently vacillate from country to country, and from governmental era to era.

Each of the domains above overlaps and interrelates in how it affects music cultures. For example, change can be driven by a combination of changing values and attitudes, technological developments, and/or audience behaviour. The manner of music transmission is often strongly determined by its institutional environment, and media attention, markets and audiences can often be linked to issues of public perception and prestige.

Returning to Western classical opera, this tradition may be argued to be one of the least likely genres to survive in terms of its almost insurmountable requirements in terms of infrastructure (a theatre with excellent acoustics, a large stage, and a flight tower), high level training of the participants (soloists, chorus, orchestra, conductor, director), and audience (sufficiently refined to appreciate the event, sufficiently affluent to afford tickets). However, the art form has survived for over four hundred years, currently on carefully constructed prestige that inspires an elite community and associated markets (including governments, corporate sponsors and philanthropists) to support it.

Other traditions without such demands such as traditional Aboriginal music are in peril, while yet others flourish in spite of a history of colonialism and drastic changes of context, such as North Indian classical music, having successfully survived centuries of colonialism and major recontextualisations from Hindu places of worship to Muslim courts, from the houses of courtesans to respectable middle class audiences, and on to new listeners through broadcasting, recordings, and the diaspora, fed by a strong sense of nationalism (Bhakle, 2005).

Sustainable futures

While the above is of interest as a theoretical argument, more important is if it holds up to scrutiny when applied to the contemporary realities of music genres across the world today. I have been very fortunate to be given the opportunity to explore to what extent this framework “works”. From 2009-2014, an international research consortium led by Queensland Conservatorium Research Centre was enabled by a large Australian Research Council Linkage Grant to extensively test this approach on nine diverse case studies: Mexican Mariachi, Ghanaian Ewe music, Amami Shima Uta, Korean SamulNori, Hindustani music from north India, Vietnamese ca tru, Indigenous Yawulyu songs from Central Australia, Balinese gamelan, and Western opera.

The project made a deliberate choice to focus not only on “endangered” music cultures (as has largely been the practice), but equally on “successful” ones. The rationale for this was that while the former may provide profound insight into the main obstacles encountered by living music cultures in need of safeguarding, the latter can reveal possible pathways to removing such obstacles. So while Aboriginal music from Central Australia and Vietnamese ca tru would be “in urgent need of safeguarding” in UNESCO terms, Ghanaian Ewe music, Amami Shima Uta, and Korean SamulNori face much less fatal challenges, and notwithstanding issues in some areas, Hindustani music, Mexican Mariachi music, Balinese gamelan, and Western opera are largely thriving according to most observers and stakeholders.

On its website, *Sustainable futures for music cultures: Toward an ecology of musical diversity*ⁱ summarised the aims of the five-year, five million dollar project as follows:

Sustainable Futures for Music Cultures celebrates the cultural diversity of our planet. It acknowledges that there are serious challenges to many music cultures that are the result of recent changes in “musical ecosystems”. It aims to identify ways to promote cultural diversity and ensure vibrant musical futures in line with those called for by organisations like UNESCO.

Sustainable Futures seeks to counteract the loss of music cultures by identifying the key factors in musical sustainability, and making this knowledge available to communities across

the world. In this way it aims to empower communities to forge musical futures on their own terms.

In order to structure the project across nine very diverse case studies, guidelines for the research teams were developed featuring some two hundred questions and subquestions across the five domains. These were carefully formulated by Research Fellow, Catherine Grant, in collaboration with the teams to ensure optimally compatible data. For example, the following questions structure the section on Domain 4: Infrastructure and regulations:

4.1. What formal structures are in place to help musicians in your culture, with regard to the following?

- compose - perform - learn - teach
- collaborate - tour - preserve or promote the music culture

For example, which of the following exist?

- musicians' unions
- teachers' associations or bodies
- performers' agencies
- formal networks or societies
- virtual spaces for collaborating / performing
- cultural organisations or institutions
- provisions for amateur / community music-making
- awards and prizes

4.2. How do musicians source instruments? Are they expensive / difficult to source?

Are there physical or intangible restrictions on instrument-making?
Who makes musical instruments? How are they trained, and by whom?
Are there enough instrument-makers? Do they earn a living from their craft?
How does this differ from five / twenty years ago? How is it changing now?
Have there been significant recent changes in materials or design of instruments?

4.3. Apart from musical instruments, what other paraphernalia, equipment or *tangible resources* are required for performing, creating, or transmitting your music culture? Are they expensive / difficult to source? How does this differ from five / twenty years ago? How is it changing now?

4.4. Where do musicians in your culture undertake the following?

- | | | |
|---------|---------------------|------------------------|
| perform | rehearse / practise | teach / learn / create |
| record | publish | broadcast |

4.5. What other conditions are needed for performing, creating, or transmitting your music culture? Are they difficult to access / expensive? How does this differ from five / twenty years ago? How is it changing now?

4.6. Are there festivals and competitions for your music?

What is their focus with regard to tradition versus innovation?
What are the benefits or drawbacks with regard to their effect on performance practices?
How are judges appointed?
What are the criteria for excellence? Who decides?
What is the role of the media in the festivals/competitions?

4.7. Which non-musical factors exist that directly or indirectly impact on your music culture?

- | | |
|------------------|--------------------|
| level of poverty | government regimes |
| civil situation | health issues |

land reform / land rights

displacement

or population drift

environmental changes

geographical distance

4.8. Which traditional / local / state / federal or national / international / church or religious authorities impact on your music culture?

4.9. Are there political, religious, gender-based, or other issues of censorship or repression that impact on your music culture? Are artists / musicians given special “allowance” to dissent, as their role, or even duty? Do musicians self-censor? If so, why?

How would you describe the regulation of freedom of expression for your music culture, along the continuum: totally repressed ←-----→ totally free

4.10. What are the copyright laws, if any, that affect your music culture? Are they enforced? If your music is “traditional”, is it considered free of copyright? If not, who owns it?

4.11. Which other government or government-induced laws and regulations exist that directly or indirectly affect musicians and music-making, either positively or negatively?

artists’ rights

taxation laws

free trade policies

sound restrictions

work permits

censorship laws

education regulations (curriculum/other)

royalty collection and distribution

broadcast regulations (quota of locally produced music/other)

venue restrictions (hours of operation/smoking/drinking/other)

What has been the general trend with regard to amendments or revisions to law and regulations affecting your music culture in the last, say, twenty years?

Do they reflect a general tightening or relaxing of rules?

How do you envisage the next five years in this regard?

4.12. What forms of assistance, if any, does the government provide to economically develop the music sector?

through state-owned entities

through subsidies

through tax concessions

through public/private partnerships

through financial instruments (e.g. access to loan funds)

4.13. Where are these forms of support directed?

live performance (including venues, cultural centres, festivals)

record production and distribution

music video production

music publishing

broadcasting

internet and multimedia

improving business practices

building music exports

statistics collection

training

other

4.14. What is the position / status of your music culture, internationally?

Are there formal recognitions of its value, such as UNESCO Oral Masterpiece/Intangible Cultural Property?

What are the procedures that lead to such recognition?

4.15. How, if at all, do governments at any level seek to protect or promote the following?

your music culture

other music cultures within your country

music cultures of immigrant communities

Does the government have a cultural plan in place that may impact your music culture?

Are there publically available government documents or reports relating to your music culture?

Are they widely known? What function do they serve?

4.16. What is the impact of the government's attitude to cultural diversity and multiculturalism (or national cohesion/cultural purity) on your music culture?

4.17. What external support (if any) is required to be a successful musician?

government backing

sponsorship / grants / funding

institutional and community support (performance venues; resources)

public support (audiences; purchase of recordings; radio airplay)

(QCRC, 2010, pp. 15-17)

Researchers were asked to seek answers to *all* questions across the five domains, and emphatically indicate those that were not applicable, as they might indicate areas unexplored in the ecosystem. They did so by applying insights from (mostly many decades) of engagement with the specific culture, targeted fieldwork, and 20-40 interviews per tradition across the domains. As became apparent at a final working conference chaired by Anthony Seeger in Brisbane in November 2013, with nine advanced draft reports on the table before a gathering of thirty international scholars and musicians, this led to both obvious and unexpected early insights through and across the five domains, some of which include:

Systems of learning music

As could be expected, systems of learning music play a key role in every music culture, whether they are formal or informal, aural or notation-based, live or online, real-time or based on recordings, self-driven, community organised, or institutionally based. Striking findings were that in some cultures, such as Balinese gamelan and Ewe percussion, the learning process is so embedded in the lives of young people that they are likely to say they never “learned music”. Another notable insight across the case studies was that there is not necessarily a one to one relationship between highly formalised and highly structured. At a deeper level, there are similarities in terms of structured progression only when the learner is ready between learning opera at a conservatorium and community-based transmission processes such as those in Central Australia, although the nature of the “exams” may differ. Finally, there is an inkling that formal education is not necessarily always the ideal: while it has advantages in terms of stability and prestige, in some cases it could even be seen as last resort if transmission within community does not work.

Musicians & communities

Community engagement in the widest sense is at the heart of sustainability in many music cultures, from village squares to opera first night crowds. The drivers for this engagement range from entertainment to necessity, from shared beliefs to prestige. Recognition by the community (in money or otherwise) is of great importance for sustainability. There is broad spectrum of levels of engagement between musicians and with the “inner circles” of the tradition, often containing important quality control mechanisms. In issues relating to sustainability, a single inspired individual or a small motivated group often plays a remarkable role in reinvigorating a tradition.

Contexts & constructs

The contexts of some music cultures are stable, but most change over time, often drastically: many music cultures demonstrate remarkable adaptability. In that

sense, recontextualisation is an asset rather than a weakness. In terms of values and attitudes, a wide range of belief systems, from aesthetic to religious to political, can be either conducive or an obstacle to any music. Prestige in its various incarnations is possibly a central driver for sustainability, and resonates across the Domains.

Regulations & infrastructure

While people in all cultures tend to be governed by public authorities issuing rules and regulations, few directly affect music. Those that do often do so inadvertently, such as laws governing sound and public spaces. Specific legislation regarding music is most notable in the area of Intellectual Property, Copyright and Performing Rights. While these do not generally generate a substantial income stream for the vast majority of musicians, they do constitute an important moral recognition of their contribution. Most cultures have access to some support for music in terms of infrastructure, media exposure or funding. However, the correlation between funding and sustainability does not seem to be strong; not unlike formal education, dependence on grants is a possible weakness from a sustainability point of view. The need for dedicated infrastructure is low for most music genres: they often use spaces that have multiple functions: village squares, pubs, big houses. Only in rare cases –like western opera– do the needs become high to a level that it can easily become a major liability to sustainability.

Media & the music industry

Since their first rise to prominence on the back of technological developments some hundred years ago, media and music industry have played a significant supporting role in the dissemination of music and building reputations of musicians. In spite of much talk about commodification, even at the peak of the record industry few world music genres generated a substantial income for individual musicians or groups. However, there has always been a close, two-way relationship between media exposure and prestige, which in turn can open avenues to financial sustainability. After the collapse of the recording industry, online environments have created massive exposure with an impressive scope for niche markets and online communities that may benefit ‘small musics’ in decades to come.

(Sustainable Futures Brisbane Working Conference Report, November 2013)

While each of the domains can be regarded to some extent as ecosystems in their own right, the full picture only emerges when examining a music culture across the domains: “Exactly what components and entities are linked to one another? Which ones are only indirectly connected? What parts of a system are tightly coupled and which only weakly coupled?” (Pickett and Cadenasso, 2002, p.4). In examining music ecosystems, there are obvious and surprising connections. High-level practices tend to have a solid system of transmission, but not all do, and certainly not all have institutionalised transmission. Opera is strongly dependent on government support throughout Europe and Asia, but Hindustani classical music is barely supported by the Indian government. Probably the strongest correlation across domains is prestige, as mentioned before, which may inspire learners to seek skills in a music, communities to engage with it, contexts of music to be celebrated, infrastructure to be provided, and people to buy tickets or recordings.

While the outcomes of the case studies show a great deal of variety in which aspects of the ecosystem are relevant and have the greatest impact, it does seem that the framework underlying them has some value in understanding sustainability, and can possibly help identify interventions that may aid in keeping or even making music genres more vibrant. The case studies will be published with a major academic publisher in 2015 or 2016, and a number of articles and edited volumes (including the 2015/1 issue of the *World of Music* will reveal some implications and outcomes in greater detail. Perhaps even more importantly, the

IP developed through this project will be made available to communities across the world through soundfutures.org, an interactive website that enables anyone to access the key findings from the project and apply them to their situation, including a “diagnosis tool” identifying key factors on the sustainability of any genre by answering up to fifty simple questions on the “state of the art”.

Conclusions

Tracing back the history of music research (and ecology) into the eighteenth century, I have tried to illustrate some important developments in music research, leading to a diverse discipline with many niches, each with specific approaches fit for purpose and sensitive to context, and the process of music research reconnecting with music practices. I have identified as a major aim for the discipline to contribute to the vibrancy and diversity of music on the planet. Focusing on issues of sustainability, I have tried to sketch an approach by which detailed and realistic pictures can be deduced of threats and opportunities in relation to contemporary contexts, traditional and potential new audiences, approaches to transmission to next generations, as well as the presence or absence of community, media, commercial, institutional and public support. Findings across these domains can be analysed and turned into resources that are not only of value to ethnomusicologists, but specifically geared to assist communities in performing and developing the music they value in the way they value it. That, surely, is one of the most worthy goals we can set ourselves in our discipline.

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Author Biography

Huib Schippers has a long, diverse and profound history of engagement with music, education and research in various cultures. Trained as a professional sitar player, he proceeded with (partially overlapping) careers in performance, teaching, research, journalism, the record trade, arts policy, community, and project management. He founded the World Music School in Amsterdam (1990-1996), worked in and with conservatoires in The Netherlands, Scandinavia and the UK (1998-2003), and was the driving force behind the *World Music & Dance Centre* in Rotterdam (2001-2006). Since 2003, he has been Director of Queensland Conservatorium Research Centre at Griffith University, from where he has led over a dozen innovative research projects, including the large-scale international collaboration *Sustainable futures for music cultures: towards an ecology of musical diversity*. Published widely in five languages, his 2010 Oxford University Press monograph *Facing the music*:

Shaping music education from a global perspective is seen as a key publication straddling music education and ethnomusicology.
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Unravelling Intercultural Knowledge Through Performative Contexts: A Flautist's Perspective.

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Performances create rich contexts for interrogating interculturality, for creating a setting for dialogical processes, exploring the interplay of our multiple selves and multiple voices, and the spaces or interstices between different “worlds”. This chapter aims to articulate aspects of the materialising thought of the performer, and investigates the performance as mediated space, as an articulation of “art as life” (Bourriaud, 1998, p.13), and as a model for aesthetic and cultural exchange from the performer’s perspective. Referencing theorists such as Bourriaud and Lau, a framework for the discussion evolves as a transition through art music and East/West engagement. The investigation draws on the author’s experience and study of intercultural music performance in Malaysia, and practice-led studies of process in contemporary art music performance.

As an Australian flautist living in Malaysia, I have found myself in a complex multicultural society, and a unique context for intercultural exploration through music. Unravelling cultural understandings as interpretation in this setting, as knowledge that is coloured by experience and preconception, has brought to the fore Gadamer’s belief in the ability of art [music] to “disrupt and challenge customary expectations ... [attributing] an ethical significance to art as being able to reveal the limitations of fixed cultural expectancy and to open the spectator towards the other and the different” (Davey, 2011, p.1). The ability of researchers, musicians and composers to achieve flexibility in participation and negotiation, and to nurture differences in an artistic context can, ideally, lead to new expression, generate unspoken, intuitive and embodied knowledge, and transform the spaces of music into dialogical sites of discovery. New models of actions can be generated, where the art (music) becomes the space, and the action becomes the living reality (Bourriaud, 1998).

This investigation presents two exemplars for performative analysis: A work for solo flute and percussion from 1984 and a 2010 work for flute and poetic vocalisation – compositions that articulate a crossing of cultures and perspectives, and create settings for intercultural dialogue and exploration. The processes of encounter, of the exploration of relationships within the music, and the physical and sonic embodiment of cultures are articulated through the realisation and experience of performance.

Imagining the Space

Currently, a major research project in Malaysia, *The Imaginary Space: Developing Models for an Emergent Malaysian/Western Electroacoustic Music* (Malaysian Government Fundamental Research Grant Scheme 2012-14), is drawing to a close.ⁱⁱ The major goal of this research has been to make artistic and cultural connections, to experience contemporary and traditional music practices of Malaysia and to see what we can learn about each other in a context of new electroacoustic composition and performance. Activating this intercultural exchange has proved to be an engaging undertaking and challenge. This interaction and has been discussed in relation to new compositions elsewhere (see Blackburn and Penny, 2014).

According to Cloonan, Spencer and Saunders (2005), “Participating and negotiating with people requires an ability to know and understand ‘your’ culture, ‘another’s’ culture and have skill in working between your own and another’s culture” (para). This aspiration provided a useful and idealistic framework as we initiated the research and managed the challenges of musical interculturality in the Malaysian university setting – in a faculty that

specialises in Malay traditional music and is now incorporating significant elements of Western music education and expertise. Our ideas for establishing a performative conduit for exchange and connection, and a synthesis of cultures within music have been welcomed, as well as challenged, in a country that is re-evaluating internal identities and tensions, and a burgeoning higher education sector. We have noticed traces of post-colonial defensiveness, and, at times, experienced considerable difficulty establishing a truly reciprocal interaction. East/West investigation for us in this setting has been about personal experiences, about sharing and about learning; about absorbing difference, strengthening our artistic practices and striving for a “cultural flux” (Lau, 2004, p.39) as new understandings evolve. It has necessitated deep self-reflection and a re-evaluation of values – and the most telling and meaningful way to accomplish this has been through music.

Composer Liza Lim has worked extensively in intercultural zones with Western and Non-Western performers and cultural practices of China, Indigenous Australia and northern Europe. She describes these exchanges as transformative education. For her,

knowledge is not so much passed from one ‘side’ to another but is generated in the engagements of the exchange. The dialogue itself is inherently ‘cultural’, that is, a situated social activity within which some processes of understanding can take place (Lim, 2013, para 4).

Transformative education in this sense, how we change through new understandings and connections, underlines our goals within a focused environment to engage with, articulate and disseminate experiential paradigms in music.

New modalities of reflection constructed through performative writing can reveal information through shifting towards a subjective analysis of process and response. Over recent decades, the value of description in music/artistic research has been recognized as crucial to developing true understandings. Marc Leman writes of “shared experiences that involve personal memories and interpretation of the cultural environment” and of how verbal and graphic descriptions provide the space for interaction between experience of involvement and the cultural context (Leman, 2008, p. 7). He further states that

Any engagement with music is a signified engagement in that it is about personal experiences, intuitive judgements, and interpretations, which are hardly accessible with scientific methods. What musicology can do is provide descriptions which are grounded in a subjective ontology of experienced musical intentions. (ibid, p. 11)

As cultures may focus on artifacts and structures, knowledge from perception, cognition, emotion, and gesture (ibid, p. 71), can be unified and synthesised through actions, and the creation of imagination. This mediation through the performer’s experience and physical energy associated with cultures, the interactions between performer, composer, audience, the materials of music (for example, the score and instrument) and the performance space provide the setting for action, for reflecting on cultures and synthesis, and for exploring “art as life”.

Western Aesthetics and the Role of Art: Knowing our “own” Culture

In attempting intercultural musical dialogues we are forced to question understandings and knowledge of our “own” culture. In this discussion Western aesthetics, as represented by a selection of writers, relates to a way of thinking that articulates ideas finding resonance in our work: that shed light on the role of art and that assist the initiation of human interconnectedness through musical dialogue. Bruno Nettl has described the basic traits of Western art music as music that is carefully composed and meticulously rehearsed; it may have radical innovation in musical content or style in composition; and it is music that is conceived of as autonomous from other domains of culture (cited in Everett 2004, p. 221 n.1). This provides a base, albeit arguable, from which we might form aspects of the discussion.

Nicolas Bourriaud (1998) describes the space of contemporary art as one that is active and real-time: “The role of artworks is no longer to form imaginary and utopian realities but to actually be ways of living and models of action within the existing real, whatever the scale chosen by the artist” (p.13). The performance as a “way of living”, a processual interaction and response to contexts, ideas and sounds, creates models and methodologies for performative research. The processes create the exchange of ideas and the performance becomes the dialogue where these are realised. The performance then becomes a space to evaluate reality, to re-evaluate values and for self-reflection.

Bourriaud writes about the space between things as a crucial point of interest, an observation he notes is supported by a cluster of French philosophers (2009). In his view, Giles Deleuze redefined the world in terms of flows and gaps between mechanisms; Jean-François Lyotard described it in the form of a system of connections and of “differentials” between various conduits of energy; and Jacques Derrida explored the interval between the oral and the written, the sign and the trace. The important thing here is always the space between things, rather than things themselves, “the event rather than the monument” (Bourriaud, 2009, p. 11). Additionally, Michel Foucault, according to Bourriaud, is less interested by what an image says than by what it produces – by the behaviour that it generates, and what it leaves barely seen among the social machinery in which it distributes bodies, spaces and utterances (ibid, p. 13).

As we explore performative spaces between cultures that emerge in contemporary music for flute, these aspects of Western thought create a presence, a placement of values, a configuration and shape to investigate what is going on in performance. We search out the “event rather than the monument” – what can be gained from the processes rather than historical fact and artifact; and we take these experiences into every consequent interchange and reflection. Our aspirations accord with Lim’s description of the process of dialogue as an enabler of capacities: “the ‘intuitions, sensibilities and orientations’ of participants are part of the shape of new feelings, responses, evaluations and understandings that arise: that is, the dialogue shapes the intertwined capacities for response to and for engagement with meaning” (Lim, 2013, para. 2).

Shifting Cultures

In our contemporary world of seemingly boundless international travel and interconnections, rising global interest in other cultures, and where people of contrasting nationhood and cultures might live side-by-side, cross-cultural influence is inescapable. Our music is inevitably reflective of these mobilities; and our lives enriched and enlightened. Musical syncretism (combined cultural idioms), and synthesis (the transformation of borrowed cultural elements into a new, hybrid musical entity) are flourishing, albeit with varying degrees of success and integrity. The history of these crossing pathways is centuries old.

During the 20th century, the social functions of art music and roles of musicians were redefined in Japan, Korea and China through modernisation and Westernisation (Garfias, 2004, p.19) – sometimes erroneously considered one and the same. According to Yayoi Uno Everett (2004), the composer became an idealised individual, and music moved from ritualistic, or pragmatic function to art for arts sake (pp.7-8). Composers such as Toru Takemitsu (1930-96), Isang Yun (1917-96) and Chou Wen-Chung (born 1923) are examples of this shift. Each of these composers is equally highly recognised in both Eastern and Western musical circles. Their music is significant artistically and also because it explores the East and West from both sides, and contributes to the forward thrust of musical creativity in contemporary life. Taking the traditions, the sounds and philosophies of their own people out into the world as newly formed music has successfully sustained, informed and stimulated listeners and practitioners in the West. Writes Takemitsu:

By cultivating within my own sensitivities those two different traditions of Japan and the West, then, by using them to develop different approaches to composition. I will keep the developing status of my work intact, not by

resolving the contradiction between the two traditions, but by emphasizing the contradictions and confronting them. Unstable steps perhaps, but no matter how faltering they may be they will stop me from becoming a keeper of the tombs of tradition. (Takemitsu, 1994, loc. 967)

Composers writing within cross cultural idioms have been described by Everett (2004) as “cultural brokers” who have acquired understanding of more than one set of cultural principles and who function as mediators between native and foreign cultural groups in initiating dialogues (pp. 4-5). This positioning of composers as mediators stretches back a long way. American composer Henry Cowell in 1933 described his cross-cultural borrowings as “not an attempt to imitate primitive music, but rather to draw on those materials common to the music of all the peoples of the world, to build a new music particularly relating to our own century” (Cooke, 1998, p.279).

Canadian composer, Colin McPhee had a wide reaching influence on directing Western understandings of Eastern aesthetics through his work in Bali, particularly his studies of gamelan as documented in *Music in Bali* (1966). Perhaps John Cage had the most celebrated influence on cross cultural music approaches in the twentieth century, mainly through his philosophical and artistic connections to Japan and China. Whilst it is beyond the scope of this chapter to discuss in detail the pioneering work of these composers, it is important to note the deep influences the introduction of Eastern aesthetics had on composers, performers, audiences and students in the West.

The proximity of Australia and its position as a Western country on the edge of Asia has naturally inspired many of its composers to look towards the East. Peter Sculthorpe (1929 - 2014), for example, became interested in Asian music through recordings he heard in the 1950s of Japanese *Gagaku* (as arranged by Leopold Stokovsky) – recordings that sound quite bland and Westernised now, but that had a lifelong impact on his compositionⁱⁱⁱ. Perhaps Sculthorpe’s most vividly Asian influenced work is *Sun Music III* (1967) for orchestra, with its bountiful use of Balinese gamelan patterns. In addition, there is *Tabuh Tabuhan* for wind ensemble (1968) which takes its name from Colin McPhee’s 1936 work for orchestra of the same name, and the String Quartet No. 8 (1968) that utilises rhythmic patterns from Balinese rice pounders.^{iv} These works came from the 1960s – but Asian influences in Australian music stretch far further than that.^v

Anne Boyd (born 1946), a close associate of Sculthorpe, has composed much music that explores aspects of the East, and many of these works are for flute. A series of her works derive inspiration from Balinese gamelan and landscape (Bali Moods I and II), Hong Kong (Cloudy Mountain), and from Japan (Goldfish Through Summer Rain; and Red Sun, Chill Wind). Her writing for flute intentionally captures the sense of the shakuhachi in these works, as a personal expression based on her own identity and sonic ideals. Julia Grenfell, who presents insightful material from personal interviews with the composer, has investigated these influences. She cites Boyd:

When I write for [the Western flute] it is the shakuhachi which is the source of my inspiration. The shakuhachi ...has a special presence in all of my music representing my melodic ideal. It is in a sense my alter ego, being the instrument of my Asian dreaming with which I have the closest spiritual identification. In this way my personal musical language has been distilled as a fusion of East and West; this musical language, I believe, is quintessentially *Australasian*. (Grenfell, 2003, p. 58)

Synthesis such as this creates a rich and imaginative setting for exploring different feelings and intentions of interculturality in a performative space. Other iterations of fusions of East and West might emphasise more superficial or technical aspects of the styles. Whilst multiple genre, nationality and style fusions can be heard throughout the world, considerable discussion remains about achieving an appropriateness of musical and cultural mixing, and one that respects differences of ethos and historical practice reflective of cultural

understanding. Frederik Lau believes that a systemisation of synthesis has created rigidity; that Eastern characteristics such as unusual tuning systems, pentatonic scales, static harmonies and unconventional instrumental timbre have become ubiquitous, and that new wave composers will now emphasise suggestiveness and evocation rather than transplantation of materials. He states, “We need to develop cultural flux rather than categorisation ... an understanding of boundary crossing and to make room for the need to create multiple identities...” (Lau, 2004, pp. 38-39).

Other writers, for example John Corbett (2000), have described these cultural crossings as colonialist attempts to assert a power on the East. Corbett writes about the “spoils” of Oriental musical exploration, of elitism in approach and the desire to reassert Western control (pp.166-168). This emotive language can perhaps be justified in a defensive situation, where a culture may feel overrun and devalued by the “magpie cultures” of foreigners from East or West adopting and using certain elements of music to colour or lend a perceived exoticism to their own. In a deeper sense, these musical crossings could be understood as attempts to recognise and seek knowledge of others, to appreciate and share ideas in a new expression.

In Malaysia there have been shifts that include Western styled Malay pop songs, and a rise in assorted syncretic music. Diverse traditions have arrived in Malaysia from many parts of the world over the centuries: from Java, from the Middle East, from China and India, from Portugal, the Netherlands and Britain, amongst others. An amalgamation of styles that reflects the various colonisations and migrations to the country is evidenced in much traditional Malaysian music. Instruments and techniques such as the oud/gambus from the Middle East; Baroque violin techniques brought from Europe and still used in traditional playing today; the Portuguese folk song idioms incorporated into styles such as Keruncung; the Hindu influences seen in Wayang Kulit; and the introduction of functional harmony and “foreign” elements by composers such as P. Ramlee to songs in Malaysia (Chan, 2012). These multi-cultural influences cannot be judged as a series of attempts to take control – more a natural transcultural exchange reflective of people and ideas existent together in a particular place.

The Flautist in the Intercultural Performance Space: Two Exemplars

That musical crossings can deeply inform and widen the experience of performers, through the absorption of different sonorities, techniques and philosophical approaches to their work, is undeniable. Appropriations of these elements, in general as a response to compositional requirements and personal sonic preferences, can expand performative experience through a sonic and physical embodiment of cultures. As a flute player, these influences may focus on tone production, ornamentation, the gestures of breath, and the freedom to explore unique musical forms and syntheses that can seem to shift from one culture to another, and one performance mode to another.

The instrumental ontologies or characteristics of Western and Eastern flutes, from exquisitely crafted state-of-the-art Western flutes to, for example, the simple drilled bamboo of a traditional Indonesian flute (see Figure 1), create and sustain performative and musical knowledge, carrying specific and imagined information into performance practices and connections. The different traditions, the memories of sounds and associations, the feelings for breath and physical gestures speak one to another, drawing the player into and out of differences of sound and of thought, creating within the performance “art as life”. Citing Nicholas Thomas, Kevin Dawe writes of a re-contextualisation, of the colonisation of instruments – consuming, giving meaning and reproducing in our own image, the instruments become objects that are “not what they were made to be but what they have become” (Dawe, 2003, p. 281). Within the performance, these appropriations create an enlarged cultural reality as sonic and musical articulations of connections occur through the instrument, the extension of the human player.

[INSERT Figures 1a and 1b – side by side]

Figure 1. Flutes from the author's collection. L-R: Verne Q. Powell custom made sterling silver flute; set of bamboo flutes from Indonesia

Composer responses to the significance of instruments in the artistic process illuminate differences and similarities of approach in both East and West:

Luciano Berio:

Musical instruments are tools useful to man, but they are tools that lack objectivity: they produce sounds that are anything but neutral, which acquire meaning by testing meaning itself with the reality of acts. They are the concrete depositories of historical continuity and, like all working tools and buildings, they have a memory. They carry with them traces of the musical and social changes and of the conceptual framework within which they were developed and transformed. ...The sounds produced by keys, strings, wood, and metal are in turn all tools of knowledge, and contribute to the making of the idea itself. (Berio, 2006, p. 25)

Toru Takemitsu:

The sounds of such instruments [biwa and shakuhachi] are produced spontaneously in performance. They seem to resonate through the performer, then merge with nature to manifest themselves more as presence than as existence. In the process of their creation, theoretical thinking is destroyed. A single strum of the strings or even one pluck is too complex, too compete in itself to admit any theory. (Takemitsu, 1994, loc. 944)

The following two exemplars provide a setting in which to examine personal responses to unraveling intercultural knowledge through the performance of works for flute; one American composer influenced by the philosophies of Japan, and one Malaysian composer writing within an ostensibly Western aesthetic.

John Cage: *Ryoanji* for Flute and Percussion

The inspiration of John Cage, his groundbreaking intercultural arts practices and his technological and philosophical approaches, has had an enduring legacy on musical connection and thought. The following personal response to his composition *Ryoanji* (version for flute and percussion, 1984) reflects on how the performer embraces these influences, and integrates aspects of Cage's creative expression into a realisation of this work. A series of relationships is described: with the notation, the timbres, time structures, physical energies and cultural resonances.

Encountering the flute score. A performance of *Ryoanji* can last anything between about fifteen minutes and over an hour, but weeks and months may be needed to fully grasp what is going on in it, and to determine how a performance may be realised. Inside the cover of the Peters edition (1984) we are confronted with beautiful graphics of symbols and signs, and performance instructions that ignite curiosity and capture the performer's imagination. Flute performance instructions are on the first page.

"Each two pages are a 'garden' of sounds", says Cage (Score: 1). The question, "how can music be a garden?" arises. My mind steps back a couple of years into the late Bill Duckworth's mobile phone gardens, called Sonic Babylon in Australia, where sounds were planted electronically in specified spaces^{vi} or the Toronto Music Garden^{vii}, inspired by the music of J.S. Bach with each section of the garden corresponding to a movement of Bach's Cello Suite No.1 in G major, BWV 1007; or perhaps even further back to the beautiful *Jardins Sous la Pluie* of Debussy (1903) in which the piano describes a garden in a heavy rainstorm. Cage's garden of sounds seems more abstract, more enigmatic, more arcane.

The glissandi are to be played smoothly and as much as is possible like sound events in nature rather than sounds in music.
Any multiphonics that happen unintentionally are welcome.
The dynamics, not given, are to be soft rather than loud, as a rule, a rule that has exceptions.
The pieces are for flute solo - or for flute with prerecorded parts...
In a performance each part is given its own sound system.
The score is a “still” photograph of mobile circumstances.
That is, where there are two or more parts active at the same time their relationship in time need not be exactly the one delineated.
Each part should be played or recorded independently of the others but within the same total length of time and following the general outlines of proportional notation... (Score, 1984)

In deciphering this text, the performance journey begins to achieve definition. The instruction to create “sound as nature” seems to immediately take away the element of performance and compositional ego; another to play “unintentional multiphonics” seems to predicate an intentionality; “A rule that has exceptions” generates a sense of freedom, but within a static, yet mobile soundscape. All of these words incite creative responses and research.

The notation of the flute part is microtonal and fragmented (see Figure 2). Curves and lines that represent the glissandi, the mobile pitches, are specified and gestural both visually and sonically. Initially, these curves seem enormous, but they actually denote a very small sound range. For example, the first pitch (G half sharp) moves down and up to G sharp then to A flat, A natural, and to a flat B natural – just a minor 3rd overall. This tiny range forces an immense concentration on the micro-elements of the sound which become magnified in effect.

[INSERT FIGURE 2]

Figure 2. Cage *Ryoanji*. Opening flute notation

At the beginning of the second “garden” the second flute part enters, either recorded or live (Figure 3). There is an overlapping of phrases, but they are never together. Everett (2004) calls this a “Korean” style unison, where attacks are close but not together (p.228 n.72). The music may look like an idle tracing and circling of lines or stones, but it creates an amazing sense of intimacy and dialogue between the players. The silences, the spaces between the notes, are equally important, and contribute a great deal to the sense of time stretching that is characteristic of the piece. The performance context transforms these elements into physical energies that merge and re-form as cultural values and experience within the performer and listener.

[INSERT FIGURE 3]

Figure 3. Entry of second flute

Encounter with the percussion score. The percussion part uses regular stick and stave notation, with straight lines, but irregular pulse (see Figure 4). According to Latartara, this is the first time Cage used a pulse in his music in 30 years (2007, para 23). There are no repeating patterns in the rhythms, but an illusion of repetition is created. The contrast to the flute part projects a sense of multiple temporal layers – of different time scales, of stasis and irregularity. The text/instructions read:

At least two only slightly resonant instruments of different material (wood and metal, not metal and metal) played in unison ... These sounds are the

“raked sound” of the garden.... They should have some life... as though the light on them is changing.” (Score, p. 2)

The timbre and strength of the percussion sound seems to give an impression of a marker – of something marking out time, or sand. The ritual of sand raking implies aspirations of conformity and control, and regular movement. The lines in the score seem to express a rigidity, and immovability; a reduction; perhaps a symbolic mediation of temple gongs, physical gesture and action. These sounds create a spatial representation that works in parallel with the flute lines, that may seem to randomly cross it, but the part retains a separateness of experience and time. The irregularities of this percussion pulse express a disjunct-ness, a challenge to physical gesture, and performance methodologies, demanding new approaches and processes and, again, a centering on the sound.

[INSERT FIGURE 4]

Figure 4. Cage *Ryoanji*. Opening percussion notation

Realising East/West Intersections: Further reflections on performing *Ryoanji*. The visual imagery of the score, the lines and curves of the flute parts and the rigidity of the percussion part, the roles of the instruments and instrumentalists, create conflicting expectations and re-assessed performance imperatives. The percussion part is dry, sharp and irregular. It is a representation of moving grains of sand, but the image one may previously have had of this is displaced with an unexpected rigidity. The flute part is a representation of stones, but is agile and flowing, following and creating breath patterns and indefinite pitchings – movements that are not necessarily associated with the stillness of stones.

With the removal of pre-conceived perceptions of the flute (which was, in Western art music, largely a melodic, tonal instrument) there comes an exciting re-assessment of performance mode and technique. The images become a process, a means to communicate the content, and to induce a performative centering on the sounds. The tracings around the rocks afford a sense of movement and layering that can be reflected in the glissandi of the flute part. While the glissandi reflect these tracings, they also move them into a timed dimension. Underpinning these thoughts is the meditative, ritualistic aesthetic created from the stretching of time structures, and the emphasis on inward focus.

The place of the player’s breath accompanies this sense of centering, as the interior – the breath – is converted into the exterior (shared experience of sound), and the timbre of individual tones and slides are given shape. *Ryoanji* shows a strong relationship to honkyoku, the Zen devotional music for shakuhachi. Whilst not directly taken from this tradition, Cage, according to pianist, Michael Fowler, “assumed a musical methodology that approached the act of composition in the same manner: as ritual” (Fowler, 2009, p.2). A method for “blowing Zen” is described by the Australian shakuhachi player, Riley Lee as playing that focuses on the present moment – the “process” or act of performance – the here and now. Through focusing attention down to individual sounds, the formal structure of the music or the breath counting fades into the background (1992). This ritualistic practice of focusing down and inwards to discover self-realisation or enlightenment is melded in this instance with performance on a Western flute, with its own unique set of techniques and practices. Playing glissandi in this manner forces a change in playing approach that matches the shapes of the notation, ranging from breath channeling to the physical handling of the instrument. A sense of other worldliness emerges, reminiscent of the Komuso monks’ performances of nothingness and emptiness.^{viii} The body becomes a mediator between the physical energies of playing the flute and communicating meaning, as performative gesture articulates the expression and experience of the music

The unique timbre of the shakuhachi is always prominent in the mind when playing Japanese influenced flute music, and the techniques one favours are those that move towards it. The sound of the Western flute, so malleable and resonant, can draw out an assimilation of gesture, a focus on sound over structure; and particular choices of resonance, and colour.

Cage's drawings of stones may seem stark and monochromatic – but then, he mentions the light that must be transferred into the percussion sounds, the mobility that should be captured by the flute motifs, and the life in the drawings is immediately and vividly apparent as movement and performance.

The garden design, the spatial relationships within the work that represent the stones and sand; the sounds that articulate these, and the sense of space created reflects elements from both East and West – of repose and meditation, of design and transformation of place, and perhaps a search for clarity of thought: a common purpose in many garden designs throughout the world. These elements transfer into the sonorities and silences through the timbres, the sense of ritual and the unfolding of musical time. Cage's approach to time crosses cultural boundaries through a use of multiple temporal layers. Stasis and movement are portrayed as natural counterparts, and in the listener and performer, time is stretched out and out. The performance space reflects this transformed sense of time, becoming a place for sonic discovery, a place where new thinking can occur and knowledge is interpreted. In this piece there is both a concentration on the inside of the performer, and a negation of the traditional idea of the performer (certainly the ostentatious performer). It is a progressive path of enlightenment, a new discovery each time, as micro sounds, physical and mind elements come to the fore. The performer grapples with the task of creating this space through sound, and strives to share what can be learned from entering this space for thinking. Cage's music gives us the opportunity to explore our inner ourselves, our sonic selves and the selves of others, and to create new understandings of both.

Lee: *Echo of the Core* for Solo Flute

Chie-Tsang Lee, from Sabah, East Malaysia, states that his current compositional work is concerned with “exploring and re-framing interdisciplinary perspectives related to hybrid oral traditions found in East Malaysia to provoke new possibilities for sounds, spaces and creativity in his compositional work.”^{ix} Lee's music evokes the notion of energy as flowing movement and significant colour, bringing together Asian performance aesthetics, Western contemporary classical approaches as well as aspects of indigenous East-Malaysian ritual forms – in particular from the Kadazandusun people (ibid.). An example of this direct influence can be seen in his work *Interbreathment* (2013) for 52 traditional Kulintangan, 8 kadazandusun gongs, two dancers, metal kulintangan, slenthem (doubling Sompoton), and 21 and 36 Soprano Sheng.^x

As a model for intercultural exploration, *Echo of the Core* for solo flute presents evidence of both Asian and Western approaches, as well as influences of dance and a compelling timbral flow. According to Lee, the work is a representation of “an ‘inner part’ of the human emotion that has been reflected by a discontinuity in the propagation medium, and returns with sufficient magnitude of emotion and delay to be perceived” (Score notes). An initial encounter with this work is bound up with poetics, extended techniques and sonorities, and a dramatic sense of musical space.

The poem that inspired the work, *Cosa credi che il cuore nasconda* (*What do you think the heart hides*) by Italian poet, Maria Grazia Calandrone, is about language and identity. The English translation is spoken in performance.

*With my language I flower again in your mouth
like a rose: I am reborn in the shape of a rose
if my dead language mixes with yours.
Here I am, totally, where the rose
had once vanished.*

*My language is the rose that died in silence,
the vanished rose blooming in your blood. I am the shadow
flowering when you name it, I am the shadow of those who seem
to sleep but pose questions still, I am the plantation*

*on the stone of your house, I am the shadow of the shadow of your language,
a foreign accent, the curve of a rose in your throat
like a scar of a diasporas
on everyone's lips.*

In the score there is the Italian poem with English translation, regular notation mixing Italian and English terms, the composer's Malaysian-Chinese name, and a Chinese inscription: irrefutably multicultural elements on the surface. Immediately on playing the piece, one finds a uniqueness that colours the flute sound with an imaginative expression; that uses extended techniques familiar to the Western flautist (many of which were inspired by styles of the East), such as breath tones, harmonics, pitch bending, vocalisation and tongue rams, as natural flute sounds that are deftly incorporated into the shapes and lines of the music. From the start, the performer is required to step out of a normative playing mode, as the work begins with silence, then recitation melding to flute sonorities. The lines are at times jagged, but with shapes reminiscent of gesture and dance that appear quite stylised and theatrical.

Later, I begin to read into the score my own interpretation of what might be termed "Malaysian-ness" in this imaginative inner sound world, so contrasted with personal societal experience. Is there a subliminal Western-ness that facilitates my understanding? Or a sonic attraction that relates to previous performances? I work with the musical gestures as physical gestures, balanced with a temporal ebb and flow in the sound. Textures of sustained sounds and implied harmonies, fragmenting, arabesque-ing, the fragilities of whistle tones, silences, shadings of pitch with quarter tones and glissandi.

A shift occurs through the use of the voice – narration, exclamation, inhalation and exhalation, and a brief episode of vocalisation while playing. Steven Connor writes, "Listen, says a voice: some being is giving voice" (Connor, 2000, pp.3-4). The voice as a representation of presence has been previously explored in a *musique-mixte* environment (Penny, 2011), in reference to Kaija Saariaho's *NoaNoa* for flute and electronics. In this work, the entwinements of flute and voice were found to create a dramatic characterization: "The vocalizations have an extraordinary impact: the presence of the human body is imprinted on the soundscape; a new dimension accentuates an intimacy that becomes derived from the sensation and vibration of the sounds, and the physical shift of pitching and project of voice that occurs." (ibid., p.187) Exploring the idea of the voice as cultural signifier generates further questions of multiplicities of identity, performer persona, location and dimension, and layers of meaning. The cultural significance of language and the sounds of Western and Eastern traditions challenge and disrupt perceptions, whether overt or hidden, and provide a platform from which to construct phenomenological experiential analysis.

Articulating what happens in the performance space is the crux of this research methodology: to experience and articulate the lived experience of performance; the felt experience in performance. As an example, there is a short improvisatory section of *Echo of the Core*, a 'dance' section, that combines several fragmentary phrases and gestures as well as a physical engagement not normally associated with flute playing: stamping, and fast heel tapping (see Figure 5). This section presents a challenge of artistic integration and expression. It is a succession of musical ideas on multiple staves that initially creates a disconnection and awkwardness. Negotiating the musical and physical relationships between the motifs and gestures, discovering new feelings and speculating on what the meaning might be – and then, how best to express it – requires a significant depth of exploration. How can I imagine this? Then, how can I project it? Strongly present is a sense of Bruno Netti's "Western-ness" – this music has been carefully composed; it requires meticulous rehearsal. There is another presence which is harder to define: more of a sensation of perception and attitude. A dialogue emerges that shapes feelings of sounds and physical embodiment of imagined cultures – a feeling of movement from one to another; a shifting engagement that enables the performer to physically and mentally approach different sides, and sonic outcomes. Through immersion in the melded musical lines and sonorities, the gestural shapes evolve into the projections into the room, the artistic articulation of the ideas and sensations. Cultural knowledge and performance movement is challenged and re-defined. This dialogical reality helps

communicate a cultural flux, a sense of moving in and out of a musical space and relationships through the act of performance itself.

[INSERT FIGURE 5]

Figure 5. Lee, Echo of the Core excerpt.

Conclusion

In this chapter I have sought to show how the performance can generate new knowledge through providing an artistic setting for analysis and response, and an articulation of intercultural resonances. Key issues addressed through this experiential approach relate to creating an empirical methodology based on performative perception, location, and societal correspondence. The performance space (the place where music is studied, rehearsed and presented) has been shown to provide an exploratory context, and to generate dialogical spaces for the investigation of aesthetic and cultural exchange. Bourriaud's concept of "art as life" (1998) – as event rather than artifact – has been applied as a way of determining and articulating the actions and implications of these engagements of exchange. Additionally, Leman's (2008) articulation of modes of analysis and experiential meaning has provided structures for investigation of cultural context and interaction. The environment of shifting East/West cultures, through compositional and geographical contexts, was further explored through works for solo flute with underlying cross-cultural perspectives and ideas. Personal responses to these scores and concepts revealed an experience of cultural flux, where the felt experience in performance, the sensation of shifting cultures, were shown as new knowledge and understanding, concurring with Lim's "new feelings, responses, evaluations and understandings that arise: that is, the dialogue shapes the intertwined capacities for response to and for engagement with meaning" (Lim, 2013, para 4).

As an articulation of "art as life", the processes of performance simultaneously absorb and synthesise multiple characters, cultures and perspectives. The performance space is a place to reflect on reality, values and oneself; and to activate an unraveling of intercultural knowledge. As Roger Scruton (1997) states: "What counts is the interaction between the experience of involvement and the cultural context" (cited in Leman, *ibid*, pp.8-9). Cultural interchange is reflective of our global relationships and actions; it sustains and informs through the interaction of the known and unfamiliar.

ⁱⁱ *The Imaginary Space: Developing Models for a Malaysian/Western Electroacoustic Music*. Fundamental Research Grant Scheme 2012-14. Main researchers: Dr Jean Penny (leader) and Dr Andrew Blackburn, Universiti Pendidikan Sultan Idris, Malaysia.

ⁱⁱⁱ ABC Radio National interview from 1999 <http://www.classical-music.com/article/music-changed-me-peter-sculthorpe>

^{iv} <http://www.oxfordmusiconline.com/public/page/Sculthorpe>

^v see <http://www.australianmusiccentre.com.au/subject/asian-culture>

^{vi} www.billduckworth.com/sonicbabylon

^{vii} www.harbourfrontcentre.com

^{viii} <http://alcvin.ca/ryuzen/honkyoku-2/>

^{ix} <http://leechietsangcomposer.wordpress.com/bio/>

^x <http://leechietsangcomposer.wordpress.com/video/>

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**Indigenous Semai Folktales Presented in Digital Media: Negotiating
“Authenticity” and Innovations through Collaborative Fusion of Indigenous
Agency and Academic Scholarship**

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The knowledge, wisdom and teachings of the Semai, one of the 18 subgroups of Orang Asli, the indigenous people of peninsular Malaysia, were passed down from generation to generation through storytelling, mythmaking, ritual or symbolic art. Storytelling was also an important form of entertainment for the Orang Asli communities. Stories were used to educate, amuse, document and remind the communities of important social and ethical mores to ensure community living and continuity (Nicholas, 2012). Orang Asli origin myths, cosmology, genealogy, taboos and protocols, cultural practices, customs and traditions, yarns and tales to amuse, personal adventures in the jungle, and knowledge of their natural resources, were transmitted through these folktales. Storytelling was an informal form of education—a platform where children were enculturated in the values, morals, customs, norms and way of life of their community. These tales were often told during the late evening after the men had returned from hunting and the women had finished attending to the children, gardens and house chores. According to Harun bin Itam (pers. com., 30 June 2013), a Temuan storyteller from Serigala Village in Ulu Selangor, the most suitable time for storytelling was the late evening when everyone was resting after dinner and the atmosphere was quiet. Semai children fell asleep listening to these stories.

Unlike many storytelling traditions in peninsular Malaysia that are accompanied by music, such as *awang batil*, *tarik selampit*, *wayang kulit* (shadow puppet) and *po te hi* (Chinese glove puppet theater), Semai storytelling was an oral tradition transmitted without any musical accompaniment. It was an art learnt through observation, imitation and practice. Semai storytellers utilised a dynamic range of speech, vocal variety, inflections and nuances, as well as pitch, volume and accent when telling their stories. They animated the heroes, villains and animals in their stories using comical and dramatic movements, inciting fear, humour, excitement and tension. Stories told in this tradition have largely declined due to the lack of interest among the children and community. The main mode of entertainment today has shifted from storytelling and community music-making to the television, radio and Internet access through mobile phones. The Malaysian government's efforts to “develop” the Orang Asli through modernisation and integration into the mainstream community have resulted in their dependency on these modern facilities. Since many Orang Asli villages are located in distant and isolated places, they subscribe to Astro television stations for better audio-visual reception. Astro channels feature global programs such as CNN, BBC News, National Geographic, Discovery and many more. With accessibility to these television channels, it is not surprising that the traditional practices of storytelling and community music-making with acoustic musical instruments have taken a step backward. This decline in the practice of the art of storytelling eventually affects their children's knowledge of traditional customs, moral values, social and ethical mores of the community, as well as the art of learning through the oral tradition.

This chapter presents an approach to cultural sustainability through a synergy of knowledge and creativity among indigenous Semai cultural practitioners and academic musicians. This collaboration has resulted in the production of a tri-lingual picture book and a digital audio production of its narration and dialogue presented in CD format. The audio production also includes sound effects and original composed musical motives for the various characters in the story. The musical motives were inspired by unpublished Semai music and

songs. Our approach in this research included in-depth examination and understanding of Semai cultural tradition in keeping to its “authenticity”, and the use of technology and innovative ways to sustain indigenous knowledge and music. We utilise technology as a tool for exploring the creative ideas of the researchers, as well as mobilising the manually impossible on acoustic musical instruments, such as the cutting, pasting, combining of tracks; sound manipulation and distortion. It is hoped that the revitalisation of Semai folktales will rejuvenate the wisdom and values of the Semai and communicate a better understanding of the indigenous way of life to those outside the culture.

Before presenting our approach, we delve into the discourse of authenticity and sustainability in academia. We then illustrate our concept of authenticity and sustainability through an example of our production – a picture book accompanied by a CD audio recording of narration, dialogues, original music and sound effects, titled *Bah Luj and the Evil Spirit*. Our negotiation between authenticity and innovation will be discussed as we present the processes of the production. This chapter argues for sustainability through innovation as an approach to making the folktales attractive, accessible and interesting to a twenty-first century audience.^{xi}

The Discourse of Authenticity and Sustainability

There are various principal definitions of the term “sustainability”. Jenkins (2012) defines it as the “capacity to maintain some entity, outcome, or process over time” (p. 380) while Titon (2009) posits that it is “something that can continue indefinitely” (para.2). Toman (1992) states that sustainability “evokes a concept of preservation and nurturing over time”. Sustainable development is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987, p. 43). Beyond these definitions, ambiguity and subjectivity over the term continues to persist. While basic guidelines to sustainability exist, each organisation recreates its own concepts of sustainability, which is often driven by political, economical and hegemonic inclinations, and social-cultural biases. Sustainability remains a contested field between the sciences and social sciences, and decisions often ensue as a result of the meeting grounds in the dialectical struggle between the two fields.

Ethnomusicology studies began with the notion of safeguarding and preserving musical cultures in their most original form. According to Titon (2009), ethnomusicologists have tried to sustain musical cultures in three ways. In its early stages, the field had been concerned with documentation, archiving and transcribing ethnographic data and music. Referred to as “salvage ethnomusicology”, these actions preserved the music but did not assist in sustaining traditional musical practices among the communities. The term “preserve” was gradually replaced by “sustain”, opening doors to reinterpretations of levels of advocacy and intervention. Second, Titon (2009) states that ethnomusicologists have contributed to promoting the performance of culture on heritage or tourism sites. The recontextualisation of music and dance genres onstage facilitates visibility and cultural pride, yet it has also made culture viable to the gaze of the public. It is important for us to discuss our understanding of “authenticity” in our approach to sustaining tradition, to avoid accusations of vulgarising culture. The notion of “authenticity” has been a subject of heated discussion among scholars in the field. Prior to justifying our approach to sustainability in music, we draw on historical arguments on the variety of ways in which cultural traditions have been commodified for different agendas. Declarations, movements and actions from government to non-government, tourism agencies and grassroots communities were triggered from the fear that traditional musical groups were losing their musical traditions and identity. The involvements of these external forces have received positive and negative criticism by ethnomusicologists and other organisations. Grassroots troupes, national and state cultural troupes and others respond to the tourist gaze (Urry, 2002) by commodifying and commoditising their traditional cultural performance. National agendas asserting a unified identity have led to the construction of “staged authenticity” (MacCannell, 1976), “airport art” (Kaepplar, 1977), “invented

traditions” (Hobsbawm and Ranger, 1983), “and the simulacra in performances” (Baudrillard, 1990; Chan, 2013).

While top-down cultural policies are instrumental in enhancing the promotion of cultural heritage, these policies have also been criticised for intruding in cultural authenticity, corrupting traditional cultures and “freezing” culture through its emphasis on “authenticity”. Interventions have been criticised for compromising the integrity of traditional cultures through “commodification, vulgarisation and theatricalisation” (Wang, 2003, p.152). Top-down policies also may “run the risk of being undermined by a complex set of issues including a lack of grassroots understanding, resources, control and ownership that typically characterise approaches developed and implemented at the community level (Grant, 2013, p. 4). The knowledge of these criticisms provides a benchmark for the decisions and choices the research team has made while facilitating the transmission of Semai folktales. The criticisms over the lack of grassroots understanding led us to include the involvement of indigenous practitioners into our research and production, enabling an integration of insider knowledge and outsider ideas. This approach is aligned with current involvements of ethnomusicologists in applied ethnomusicology and advocacy as will be elaborated in Titon’s third description of the ethnomusicologist’s works in the field.

Third, Titon (2009) propounds that ethnomusicologists have collaborated with governmental and non-governmental agencies (NGOs) and community music practitioners in developing models for effective community-based pedagogy and approaches. While working to sustain traditional history and musical cultures, this process often leads to innovation in traditional community music. There is no assumption that musical preservation means that the music must remain the same, but a partnership in conservation and sustainability rather than preservation is the goal of the third approach (Titon, 2009). Alviso (2003) emphasises that applied ethnomusicology is premised by the notion that ethnomusicological research should be able to make a difference in the lives of its subject (p. 90) and be a meaningful giving back to the community.

Sustainable Development among Orang Asli communities in Malaysia

One of the major problems affecting the Orang Asli communities who live in villages scattered around the Titiwangsa Range and the southwestern coastal plains of peninsular Malaysia is the competition of their traditional territories with the nation’s development plans. The development of highways, dams, airports, oil-palm plantations, agricultural and aquacultural farms and real estate have resulted in the resettlement of Orang Asli villages to *Rancangan Pengumpulan Semula* (RPS) areas (Dentan, 1997). These resettlements detach them from their original sustainable way of life and livelihood, catapulting them into the world of commodity and consumerism, for which they are culturally and mentally unprepared. International organisations and non-government organisations have come to the aid of the Orang Asli by providing grants and expertise to assist in cultivating entrepreneurship skills and capitalising on the reality of the situation affecting them.

In 2005, the EU-UNDP (European Union- United States Development Programs) Small Grants Programme (SGP) sponsored entrepreneurship-training workshops to the indigenous Semelai people of Lake Bera, Pos Iskandar, Pahang, to cultivate an ecotourism business, as well as the development of a herb garden to preserve knowledge of the medicinal qualities of the plants and herbs in the area^{xii} (Chan, 2005). These training sessions provided the Semelai with alternate forms of survival as their traditional homeland was threatened by encroachment, development and pollution. In 2009, the Malaysian Environmental NGOs (MENGO) established projects to benefit indigenous peoples, local communities and environmental practitioners. Awareness and education on environmental sustainability through the management and utilisation of natural resources, conservation and ecotourism were cultivated during the project period (Ramakrishna, 2009, pp.13-17). Amongst these projects, there were very few organisations that founded importance on sponsoring cultural sustainability. Most of these sponsored projects are concerned with sustaining the existence of

the natural environment and the flora and fauna; there were only a handful of projects aimed at sustaining musical and cultural heritage.

Cultural sustainability is important in this age of globalisation. It cultivates “a greater awareness of who we are, we are better able both to understand the beliefs and values we share collectively, and to comprehend the differences in worldview and experience that make us distinct from one another.”^{xiii} In 2012, the Shell Sustainable Grants Program awarded a grant to the Dusun Tatana, an indigenous group from Kuala Penyu, Sabah, to document and educate their community on their cultural and natural heritage.^{xiv} In 2014, a community-based education team has collaborated with the Center of Orang Asli Concerns (COAC) to establish the *PDK Cenwey penaney* (shoots of ingenuity) project at Kampung Ulu Tual, Pahang. The center provides valuable skills and traditions that are relevant to their community, such as basket-weaving and making hog and bird snares (Nicholas, 2014).

One of the research grants and projects that sought to sustain cultural heritage was the digitalisation project by the Center for Creative Content and Digital Innovation at Universiti Malaya. Different groups have made several approaches in sustaining the cultural heritage of the indigenous people. In June 2013, the Center for Creative Content and Digital Innovation collected a series of Mah Meri folktales and retold them in digitalised audio-visual format. The artist, who was not a Mah Meri, depicted the Mah Meri characters and environment of folktales through postmodern art imaginations. The pictures were presented in 3D formats, and the voice over of the stories were in Semai language but had English subtitles. At the same time, a 3D scan and digitisation of the Mah Meri mask collection was conducted in order to document and sustain this heritage.^{xv} In line with attempts to sustain cultural heritage in innovative ways, our research stemmed from an attempt to recontextualise the Semai folktales in a manner accessible to the general public and appealing to children without comprising its “authenticity”.

Sustaining Traditions, Mobilising Technology

Ethnomusicologists are increasingly involved in facilitating the collaborations between communities and researchers to document and sustain their cultural heritage. This approach is known as applied ethnomusicology. In the last two decades, there has been a trajectory for communities to play an active role in the sustainability of their own cultural traditions. This trajectory derives from a concern that projects should grow out of the concerns and needs of the communities, rather than hegemonic policies of interest to academics or people in power (Grant 2014, p.6). The crisis in sustainability has presented opportunities for cultural renewal. Cultural groups revisit and revitalise their traditional practices in response to threats of resettlement, integration and absorption into mainstream identities. Mitigating this crisis requires creative modification that negotiates between “remaining authentic” and innovating to be receptive to the general public.

Our research and production draws on elements from the three approaches discussed by Titon (2009). First, it documents Semai folktales through publications. Second, these folktales are recontextualised from an oral tradition to print and digital media. Third, there is interactive collaboration among indigenous practitioners and academic musicians in the decisions made on the production. In addition, our production also involves the use of technology to extend our creative ideas beyond the traditional methods of storytelling. Grant (2013) writes that policy instruments at the international level provide reference for nation-states to protect and promote intangible cultural heritage, including music. The “Declaration on Cultural Diversity” by the Council of Europe in 2000 propounded the need to support cultural diversity by utilising the advancements in globalisation, such as audio-visual (technology-aids) to promote and respect cultural diversity. Intercultural dialogue and cultural diversity, creativity as economic stimulus was recommended during the European Agenda for Culture in a globalising world. UNESCO’s “Recommendation on the safeguarding of traditional culture and folklore” highlights the value of traditional cultural heritage and highly vulnerable forms of folklore transmitted through the oral tradition. In the “Universal Declaration on Cultural Diversity”, globalisation is presented as an opportunity for

intercultural dialogue and exchange, encouraging the human right to engage in expressing their one culture (p.3).

Dorji (2009) suggests the use of technology in cultural sustainability, such as the creation of a web server and database to host the collection of folktales, various formats for archiving (text, audio and visual), free access to these collections, effective search and retrieval of information, recruitment of contributors and collaboration with colleges in the dissemination Bhutan folktales. He states:

We cannot escape from the forces of globalisation and consumerism that have become so essential to the so-called modern economy and modern way of life. However, these very forces, which are threatening our traditional culture and values, have brought us tools like the digital technology, which we can use, for their preservation and promotion (Dorji 2009, pp.94-95).

In the age where technological advancement facilitates knowledge, global dissemination and accessibility, our research team embraced the use of technology in optimising cultural sustainability. The research project led to the production of four Semai picture books and a digital audio recording in CD format of the narrations and dialogues to the story. This research is unique because underpinning the production is our collaboration with Semai. The research produced from Semai storytellers was adapted into both Semai and Bahasa Melayu text by a Semai novelist, Mahat China, and the pictures were illustrated by Semai artist, Pandak Basri. Therefore, the recontextualisations of original folktales were represented as close to the indigenous people's heart as possible. Villagers from a Semai village in Gombak also recorded the narration and dialogues in Semai language. In addition, original composed musical motives were composed and sound effects to the digital production inspired by Semai music.

In the next section, we present the processes and approaches leading toward the publication of indigenous folktales in print and digital media. In each section, we discuss how we have negotiated between “authenticity” with innovations in our production of the picture book and digital audio production in Compact Disc (CD) format. In our research, we have published four picture books on Bah Luj in three languages: Semai, Malay and English. The stories are titled *Bah Luj and the Evil Spirit*, *Bah Luj and his Five Brothers*, *Bah Luj and the Seven Bataks*, *Bah Luj and the Garuda* (phoenix). In this chapter, we present the story of *Bah Luj and the Evil Spirit*.

Phase 1: Publishing a Semai picture book

The process toward documenting and publishing Semai folktales began with a literature review of Orang Asli stories. Many Orang Asli stories revolve around their origin myths, genealogy, and animal tales. The origin myths of the Semelai communities were documented by Skeat and Blagden (1960), the Mah Meri, Wazir-Jahan Begum (1974); the Temuan, Antares (2006) the Semai, Edo (1990), the Semelai, Hoe (2001) and Santharamohana (2002). In addition, Lim (2004) gathered various Orang Asli fables of animals. Curtis (2013) produced a picturebook on a Temuan folktale titled *Tujal and the Wind* in three languages: Temuan, Bahasa Melayu and English.

We proceeded to interview various Orang Asli storytellers, focusing on the Semai and Temuan groups in Perak and Selangor. While interviewing the storytellers, we found tales of the adventures of Bah Luj (or Mamak Bongsu as he is known in Temuan culture) tended to be very popular. Although Bah Luj stories are well known among the Semai and Temuan, they remain an oral tradition. There is very little documentation or publication of Bah Luj tales and his cultural symbolism among the Orang Asli. Only Antares (2006) has

documented a few stories on Mamak Bongsu (Bah Luj) told by the Temuan of Pertak village in Kuala Kubu Baru, Selangor. Bah Luj is revered as a supernatural and heroic figure among the Orang Asli. Physically, Bah Luj is thin and his body is filled with scabies. Unknowingly, Bah Luj actually has divine supernatural powers but lives a humble and simple life. Many of the antagonists in the folktales about Bah Luj are jealous of his luck and wisdom and scheme to destroy him. Bah Luj usually outwits his enemies through subtle wit and wisdom. Bah Luj is known by different names among Orang Asli subgroups: Bah Luj (Central Semai), Yok Luj (Southern Semai) and Mamak Bongsu or Inak Bongsu (Temuan) (Chan, 2012). According to China (2004), the Semai of Pos Jernang, Ulu Sungkai and Pos Senderut, Ulu Pahang usually called this character “Yok Luj.” The Semai located in Central Perak, such as Bidor, Tapah, Kampar and Gopeng often referred to this character as, “Bah Luj.” “Yok” and “Bah” are designations given to males living in Southern and Central Perak, respectively, and “Han” and “Wak” are designations given to females in the respective regions (Mahat China, per. comm., 6 October 2014).

The Temuans believe that Mamak Bongsu and Inak Bongsu are the male and female human forms of Tuhan (Supreme God) on Earth (Antares, 2006, p. 29). Mamak Bongsu and Inak Bongsu’s seven children are the first family of humans on Earth derived from divine origins. Mamak Bongsu is also known as Mamak Bongsu Pancur Bunga Tuan Kecil—metaphorically referring to him as a flower spray, the source of divine source of inspiration, ideas and creations. Literally, Mamak Bongsu Pancur Bunga Tuan Kecil means “the rainbow that forms when the splashes of water from the waterfalls in the highland meets the rays of the sun” (ibid., p. 30). These references signify that Mamak Bongsu is indeed a revered, divine, heavenly figure among the Temuan. Among the Temuans, there is an origin myth that Mamak and Inak Bongsu are the only survivors of a Great Flood or Great Deluge. Both brother and sister survived on the soggy pulp of the tallest gaharu tree in Gunung Raja (in the Titiwangsa Range in the centre of the Malay peninsula) until the waters subsided. Mamak and Inak Bongsu then procreated and brought forth the first human beings of the Earth (Antares, 2006, pp. 26-27; Chan et.al, 2013, p. 24).

In order to experience the original storytelling setting, we were told to come to the village at night, as the night provided the ambience and inspiration for storytelling. During the storytelling session, the storyteller performed a simple ritual that transported him into the role of a storyteller including wearing a headdress woven from nipa leaves. Because none of the researchers spoke or understood the Semai language, the storytellers originally told us their stories in Bahasa Melayu, and not the Semai language. However, we invited Mahat China, a well-known Semai novelist to join us during the storytelling process. Mahat China is a Semai who grew up in Erong village, Ladang Ulu Bernam, Southern Perak. After the interviews, Mahat helped enlighten us by clarifying parts of the story that were culture-specific. Mahat also retold the stories we transcribed from the interviews into his own creative literary expressions in Semai and Bahasa Melayu. Mahat’s retelling of these stories is an important part of the sustainability of Semai verbal and cultural expressions. Recontextualising the stories from an oral tradition to a written one shifted it from its original context, allowing the stories to be retold by a culture bearer to help position it back more closely to its culture. A verbal expression associated with the Semai culture in the story *Bah Luj and the Evil Spirit* is Bah Luj’s exclamation in Semai and English respectively:

*“Tuj! amen sah eng kenon luj. Kenon betuah. Eng sap, amen Jak Cemenak, biarloh jadik Jak Cemenak, agok hod jadik sengoi. Agok perneng cerendik hod tipu sengoi,”
kisap ya Bah Luj.*

“Tuj! If I am truly the youngest son, the gifted son, I swear, if you are an evil spirit, remain an evil spirit, do not try to disguise yourself as a human. Do not trick and cheat humans,” Bah Luj swore (Chan et. al., 2014)

[INSERT FIGURE 1]

Figure 1. Storytelling session with Bah Kang s/o Bah Mat at Kampung Bukit Terang, Kampar, Perak on the 12 December 2012. From left: Alang Bah Kang, Bah Kang Bah Mat (storyteller), Md. Nasir, Ahmad Hafzan, Clare Chan, Tuan Haji Iberahim.

[INSERT FIGURE 2]

Figure 2. Nighttime storytelling at Kampung Serigala, Ulu Selangor on 14 January 2014. From left: Mayco Santaella, Mahat's wife, Mahat China, Clare Chan, Mohd Azam, Harun bin Itam (storyteller) and his wife.

When the stories were ready, we approached Pandak s/o (son of) Basri, a Semai artist, to illustrate the pictures to the stories. Pandak is a Semai who grew up in Kampung Tanjung Tualang, Batu Gajah, Perak. We divided the stories into pages and requested Pandak Basri to draw each page for us based on his imagination and cultural experiences. Pandak added many cultural symbols that the storyteller did not include, such as blowpipes, darts, rattan baskets, water gourds, fishes, and others affiliated with Orang Asli traditions and culture. Pandak used his own imagination of Semai culture, landscape, and environment to illustrate the orally transmitted stories. On observation of Pandak's remarkable illustrations, we interviewed him on the function, symbolism and cultural meaning of these items. We also conducted literature research on these cultural symbols (resulting in a glossary in the back of the picture book), value-added knowledge obtained from the Semai artist's knowledge. Pandak Basri's contributions are integral to the sustainability of knowledge on Semai way of life: his knowledge of the equipments for hunting, animal and fish traps, types of vegetables and fruit, cooking ingredients, utilities and dishes. Our approach deferred from those of the Centre for Creative Content and Digital Innovation (CCCDI) at University Malaya, which utilised an artist outside of the Orang Asli culture. This artist had sketched his postmodern imaginations of the Mah Meri folktales.

On examination of his pictures, Pandak Basri illustrated Bah Luj, the heroic figure, and Sulong, his elder brother, in *lat* (loincloth), the Orang Asli's ancestral attire. Bah Luj held a blowpipe in his right hand, while Sulong carried a *ragak* (rattan basket) on his back and had a bamboo dart quiver case attached to his loincloth at the waist (see Figure 3). The evil spirit disguised as Old Granny was draped in long white cloth and a white scarf that covered her hair (see Figure 4). Pandak illustrated an Orang Asli village by illustrating the traditional Orang Asli bamboo hut as constructed by the Orang Asli. The hut was built on wooden stilts, the roof woven from *bertam* leaves, the front entrance always has a porch for relaxing and storytelling and a short wooden staircase to the ground. Banana trees were set against the backdrop of the mountains of the Central Titiwangsa Range (see Figure 5).

[INSERT FIGURES 3-5]

Figure 3. Bah Luj and Sulong
(Source: Chan et. al., 2014).

Figure 4. The evil spirit (*jak cemenak*) in Old Granny
(Source: Chan et. al., 2014).

Figure 5. Semai village and villagers (Source: Chan et. al., 2014).

Phase 2: Creating the Audio Recording of the Semai folktales

The digital audio recording of Semai folktales told in narrative and dialogue formats is produced in Compact Disc (CD) format. This audio recording contains the narration and dialogue between the various characters of the story. Aiming to sustain tradition, be nationalistic and internationalise these stories, we insisted on an audio recording in three

languages: Semai, Bahasa Melayu and English. We stressed the importance of recording the stories in Semai, the original language of the culture, to sustain the original meanings in the stories. The translations of the Semai stories into Bahasa Melayu represent the multilingual background of the Semai people, and the translations into English place these stories onto an international pedestal.

Recording the narration and dialogues: Candidates, training and recording

For the recording in Semai language, we invited a few Semai acquaintances to record the narration and dialogue of the story. For the Malay and English version, we utilised staff and students from the Faculty of Music and Performing Arts at Universiti Pendidikan Sultan Idris. Unlike the voiceover narrations done in British accents in early documentaries about Malaysia, this audio recording celebrates the uniqueness of the Malaysian identity. Since the stories were based in Malaysia, we celebrated the diverse ways in which Malaysians from different ethnic and cultural backgrounds spoke Malay and English. Some of these candidates were professional actors and lecturers from the faculty, while some were talented students who needed some training for improvement. The narration and dialogue reflected the unique ways in which those from different ethnic, cultural and social backgrounds speak the same language. A Malay from Kelantan, a Chinese from Ipoh, an Indian from Melaka, a Dayak from Sarawak and a Bidayuh from Sabah would each have different styles of speaking Bahasa Melayu or English.

[INSERT FIGURE 6]

Figure 6. Recording narration and dialogue with Semai friends at the Faculty's music studio. From left clockwise: Loy Chee Luen, Mohd Azam, Raman Bah Tuin, Mahat China, Bah Sani, Clare Chan.

Composing the musical motives inspired by Semai music

Bah Luj and the Evil Spirit is a folktale about an evil spirit that inhabits the body of an old grandmother, Old Granny. She is disguised as an elderly woman who pretends to be good but is malicious. This evil spirit, known as *jak cemenak* in Semai language, guards the old cupu (a sour fruit that resembles a small orange tomato) tree that grows in the Malaysian rainforest. The evil spirit attracts many villagers to the tree by inviting the villages nearby to pick and collect the cupu. The evil spirit, disguised as Old Granny, then invites villager after villager to climb up the cupu tree. They are free to pluck and bring home as many fruit as they want. When the villagers descend the tree, Old Granny strikes them dead with a wooden stick. "She" then drags the dead body home, roasts it over a fire and eats it with "her husband".

The narration and dialogue are embellished with musical accompaniment in three ways: composed musical motives to represent important characters of the story, live recorded sounds from the Malaysian rainforest surroundings and digitalised sound effects from sound libraries. In evoking a sense of "authenticity" and cultural attachment to Semai music, the melodic motives of these characters are inspired by unpublished Semai musical recordings collected from previous research.^{xvi} Inspired by the rhythm and melody of Semai music, we created the melodic motives for the various characters, altering existing sounds and creating new sounds in relation to the story's setting and each character's behaviour and aura. We stress utilising Semai music as the basis for creating the musical motives, as this connects the Orang Asli to the shared values, cultural and social consciousness of their community.

Bah Luj: Melodic motive. The composed soundtrack fuses the sounds and scales of Asli instruments with the Western tradition of motives, such as Wagner's *leitmotifs* and the themes in Prokofiev's "Peter and the Wolf". Bah Luj, Old Granny (evil spirit) and the villagers are each represented by an instrument and theme that reflects each personality and role in the story. Specific recordings of Semai songs and music inspire each theme, and in some cases, the meaning of the original song is used as a basis to connect to the characters in the stories.

The chordophone represents Bah Luj, inspired by music of the *kereb* (plucked bamboo zither). In unpublished music recordings of the songs “Huei huei der” (see Figure 7) and “Nyek nyek lok” (see Figure 8) sung by Bah Kang Bah Mat,^{xvii} the *kereb* uses a scale roughly similar to a Western mixolydian mode with a drone on the fifth scale degree, which is adapted into the Bah Luj motive (see Figure 9). The “Nyek nyek lok” is a teasing love song from a woman to a man. She says, if you are not interested in me, there is still plenty of fish out there (Bah Kang Bah Mat, personal com., 2012). Bah Luj appears to be a simple person, but is actually cunning and a trickster, so the theme composed takes the almost taunting nature of “Nyek nyek lok” into the themes within the story.

[INSERT FIGURE 7]

Figure 7. Excerpt from “Huei huei der” transcription (Source: Chan and Ross, 2012).

[INSERT FIGURE 8]

Figure 8. Excerpt from “Nyek nyek lok” transcription (Source: Chan and Ross, 2012).

[INSERT FIGURE 9]

Figure 9. The Bah Luj theme on the chordophone.

The evil spirit (Old Granny): Melodic motive. The high flute represents the evil spirit disguised as Old Granny. The flute is tuned similarly to the *pensol* (see Figure 10), using only the notes available on the instrument. This serves as an anchor to the original instrument, but also doubles as a dissonance to a listener more accustomed to Western scales. Old Granny’s melody is very disjunct, using quick leaps to a high, piercing tone. The quick grace notes are inspired by “Che nip nyah” which contains similar flourishes. She is always accompanied by a steady percussive beat from the drums. The steady pulse of the *centong*, a pair of bamboo stamping tubes, presented in “Lagu Tok Barat”, (see Figure 13) also resembles a death march to represent the evil spirit’s intentions. The two instruments convey the duality of the Old Granny and the evil spirit (see Figure 13).

[INSERT FIGURE 10]

Figure 10. The approximate scales of the *pensol* in two registers.

[INSERT FIGURE 11]

Figure 11. The Old Granny/evil spirit dual theme played by a flute and drums.

[INSERT FIGURE 12]

Figure 12. Transcription selection from “Che nyip nyah” (Source: Chan and Ross, 2012, unpublished recordings).

[INSERT FIGURE 13]

Figure 13. Transcription selection from “Lagu Tok Barat” (Source: Chan and Ross, 2012, unpublished recordings).

Bah Luj’s brothers and villagers: Melodic motive. The mouth harp represents Bah Luj’s brother and the villagers, inspired by the *rangot*. A single mouth harp represents Bah Luj’s brother, Sulong, and several represent the villagers. With its capacity for variations in timbre, this monotone instrument was chosen to represent the murmur of a crowd.

Sound recording: Technology

The audio recording’s compositions use electronic samples from the Garritan World Instruments sample library. The musical motives are originally composed but the sounds that

represent it derives from those available in the sound library mentioned. For example, the recorded sound of the *Đàn tỳ bà* (a Vietnamese lute) represents Bah Luj, a *bansuri* (Indian subcontinental flute) and the *da gu* (Chinese lion drum)^{xviii} represents Old Granny/evil spirit, and a generic jew's harp represents the villagers.^{xix}

[Insert Table 1]

Table 1. Connections from the original instrument to the Garritan World Instruments library used in the composition.

Instead of a predetermined score, the themes listed are a template for each appearance of the character. In the recording, the themes are adapted to the situation and the actions each character takes. Each instance of the theme is played *ad lib* to not only suit the action of the story, but also maintain a feeling of freshness instead of exact repetition. When Old Granny hits a villager, the first three notes are shortened and quickened to represent a short, swift motion (see Figure 14). The theme repeats more slowly in the lower register when Old Granny dies at the end.

[INSERT FIGURE 14]

Figure 14. Approximate representation of a shortened Old Granny theme.

Sound effects: Natural Environment and Sound Library

Aiming to simulate the sounds of the natural rainforest in the audio recording, the research team recorded live sounds of the natural environment of the Malaysian rainforests. Sounds of the birds, cicadas and gushing of the waterfall of Lata Iskandar, en route to Cameron Highlands were recorded with a Zoom H6. We cut and inserted the sounds that suited the dynamics of the story.

To further enhance the story, sound effects were added to the audiobook. These sounds are not directly related to Asli music or instruments, but are used in a more modern storytelling sense in that they enhance the realism (or fantasy) of the story itself, similar to sound effects used in modern media. The sound effects consist of a combination of natural and supernatural elements. Natural elements such as wind and thunder were used as a foundation, but are used in a manipulated state when the evil spirit appears. The evil spirit represents a disruption of nature, so the sounds are modified by using a simple shift in pitch, timbre, and speed to still give the listener a sense of the natural world, but it also gives a sense that the evil spirit is throwing nature into disarray. The ambient forest sounds used throughout the story are also manipulated and included in the background when the evil spirit appears. Other examples include the striking sound for when the evil spirit kills Bah Luj's brother. This specific sound combines the sound effect expected for a punch or blow in movies or television,^{xx} in addition to the evil spirit motive on flute conflicting with the brother's melodic motive on the jew's harp. To add another supernatural element, non-natural cinematic textures were added and manipulated, largely associated with tense or epic moments.

Conclusion

This research is a culmination of collaborative efforts between various indigenous artists, writers and musicians with musician-scholars to create a production of Orang Asli folktales. This research also combines innovation with elements of "authenticity" and originality. Today, ethnomusicologists pay less attention to preserving music in its authentic form for as Nettl (2010) states, "the idea that there is a pure Czech folk music, a pure Navajo Indian music, a pure Carnatic music in Southern India, those notions are imaginary" (p.6). Palmer (1992) points out that "when a music is transferred from its original culture, it loses some of its essential qualities" (p.32). Joseph (2010) explains that, for this reason, "it is necessary to

uphold the integrity of the music when made out of its original setting” (p.70). The work of ethnomusicologists has expanded beyond documentation and publication to engagement and collaborations with culture bearers. Through their knowledge of the issues, critiques and challenges involved in cultural sustainability, the field is searching for the best ways in which academia can coalesce with communities to enhance the cultural sustainability. Our approach is an experiment in constructing the best possibilities in cultural sustainability that will benefit both communities and academia. Supporting QCRC (2008)’s notion

culture is a living, organic thing; it is not something that you can put in a museum and say, “There we are, everything’s fine, we’ve put your culture in a museum, now you can relax.” The help that we give in terms of preserving the past and tradition of a culture is often very useful, but it is no use unless it is given back to the culture to use, so that members of the culture can learn how to use that and renew their own culture in their own way. Cultures do not stand still; they cannot live in the past all the time (QCRC 2008, p. 9)

Our argument is cultural sustainability in the twenty-first century is the perpetuation of culture in a mobile and changing environment. In the twenty-first century, cultural sustainability can occur in many creative ways, however, we emphasise that innovations should occur through an in-depth understanding and context from where the cultural elements originated. This is possible with the rise of interaction among indigenous practitioners and academics who are both keen to collaborate on productions that will benefit both the indigenous communities and academia. Grant (2013) posits that “safeguarding intangible cultural heritage might not only aim to preserve the past, but to allow for adaptation to the changing environment in ways consistent with the naturally dynamic expression of cultural traditions over time.” In conclusion, we have capitalised on the areas of agency, technology and diverse expertise available in the early twenty-first century in our efforts toward cultural sustainability of integrity.

^{xi} The pioneer stage begins with interviews with Semai or Temuan storyteller’s on the various stories they knew. This paper reports the latest findings of ongoing research titled “Constructing a model for an Orang Asli animation series: Performing Arts, indigenous wisdom and folktales communicated through new media.” This research is funded by the Exploratory Research Grant Scheme (ERGS) awarded by the Ministry of Higher Education from July 2012- July 2014.

^{xii} The Wetlands-International-Malaysia Office.
<http://malaysia.wetlands.org/Whatwedo/Allourprojects/tabid/513/ArticleType/ArticleView/ArticleId/138/Default.aspx>

^{xiii} What is cultural sustainability” Retrieved from
<http://www.vermontfolklifecenter.org/education/cultural-sustainability/cultural-sustainability.php>.

^{xiv} Shell Sustainable Grants. Retrieved from <http://www.shell.com.my/environment-society/shell-in-the-society/malaysia/sd-grants.html>

^{xv} Center for Creative Content and Digital Innovation. Retrieved from
<http://www.3cdium.com/projects/>

^{xvi} Semai songs and music were recorded during a research project sponsored by the Institut Darul Ridzuan’s (IDR)(April 2012-November 2012). The singer was an elderly shaman called, Bah Kang Bah Mat from Bukit Terang village, Kampar, Perak.

^{xvii} These songs were sung by Bah Kang Bat Mat from the Bukit Terang village, in Kampar, the state of Perak. Valerie Ross recorded his singing these songs during our research sponsored by the Institut Darul Ridzuan research grant in 2012.

^{xviii} While the nature of the Asli percussion instrument is different in the story (the original is a bamboo idiophone and the *shi gu* (lion drum) is a more traditional membranophone), the sound quality of the only bamboo instrument available in the library (the Hawaiian kaekeke) is lower than that of the lion drum.

^{xix} Asian instruments in related geographic areas were only available for the purposes of this type of composition. Recordings for the purpose of creating samples for composition would require an entire session of recordings in a studio for each instrument to create a high-quality MIDI sample.

^{xx} In reality, the sound of a lethal blow is nothing like what is heard as a sound effect, but it has come to be expected from an audience accustomed to those media.

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Sustaining Musical Heritage and Adapting to Change among the Kadazan Dusun of Tambunan, Sabah, Malaysia

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The Kadazan Dusun of the inland upland Tambunan District in Sabah, the east Malaysian state of northern Borneo, have a rich intangible cultural heritage. Based on over thirty years of research, this paper briefly looks at some of their major vocal and instrumental musical genres, and shows how change has impacted the performance of these genres.

Change is an inevitable part of human life. Regarding communities undergoing sociocultural change, anthropologist George Appell (1986, p. 33) notes that the capacity for people to deal with and adapt to change involves a positive appreciation of their traditional cultural heritage and access to the cultural past, even through secondary sources such as museums and ethnographies. The devaluation and loss of cultural heritage, he notes, leads to major social problems. Jeff Todd Titon (Fenn, 2003; Titon, 2012, 2014a, 2014b), speaking from an applied ethnomusicological perspective, talks about musical sustainability in the face of environmental, ecological and cultural loss, and sees the ethnomusicologist as an advocate for this sustainability.

But what about indigenous communities such as the Kadazan Dusun whose culture and society remain strong and who have not experienced major environmental and ecological loss, like others in Borneo? What is the traditional musical heritage of the Kadazan Dusun of Tambunan, and how has it been affected by changes over the past generation of thirty-five years or so? What are the agents that have caused these changes? What decisions have people made to sustain aspects of their musical heritage?

The Kadazan Dusun

Sabah has over fifty main Austronesian isoglots or ethnic groups each with their own language of whom thirty-two are indigenous to the state and speak languages from the Dusunic, Murutic and Paitanic families (King & King, 1984/1997). The Kadazan Dusun (also known as Dusun), one of thirteen Dusunic isoglots, are both the largest indigenous group and largest ethnic group overall in Sabah at around twenty-five percent of the state's historical population prior to the recent influx of illegal immigrants from neighbouring countries (Regis, 1989, pp. 409-410).

Located across the interior of Sabah and along parts of the west coast, the Kadazan Dusun trace their origins from waves of migration over centuries out of Nunuk Ragang, a village on the Liwagu River in today's Ranau District in the interior. Like other indigenous Sabahans, they live in sedentary communities of villages formerly composed of longhouses. They are accomplished agriculturalists cultivating wet rice on alluvial plains and dry rice on hills, as well as orchards. Their traditional animal husbandry includes rearing water buffaloes which are used as beasts of burden, bridewealth components, and for feasting and major traditional sacrifices.

The Kadazan Dusun are an egalitarian or acephalous society without social classes, in which leadership is determined by personal aptitude not hereditary status. They have a bilateral kinship system wherein one's maternal and paternal kindred are equally important. Like other Sabahans, they practice gender balance and certain respected senior women were priestesses and ritual specialists (*bobolian* or *bobohian*, or among the coastal Kadazan *bobohizan*) in the traditional religion. Some men were also ritual specialists, but their spiritual status and power were less than the women.

Marriage is legalized by bridewealth (not dowry) consisting of a couple of buffaloes, ceramic jars, brassware and other valuables from the parents of the groom to the parents of the bride. Marriage is exogamous at least as far as third cousins and traditionally up to seven cousins in some cases among the Kadazan Dusun from Tambunan. Intergenerational marriage and unions between close cousins are prohibited as incestuous under the *adat* or customary law (Pugh-Kitingan, 2012, pp. 50-65, 80-92).

Tambunan District is an inland upland plain surrounded by the Crocker Range in the west and the Trusmadi Range in the east. Most of the Kadazan Dusun of Tambunan speak the Central Dusun dialect of Kadazan Dusun which has several sub-dialects that were mostly named according to different longhouse structures in former times or place names. These included the Tambunan, Tuhauwon, Tagaas, Kuriyou, Bundu-Liwan and Liwan. The Tambunan, who live in villages on the central part of the plain around Kampung Karanaan, are said to have been the earliest to come over the Trusmadi Range from Nunuk Ragang. They were called Tambunan, (now applied to the whole District and its main town), because they covered (*moninibun*) the roofs of their longhouses with *tolidus* leaves. The Tagaas around Kampung Kituntul, who formerly constructed their houses of *tagaas* hardwood along high ridges, came from Libodon in the Crocker Range. The Tuhauwon located in villages around Kampung Nambayan, many of whom came from Kionop in the Crocker Range as well as directly from Nunuk Ragang, were so-named because they planted *tuhau* ginger near their houses. The Kuriyou of the remote Kampung Monsok area in the southeast, who speak a separate dialect from Central Dusun, also came from Nunuk Ragang and are said to be the origin of the large Kuijau Dusun isoglot of Bingkor on the Keningau Plain. The Liwan to the north around Kampung Kirokot are the most recent to come into the area over the past 150 years, while the Bundu-Liwan of Kampung Sunsuron and neighbouring villages to the northwest are Liwan who came to the area long ago via the Bundu Tuhan cluster of villages in Ranau District (Pugh-Kitingan, 2011a, pp. 239-240). Today, these terms are rarely used due to intermarriage and movement between villages, although there remain dialectal differences across the District.

The Kadazan Dusun of Tambunan are renowned for their rice agriculture and associated celebrations. The *Kaamatan* is a traditional family celebration at the end of harvesting or *mongomot*. It also occurs at the village level, when all families in a village celebrate at one time with feasting, gong-beating and dancing. Similar celebrations occur in rice cultivating cultures throughout Sabah. Over the past sixty years, this Harvest Festival or *Pesta Kaamatan* has developed into a major Malaysian festival, celebrated at village, District, State and National levels.

The *Moginakan* is the most important celebration among the Kadazan Dusun of Tambunan. Organized by a conjugal family during times of peace and abundance of rice and livestock, it consists of three or more days of feasting, gong music and dance open firstly to immediate kin of both the conjugal family heads (mother and father), then to more distant kin, then non-related villagers, and finally friends from afar. A *Moginakan* honours the Creator for his providence, by sharing a family's abundance of rice and meat with others. It is celebrated by adherents of the traditional religion, who engage *bobolian* to do rituals, as well as by Christians without the services of priestesses (Pugh-Kitingan, 2012, pp. 119-130).

Roman Catholic missionaries first came to Tambunan in the late 19th century from Penampang and Papar on the coast. Today, most Kadazan Dusun are Christians of various denominations, among whom the Roman Catholic church predominates in Tambunan. Some have also become Muslims, and a few still follow traditional religious practices. Education came with the missionaries in the old days, and today many people from Tambunan are civil servants, outstanding professionals and political leaders.

Traditional Music in Tambunan

The Kadazan Dusun of Tambunan have a rich intangible cultural heritage that includes a wide variety oral literature and vocal music and instrumental music. This has been handed down over generations largely through a process of indirect enculturation, as children have acquired

musical knowledge through observation and personal practice. Ritual chanting, however, involved direct instruction of a novice by a priestess.

Oral Literature and Vocal Music

The oral literature of the Kadazan Dusun of Tambunan includes *sundait* (riddles) told in the rice fields during harvesting, *tanong* or *tangon* (folk tales) told to children, and *susunan* (legends) that recall events in oral history, as well as the long sacred poetry or *rinait* chanted by *bobolian* during ritual ceremonies, and various genres of secular vocal music. *Tanong* and *susuyan* are prose forms, while the other genres are poetic. Secular poetic genres include *sinding* or “songs,” older classical forms, and extemporaneous call-and-response genres. Apart from chanting the *rinait* which can only be performed by a qualified *bobolian*, there are no gender or age restrictions on performing these genres (Pugh-Kitingan, 2012, pp. 146-156).

The *rinait* constitute a huge body of ritual poetry and are memorized and chanted (*mogondi*) by the *bobolian* during major ritual events. *Rinait* are structured in pairs of lines in which the first line is in the everyday language for the human world and the second, of the same meaning, is in a ritual language for the spiritual realms. They describe the creation of the world and various events in the spiritual realms as well as *adat* prescriptions and prohibitions. Performance styles vary according to the particular *rinait* and its performance context, from soft recitation to loud chanting (Pugh-Kitingan, 2004, pp. 59-61).

While *rinait* are performed only in the correct ritual context, non-ritual vocal music occurs as entertainment at other social events, including gatherings in the home. Older non-ritual genres include *kandagoi*, in which a soloist sings in an old poetic language with an anhemitonic pentatonic melody. The poetry has deep symbolic meanings. Lines are traditionally sung twice, followed by a chorus singing the refrain *kandagoi* (Pugh-Kitingan, 2004, pp. 55-56; 2012, p. 154).

Sudawil is a call-and-response genre which features a group of men and a group of women calling stanzas back and forth using anhemitonic pentatonic melodies. Each stanza has four lines in which the first and fourth rhyme, while the second and third rhyme. The first two lines refer to something in the natural environment and have a symbolic meaning, while the second two lines explain the meaning. This genre is said to have originated from people calling messages back and forth across the hills (Pugh-Kitingan, 2004, pp. 52-55; 2012, p. 155).

Andayayong is an extemporaneous call-and-response genre that takes place at night in the threshing hut at the end of the rice harvest, in the northern part of Tambunan District, especially in Kampung Kirokot. An old man and a few old women with arms around each other's shoulders shuffle anticlockwise around in a circle. This dance is called *kumiyoi*. The man calls out *andayayong* and a line of verse, followed by the group repeating the line. Lines can refer to anything in the surrounding environment or any event in the village, and the purpose of the performance is to entertain and enable everyone to stay awake and complete threshing the rice until morning. A similar genre named *indayayang* with the dance called *kimiod* is performed in Kampung Tikolod in the south of the District (Pugh-Kitingan, 2004, pp. 57-59; 2012, pp. 155-156).

Sinding or songs comprise the most ubiquitous vocal genre in Tambunan. This is a wide category that includes love songs, drinking songs, battle songs, church songs, and pop songs heard on the radio. Themes vary, but *sinding* always have a poetic structure and are traditionally sung in a loud full-throated style using anhemitonic pentatonic melodies (Pugh-Kitingan, 2004, pp. 50-52, 153-154).

Instruments and Instrumental Music

Kadazan Dusun instruments from Tambunan include one membranophone (a single-headed drum), idiophones (particularly gongs), aerophones (mouth and nose flutes, a jew's

harp, a mouthorgan) and chordophones (two idiochordal tube zithers, a boat lute). Most of these instruments are played solo for personal entertainment in purely secular contexts. Gong ensembles, however, are played at both social ceremonial events and in ritual contexts. In Tambunan, both men and women play all the instruments (Pugh-Kitingan, 1988; 2003; 2012, pp. 136-182).

Drum. The *karatung*, also known as *gandang* or *gondang* in some villages, is a single-headed drum with a body made from hardwood. Its head is made from deerskin, goatskin or cowhide and is affixed to the body by a cane hoop into which wooden tuning pegs (*binsolot* or *ponginsolot*) are inserted (Pugh-Kitingan, 1988, pp. 25-26, 35, 53-54; 2003, pp. 4-5, 34; 2004, pp. 19-20, 83; 2012, pp. 157-158). The drum is used as a ritual object in major rituals such as those of the *Moginakan*. When played with the gong ensemble in non-ritual ceremonial contexts, however, its beating supports the composite rhythm of the gongs.

Gong ensemble. Brass or bronze gongs, traded into the interior from west coast in former times, are items of wealth as well as musical instruments (Pugh-Kitingan, 2010). The *sopogandangan* ensemble, also known as *songkogungan* in some villages, normally consists of seven hanging gongs of various types and sizes, a small hand-held gong, and the drum (see Figure 1). The gongs have various generic names as individual objects, but when included in the ensemble, they each acquire a musical name that denotes the particular rhythm that they play. For example, the small hand-held gong is a type of *sanang*, but is usually called *koritikon* (indicating a rapid syncopated knocking sound) when included in the ensemble among older “Tambunan” villages on the plain. The seven hanging gongs include three *sanang* (small, thick, steep-sided brass gongs with flat front surfaces around their bosses and back diameters smaller than the front), two *tagung* (large thin brass gongs with raised ridges around their bosses, short sides and back diameters roughly the same size as the front) and two *tawag* (large, deep-sided bronze or brass gongs, with raised ridges around the boss and back diameters much smaller than the front). The gongs are hung more or less in order of size, and the music starts from the hand-held gong and drum (if present) then to the hanging *sanang*, *tagung* and finally *tawag*. Musical names for the gongs vary according to village and dialect. The numbers of gongs and rhythmic complexity of the music produced is greatest among the oldest wet-rice planting villages on the plain compared to less old hill villages further away (Pugh-Kitingan, 1988, pp. 26-27, 36, 54-56; 2003, pp. 5-11, 35-37; 2004, pp. 129-133, 137-140, 143-146; 2011c, pp. 204-208; 2012, pp. 139-163).

INSERT

Figure 1. The *sopogandangan* ensemble of Kg. Karanaan with (from far right) the hand-held *korotikon*, the *karatung* drum, then seven hanging gongs *bobogon*, *kuribadon*, *tagung tatahis*, *tagung tohombou*, *kutoukutowon*, *tongtoongon*, and *tawag*

Tinondot is the term for gong ensemble music played in both ritual and social celebratory contexts. It is a vibrant syncopated piece of music created from the colotomic patterns of the individual instruments. It marks the processual flow of the *Moginakan* and social events such as weddings, *Kaamatan* and special church events. It also accompanies *magarang* or dancing in these social contexts, when it can also be called *magarang*.

Dunsai is another kind of gong music played during mourning prior to burial only among older villages on the central part of the Tambunan plain. Except for stylized crying and *dunsai*, all performances of vocal and instrumental music are prohibited as well as the beating of the hand-held gong and the drum. Only the hanging gongs are used for *dunsai*. They are taken down from the gong-stand, laid on the floor, and bashed repeatedly in a single monophonic beat. This can be heard from afar and announces the death to the human world. *Dunsai* is also believed to usher the deceased into the afterworld (Pugh-Kitingan, 2012, p. 97).

Other idiophones. Sets of bamboo *togunggak* are occasionally used as temporary instruments instead of gongs. Made from young *poring* bamboo, each idiophone is closed at one end by a node in the bamboo while its other end is shaped too produce the sound of a particular hanging gong in the ensemble, with different lengths producing different pitches. Each performer holds his or her respective bamboo at its basal end and hits it with a rubber or gum ended mallet. The composite sound of the seven bamboo idiophones resembles that of the gong ensemble.

The rare *babangau* is a single length of bamboo, around half a metre long, closed by a node at one end, with the other end shaped into two vibrating “arms.” The performer holds the instrument at its basal end and strikes the two arms against the palm of the other hand to beat out the syncopated rhythm of gong music. This instrument is used only occasionally to support other solo instruments or singing.

Aerophones. The *suling* is a short five or six-holed endblown mouthflute made from small *sumbiling* (or *sumbihing*) bamboo (see Figure 2). *Suling* music may imitate the tunes of well-known *sinding* or be the personal composition of the performer (Pugh-Kitingan, 1988, p. 27-28, 37, 46, 56; 2003, pp. 12-13, 37; 2012, pp. 168-169). Transverse or sideblown flutes were not traditionally played in Tambunan, but today some people make them having seen similar instruments elsewhere.

INSERT

Figure 2. En. Thadius Yongut of Kg. Tikolod playing *suling*
(Photograph: Jacqueline Pugh-Kitingan, 1987)

The *turali* (or *turahi*) is a noseflute made from *sumbiling* bamboo (see Figure 3). It has four finger holes—one on the back of the instrument and three on the lower front. The lower end of the instrument is open while upper end has a hole in the node. This end is pressed against the nostril with the hole exposed. A soft sound is produced when breath from the nostril passes across this hole. The performer uses a circular breathing technique to sound the instrument. The *turali* is laid in the palm of the hand whose fingers control the lower three holes, while the thumb of the other hand controls the back hole. *Turali* music from the northern and southern parts of Tambunan often imitates the melodies of *rinait* and may have formerly been used to practice the *rinait* by novice *bobolian*. Among older central villages on the plain, however, the sound of the *turali* is melancholic and imitates the different kinds of *pogigiad* or stylized crying of women during mourning prior to burial. The instrument is not performed during mourning, however when instrumental performance is forbidden, but is played months or years later to express sadness as the performer remembers a departed relative. Nowadays, this *turali* is sometimes made with a mouthpiece to enable those unskilled in playing the noseflute to blow the instrument. The melancholic music of the mouth *turali*, however, is the same as for the traditional noseflute (Pugh-Kitingan, 1988, pp. 27, 37, 46, 56; 2003, pp. 12-13, 37; 2004, p. 94; 2012, pp. 169-171).

INSERT

Figure 3. Puan Gontit Poyotuk of Kg. Tikolod playing *turali*
(Photograph: Jacqueline Pugh-Kitingan, 2012)

The *bungkau* is a jew’s harp or free aerophone cut from a strip of *polod* palm skin with a special sharp knife or *pais* to form a thin *sodi* or lamella down the middle of the strip. It is held between the lips while its basal end is struck with the other hand (see Figure 4). This causes the *sodi* to vibrate between the frame of the instrument producing air turbulence. The upper frequencies in this air turbulence conform to the natural harmonic series of the *bungkau*, and are resonated and reshaped by the mouth to produce music. There are five different styles of *bungkau* music from Tambunan. The instrument is played as a diversion to pass time such as when resting during midday while working in the rice fields (Pugh-Kitingan, 1988, pp. 30-33, 50, 60; 2003, pp. 22-25, 41; 2012, pp. 176-177).

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Figure 4. En. James Suil Soligun of Kg. Tikolod playing *bungkau*
(Photograph: Jacqueline Pugh-Kitingan, 2011)

Possibly the most famous aerophone from Tambunan is the *sompoton* mouthorgan (Figure 5). This is said to have originated from Kampung Tikolod many generations ago, from where it was traded throughout the entire Kadazan Dusun area and into neighbouring Dusunic, Murutic and Paitanic communities (Pugh-Kitingan, 2011b). The *sompoton* consists of a double-layered raft of eight *sumbiling* bamboo pipes inserted into a gourd wind chamber and affixed with beeswax; seven of the pipes have small *sodi* made from *polod* palm skin inserted into their lower sides, while the eighth pipe (one of the two longest) is soundless and merely balances the raft. The pitches of the *sodi* are resonated by the pipes when the performer sucks and blows through the gourd's mouthpiece. Two front and one back pipes are played by closing small holes in the pipes near the gum line of the gourd with fingers of the left hand, while three pipes to the back of the shorter raft can be stopped on top with the three longer fingers of the right hand. *Sompoton* music is traditionally the personal composition of the solo performer who develops a repertoire of named pieces. These may reflect the beauty of the surrounding countryside, or express longing for an absent beloved, or may even imitate *tinondot*. Sometimes a group of three or more *sompoton* accompanied by a *koritikon* gong imitate *tinondot* for *magarang* at a small social gathering (Pugh-Kitingan, 1988, pp. 30, 48-49, 59; 2003, pp. 17-22, 39-40; 2004, pp. 33-34, 67-82, 104-106; 2012, pp. 172-175).

INSERT

Figure 5. En. Thadius Yongut of Kg. Tikolod playing *sompoton*
(Photograph: Jacqueline Pugh-Kitingan, 1985)

Chordophones. The *tongkungon* is a plucked idiochordal tube zither made from large *poring* bamboo (see Figure 6). The numbers and names of the strings correspond to the numbers and musical names of the hanging gongs in the gong ensemble of the performer's village. The performer holds the zither in a somewhat upright position or supported against a wall at its upper end and plucks the strings with his or her fingers to imitate *tinondot* gong music. Sometimes a *tongkungon* may be played in a duet with another instruments, such as the rare struck *takobung* zither (Pugh-Kitingan, 1988, pp. 31, 41, 51, 60-61; 2003, pp. 25-28, 41-42; 2004, pp. 34-35, 99, 106-112, 125-149; 2012, pp. 178-179).

Like the *tongkungon*, the *takobung* (also called *tongkibong*) is an idiochordal tube zither made from *poring* bamboo. It has a flat surface cut out from one side with two or three strings. One string has a small bamboo tongue in the middle that flaps over a hole in the surface. The instrument is laid horizontally and the performer strikes various parts of the strings and the tongue with a thin stick, while hitting a hole at one end of the bamboo with his hand. The resulting sound resembles *tinondot* (Pugh-Kitingan, 2004, pp. 36-37, 100, 107, 127; 2012, pp. 179-178).

INSERT

Figure 6. En. Maikon Gulaab of Kg. Tikolod playing *tongkungon*
(Photograph: Jacqueline Pugh-Kitingan, 2012)

The *sundatang* is a very rare long-necked, somewhat oval-bodied strummed lute (sometimes called a boat lute) made from a single log of jackfruit tree wood (see Figure 7). The base of the body curves up as a thick support or "tail." It has two brass or (nowadays) wire strings, with bamboo frets lying flat against the neck under the shorter string. The tuning pegs cross diagonally through the head at the top of the neck. *Sundatang* music from Tambunan may have accompanied singing in the past, although it usually imitates *tinondot*. Sometimes it was played with a *koritikon* gong to accompany the slow sedate *magarang*

sundatang dance. This was similar to *magarang* accompanied by the gong ensemble, but the arms were not raised so high, and hence was more suitable for dancing in a confined space such as a room or longhouse apartment (Pugh-Kitingan, 1988, pp. 32, 52, 61; 2003, pp. 28-31, 42; 2004, pp. 37-38, 100-101; 2012, pp. 181-182).

INSERT

Figure 7. Puan Kimoi of Kg. Timbou playing *sundatang*
(Photograph: Jacqueline Pugh-Kitingan, 1985)

Effects of Change on Musical Culture in Tambunan

The *bobolian* and performance of the *rinait* have gradually declined in Tambunan over the past century due to religious conversion, the availability of medical services so that healing rituals are no longer required, and education, as well as the demise of older practitioners. Although they have a ceremonial function in the District-level *Kaamatan* and still perform rituals at some *Moginakan*, the *bobolian* are dwindling in numbers and knowledge of the *rinait* is diminishing as they pass away. Nowadays, most young women prefer secular education, and some continue on to university and careers elsewhere.

Over the past thirty-five years, Tambunan District has experienced much change in terms of infrastructure development. The completion of the road from Kota Kinabalu to Tambunan township and on south to Keningau during the 1970s enabled consumer goods such as television sets, cassette players and later CDs and VCDs to come into the District. Today, most villages have electrical power. New media have been introduced. Radio was once the main medium for outside news. Today, many people have access to Astro cable television. Similarly, while in the past there might be one landline telephone in a village on the plain, today most people throughout the District use mobile telephones and have access to internet services.

The increasing prevalence of these new media have impacted the performance of traditional entertainment genres. Formerly after an evening meal, for example, a family might listen to *tanong* or *susuyan* told by their elders, old songs, or someone playing the *sompoton* or *tongkungon*. Today, in homes that have Astro, families tend to gather around the television to watch their favourite programs after dinner, rather than engage in traditional musical pastimes. Young people from these homes are becoming enculturated in the foreign cultures and music of the programs that they watch on television.

Over the past few years, agricultural mechanization has come to villages on the plain, and this has affected the performance of some genres. Nowadays, villagers close to Tambunan township rent tractors for ploughing and harrowing instead of using the traditional plough and harrow pulled by a buffalo. Formerly, men did the ploughing and harrowing in preparing the wet rice field, while the women and children made the bunds with their hands. Although the traditional rice varieties are preferred, harvesting nowadays is often done using a sickle (requiring the harvester to bend over) or sometimes a mechanized combine harvester, instead of the traditional method using a small palm-held harvest knife (*linggaman* or *hinggaman*) tied to the hand to cut the rice stalks as the harvester walks forward. Traditional cultivation methods allowed family members and friends to tell stories, riddles and jokes while working. Increased mechanization has led to a decline in social interaction during field preparation and harvesting and a loss of much contextual space for these genres.

Sinding, however, has grown into a popular contemporary genre. Around sixty years ago, the guitar was introduced through trade with the coastal Kadazan. People began accompanying *sinding* and church songs with the guitar. Over the past forty years, *sinding* accompanied by electric bands has developed under the influence of similar music from Penampang and foreign popular music heard over the radio and on television. Many of the songs have traditional anhemitonic pentatonic melodies, but these are accompanied by the diatonic harmonies of the band instruments. The accompaniment resembles the slower pace of the Penampang Kadazan *sumazau* dance music, instead of the syncopated patterns of the Tambunan *magarang*. This genre development has given rise to a huge Kadazan Dusun

popular music industry utilizing cassettes and nowadays CDs and karaoke VCDs. It has also led to similar popular music developments among other groups, such as the Rungus, east and west coast Bajau, the Timugon Murut and other communities. There are many acclaimed popular singers from Tambunan including the late Datuk John Gaisah, Justin Lusah, Ambrose Mudi, David Yuntala, Mary Intiang, Evaristus Gungkit, and Jimmy Palikat. Some, such as Candy Clement (Candy Clement Liku of Kampung Monsok) and Nera Francis (Queenara Francis Kitingan of Kampung Karanaan) have become recognized as Malaysian artistes at the national level.

Although they have declined, traditional solo instrumental genres are still extant in many villages. The *sundatang*, which was extremely rare in the past, is now only played by one elderly lady in Kampung Timbou (Plate 7). The *sompoton*, which has become a cultural icon for Sabah and is utilized in the tourism industry, has declined markedly in its village of origin. Thirty years ago, most people in Kampung Tikolod played *sompoton*. Today, only eight elderly men and one younger man play the instrument. Encik Juie Maikon, the younger man, is aged around 45 years. Today, he is the only performer from Kampung Tikolod who can cut the intricate *polod*-palm *sodi* for the sounding pipes, because older performers can no longer see clearly to do this.

Gong ensemble music continues to be important for social ceremonial events such as village *Kaamatan* and weddings, where electric bands and karaoke sets may also be present. It is essential for *Moginakan* celebrations which do not include newer musical media. It is also played for special church events and in newer contexts, such as stage performances for District and State level *Pesta Kaamatan*. Among villages on the Tambunan plain, gongs continue to be essential for beating *dunsai* during the three days mourning prior to burial.

Cultural Continuity and Local Efforts towards Sustainability

People from Tambunan are aware of changes affecting the continuity their intangible cultural heritage. Many elderly folk complain that their grandchildren appear indifferent to the music of their forebears and prefer modern popular music. Various strategies have been used to sustain and promote traditional music, including utilizing festivals, developing group instrumental music, fusing old and new genres, organizing courses in traditional music, reviving older genres, and utilizing outside “interventions.”

Festivals

Pesta Kaamatan at both District and State levels officially open with a ceremonial performance of the *rinait* inviting the *bambarayon* (soul or life force of rice crops) to return to the rice barn by priestesses. In Tambunan, this *rinait* is named *Papa'atod do Siduwan do Parai* while in Penampang it is called *Magavau*, and there are various names for it in other languages and Districts. Today's official *Kaamatan* begins on 1 May in a selected District, followed in turn by other Districts throughout the month until the State level celebrations on 30 and 31 May at the *Hongkod Koisaan* (Unity Centre) of the Kadazan Dusun Cultural Association in Penampang. At the penultimate State level main day on 31 May, priestesses from the District chosen to begin the *Kaamatan* on 1 May will perform their ceremony on stage at the *Hongkod* venue. Festivals throughout the Districts and on 30 May at the *Hongkod* include performances of indigenous music and dance from all Districts, as well as contemporary music which sometimes includes one or two traditional instruments.

The *Bamboo Fest and Battle of the Bands* began in Tambunan in 1989 and ran annually until 2000. It focused on daytime exhibitions of bamboo crafts, including musical instruments. At night, it featured the electric band competition *Battle of the Bands*, in which bands were supposed to include one or more traditional instruments.

Group Instrumental Performances

Traditional solo instruments, such as *bungkau*, *suling*, *tongkungan* and *sompoton*, have been combined into groups to play *tinondot* and popular Kadazan Dusun *sinding*, to increase their appeal among younger generations as well as for tourists. Similarly, groups of *sompoton* have played on state at festivals since the 1980s and to welcome the arrival of VIPs. These efforts have musical limitations, because instruments must share the same basic pitch arrangement and play in unison, unlike complex traditional solo music that reflects the creativity of the performer (Pugh-Kitingan, 2004, pp. 75-77, 79-81).

Fusion of Old and New

Attempts have been made to include traditional instruments with electric band instruments through the *Battle of the Bands*, as mentioned above, and the *Bintang Kaamatan and Kugiran* of the *Pesta Kaamatan* during the 1980s. The *Kugiran* section, which was eventually dropped, was an electric band competition that required the inclusion of at least one traditional instrument. It was felt that this would attract young people to learn traditional instruments, but it is not apparent that this happened (Pugh-Kitingan, 2004, pp. 77-78). *Bintang Kaamatan*, now renamed *Sugandoi*, continues as a very popular Kadazan Dusun singing competition using *sinding* and Malay pop songs accompanied by electric band instruments.

Courses in Traditional Music

During the 1990s, the Kadazan Dusun Cultural Association organized courses in traditional music with village musicians as teachers during school holidays in Tambunan, and after office hours in Penampang and Tamparuli. At the time, these courses mostly attracted civil servants and business workers, rather than children (Pugh-Kitingan, 2004, pp. 78-79). In recent years, however, some villagers in Tambunan have successfully trained children to perform *magarang* accompanied by adults playing *tinondot* or group *sompoton* for stage presentations at District *Pesta Kaamatan*. Primary schools in Tambunan have also begun to hold their own *Pesta Kaamatan* dance competitions.

Reviving Vocal Genres

Over the past decade, a group of women from Kampung Timbou on the Tambunan plain have begun learning to perform the *rinait* and older secular vocal genres such as *kandagoi* from older practitioners. Led by Madam Regina George Kiloh (see Figure 8), the women perform during *Kaamatan* and when demonstrating traditional agricultural practices for tourists who stay in village Homestays in Tambunan. The women, who are mostly Roman Catholics, are not interested in becoming spirit mediums like the *bobohian* of former times, but wish to preserve the oral literature of their people.

INSERT

Figure 8. Mdm. Regina George Kiloh (right) and women from Kampung Timbou who are learning the *rinait*

(Photograph: Jacqueline Pugh-Kitingan, 2007)

Utilizing Outside “Interventions”

Fieldwork for undergraduate courses in Ethnomusicology at Universiti Malaysia Sabah has taken students to Kampung Tikolod, Tambunan, said to be the origin of the *sompoton* mouthorgan. At the village Community Hall, students are introduced to the village headman, the *Pengerusi JKKK* and also to Encik Juie Maikon and elderly traditional musicians who play *sompoton*, *tongkungan*, *takobung*, *turali*, *suling*, *bungkau*, *togunggak* and other instruments. The students are organized into groups, each under the tutorship of a musician. After interviewing their tutor about his or her life history and instrument, they are

taken to the fields and bush surrounding the village, to source materials for instrumental manufacture. They are then shown how to make and play the instruments.

These fieldtrips have not only brought university students from diverse ethnic and cultural backgrounds to an appreciation of Kadazan Dusun musical culture and village life, but have begun to awaken interest in traditional music among younger villagers. During fieldtrips that coincide with school holidays or weekends, a few primary school children sometimes tag along with the students, encouraged by the musicians. Some of the older musicians have also started including unemployed Form 5 graduates as apprentices to assist with instructing the students. Hopefully these strategies will further encourage the younger generations to learn the musical culture of their forebears (Pugh-Kitingan, 2013, pp. 5-8).

Conclusions

The Kadazan Dusun of Tambunan are a stable, cohesive society with rich cultural and musical traditions. Unlike many indigenous communities in other parts of Borneo who have suffered major environmental and ecological losses due to timber logging and, more recently, large scale commercial oil palm plantations, they have retained their land and maintained their society and culture.

Nevertheless, changes over the last thirty-five years have affected their musical heritage, especially secular genres of vocal and solo instrumental music which have declined. The main agents of change have been technological and media developments, particularly access to Astro cable television, as well as CDs, VCDs, karaoke sets and the internet. These media have provided new genres of entertainment that have replaced the telling of folktales and legends and the performance of older secular vocal and instrumental genres in many homes. Mechanization of agricultural practices in some villages, while saving time and alleviating heavy work, has also contributed to the decline of some traditional entertainment genres in these places.

Unlike other vocal music genres, however, *sinding* has been readily adapted to change. The addition of guitar and diatonic band accompaniment to the songs, both old and new, has ensured the continuity and resilience of the genre albeit in a somewhat modified form. This has also led to the rise of a burgeoning Kadazan Dusun popular music industry. The Kadazan Dusun today regard modern *sinding* as an integral part of their musical culture and a distinctive expression of their ethnic and cultural identity.

Although the ritual aspects of its performance have diminished, gong ensemble music or *tinondot* is also a resilient genre that continues to be played on important social ceremonial occasions such as weddings, *Kaamatan* festivals, special church events, and *Moginakan*. Its unique sound announces the occasion to listeners from afar, it frames the processual flow of these events and supports *magarang* or dancing. The sound of gongs playing *dunsai* is also essential during mourning prior to burial in older villages on the Tambunan plain. The ceremonial importance and use of gongs on these occasions underscores the importance of social solidarity among the Kadazan Dusun. *Moginakan* are social occasions for sharing a family's abundance of food (grain and meat) with kin and friends. Weddings, not only unite husband and wife, but form alliances between two unrelated families and two sets of unrelated kindred. Church events bring people together in a common bond of faith. Mourning brings together the family of the deceased, their wider kindred, the village, friends and acquaintances from afar to grieve together and farewell the deceased.

Musicians and members of the older generations, who are concerned about the continuity of their musical heritage, have devised various strategies to strengthen its resilience and promote its genres among the youth. At the macro or social level, they have utilized festival events to present and promote traditional music and dance; they have organized traditional music courses, and have made use of outside interests (UMS student fieldwork) to encourage interest among the young. At the micro or musical level, they have formed ensembles of traditional instruments and have experimented with combining Kadazan Dusun instruments and electric bands to create new music. They have also sought to revive ritual

poetic performances for posterity. While adapting to change, they have helped to sustain their musical heritage.

Glossary

adat—customary law

andayayong—extemporaneous call-and-response genre performed during threshing in Kg. Kirokot

babangau—single bamboo idiophone hit against the palm of the hand

bambarayon—soul or life force of rice, other crops and livestock

bobolian, *bobohian*—priestess (Central Dusun)

Bintang Kaamatan—Harvest Festival Star (*bintang* = Malay “star”), singing competition

bobohizan—priestess (coastal Kadazan)

bungkau—jew’s harp made from *polod* palm skin

dunsai—special gong music for mourning the dead before burial

gandang, *gondang*—alternative names for the *karatung* drum

Hongkod—“Centre”

Hongkod Koisaan—lit. “Unity Centre,” headquarters of the Kadazan Dusun Cultural Association

indayayng—extemporaneous call-and-response genre performed during threshing in Kg. Tikolod

Kaamatan—major feast held at the end of the rice harvest

kandagoi—an old genre of secular vocal music

karatung—single-headed drum with tuning pegs around the head

kimiod—anticlockwise circular dance that accompanies *indayayang* in Kg. Tikolod

koritikon—small *sanang*-type hand-held gong

Kugiran—Malay for “band music”

kumiyoi—anticlockwise circular dance that accompanies *andayayong* in Kg. Kirokot

linggaman, *hingaman*—traditional harvesting knife

magarang—Kadazan Dusun term for dance and dancing from Tambunan

Magawau—coastal Kadazan name for *Papa’atod do Siduwan do Parai*

Moginakan—major feast organized by a conjugal family in times of plenty

mogondi’—chanting of the *rinait*

mongomot—harvesting

moninibun—to cover

pais—small sharp knife for cutting a *bungkau* and the *sodi* for a mouthorgan

Papa’atod do Siduwan do Parai—*rinait* for restoring the *bambarayon* to the grain in the rice barn

Pesta Kaamatan—Harvest Festival

pogigiad—stylized crying by female mourners before burial of the dead

polod—species of small palm tree

poring—species of large-diameter bamboo

rinait—long sacred poetry recited or chanted by priestesses

sanang—small, thick, deep-sided brass gong with flat front surface around its boss

sinding—songs, singing

sodi—lamella of a jew’s harp; *polod* palm skin reeds in the pipes of a *sompoton*

sompoton—Kadazan Dusun mouthorgan

songkogungan—alternative name for *sopogandangan* gong ensemble

sopogandangan—gong ensemble

sudawil—extemporaneous call-and-response genre sung between two groups of people

Sugandoi—singing competition

suling—endblown mouthflute

sumazau—coastal Kadazan term for dance and dancing from Penampang

sumbiling, *sumbihing*—species of thin bamboo

sundait—riddles

sundatang—rare long-necked, strummed boat lute with metal strings, made from jackfruit wood
susuyan—recited legends
tagaas—a type of wood
tagung—large, thin, narrow-sided, brass gong with a raised ridge around its boss
takobung, tongkibong—struck, two or three-stringed, idiochordal, tube zither of large *poring* bamboo
tanong—folk tales, stories
tawag—large, deep-sided, brass or bronze gong with a raised ridge around its boss
tinondot—gong ensemble music for celebration and to accompany dancing
togunggak—a set of struck bamboo idiophones
tolidus—type of leaves used for roofing
tongkungan—plucked, seven-stringed, idiochordal, tube zither made from large *poring* bamboo
tuhau—type of ginger
turali, turahi—noseflute

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The Pipe Organ in Malaysia

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This chapter is an exploration of the pipe organ in Malaysia. It will point out that the pipe organs in Malaysia represent significant heritage value, though there are relatively few instruments remaining. The communities who are charged with responsibility for these instruments – their maintenance, preservation and restoration – need support in understanding their role and responsibilities to a wider Malaysian culture. This is possible through an academic documentation of their instrument, assessment of its significance in the cultural heritage of Malaysia, and wide community support in undertaking and financing historically appropriate restorations. The exemplar of a very successful restoration in Penang, supported by the wider community, shows how this can happen. Although mostly housed in Christian places of worship, these instruments form part of the heritage of all Malaysians, regardless of religion or background. It is important to understand that this is a significant part of Malaysia's history and heritage, so the processes which are set out in this chapter provide some pointers towards retaining and continuing to vivify the instruments in the various communities charged with their care and maintenance.

For the long-term viability of the pipe organ, it is important to develop a cohort of younger students learning to play the organ and so gaining an understanding of its musical heritage – an outcome of the recent restoration in Penang. A further indicator of the energy and support of any instrument in today's musical world is the interest music creators and composers show in writing for it. In this measure, the organ again displays positive signs. The chapter explores several examples in some detail and in different contemporary musical styles, showing something of the range of musical styles in which the pipe organ is “at home”.

Despite the indisputable problems that have and continue to exist, this chapter argues that there are a number of positive signs of life and growth, which suggest that there is an opportunity for the pipe organ to create a continuing cultural sustainability and even vibrancy in contemporary, post-colonial Malaysia.

Understanding the interculturality of both the instrument in Malaysia, and of Malaysian music now being composed for it, demands a theoretical and philosophical perspective. Models of interculturality, which form the outcomes of a Fundamental Research Grant undertaken by Penny and Blackburn, et al^{xxi} provide solid and clear pointers which will be enunciated later in this chapter. The theorists Michel Foucault and Nicholas Bourriard each provide useful insights and perspectives, especially Foucault's theory of heterotopia, which can be effectively applied to this area. The discussion of the instruments, both extant and lost, and the exemplar pieces which are discussed should be seen through the prism of an intercultural richness and spaciousness, explained by these writers. It is through this prism that the Malaysian heritage of the pipe organ becomes culturally sustainable and relevant within what could be otherwise construed as operating in a hostile climate and cultural indifference.

An Overview of Pipe Organs in Malaysia

Compared to other countries in South East Asia, Malaysia has historically had relatively few pipe organs, and in 2014 there are only a few remaining instruments. Surveying the instruments noted on the website Pipe Organs of Malaysia^{xxii}, and assessing which are in regular use and playable, the total number (both playable and destroyed) in Malaysia is listed as fourteen. This website is not totally complete, for it does not include within its listings the five-stop chamber organ by English builder Robin Jennings (I/5 1998) in the Dewan Filharmonik Petronas (Petronas Philharmonic Hall) in Kuala Lumpur, KLCC.^{xxiii} This hall is also home to the country's largest instrument – a three manual organ by Klais (III/P/44–1999^{xxiv}).

Of the fourteen instruments listed, only seven instruments remain in playable condition, including the two in the Dewan Filharmonik Petronas, and two that are now hybrid instruments (St Andrew's Presbyterian Church, Kuala Lumpur and Masland Methodist Church, Sibul). So there is an urgent need to document the remaining instruments in Malaysia in accordance with the standards of the various Organ Historical Trusts around the world.^{xxv} An underlying requirement in deciding if and how an instrument is to be restored, is to have appropriate documentation taken from the instrument itself, providing details of its history, pipe scales, materials, and acoustic and spectrographic measurement. This, in turn, allows a knowledgeable and historically sympathetic organ builder to undertake a restoration that preserves the instrument, and provides its owners/custodians with a viable plan of action, whilst retaining the artistic work of the original organ builder. The website "Pipe Organs of Malaysia" (ibid) gives a very brief overview of instruments but, though a valuable resource, does not constitute a standard or complete documentation of the instruments it surveys. It is to be hoped that such documentation and recording of instruments can be undertaken in the near future.

[INSERT Figure 1]

Figure 1. The author playing the Jennings organ in Dewan Filharmonik Petronas, January 2012

Pipe Organs of Malaysia: Sustaining the Historic and Contemporary Heritage of the Portuguese, Dutch, and British Eras.

In perusing the lists of instruments in Malaysia, it is immediately evident that the organ building traditions of the early European (Portuguese and Dutch) colonialists are totally absent, although considerable evidence of their other cultural influence continues in Malaysia. The three colonial eras that are relevant for this chapter are the colonial administrations of the Portuguese (1511 - 1641), Dutch (1641 - 1824) and British (1790 - 1957).

The Portuguese and Dutch administrations were centered in the port city of Malacca, and architecturally there remains considerable evidence of these colonial administrations. At that time, Malacca was a major centre and hub for spice trading with ships from China and the Orient, India, Europe and South East Asia all calling and trading through the port. The city also influenced the whole of the southern and central parts of the Malaysian Peninsula. The British initially landed in the Georgetown and Butterworth areas, recognizing the strategic importance of the island of Penang (Pulau Pinang) over the Straits of Malacca. The (Anglican) church of St George, Georgetown was built early in this era, dating from 1817-1819.^{xxvi} St George's first pipe organ was installed by 1838, for it is referred to in J.T. Turnbull's *Some Glimpses Into Life in the Far East*. Turnbull speaks of the "pagan" who "pumped air into the organ up in the gallery" and the sound of the organ producing "soul-inspiring strains" (Turnbull, 1864, p. 39).

During the time of their respective colonization of Malaysia, Portugal and Holland had flourishing organ-building traditions, and the era of Malaysian colonization coincided with a high point of Dutch organ building. It may be surmised that some of the wealth generated by trading and other colonial activities in Malaysia, quite possibly funded the

building of organs in both Portugal and Holland. In Malaysia, almost the only possible place where there might have been an organ of Dutch origin is in the church now known as Christ Church, Malacca. This building was constructed by the Dutch in 1741 to commemorate a century of Dutch colonial administration. However, there are no records of an organ dating from this period – nor are details of the first organ currently known, although there is evidence of an instrument having been installed in a west gallery. This dearth of knowledge of instruments of Dutch or Portuguese provenance in Malaysia (either extant or destroyed) differs from the experience of the nearby Philippines or Indonesia. In the Philippines, the Spanish missionaries brought pipe organs from Spain and Mexico, leaving a rich, treasured and continuing heritage. In Indonesia, also, there remain a number of instruments which were installed during the Dutch Colonial Era – though all now appear to be in a state of disrepair. For example, the organ in Gereja Blenduk, Semarang, Central Java: although little is known of its origins, the list and form of stop names for this organ are strongly suggestive of a Dutch origin. Its highly ornamented case is equally reminiscent of the Seventeenth or Eighteenth Century instruments in Holland. ^{xxvii}

The pipe organs recorded in Malaysia originate from three major sources:

1. United Kingdom
 - a. St Mary's Cathedral, Kuala Lumpur (Henry Willis II/P/8 1898)
 - b. Church of the Assumption (Moody and Morton II/P/12 1914)
 - c. St George's Anglican Church, Georgetown, Penang (Foster and Andrews Op1238 (II/P/16 1899) - destroyed in the Second World War) (This was the fourth instrument installed in St Georges).^{xxviii}
 - d. Kuala Lumpur Dewan Filharmonic Petronas Continuo Organ (Robin Jennings I/6 1998)
2. Germany
 - a. Kuala Lumpur Dewan Filharmonic Petronas (Johannes Klais III/P/44 1999)
3. Pre 1950, Kuala Lumpur/Singapore - James Riddell:
 - a. St Andrew's Presbyterian Church Kuala Lumpur (originally II/P/7 Riddell – but now extensively remodeled and rebuilt as a hybrid instrument, with the pipes only playable from a single keyboard);
 - b. All Saints Church, Taiping (II/P/6 1938 Riddell);
 - c. St Francis Xavier Church, Malacca, (II/P/6 1932).^{xxix}
4. Instruments of unknown provenance and no longer extant:
 - a. St John's Catholic Cathedral Kuala Lumpur;
 - b. Convent of the Holy Infant Jesus;
 - c. Presbyterian Church, Kuantan;
 - d. Christ Church, Malacca;
 - e. Presbyterian Church Malacca.

It is probable that the instruments in this last category (of unknown provenance and no longer extant) were also of similar provenance to those listed from pre-1990. At various times during the last century, overseas organ builders from the United Kingdom, Singapore and Australia have provided maintenance and some rebuilding services – including Anthony Welby of Sydney, Australia, and J.W. Walkers Pty Ltd of the United Kingdom.

In light of the above information, it would be easy to argue that the history and role of the pipe organ in Malaysia is little more than a footnote to the era of colonization by the Portuguese, Dutch and English. One might therefore expect the remaining instruments in Malaysia to continue declining, with the very few remaining instruments gradually falling into complete disrepair, unplayability, and eventually being scrapped entirely. This has certainly been the fate of a number of the organs, which have disappeared after a period of neglect and disinterest. Bruce Duncan (Pipe Organs of Malaysia) describes the organ in the Chapel of the Convent of Holy Infant Jesus in Kuala Lumpur:

“... in 1914, ... a small pipe organ was installed not long after. No information on the organ's specification or its provenance is

currently available. The organ became unplayable at some point and was dismantled to provide parts for other organs owned by the Roman Catholic Church. An unplayable console hidden in a storeroom is all that remains of this organ.^{xxx}

The Independent Era – Post 1957

Since 1957 Malaysia has been an independent country. Its constitution defines it as an Islamic State, but one which respects the traditions and religious practices of other religions. As in the rest of the world, the pipe organ is often seen as a significant part of Christian liturgy (Blackburn 2011), and indeed most of the custodian communities with responsibility for maintaining these instruments are local Christian churches. As in the rest of the Christian world, the role of the pipe organ in the liturgy of churches varies from community to community. The Church of the Assumption in Penang restored its pipe organ (2013/4) which has had the effect of generating new interest in the instrument, and there are moves to restore a number of other historic instruments around Malaysia. There are also moves to install several new instruments in churches that have had, and lost, older ones.

Away from the Christian communities, all around South East Asia new secular pipe organs are being installed in civic and arts buildings. These instruments are mostly coming from Europe (especially the builders Rieger Orgelbau and Johannes Klais, both of Germany). The largest pipe organ in Malaysia is the instrument in the Dewan Filharmonik Petronas by Klais. It is an instrument of significance in Malaysia, and typical of the concert instruments being installed around the region. Its function is entirely secular, being used for performances of orchestral works with the Malaysian Philharmonic Orchestra and solo organ concerts. In this sense this instrument also represents a new and more twenty-first century role for the pipe organ. One may draw parallels with the building of (now famous) historic instruments in the Hanseatic cities of Northern Germany in the seventeenth and eighteenth centuries (see Snyder (ed) 2002) where organs were built in part as a symbol of civic pride and significance.

Heritage and Sustainability: Restoration, Conservation and Sustaining the Pipe Organ in Malaysia

As noted earlier in this chapter, the need for conservation, preservation and restoration (where possible) is paramount to the maintenance of this facet of Malaysia's historic and cultural heritage. There are several phases in this process. Though the instruments are few, the need for careful and accurate documentation of the remaining instruments is paramount, utilizing the standard heritage documentation procedures which have been established for pipe organs – for example, Stiller's (1998) NSW Heritage: Pipe organ conservation and maintenance guide Parramatta.^{xxxi} The process involves providing each instrument with an assessment of significance, from which both the strength of argument for the organs' conservation and maintenance can be mounted. In making this assessment, a unique feature of pipe organ assessment is the need to include all aspects of the organ "...its musical quality...historical, social and aesthetic contexts in the building and community in which it resides" (Stiller, 1998, p.1.)

Understanding the meaning of certain terms, which are frequently and erroneously used interchangeably, is also important to set the parameters for this process. The following definitions are drawn from Stiller (1998), and modeled on the Burra Charter (Australia ICOMOS 1992, The Illustrated Burra Charter, Australia ICOMOS, Sydney 1992). It is an Australian adaptation of the International Charter for the Conservation and Restoration of Monuments and Sites (ICOMOS, 1966) and is now a widely accepted heritage standard for places of significance.

Conservation: is an over-arching term that embodies all the processes directed towards looking after an organ such that its heritage significance is retained. Conservation may include steps

taken to maintain an organ in its existing state, and to prevent its deterioration.

Maintenance: is the continuous protective care of an organ. It includes the regulation, tuning and *repair* of minor defects.

Preservation: is the protection of organs through activities that prevent damage or loss of informational content and retard deterioration. The primary goal of preservation is to prolong the existence of organs as long as possible in an unchanging state. Preservation involves management of the environment and of the conditions of use, and may include treatment in order to maintain an organ, as nearly as possible, in stable condition.^{xxxii}

Repair: aims to preserve an endangered or deteriorated instrument in its present form. It refers to the correction of damage which influences the appearance or function of the instrument and is undertaken only in the course of *maintenance*. This term only has validity if the old parts of the organ are not changed.

Restoration: is the returning of a (previously) altered instrument to a (previously) documented state. It may include the removal of additions or reassembly of existing components, without the introduction of new materials. In the case of the pipe organ, an exception can be made that allows the introduction of new perishable components - such as leather, wire or ivory (with acceptable substitutes).

Rebuilding: is the free alteration of the existing form of the organ with no intention of serving any of the purposes of conservation.

Reconstruction: is the returning of an altered instrument to as near as possible to an earlier documented condition. It permits the introduction of lost or missing materials (new or old). Such material should be clearly distinguishable from the original, through labelling or documentation. (ICOMOS 1992)

A recent restoration in Penang at the Church of the Assumption (Morton & Moody Oakham, UK, II/P-12, 1914 restored 2013, Peter Wood, Harrogate, UK) has provided a Malaysian fillip and exemplar to the local pipe organ scene. This is partly through the extended presence of the organ builder (Peter Woods) in Malaysia, as he completed the installation and final adjustment of the Penang organ. His presence allowed a number of other communities with pipe organs to make contact and begin the process of having their instruments assessed for restoration.

The author also had a positive influence on the restoration of the Morton and Moody instrument in Penang. The initial recommendation of the builder was to rebuild the organ, altering the original mechanical action and changing it to an electro-pneumatic (or similar) action. Such changes would have meant that the instrument was irrevocably changed in character. Although in a state of poor repair by the end, the instrument was almost 100 years old, it had survived many difficult circumstances in part because it was mechanical. Many minor problems or faults could be repaired without reference to the organ builder who was based overseas and not readily accessible. In discussion with the local organist, the author argued strongly for the retention and restoration of the original action rather than the rebuild approach being considered. The initial decision of the local organ committee then changed in favour of the restoration approach (personal communication with Leonard Selva, March 2012). Because this approach also preserved the heritage value of the organ, providing an ongoing and sustainable approach for this organ and its community, the restoration project then fulfilled the requirements for support by the various heritage and tourism groups who donated a significant proportion of the funds required to complete the project (personal communication Dato Sri Dato' Sri Dr Ng Yen Yen, Chairman of Tourism Malaysia, 29 June 2014). In subsequent discussion with the organ builder during the celebrations to launch the

restored organ, the organ builder, Peter Wood, also noted that he had originally recommended rebuilding, but realised that restoration was a “better way to go” for the local community and instrument itself (personal communication, June 2014).

Though the Morton and Moody organ in the Church of the Assumption in Penang is a small instrument of just 12 stops, it has an artistic and musical integrity and heritage value which has proven worthy of retention. The success of the restoration of the instrument to its original playing condition has validated the whole process, and provides an exemplar or model for other Malaysian communities, who are also custodians of pipe organs and dealing with similar issues, to follow. The project has demonstrated in practical terms how a good heritage-based outcome also is strengthening the musical community, and of course the instrument is shown to its best advantage. The restoration process involved repairing the mechanical action, re-bushing and felting the trackers, cleaning the pipe-work, re-leathering the bellows and providing a new electric fan to supply the wind, whilst retaining the original hand pump mechanism. The console was repaired and missing ivory key covers replaced, and the whole adjusted to become even in touch. The recovery of the Moody & Morton instrument has also resulted in an upswing of interest in the pipe organ and students interested in learning to play it (personal communication with Leonard Selva June 29, 2014).

Contemporary Malaysian Organ Music

Another major means of assessing the vitality and living quality of any artistic movement, genre or instrument is by considering the strength of new creativities within the art form. In the case of the pipe organ in Malaysia (as in the rest of the world), this is an area that gives rise to some optimism. With no claim to the completeness of this list, since 2011 a number of artistically interesting Malaysian works have been, and continue to be composed for the pipe organ. Pipe organ compositions of three composers (Robert Casteels, Valerie Ross, and Affendi b Ramli), provide representative examples of music of different styles being composed in Malaysia.

Robert Casteels Two Short Organ Pieces based on Malaysian Folksongs

Belgium born composer, now resident in Singapore, Robert Casteels^{xxxiii} has an abiding interest in, and draws inspiration from “Asian music” which is the source of two short organ works *Dayung Sampang* (2007) and *Flower Drum Song* (2007). He describes these pieces as a “transcreation for organ”^{xxxiv} – each piece consisting of a simple exposition of the folk-song with an accompaniment that is idiomatically well-suited to the organ. Casteels acknowledges the contrapuntal tradition of organ composition, particularly that of his native northern Europe, in the *Flower Drum Song*. After a short, pentatonic-based introduction, he presents the folksong melody in an unadorned manner, but in canon. The cross-rhythmic interplay of duple and triple metres established between the voices of the canon is maintained throughout the piece with each iteration of the melody, which is rhythmically contracted in subsequent repetitions. In *Dayung Sampang* the mix of cultural styles is also evident, with a lilting accompaniment in the “tempo di barcarolle”.^{xxxv} In these two short pieces we see a composer juxtaposing the two cultural backgrounds within the musical texture, even though the composer’s European heritage remains at the fore and he uses a Malaysian folk melody. So, the pieces are transcreating the melody from a Malaysian culture to the Western culture of the composer and, in the process, creating a new creative work. It is one approach to interculturalism which, in this context is musically successful.

The other works considered in this chapter are Valerie Ross’ *Synergies of Breath II* 2013, and Affendi Ramli’s *Voice of Nur* 2013/4. Both works are “intercultural”, though from very different perspectives to that of the Casteels’ pieces just described.

Valerie Ross Synergies of Breath II

For flute and pipe organ; first performed in Churchill College, Cambridge, UK October 2013 by flautist, Jean Penny and organist, Andrew Blackburn.

Synergies of Breath II (Ross 2013) is an outcome of the larger research study, “The Imaginary Space”, that explores intercultural connections which can be found in contemporary art music using musical approaches of both Western and Malaysian cultures. Valerie Ross is well-known in Malaysia for her work as an academic, composer and ethnomusicologist. *Synergies of Breath II* combines the significant elements of her work – Malaysian ethnomusicology and composition. A companion piece, *Synergies of Breath I* (2013) for flute, fixed sound and live electronics is also related to the research project. This work takes a recording of a melody collected from an indigenous pensol (bamboo nose flute) within a tape part which also incorporates the sound of a jew’s harp, weaving it with the sound of a (live) Western flute that is electronically processed real-time in performance. Having explored interaction between the Indigenous cultures (Orang Asli) and Western cultural spaces in *Synergies of Breath I*, in *Synergies of Breath II* Ross uses cultural elements from the other significant cultures of Malaysia including Hindu music and melodic fragments from chants of the early Christian Church, as her core material. Thus, her cultural explorations encompass significant historical and contemporary cultural minority influences in the make up of modern Malaysia.

Synergies of Breath II – The Score The score of *Synergies of Breath II* is unlike others. It provides all the core performance material, presented in a circular manner – representing the face of a clock – suggesting the music of the hours of the church and the Carnatic music from which the musical content and artistic aims of the piece originate. While there are practical difficulties in reading the score in a usual sense, this music provides scope for personal creativity and expression on the part of each player. The organ part consists of musical fragments, like little memories, which are reconstructed to make musical sense (Figure 3 below, is a detail from the whole score of *Synergies of Breath II*). Within each time cell – three hours and performed as three minutes – the material can be performed in any order or combination during the relevant time frame. So, reading the score in the conventional way is not possible. Pedal parts are written above keyboard parts (normally below), and their visual alignment is not as it is to be performed. Timing the music – when each fragment is to be played – is also worked out in part in rehearsal and then in performance. In Appendix 2, the complete score is reproduced, also showing the flute sections in their time frames (what Ross called “flute extensions”).

[INSERT FIGURE 2]

Figure 2. *Synergies of Breath II* Valerie Ross (2013) Detail of score

The score of *Synergies of Breath II* is a single A3 page. In the middle of the page is a circular section framed into 4 sections, representing a clock face (see Figure 3 above). The sections begin at 1 (AM and PM), 4 (AM and PM), 7 (AM and PM) and 10 (AM and PM). These form the basis of structured improvisations built from the material provided for both flute and organ within each three-hour block.

Synergies of Breath II – The Music There are 4 sets of “Gregorian Tones” used for the organ parts (See Figures 4 - 7 below), which are paired to 8 “Hindustani Ragas” played and “extended” by the flute (see Table 1 below).

Table 1. List of modes and Ragas used simultaneously in *Synergies of Breath II* Ross.

Time frame (see fig. 3 above)	Gregorian Modes (organ)	Hindustani Ragas (flute)
A	Dorian	Malkauns Madhuvandi
B	Phrygian	Bhairav Kalyan
C	Lydian	Todi Durga
D	Mixolydian	Gaud Abhogi

[INSERT figure 3]

Figure 3. Section A

[INSERT Figure 4]

Figure 4. Section B

[INSERT Figure 5]

Figure 5. Section C

[INSERT Figure 6]

Figure 6. Section D

Rehearsal Process and Performance. The concept, development and rehearsal phases for *Synergies of Breath II* initially occurred in Kuala Lumpur, Malaysia (March/April 2013) and then Cambridge, UK (October 2013), the first performance being given in the Chapel at Churchill College, Cambridge. The concept and development phase discussions took place between Valerie Ross (composer), Jean Penny (flute) and Andrew Blackburn (organ) in Kuala Lumpur in early 2013, and the work was finalised in Cambridge at the end of the same year. The motivation was the completion of a group of works being composed under the auspices and inspiration of research project “The Imaginary Space”^{xxxvi}. Although the original concept of the piece was to include live DSP for both instruments, the composer eventually decided against this, composing an acoustic work.

In her two compositions, Ross is making specific and clear references to the history of Malaysia and the various diaspora that comprise it (personal communication, Oct 2013). Music of the cultural majority – Malay (Bumi Putra) is explored in the next piece under discussion in this chapter, *Voices of Nur* for pipe organ and live electronics by Affendi bin Ramli.

Affendi bin Ramli – Voices of Nur (2013/4) for pipe organ and real time DSP

In the Qu'ran, the meaning of “nur” is the light which is brought about by understanding the joy and happiness coming from God. The musical intention is to share how Affendi – a Malay composer – presents himself in all his music – his “voice”. It has “nur” and is a beautiful part of the Islamic religion, sharing together the “beautiffulness of the Light of God” (personal communication, Affendi, August 28, 2014). He relates this to the wider religious understanding of the Light of God, as seen in other religions – Buddhism, Christianity, Islam and Hindi, the major religions of Malaysia.

Voices of Nur - The Music. The music of *Voices of Nur* is tonal in orientation with simple melodic writing. It is set out on a conventional organ score of three staves (two for manuals plus pedal). The DSP processing is not indicated in any way within the score; it is intended to develop this element of the musical texture as we approach the first performance. This parallels the compositional approach taken by Affendi in the development of the *musique-mixte* version of his *Curse of the Screaming Serunai* (2007 rev 2012) in which a flute part, with live DSP, was added to the fixed tape part in the 2012 revision.^{xxxvii}

The Development and Rehearsal Process. Of greater interest than the structural niceties, is determining the sections where the composer intends the use of DSP as a dominant timbral presence. In discussion, before rehearsal has commenced, Affendi suggests that DSP should be the dominant timbral quality in sections of block harmony (personal communication, May 2014) – i.e. sections B, B¹, C and D, with similar approaches in the repetitions of these sections. The rehearsal process is planned to occur using the pipe organ where the first performance is planned. Software will either be Plogue Bidule, or ProTools using Cycling 74 plugins and Camel Audio as the core of the DSP.

Voices of Nur – Analysis. The work is structured in 8 bar phrases, which are reminiscent of Affendi’s commercial music writing background; it may also be described as a loose 16 bar song form.

The 8 bar phrase structure features an:

Introduction (B1-8) (B 1 - 8) f min
Bridge/Modulation (b 9) to d min (b9)
A (b10 - 17) New material - d minor
A' (18 - 25) repeat
B (26 - 33) New material – block chords
B' (34 - 41) Same as previous but more movement in manuals
B² (42 - 49) Melodic material – loosely an ‘inversion’ of B¹
B (50 - 57) Harmonically based on B²
B³ (58 - 65) Harmony of B² with new melodic material
C (66 - 73) New material (4 bars, repeated) – both rhythmic and melodic.
D (74 - 81) Bridge section – block semibreve chords and new harmonic pattern
B¹¹ (82 - 89) Key transposed up 1 tone (E major/minor)
B¹¹ (90 - 101) Repeated
Coda (102 - 106).

If read as “song form”, the structure would be B 1 - 9 Introduction, B10 - 25 “verse”, B26 - 41 “chorus”, B 42 - 57 “chorus”, B66 - 81 Bridge, B 82 - 101 “chorus” B102 - 106 - Coda.

These two works, one complete and publicly performed and the other in the final stages of preparation, represent an exciting development for Malaysian pipe organ music. The composers taking part in this project were enthusiastic in their response, and keen to explore the challenge posed by creating a work which is Malaysian, as each composer understands the meaning, and the musical interaction with Western music represented by the pipe organ itself.

The Pipe Organ – Interculturality and Heterotopia

In this final section exploring the sustainability and heritage of pipe organs in Malaysia, the application of philosophical and theoretical understandings central to the optimism for the

cultural future of the pipe organ in Malaysia expressed earlier is explained: in particular, the thoughts and approaches of late twentieth century theorists, Michel Foucault and Nicholas Bourriard. Before considering the theories of these writers, and the argument which follows in this chapter, some definitions assist in positing the argument within a theoretical framework.

Central to the arguments of both writers is the concept of heterotopia. Nicholas Bourriard, writing in the preface to Foucault's *Manet and the Object of Painting* recounts that Foucault developed the concept of "heterotopia" as a way of representing "a constant among all human groups, [and] can be described as 'anti-location'. It consists of an ensemble of "places outside of all places, even though they are at the same time localizable" (Bourriard in Foucault tr. Barr, M. (2009), p.17). Foucault extends this, and it has parallels in contemporary Malaysia and its need to come together as a nation of many different backgrounds. The official policy statement states that what...

... makes Malaysia unique is the diversity of our peoples.
Malaysia's goal is to preserve and enhance this unity in diversity
which has always been our strength and remains our best hope for the
future. ^{xxxviii}

Bearing this in mind, and the combination of cultural influences observed in the organ works under discussion, some understanding of the heterotopian dynamic being encountered is offered in Foucault's writings where he speaks of "representations". Writing on the paintings of Magritte, *Ceci N'est Pas une Pipe* and the duality of meaning found in the images with text, and images shaped by text, Foucault wrote:

It is not, in fact, a question of those calligrams that by turns bring into play the subordination of signs to form (a cloud of words and letters taking the shape they designate), then of form to sign (the figure dissecting itself into alphabetical elements). Nor is it any longer a question of those collages or reproductions that capture the cut out form of letters in fragments of objects; but rather the intersection within the same medium of representation by resemblance and or representation by signs. Which presupposes that they meet in quite another space than that of the painting (Foucault, M. tr Harkness, J. 1983, p. 33-34)

In the organ works, the musical representations are different from the usual cultural norms for this instrument. The references are representative, not literal musical quotation. In *Synergies of Breath II* and *Voices of Nur*, Carnatic Music, Gregorian Chant and Islamic Music are referred to, rather than directly quoted. As has been shown earlier, these musical traditions are consciously referenced by the composer, but without quotation. Nevertheless, familiarity with the original allows the listener to "...posit an equivalence between the fact of resemblance and the affirmation of a representative bond" (Foucault, 1983, p.34). This use of musical quotation and reference is common in organ music of the Western tradition. For example, in the organ music of Jean Langlais, there are many frequent and direct quotations of chant, taken from the various Propers of the Day.^{xxxix} A single example from the many possibilities will serve to make this point. The *Cinq Méditations sur l'apocalypse* (Langlais, 1973), the second movement "Il était, il est, et il viendra" (He was, He is, and He will become), incorporates two chants – "Vexilla Regis" from Vespers for the First Sunday of the Passion, and "Lauda Sion" (Laubounsky, 2000, p. 279). In this music, the references are specific and direct, and they add meaning and significance to the music in which they are quoted.

In *Synergies of Breath II*, Ross uses musical gestures, in particular, to infer the music. In the original sketches of the flute part (see Figure 8 below) the actual notes and breath-tones are not quotations but shapes and gestures based on the "ideas of the carnatic music chanting"

which are represented by this music. Similarly with the organ part (see Figure 3 above) – the music implies the music of the chants and the idea of the organ as an instrument associated with the church, and therefore, chant. The (semi-improvisational) organ part is gestural and is intended to create the idea of chanting, even though this is something the pipe organ cannot do at all.

[INSERT Figure 7]

Figure 7. Initial manuscript score of the flute part *Synergies of Breath II*

The music of the chants of the Services of the Hours are not played exactly – rather the notes being played are a representation of the chants, not the literal quotation. Again, with a substantially improvised quality to the music and its notation, representation, not quotation, is important. Of greater significance in this instance is not that the notes of the score do not make direct quote from the chants, but its signification, and the new relationships forged in the process of their juxtaposition. To quote again from Foucault discussing the work of Magritte:

Let a figure resemble an object...and that alone is enough for there to slip into the pure play... a statement—obvious, banal, repeated a thousand times yet almost always silent... “what you see [hear] is that”. No matter, again in what sense the representative relation is posed – whether the painting is referred to the visible world around it, or whether it independently establishes an invisible world that resembles itself. The essential point is that semblance and affirmation cannot be associated (Foucault, 1983, p.34).

There is no obvious connection between the disparate “objects” or traditions of these works. In *Synergies of Breath II*, we must relate the pipe organ, Indian Carnatic Chant, Western Gregorian Chant, improvisation with elements of time and space, all together: or in *Voices of Nur* the pipe organ and Islamic musical aesthetics with popular music forms and structures. The following statement of Magritte, cited by Foucault, allows us to create this connection within the heterotopian space for it is “conveying no contradiction, but referring to the inextricable tangle of words and images and to the absence of a common ground to sustain them”. [Magritte says] “In a painting, words are of the same cloth as images. Rather one sees images and words differently in a painting” (Foucault, 1983, p.39).

Having established that the music of these works draws seemingly unrelated influences and symbols together to create a new set of relationships and resemblances, exploring the space in which this occurs is an imperative. Kadijah White notes that the term “... soundscape” is used to examine people’s negotiation of sound and noise within a space and ... displace the primacy of visual symbols within the physical landscape and emphasise the significance of aural markers” (Goddard, Halligan and Hegarty, 2012, p. 234). In this world, sound (what White terms “noise”) comprises both a physical and spatial context, which transfers to a psychological domain as well. Thus sound can become a “physically confining space”, a type of prison from which people may have no opportunity to escape (p.239). Though these examples are negative, they illustrate the physically spatial impact of sound. As White tellingly argues, sound can here trouble the boundaries between adjacent communities. Citing Baron, (1970):

Noise pollution is what we suffer from when we sit on the rocks looking out to sea enjoying the sense of the wind and the waves, but not enjoying at all the blast of soul music from the transistor radio on nearby table (p.241).

Yet we find in the music of Ross and Ramli a non-physical space in which the different cultural (musical) symbols and the interactions (relationships) which take place can reside simultaneously, positively informing and affirming each other.

Bourriard writes of Foucault's development of the notion of "heterotopia". It is, according to Foucault, a constant among all groups and is defined as 'anti-location' – "an ensemble of places outside of all places, even though they are at the same time effectively localizable" (Foucault, 2009, p 17). Importantly, as Gary Saur-Thompson observes "...we live inside a set of relations that delineates sites which are irreducible to one another and absolutely not superimposable on one another" (cited Ibid). So the diverse cultural signs that are drawn together in these works each continue to exist on their own and, whilst in close proximity to others, neither impose themselves nor are reduced, but interact in ways that create new relationships and meanings. What the practitioners have found, regarding this facet is that the individual cultural artifacts, or resemblances, interact in an (invisible) space, perhaps mediated electronically if DSP is involved.

Conclusions

This chapter has explored the pipe organ in Malaysia from several different directions – the physical presence of instruments in Malaysia, and the potential to understand these instruments as a significant cultural heritage for the whole country. Some processes that need to be followed are enunciated and a telling success story described. It is telling for the fact that the restoration of an instrument has created a new interest and passion amongst younger people for the music of the pipe organ.

The next section of the chapter considered recent works for pipe organ by Malaysian composers. A growing repertoire for the instrument, grounded in the local cultural environment, is essential to the on-going vitality of the instrument. The important point of each of the compositions under discussion is their use of multiple cultural influences, and their use of advanced Western Modern or Post-Modern musical aesthetics, including live DSP of the organ, and other instrumental resources.

Drawing these points together, the optimism for the continuing and increasing influence of the pipe organ expressed in the introduction is given explanation and (intercultural) justification through the theoretical writings of Michel Foucault and Nicholas Bourriard using Foucault's theory of "heterotopia". It is the combination of theories, creation and the instruments themselves that leads to an optimism for the future of the pipe organ in Malaysia. It is not a huge scene or community, but one that is certainly growing. In attending the organ recitals, jointly hosted by the Malaysian Philharmonic Orchestra and the Dewan Filharmonik Petronas in 2013 and 2014, one sees the strong public interest in the instrument. These concerts are well attended – upwards of 400 people – with an audience spanning all ages and backgrounds. Securing the future of the instruments around Malaysia, and encouraging new students and local composers to play and write for the instrument in the diversity of styles which characterise Malaysian music, will see this interest continue to grow.

^{xxi} 'The Imaginary Space', is an intercultural study exploring the creation of connections between Western Contemporary Art Music and Malaysian Traditional Music, led by Jean Penny. The author is a co-researcher in this project, which ran from 2012 – 2014. More information and publication is available at http://www.cmpcp.ac.uk/PSN2/PSN2013_Penny.pdf and journals.cambridge.org/action/displayAbstract?fromPage=online&aid=9294408&fileId=S1355771814000107

^{xxii} Duncan, B. ND <http://www.clacklinevalleyolives.com.au/Pipeorgan/Malaysia/Malaysia.html>

^{xxiii} <http://www.jennings-organs.co.uk> - accessed 20 August 2014

^{xxiv} The format used to describe pipe organs in this chapter is: number of keyboard divisions/pedal/number of speaking stops; year of construction.

^{xxv} see for example <http://www.ohta.org.au/resources/preserv/orguide.html>

^{xxvi} <http://www.victorianweb.org/art/architecture/churches/32.html> Accessed 4th September 2014.

^{xxvii} <http://www.clacklinevalleyolives.com.au/Pipeorgan/Indonesia/Blenduk.htm>

^{xxviii} More information at <http://www.clacklinevalleyolives.com.au/Pipeorgan/Malaysia/PenangStGeorge.html>

^{xxix} <http://www.clacklinevalleyolives.com.au/Pipeorgan/Malaysia/MalaccaStFrancis.html>

^{xxx} <http://www.clacklinevalleyolives.com.au/Pipeorgan/Malaysia/KLHolyInfant.html> accessed 1 August 2014

^{xxxi} <http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/infopipeorgan.pdf> accessed 18 August 2014

^{xxxii} Definition of the term ‘preservation’ is drawn from <http://www.organsociety.org/html/historic/pdf/ConservGuidelines.pdf> p.3

^{xxxiii} <http://www.robertcasteels.com/biography>

^{xxxiv} The Macmillan Dictionary offers the following definition of ‘*transcreation*’ –“ a distinct translation process that is mainly used to describe the adaptation of advertising and marketing copy”. (<http://www.macmillandictionary.com/open-dictionary/entries/transcreation.htm> accessed 14 September 2014). It is worth noting that the Oxford Dictionary does not yet provide a definition of the word.

^{xxxv} Encyclopaedia Britannica - **barcarolle**, also spelled **barcarole**, (from Italian *barcarola*, “boatman” or “gondolier”), originally a Venetian gondolier’s song typified by gently rocking rhythms in 6/8 or 12/8 time. In the 18th and 19th centuries the barcarolle inspired a considerable number of vocal and instrumental compositions, ranging from opera arias to character pieces for piano. The term surfaced as early as 1710, when French composer André Campra included a “Fête des barquerolles” in a stage work (*Les Fêtes vénitiennes*, 1710).’ (<http://global.britannica.com/EBchecked/topic/53019/barcarolle>)

^{xxxvii} A full description of this process may be found at in an article by Jean Penny and Andrew Blackburn in Organised Sound Blackburn, A and Penny, J (2014). Imaginary Spaces: New Malaysian performance contexts for intercultural exploration. *Organised Sound*, 19, pp 164-172. doi:10.1017/S1355771814000107.

^{xxxviii} www.1malaysia.com.my accessed August 16, 2014.

^{xxxix} The following explanation of Gregorian Chant is from the website of GIA Publications – a specialist publisher of Liturgical Chant.

Gregorian chant is the church’s own music, born in the church’s liturgy. Its texts are almost entirely scriptural, coming for the most part from the Psalter. For centuries it was sung as pure melody, in unison, and without accompaniment, and this is still the best way to sing chant if possible. It was composed entirely in Latin; and because its melodies are so closely tied to Latin accents and word meanings, it is best to sing it in Latin. (Among possible exceptions are chant hymns, since the melodies are formulaic and are not intrinsically tied to the Latin text.) Gregorian chant is in free rhythm, without meter or time signature.

Because the liturgy was sung almost entirely in Gregorian chant in the Middle Ages (with polyphony saved for special occasions), every type of liturgical text has been set in chant: readings, prayers, dialogs, Mass propers, Mass ordinaries, office hymns, office psalms and antiphons, responsories, and versicles. Although Pope St. Gregory the Great (590–604) certainly did not play a role in the creation or compilation of our chant melodies, popular legend led the church to name Gregorian chant after this great leader.

Many other types and styles of music are similar to Gregorian chant or inspired by it, but one should distinguish them from Gregorian chant. Taizé chants, for example, are generally in Latin, similar to Gregorian chant antiphons. But the musical style is quite different: metered and with choral harmonies and/or instrumental accompaniments. (http://www.giamusic.com/sacred_music/chant_what_is.cfm accessed 09 Oct 2014)

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Early Music Identities Among the Kaili: An Educational Approach to Applied Ethnomusicology in Central Sulawesi, Indonesia

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The fields of Music Education and Ethnomusicology developed out of influential works carried out at the end of the nineteenth century and the first half of the 20th century maintaining strong roots in Europe and the United States. Both fields of study have continued to evolve and crossed paths during the second half of the 20th century including the study of non-Western music (also referred to as *world music*) as used by music educators in Western educational institutions, as well as the ethnomusicological study of Western musical forms. Ethnomusicology in Southeast Asia developed in the region mostly during the second half of the 20th century through a generation of scholars as educators and cultural advocates in their countries of origin. In this sense, ethnomusicology in Southeast Asia allowed for numerous forms of education and cultural activism in the region, through the field now conceptualized as Applied Ethnomusicology. Drawing upon the inter-sonic relationships between musical meaning and society (Green, 1998), and the construction of early musical identity through childrens' games and the educational system (Green, 2001), this paper posits a merging space between music education and ethnomusicology through the field of applied ethnomusicology in Southeast Asia using the project *Nyanyian Anak Anak Kaili* (Kaili Childrens' Songs) by *Yayasan Modero Palu*, an NGO from Central Sulawesi, Indonesia as a study case.

The development of new educational material among the Kaili of Central Sulawesi reflects Lucy Green's ground-breaking theoretical and pedagogical approaches to music education. Green's (1998) *Music on deaf ears: Musical meaning, ideology and education* outlines inter-sonic relationships between musical meaning and society. Her 2001 publication *Learning teaching and musical identity: Voices across cultures* examines identity construction through numerous examples from across the globe. The editor in her introduction posits Western classical music as a form of musical cultural imperialism towards the modernization of educational systems. An illustration of such a model is seen through "contrasting ways in which early musical identities are formed" namely "through children's informal games and their formal educational experiences in schools" (Green, 2001, p. 16). Drawing from the inter-sonic relationship between musical meaning and society embedded in the development of early musical identities, this chapter looks at the work carried out by *Yayasan Modero Palu* as a case study for the production of new music pedagogical material based on childrens' songs among the Kaili ethnic group in Central Sulawesi. The project presents new pedagogical approaches that merge inter-sonic relationships with early musical identities for the educational system through the development of Kaili childrens' games and songs. Through applied ethnomusicology, this paper presents shared confines of music education and ethnomusicology illustrated through traditional childrens' games, lullabies, and songs among other examples that are reworked, expanded into musical pieces and developed towards new music pedagogical material for the educational system and the community of Central Sulawesi.

Music Education and Ethnomusicology as Tributaries

The field of music education is dedicated to the analysis and application of different music pedagogical approaches. The latter include modes of transmission and reception including skills, internalization mechanisms, cognitive processes, as well as cultural approaches. Music

education methodological approaches to teaching western music were developed and applied in numerous educational institutions such as the Kodály Method from Hungary, the Orff Schulwerk from Germany, and the Suzuki Method from Japan. Yet, music education, since the development of the mentioned methodological approaches, maintained a parallel course to the field of ethnomusicology. As pointed out by music educator Keith Swanwick

Education is essentially interventionist in character and culturally subversive. Education is about preparing the young for a changing world and is an attempt to bring about change in people. That is the intention of education, and any custodial or curatorial activity has to serve that end. Ethnomusicology, on the other hand, presumably aspires to be more locally descriptive and culturally neutral. As an anthropologist, it would never do to intervene in a situation under scholarly observation. (Swanwick, 1992, p.137).

Despite its generalising nature, the statement is reflective of distinct historical developmental paths of both fields of study.

Ethnomusicology, as a 20th century field of study also developed out of significant projects emerging from Europe and the United States. At the end of the 19th century, amidst nationalist movements, the study of folksong and traditions in Europe was approached by both composers and academicians. Of the former, Hungarian renowned composer Bela Bartok, collected folk music, making a significant contribution to the development of the field. Of the latter, Eric von Hornbostel (Austria) and Curt Sachs (Germany) developed a system that bears their name for the classification of musical instruments used until the present day (see Hornbostel & Sachs 1961). Furthermore, the development of the cents system for the measurement of sound intervals by Alexander Ellis together with the phonograph cylinder by Thomas Edison, were two significant contributions to the analysis and recording of folk music and eventually “non-Western” musical forms. The study of “non-Western” musical forms thrived into the first half of the 20th century through the field conceptualized as comparative musicology. After half a century of vast documentation (see Densmore, 1918, Tracey, 1934, et al.) and studies comparing “Western” musical forms to “non-Western” ones, the field took new directions during the second half of the 20th century. Based on fieldwork experiences and the use of new theoretical approaches, Dutch scholar Jaap Kunst coined the term “Ethno-musicology” (Kunst, 1955). Alan Merriam’s (1964) *The anthropology of music* provided an anthropological approach to the study of music and culture leading consecutively to a continuous development of the field regarding methodological and theoretical approaches.

Towards the end of the 20th century, the field of ethnomusicology became established in numerous music departments across European, United States and Australian institutions. It included non-Western ensembles as part of its curricula, including gamelan, Chinese orchestra, West African drumming, Afro-Cuban ensembles, and Hindustani classical music, to name a few. The presence of non-Western ensembles (and musicians) encouraged new analytical studies of pedagogical approaches by both music education and ethnomusicology trained researchers. Towards the end of the 20th century and into the 21st century, Music Education studies of cultural learning and the learning of culture began to take an interdisciplinary approach. Aside from Green’s 2001 publication mentioned above, other music educators provided new perspectives on the use of non-Western music for educational purposes, including Shehan’s (1991) *Lessons from the world*, Lundquist and Szego’s (1998) *Musics of the world’s cultures: A source book for music educators*, and Schippers (2010) *Facing the music: Shaping music education from a global perspective*. Similarly, ethnomusicology publications also began to look (rather retrospectively) at pedagogical aspects of the study of non-Western music from an educational perspective, including Nettl’s (1995) *Heartland excursions: Ethnomusicological reflections on schools of music*, Solis (2004) *Performing ethnomusicology*, as well as a chapter written by Bruno Nettl titled “Some

contributions of ethnomusicology” in McPherson and Welch’s (2012) *The Oxford handbook of music education*.

Current inter-disciplinary approaches in US and European institutions maintain 20th century academic legacies while collaborating and utilising theoretical approaches from diverse fields of study. Simultaneously, the field of ethnomusicology developed in Southeast Asia by a legacy of academicians trained in Western institutions and ‘performing ethnomusicology’ (Solis, 2004) in their countries of origin. Such academic performance was not bounded within institutions of higher education but included numerous cultural activities with communities in the region. Both academic and non-academic approaches inside and outside the classroom setting for students and the community allowed for a development and praxis of inter-disciplinary approaches based on the needs and nature of each specific project (See Beng, 2008). Thus, the practice of ethnomusicology in Southeast Asia included as well aspects of composition, ethnochoreology, drama, cultural advocacy through non-government organisation’s (NGO), governmental cultural policies, health and well-being, and Music Education. A rather organic inter-disciplinary approach in the region as practiced by leading scholars in the field established new models for the contextual and cultural practice of Ethnomusicology in Southeast Asia.

Applied Ethnomusicology in Southeast Asia, a Conflux

The field of applied ethnomusicology was formalised through a panel at the 2007 ICTM (International Council for Traditional Music) conference in Vienna. This study group defined Applied Ethnomusicology as “the approach guided by principles of social responsibility, which extends the usual academic goal of broadening and deepening knowledge and understanding toward solving concrete problems and toward working both inside and beyond typical academic contexts” (Harrison, Mackinlay & Pettan 2010). The formation of this field is reflective of inherent social responsibilities of ethnomusicologists towards the community they work with. Reflective of this notion, Sheehy’s (1992) qualities of applied ethnomusicology include the development of new performance frames, a musical model for feedback to the communities, providing community access to strategic models and conservation techniques, as well as developing broad structural solutions. Emerging from an academic training in ethnomusicology, the new field focuses research training on the social applicability of theoretical models outside institutions of higher education.

Currently established as a field, the communal praxis of social responsibility beyond the classroom setting by numerous ethnomusicologists from and in Southeast Asia have taken place in the form of workshops, documentation projects, festivals and numerous activities organized by ethnomusicologists in the region. The diverse nature of the projects carried out has allowed for inter-disciplinary approaches, including music education for the Southeast Asian context. Ramon Santos (2012) in his monograph *Laón- Laón* presents different perspectives on the transmission and pedagogical approaches of music traditions in post-colonial Southeast Asia. Focusing on cases in Indonesia, Thailand, and the Philippines, Santos introduces different approaches to traditional music education as “modern concept of learning through teaching and the formalized formula of mass instruction as developed in the west” (Santos, 2012 p. 60). Yet, traditional music education in the post-colonial setting maintains, in varying degrees, a localised praxis of the oral-tradition setting embedded in their sonic environment of origin. The following case study in Central Sulawesi, attests to Santos’ (2012) reflections while invoking the formation of early musical identities (Green, 2001) as a form of applied ethnomusicology among the Kaili ethnic group.

Kaili Childrens’ Songs in the Post-colonial Context

Located in Central Sulawesi, Indonesia, the Kaili are the largest ethnic group in the province with over 300,000 members. Characterized by the use of the Kaili language, the Kaili reside mainly in the districts of Donggala, Sigi, Parigi and Palu, the capital of the province. The Kaili language belongs to the Kaili-Pamona language family and is comprised of numerous

dialects spoken in several districts such as Kaili Tara, Kaili Rai, Kaili Unde, Kaili Ledo, and Kaili Da'a. Published in April 2014, the *Nyanyian Anak Anak Kaili* childrens' songs project was carried out in the city of Palu working with songs and games in the Kaili Ledo dialect, the largest spoken dialect functioning as the *lingua franca* among Kaili speakers. After Indonesian independence in 1945, the Indonesian language was taught in schools and became the dominant medium of communication in Central Sulawesi, especially in Palu considering the divergent ethnic groups residing in the city. Nowadays, children in the region grow up mainly speaking the national Indonesian language, thus the Kaili childrens' songs project provides a space to utilise and maintain the Kaili language through music and performance.

The project *Nyanyian Anak Anak Kaili* (Kaili childrens' songs) was carried out collectively by *Yayasan Modero Palu*, a non-governmental organization (Hereon NGO) from Palu dedicated to the development of traditional culture and the performing arts in Central Sulawesi. The aim of the project was to produce music education material based on Kaili local practices such as games and songs for children to be used inside and outside formal education institutions. Music educator Patrick Schmidt has characterized NGO's as a "framework for education in and through music" stating that, "The elements that often characterize NGOs – capacity to identify local needs and "realities;" generate adjustments and weighing alternatives – can also serve as patterns to be used in structured organizations, providing inside–out change while attending to State, or outside–in, mandates" (Schmidt, 2014 p. 32). Working outside the elementary school realm, *Yayasan Modero Palu* is able to document practices, arrange musical pieces for performance and produce a book and compact disc with Kaili songs to be used inside and outside the institutional setting, serving both school needs and the community.

The project began with the documentation of traditional Kaili childrens' songs and games carried out by Amin Abdullah in 1998 supported by the Arts Council of Central Sulawesi. The realization that schools in Java were teaching ethnic Javanese songs such as "Jaranan" or "Cublak-Cublak Suweng" among others to students triggered the inspiration to include Kaili songs in the educational system. Most educational material in the arts is produced in Java and the Kaili ethnic group is a small minority in this diverse multi-ethnic country, thus music teaching in Palu has been entirely dependent upon the knowledge of local music teachers. The production of materials for music education is reflective of the presence of schools as a modern educational setting for music instruction. As mentioned by Beng (2008, p.70) "education plays a very important role in revitalizing and rekindling the interest of youths in traditional music." In this way, the project *Nyanyian Anak Anak Kaili* intends to serve local educational needs developing early Kaili music identities based on local culture for (mostly) local students. With the support of the Education and Culture Office of the City of Palu and Central Sulawesi, 3000 books and compact discs were produced and distributed throughout schools in Palu.

Nyanyian Anak Anak Kaili

The project carried out by *Yayasan Modero Palu* consisted of the documentation, arrangement, and audio recording of songs, and the printing of a book launched in April 2014. Previous documentation carried out by Amin Abdullah provided a large selection of different types of songs, childrens' games, and lullabies. Through the collaboration of the organisation's performing ensemble members, the songs were selected and arranged in the form of a medley. The accompanying ensemble included local instruments such as the *kakula* (Kaili gong-row melodic carrier), *gongs*, *gendang* and *kanda* (Kaili double-headed drums), *pare'e* (Kaili bamboo buzzer), *juk* ('ukulele), *kudode* (Kaili bamboo slit-drum), and guitar among other instruments. The use of local instrumentation and musical arrangement provides a Kaili sonic background for the accompaniment of local songs. The songs, also part of the collective memory of the performers, are arranged collectively as an ensemble using the *sintuvu* method of composition (Abdullah, 2004). In the latter compositional technique, all members participate in the development, arrangement and performance of songs. Thus, the

product reflects individual music capabilities and a temporal outcome from the members present in the production.

Among the highlights and success of this project, both in outcome and reception, is the inclusion of children in the production and performance of the pieces. In this sense, Kaili children become performers on stage and for the recording for other Kaili children as audience. Working outside the educational institution setting allowed for extended rehearsals in which children of varying ages were able to work together, absorb the material without time constraints, and most importantly do so in an enjoyable and playful manner. The pedagogical process carried out orally included cognitive aspects of assimilating knowledge, psychomotor development of accompanying movement to song (also aiding cognitive aspects), and affective aspects in the assimilation of *rasa* (feeling) embedded in each of the songs. With ages ranging from four until 12 years of age, children worked together not only to apprehend knowledge but also to learn presentational aspects of performance. The latter includes a medley of songs accompanied by both choreographed movements that portray the song's meaning as well as improvised movements that maintain playful qualities during staged performance setting.

[INSERT Figure 1]

Figure 1. Performance of “*Ina Ina Rumba Colo*” (Palu, May 2014)

The repertoire consists of childrens' songs, folksongs, lullabies, and playful songs (for childrens' games). Among these, some have been composed in the region, either by borrowing an existing melodic tune or creating a new one, and others are part of the collective memory reflective of different traditional games among the youth. All songs belong to the oral tradition among the Kaili, some of which are still practiced nowadays, while others were reconstructed from the memory of elders in the community. The repertoire includes “*Ina Ina Rumba Colo*”, “*Bersuka Ria*”, “*Love Oge*”, “*Tendo Tendo*”, “*O Yangguse*”, “*Owa Owa*”, “*Ana I De*”, “*Hau Rumba Ina*”, “*Nokilalaki*”, “*Junju ri Peti*”, “*Antara Desa*”, “*Sakaya*”, “*Reme Reme Vula*”, “*Dapa Dapa Lauro*”, and “*Didi Lauro*”. The songs may also be categorised depending on the positionality of children, namely, children as carriers with or without a specific game, children as subjects of the song (mainly as *nompaoa* / *nompalonga* or lullaby) and children as an adaptable designated rendition of a song not specifically for children such as a folksong, part of the Kaili folklore (see Danandjaja, 1984) within the province of Central Sulawesi.

Table 1. *Nyanyian Anak Anak Kaili* repertoire description

Song	Translation	Type	Composed/ Traditional	Category	Description
“ <i>Ina Ina Rumba Colo</i> ”	Mother where is the lighter?	Childrens song	Melody: Bung Karno Lyrics: traditional	Adapted for Children	Kaili version of the song “ <i>Bersuka Ria</i> ”. The lyrics in this case provides behavior advice to children. Sung without game.
“ <i>Bersuka Ria</i> ”	Rejoice	National Popular Song	Bung Karno	Adapted for Children	Well known national song sung among the Kaili since the 1960's
“ <i>Love Oge</i> ”	Gallant Eagle	<i>Nompaoa</i> (lullaby)	Traditional	Children as subject	Kaili lullaby sung in various positions such as holding a baby or in a hammock (<i>buaian</i>).
“ <i>Tendo Tendo</i> ”	Darling darling	<i>Nompaoa</i> (lullaby)	Traditional	Children as subject	Kaili lullaby (see “ <i>Love Oge</i> ”)

“O Yangguse”	Sway	<i>Nompaoa</i> (lullaby)	Traditional	Children as subject	Kaili lullaby (see “Love Oge”)
“Owa Owa”	Owa Owa	<i>Nompaoa</i> (lullaby)	Hassan Bahasyuan	Children as subject	Well-known song among the elder Kaili citizens by this renowned Kaili composer.
“Ana I De”	De’s Son	Children song	Traditional	Children as carrier	Song without meaning. Sung without a game, for joyful purposes.
“Hau Riumba Ina”	Where do you go mother?	Popular Song	Melody: Boney M Lyrics: traditional	Adapted for Children	Based on the song “Hooray Hooray It’s a Holi-Holiday” the Kaili version uses lyrics in the form of call and response between girls and boys.
“Nokilalaki”	Nokilalaki	Folksong	Traditional	Adapted for Children	This Kaili tune makes reference to a mountain in Central Sulawesi. Sung for joyful purposes.
“Junju ri Peti”	Frame in a Case	Children Game	Traditional	Children as carrier	Kaili children game sung while playing in rhythm with the palm of the hand.
“Antara Desa”	Between villages	Folksong	Traditional	Adapted for Children	Kaili song naming several villages of the city of Palu.
“Sakaya”	Boat	Folksong	Traditional	Children as carrier	Sung without a game, for joyful purposes.
“Reme Reme Vula”	Bright moon	Children song	Traditional	Children as carrier	Historically sung by adults during full moon to make children laugh.
“Dapa Dapa Lauro”	Pieces of rattan	Children Game	Traditional	Children as carrier	Kaili children game that follows the rhythm and structure of the song.
“Didi Lauro”	Drawn rattan	Children song	Syahrir Lawide	Adapted for Children	The song describes a raffle using rattan to determine who begins the game.

The above-mentioned classification of songs reflects temporality, arranged, in this case, as a childrens’ song. The distinction between songs as being popular, folksongs or serious songs is not fixed in communities with oral traditions, as mentioned by Brunvand (1968 p.131-132), since a song may derive from another category or singing style. This is seen in the songs “Ina Ina Riumba Colo” and “Hau Riumba Ina”, the former adapting the melody during the 1960’s from “Bersuka Ria” composed by Bung Karno (Indonesia’s first president) and the latter from the song “Hooray Hooray It’s a Holi-Holiday” by the US group Boney M, famous in the 1970’s. The adaptation of melodies also takes place in traditional music among the Kaili such as the borrowing of *gambus* (Lute of arab origin) and the *lalove* (Kaili bamboo flute) tunes played by the *kakula* (single gong-row instrument). The piece “Gambusu” of the traditional *kakula* repertoire, is an example of a melodic adaptation that considers tuning, phrasing, and melodic contour of the *gambus* tune reworked into the *kakula* deeming its capabilities. While borrowing melodies, “Ina Ina Riumba Colo” and “Hau Riumba Ina”, consist of lyrics representative of Kaili contexts in the Kaili language unrelated to the original songs.

The song selection includes mostly short or shortened songs to assist the performance memory of children. Also intended for elementary schools, the songs maintain a cultural

connection to the Kaili ethnic group specifically and the province of Central Sulawesi at large, crucial in the development of early musical identities. For the educational setting, the book includes the songs transcribed using cipher notation, following music educational practices of Indonesia. Each song includes the original lyrics in the Kaili language and a translation in the Indonesian language. Finally, each song includes a contextual explanation of the type of song, history, and a description of its traditional performance. The last section of the book consists of transcriptions in staff notation for students, music teachers, arrangers, and researchers. The book also provides a descriptive contextual introduction to the songs and the project in general.

[INSERT Figure 2]

Figure 2. “Dapa-Dapa Lauro” – song sample from *Nyanyian Anak Anak Kaili*

Considering that the book will be utilised in the educational system it becomes important to bring the reader to the attention of possible issues. One of the concerns, is regarding “standardisation” through the publication of oral tradition materials. The book presents a single possible arrangement of a song, yet teachers are encouraged to explore different arrangement possibilities. Most of the songs utilize consistently the Kaili Ledo dialect, yet there are certain words that vary depending on the region where it is sung. The song “Ina Ina Rumba Colo” has variants of performance depending on the region where *riumba* (where) becomes *umba*, or *rumba*. The translations of the songs are not fixed but rather provide a general explanation of the meaning, since some of the words have multiple translations in the Indonesian language, some words have a single possible translation in Indonesian (but multiple in the Kaili language) and some phrases are metaphorical alluding to non-specified topics. Finally, some words are reflective of an older use of the Kaili language, including as well terminology not present in today’s parlance.

Evaluation

The confluences of ethnomusicology and music education in this case maintained a pragmatic approach towards the execution of the project. Ethnomusicological practices such as research, documentation, analysis, and transcription were essential to the development of the pieces in the book. Likewise music education interests such as pedagogy, arrangements for children, the inclusion of movement aids, performance arrangement, and music notation were among some of the activities carried out in this project. Supporting elements from both fields of study were put into practice through the current field of Applied Ethnomusicology considering both theoretical discourses and practical approaches. Returning to Sheehy’s (1992) four qualities of applied ethnomusicology mentioned above, the project *Nyanyian Anak Anak Kaili* developed new performance frames through the inclusion of children performing childrens’ songs through a staged presentation symbolizing Kaili-ness. The project served as a musical model feedback to the community through new arrangement and performance possibilities of local songs. It provided community access to strategic models and conservation techniques through the publication of instructional material based on Kaili oral traditions for the educational system and the community at large. Lastly, it provided a broad structural solution to the local need of music education instructional material reflective of Kaili culture.

While emphasising practical rationales, the project *Nyanyian Anak Anak Kaili* is not segregated from theoretical discourses. Music education cultural discussions in publications such as Green’s (1998 & 2001) mentioned above, provide relevant information of experiences from the educational system as well as the importance of identity construction. The project carried out in Central Sulawesi provides a contemporary alternative in music education for Kaili children to develop identity imprints by learning and experiencing childrens’ songs from their own cultural background. The identity discourse in ethnomusicology is also supportive of Simon Frith’s notion in that “the issue is not how a particular piece of music or a

performance reflects the people, but how it produces them, how it creates and constructs an experience - a musical experience, an aesthetic experience - that we can only make sense of by *taking on* both a subjective and a collective identity” (Hall & DuGay, 1996, p.109). Academic discourses in this sense serve as guidance to the execution of projects that consider numerous precedents where cultural and socio-economic circumstances serve as reference for future projects.

Academic discussions have also pondered the wide-ranging effects that a specific project may have in its community. In this case, *Nyanyian Anak Anak Kaili* is merely a single approach to the interpretation, arrangement and performance of Kaili childrens’ songs by the ensemble. Due to the lack availability of educational material, the book foresees possible concerns of performance standardisation and repertoire favoritism, due to its mass dissemination through the support of local governmental entities. Furthermore, the songs in the Kaili Ledo dialect as the regional *lingua franca* may not be of interest to districts where other Kaili dialects are spoken. Lastly, the plurality of ethnicities from Central Sulawesi (Toli-Toli, Kulawi, Pamona, etc) and outside the province (Bugis, Mandar, Minahasa, etc) residing in the city of Palu may not feel represented through the use of this book in the educational system. The need for future publications that focus collectively or separately on other ethnic groups ought to be considered by *Yayasan Modero Palu*, or other organizations in the province towards a multicultural inclusivity reflective of the city of Palu.

Aside from theoretical discourses, the field of applied ethnomusicology now provides numerous cross-cultural examples of cultural activism and different modus operandi of community projects. Malaysian ethnomusicologist, Tan Sooi Beng, has carried out numerous community projects dealing with traditional music education on Penang Island. As she mentions, “Philippines, Malaysia, Indonesia, Singapore and Thailand have been responsible for the introduction of indigenous music in public schools which until recent decades focused on European music theory” (Tan, 2008 p. 70). The project *Nyanyian Anak Anak Kaili* acts as a response to this Southeast Asian phenomenon towards the inclusion of ethnic minorities through the production of educational material. The project carried out by *Yayasan Modero Palu* and its performing group mirrors other applied ethnomusicology projects such as the work carried out by Samuel Araujo in Brazilian marginal communities working with performing groups or samba schools (*escola de samba*) who also devote their time to research and creative community activities. In a similar effort of cultural activism, through projects such as *Nyanyian Anak Anak Kaili*, *Yayasan Modero Palu* advocates for a world “(...) in which knowledge will hopefully emerge from a truly horizontal, intercultural dialogue and not through top-to-bottom neo-colonial systems of validation” (Araujo, 2008 p. 14).

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Shifting Sands: The Complex Science of Permanence in Impermanent Performance.

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By considering the notion of sustainability in relation to heritage, performance and education through the prism of Complexity and Emergence, science-sourced theories that explain dynamic self-organising systems and their patterns, we are considering three interconnected components of an organic culture.

Whilst performance is ephemeral, suspended in space and time, it resonates deeply at many levels in creative learning, and therefore moulding heritage. Whilst it is created out of identifiable parts, whether instruments or voices, bodies or elements of stagecraft, the performance itself is more than the sum of these parts. By considering performance as a complex system we understand that each time these parts interact together the resulting performance is different yet its pattern is familiar, like shifting sands.

By evoking 'Shifting Sands', a dune type landscape, I reference the natural or physical world, usually studied from a scientific basis. A flow of communication between scientific ideas and artistic production is core in my dance-based praxis, just as the development of computing power and the digital is key to the development of theories of Complexity and Emergence. The digital is also key to my developing discussion here as it enables my referencing of performance works, both of my own creation and of other significant choreographers. These can be accessed easily on-line, and exist semi-permanently in cyber space, which points to a consideration of heritage, performance and education as essentially digitised.

In exploring these interconnections I will entwine my argument to the image of the spiral. The spiral pattern is an essential shaping pattern of dynamic systems as seen in nature and culture across the universe from the spiralling strands of DNA within the body, to ancient carvings on religious sites across cultures, to water going down a plughole. It is a shape that forces continual change extending from micro to macro levels, and by referencing both Nature and Culture, it is also an emblem that binds science and art, the two main arteries of discovery.

By conjuring the spiral as a metaphor for the interconnectedness of things, I enjoin the imagination with the intellect, appropriately perhaps because as a practice-led researcher, I come to theory through tacit knowledge developed out of creative doing. This doing is essentially interdisciplinary and therefore concerned with an interconnectedness that Paul Cilliers (1998) argues is a characteristic of both complexity and postmodernism and that I seek to reinforce in this writing. Complexity describes a system whereby a collection of elements (dancers or musicians improvising following choreographic/compositional rules/equations), interact at a local level, share information, respond to feedback and their environment, and thus form patterns – becoming a self-organising system that is greater than the sum of its parts – perhaps a performance.

I approach this task from my foundations as dancer and performer who has developed her practice as part of a postmodern environment, as teacher and choreographer and latterly, additionally, academic and researcher. In that spiralling I have strayed from the arts into the sciences, and in doing so have found the contemporary theories of Chaos, Complexity and Emergence profoundly and pragmatically enlightening in my pursuits of creating new performance with people, with all the expectations that this engenders. For us, working in the

arts, “although we cannot consciously seek the new, since by definition the new cannot be known in advance” (Bolt 2007:31) we seek structures and systems that we hope will foster new learning and creation for ourselves and our communities at local and global levels. Whilst complex systems indicate that everything changes all the time, in doing so, as with the image of shifting sands, the patterns created resonate long after on many levels.

Postmodern or New Dance

When American postmodern choreographer Kenneth King announced, “I think improvising is a science” (King in Banes 1987:177) he made a connection between postmodern dance and science. King also makes intrinsic connections between practical doing, reflection, formal theory and analysis. My own practice-led choreographic research substantiates King’s pronouncement and continues the interpollination of science-based theory and improvisation-based contemporary dance through practice-led explorations of the theories of complexity and emergence. In this, I link contemporary postmodern dance practice and these contemporary scientific theories and situate this dialectic as part of a growing interdisciplinary community that is concerned with science, arts, learning-by-doing and new technologies.

King was one of the artists aligned to New York’s Judson Church innovators of dance art. Part of the questioning, liberational movement of the 60’s these dance and performance makers rejected traditional forms and notions of the professional or expert, towards finding new ways to make live events using chance and improvisation practices that could include a released body, non-western approaches, contact improvisation, an understanding of the relationship between body and mind and therefore the use of self as subject. These postmodern developments informed the British Dance culture within which I was involved and were referred to as the New Dance scene (Adair 1992:191).

These influences were layered onto my roots as a dancer forged through childhood training in the traditional western theatre dance styles of ballet, jazz and tap before being introduced to the contemporary or modern dance techniques developed by Martha Graham, Merce Cunningham and particularly Doris Humphrey and José Limón at university. Recognising the variegated strands of my dance praxis enables establishing a range of links useful to my thesis.

The American modern dance pioneers developed formal and distinct dance techniques which whilst rejecting some of the principles of ballet, such as the use of the turned out leg, and instead variously embraced a recognition and use of gravity, the weight of the limbs, the use of breath, and looked to contemporary and abstract themes as serious subjects for choreography. As ever they also worked closely with composers and artists from other disciplines, such as that between choreographer Merce Cunningham and John Cage, which led to radical innovations in both dance and music and contemporary understandings of culture.

A modern, or contemporary, dance technique yields to and works with the pull of the earth, the drum, inner-dynamics and poly-rhythmic patterns of the body. Such characteristics associate the technique with ancient, non-Western cultures as American dance scholar Dixon-Gottschild here elaborates:

Rather than the classical, Europeanist, linear logic of cause, effect, and resolution, we have irony, paradox, and double entendre — indeed, radical juxtapositions — as basic premises of the African-ist aesthetic, and where do we find them? In our postmodern lifestyles (Dixon-Gottschild 2008).

Such radical juxtapositions call to mind our ancestral African beginnings and their cultures and, if we keep spiralling backwards, to the Big Bang, a moment of fusion where the microscopic became infinity and our universe was created. Such rapid evolution from small

beginnings is repeated in the making of ourselves. We are conceived, cells split and multiply in rapid accumulation, genetic coding combines with environmental factors and the self and its cultures is formed. These are ‘quantum’¹ dimensions, which explain a universe that seems to be based on paradox, matter is also energy, just as chaos and order co-exist and are essentially part of each other.

Through immersion in the improvisational and interdisciplinary culture that continues to defines the contemporary or independent dance and live art making scene in Britain, the expansive processes of discovery - improvisation and choreography – opened up to different, ‘other’ cultures and narratives to mainstream culture and the academic community. Thus the western creative and academic community increasingly identifies itself as both inter-disciplinary and inter-cultural.

For myself, such understandings have evolved through practice, and it is through a practice-led-research model that I have come to the theories I discuss here. For the improvisational postmodern dance methodologies, essentially identified by inclusive, feminist, interdisciplinary processes that seek to explore the spaces between things, body-mind, the self and other, the personal and political, focused as a “training in perception” (Tufnell & Crickmay 1990:45), that finds synergy with the science of self-organising systems, complexity and emergence. In improvising we work towards awakening the senses, releasing ourselves from forced or fixed ways of doing and knowing, trusting and therefore discovering through making contact and connection. Improvisational postmodern dance forms recognise process as important as product. Quantum physics, the culture that spawned new understandings about science and the universe, similarly points to the sameness of material and energy.

Improvisational forms for discovery are found across disciplines and cultures. For example, Argentine Tango, a form I have worked with often in creating new dance theatre performance with its essential themes of power, desire, intimacy, gender. An orchestration of life’s wanderings, of meetings and partings, Argentinean tango is a partner dance and a social dance, an urban dance. Whilst having basic step patterns, the direction, phrasing and tempo of the duet unfolds out of the relationship between the dancers. As with postmodern or New Dance where movement language is ‘found’ through exploration, Argentine Tango is essentially a dance that is evolved from walking.

Argentine political theorist and anthropologist Marta E Savigliano states that “tangos are expressions of the private, personal world, addressed to the public world” (1995 on-line) demonstrating their essentially theatrical intentions. Similarly contemporary improvisational forms in dance and music, that underpin contemporary avant-garde performance and therefore higher education arts culture, evolve from the act of looking inward and listening to the personal. As a complex modern art form that is interpretative and improvisational, tango is an exemplar of how ‘local’ cultures, expressions spiral out and interconnect with global currents and patterns.

Dance Performance: Spirals of Complexity

When making my first professional contemporary choreography “*a still point in the turning world*” (1990) I was in pursuit of moving patterns that express and represent a sense of the dynamics and forms that are intrinsic to our universe. And in positing the question “does the world turn us or do we turn the world?”² I was perhaps asking a practical question, not a philosophical one. Complexity theory suggests that we do play a part in ‘turning the world’, as it recognises that all parts of a complex system feedback and affect the whole: the dancer affects the dance, that affects the audience, that affects their society, and culture and so on.

¹ My current choreographic dance project is entitled *Quantum* and explores the essential notions drawn from quantum mechanics.

² Quoted from the publicity for this work.

A dance where the performers use improvisational structures to create the raw material and key images from which the final work will be derived, can provide a tangible model of emergence at work and in so doing “model[s] the world” (Holland 1998:115). In analyses of complexity and emergence there are different linguistic descriptions of the two terms. I address emergence as the behavioural outcome or activity (the performance) that emerges from a complex system.

I refer to this first professional contemporary choreography to highlight that a correspondence between the scientific and the artistic is long been embedded in creative endeavours such as my own, albeit often in a non-defined, intuitive way. In my early years as a dance-maker I described this interest as one concerned with ‘how the world works’, a curiosity recognised by mathematician and pioneer of emergence theory, John Holland; “Both the poet and the physicist strive to get beneath the surface of events”(ibid.:219) whilst acknowledging that “their disciplines seem very different” (ibid.:218)

I created “*a still point in the turning world*” with a group of dancers using improvisational practices and it was therefore, in part, a collective exercise and a process that accords with Wendy Wheeler’s assertion in her exploration of complexity, bio semiotics and the evolution of culture, that “[c]reativity – the means by which human cultures evolve – is a social affair” (Wheeler 2006:141). Working in this way enables dances to be created from the ‘bottom up’ and this is a signifier of emergent activity.

It is common in contemporary dance that the choreographer and her dancers create a social community from which the work emerges. From a post-modern perspective a series of fragmented worlds collide, through deconstruction, parody and pastiche they invent a shared movement language from differences, from which a collage of performance expressions emerge:

The postmodern body is not a fixed, immutable entity, but a living structure which continually adapts and transforms itself. It is a body available to the play of many discourses. Postmodern dance directs attention away from any specific image of the body and towards the process of constructing all bodies (Dempster 1994:32-3).

Referring to the postmodern body as a living structure acknowledges the ever evolving, changing nature of performance works as both biological, of the body/all bodies, and of the shared imaginations of its creators and performers. Through the act of dancing, the body expands to more than itself, echoing the ever-expanding nature of the universe of which it is part. That every-expanding universe, with its planets, stars, black holes, its known and unknownness, can be visualised as a place of dynamic spiralling as the spiral is essentially a dynamic form, a theory in practice that accords with a postmodern dance aesthetic, “a discourse defined not by a choreographer’s specific language, its permanence, canon or category, but by its practice of process’ (Claid 2006:128). Within such an aesthetic the “*a still point in the turning world*” choreography evolved through experimentation on my own and other dancers’ bodies in the making of spirals and exploring how are they initiated in the body and where they lead. Thus, those bodies are the subjects and objects of the work and the embodiment of a theoretical exploration situating such a choreography as a practice-as-research and postmodern activity.

My route to exploring complexity and emergence came through the recognition that many of the dance patterns that were emerging from dance improvisations I initiated as being similar to fractals. Fractals³ show self-similar geometrical patterns emerging from an endlessly

³ A term coined by Benoit Mandelbrot when an IBM worker in the late 1970s. “Mandelbrot set up a mathematical equation on a computer which through colour coding its different values shows itself as an evolving intricate swirling pattern that demonstrates self-similarity on many scales” (Hofstadter 2007:69).

re-iterated equation in a feedback loop. Such self-similarity and iteration on many scales can be seen in the vein pattern of a leaf in relation to the root pattern of a tree, or in the similarity between a cauliflower floret shape and the cauliflower itself. Mandelbrot was able to show that this 'new geometry', through the rapidly evolving computing power of the 1970s, whilst irregular, contained order. Fractals are the patterns of Chaos (Briggs 2002) a theory that helps understand the extraordinary dynamics where tiny interferences to systems can wreak huge changes such as the now famously understood descriptor that a butterfly flapping its wings can tip a system to a critical state where chaos ensues in, for example, a tornado. Whilst sharing the dictum that all parts feed back and affect the whole, chaos and complexity are essentially different in that "[c]haotic systems are exquisitely sensitive to initial conditions, and their future behaviour can only be reliably predicted over a short time period" (Coveney & Highfield 1995:39). By contrast "Complexity refers to the phenomenon of order emerging from complex interactions among the components of a system influenced by one or more simple guiding principles" (Gatrell 2005) and is therefore an open system.⁴

In performance we would consider open systems as improvisational. Improvising dancers or musicians might explore particular themes, compositional structures or rules towards building a new collective pattern that whilst unpredictable in some aspects, has a collective shape and is built from shared understandings, or feedback. While these rules may be quite simple, the behaviour which emerges for the entire system is intriguingly complex. In most cases it is rhythmic and fascinating to observe, providing "perpetual novelty" (Holland 1998:4) for both the beholder and the elements (dancers, musicians, performers, collaborators) through who flows the information that creates this autopoietic happening.

In nature emergence is possibly the key to understanding many mysteries concerning the behaviour of the whole (for example a neural network or a biological cell), which depends on the function of its parts (neurons or genes). Increasing numbers of scientific minds are now exploring complexity and emergence for

[a]lthough we may not be able to precisely forecast the long-term behaviour of a complex system, non-linear dynamics shows that we can gain some insights into its global behaviour... These insights may provide the bedrock of understanding for future decision-making (Coveney & Highfield 1995:331).

In understanding the key characteristics of a complex system, might we be able to identify them in local-level practice in performance and pedagogy, whilst also seeing how the long-term sustainability of performance as part of cultural heritage may evolve. Indeed Cilliers ties the embrace of complexity as important to humankind's progression;

We need to come to grips with complexity in order to ensure our survival. At the same time, complexity is the fount of liberty. In both science and politics, therefore, the acknowledgement of complexity is a vital step (Cilliers 1998:127).

The Characteristics of a Complex System

In his analysis he defines the ten characteristics of a complex system which I use here as a template for understanding, and becoming participant with, complex dynamic cultures in performance making contexts.

⁴ Being a new field of research in open systems there are interlinking relationships and common understandings between: systems research, complexity, networks, adaptive systems and emergence.

1. Complex systems consist of a large number of elements
2. These elements interact
3. These interactions are rich
4. These interactions are non-linear
5. The interactions are with local neighbours
6. The effect of the activity can feed back on itself
7. Complex systems are usually open systems
8. Complex systems operate far from equilibrium
9. Complex systems have a history
10. Each element is ignorant of the behaviour of the system as a whole

Consist of a large number of elements

In my practice as a choreographer and dance teacher I often work in situations with a large number of elements, the first characteristic of a Complex system as defined by Cilliers, where the participants are the elements. Dance offers many examples where dynamic patterning between large numbers of 'elements' is the core aesthetic effect of the style, from folk dances to a ballet chorus.⁵ However, in these dance examples the dancers are not asked to process information and feedback into the work. It is only with the democratic political intentions of the postmodern dance innovators that art-making dancers started to see themselves as equal active agents in a creative process that is essentially collaborative. Emilyn Claid, key innovator of the British New Dance scene, speaks here with a voice resonant with emergent notions;

A collective dynamic is more than the sum of its parts. The power of the collective to change cultural movements does not emerge through the voice of a single author. Neither does it emerge from the unity of the group. The outcomes of collective working occur in the weaving of a connecting web of processes between people and things. The web creates its own patterns of change that are invisible to established systems of production (Claid 2006:124).

These elements have to interact

An improvisational dancer is a creative artist motivated to explore creative paths for their own sake. They choose a journey of independent exploration and discovery which, whilst responding to 'rules' of enquiry, of their discipline, of their environment, leads them to new interactions. Their personal uniqueness will be expressed in their actions. Rosemary Butcher refers positively to improvisational dancers she collaborates with as 'intelligent rebels' (Foster in Butcher and Melrose 2005). Working collaboratively is a key methodology in education and in arts pedagogy in Higher Educational contexts.

Paradoxically, it was a computer scientist, Joe Faith, who I worked with on an early project looking at emergence and performance improvisation (*Emergence* 2002), who contributed an exercise that always shows unique emergent patterns forming through movement interactions involving a large number of elements.

The shoe exercise. Rule 1: All players remove their shoes and scatter them in the space (this gives quite a lot of shoes).

Rule 2: Set up a continuous movement system such as 'walk on an imaginary grid' or 'walk into and out of the space following your own image of a spiral'.

⁵ Many artists' works have used such an effect where small changes amongst many elements are the work. Such as painter Jackson Pollock, composers Steve Reich and Phillip Glass.

Rule 3: If you pass a shoe pick it up.

Rule 4: If you pass another shoe on the floor put the one you are holding down next to it.

The outcome of this exercise is emergent. Piles of shoes form but the patterns made by the size and spacing of those piles can never be predicted. I have worked with variants of this exercise as part of previous performance works *e-Merge* (2004), and in *Baby* (2003/6) where, instead of shoes, we used about 90 small pink beanbag pigs⁶. Examples of such complex impermanence.

These interactions are rich

In the context of scientific research that asks “how does a persistent, flexible organization emerge from relatively inflexible components” (Holland1998:82), both ant colonies and neural nets (Johnson 2001, Holland 1998) have been examined to provide insights into the way such a system operates. Ant colonies are an excellent example of complex systems that are made up of large numbers of same elements, where the ants, which interact and respond only to local information, generate a complex society. Ant colonies are self-generating systems where the crucial behaviours that define them as complex systems are clearly demonstrated by the ants’ emergent behaviour. The colony’s activity is based on ant genetic programming in response to local environmental conditions. Each of the ants has a set of behaviours that are triggered by certain environmental situations and pheromones (scent) left by other ants. The community is “typically possessing only ten or twenty signs” (Johnson 2001:75) such as: follow that pathway, forage for food, enemy nearby. Ants, in picking up scents that trigger different actions, are richly connected readers of signs, as we are, and these semiotic interactions contribute to “a form of collective memory” (Bloom 2000:38).

In performing a dancer similarly performs not only their own parts or roles but also connects and presents this ‘collective memory’, which might be considered as the essence of the whole work, or indeed even something more universal. Contemporary dance maker Siobhan Davies talks of making structuring decisions “in the moment”, aiming for an audience to see both the simplicity and the complexity (Davies in Butterworth & Clarke 1998:57) inherent within it. The dual identity displayed by task-based ants/dancers as integral part of ant colonies/dance performance systems that are able to move “between the abstract and the figurative” (ibid:63) echo the paradoxical nature of matter itself. As Coveney & Highfield state “all physical objects are intrinsically ghostly” in the sense that

Particles of matter are waves of energy, and waves are particles, appearing as one or the other depending on what sort of measurement is being performed in any experiment (1995:81).

And working with paradox is something that that feels very familiar when creating performance from improvisational starting points.

The [improvising] performer refers to a map of possible choices determined by the structure of the form. The map must be recognized by a community of participants in order for the improvisation to make sense, but the map doesn’t definitely mark the entire terrain. Here is the paradox of improvisation: it is neither truly spontaneous nor fully choreographed (Cooper-Albright & Gere 2003:106).

⁶ In my performance making I usually work with other media: music, projected still and moving visual images, text, props, costumes and increasingly new technologies.

These interactions are non-linear

One of the key factors regarding complex systems is their non-linearity. They ‘do not obey the simple rules of addition’ (Coveney & Highfield 2006:9). When working with complexity, a scientific theory that might be considered as an equation for producing emergent outcomes, we are not confronted by absolutes and exactness. In the performed arts it is the differentiation of presentation of known material or texts (scores, choreographies, etc.) that may get called artistry. And for system creators such as choreographers and composers, it is perhaps a requirement that the innovator of a discipline changes fundamentals of that known genre or language. Wendy Wheeler in her exploration of complexity, bio semiotics and the evolution of culture, articulates this as

when a person has become so familiar with an area that they are able to ‘tweak’ it with confidence in order to explore the bending of its rules. Transformational creativity occurs when rule-bending gives way to an entirely new formulation of the dominant rules of the field (2006:140).

For arts disciplines to evolve and find new audiences and therefore to remain meaningful as part of a wider evolving culture they must mutate and change. Such mutation and change results fundamentally from rich interactions.

The interactions are with local neighbours

In my practice I have observed that by encouraging interaction between dancers and ideas through improvisation at a local level, new unexpected outcomes arise, which in turn may become symbolic theatrical images/ideas that are central to a new performance work. Birringer perceives this in Pina Bausch’s choreographic approach “thirty dancers and their diverse personalities constitute the dynamics of the improvisation” (1998:91) underscoring that the interaction between the company members, ‘local neighbours’, as they explore certain choreographic ‘rules’, create, in some large part, the textural quality of an emerging performance work. Similarly, in the opening minutes of my *Herdfilm* (<http://www.vimeo.com/7641806>), local interactions between individuals can be seen starting to transform into a group dance work. For example, in the upper oblong window of film footage, as it opens, the dancers can be seen in rehearsal clothes, individually walking spirals in shared space. After a short while you can perceive a transition from five dancers walking their own spiralic pathways, to five dancers interacting with each other in a spiral informed, self-organising group dynamic.⁷

As stated earlier New Dance and postmodern dance practices had at their core the breaking of boundaries between art and everyday experience, the opening of routes to the high art experience to non-dancers and non-western disciplines in an attempt to invigorate the art experience beyond the traditional frames of reference. This is particularly evident in the work of Pina Bausch, recognized as a major figure in the world of ‘high art’ dance, in her restaging of her 1978 work *Kontakthof* in 2000. She remade this work using male and female performers aged over 65, who were not professional dancers. In this version the change in the age of the cast rewrote the themes underscoring the work: the interrogation of male/female relationships, the

⁷ Scientists define this shift as a ‘phase transition’. It occurs because of the flow of energy/information between the elements thus “changing from one defined state to another at a critical juncture” (Johnson 2001:111).

offering of self to others for validation and acceptance. In restaging it thus with 'non- dancers' who are clearly in a stage of life where the conventional demands of dance performance are very difficult, the work creates a new and powerful resonance. As with so much postmodern work, performances of *Kontakthof* are founded on a complex network of local relationships between performers, images, and questions about how we deal with our bodies and relationships, and, I would argue, the performative outcomes of *Kontakthof* are emergent. Such emergent performance, demonstrated by this latter version of *Kontakthof*, is understood as a live event that results from the play of relationships between the elements (the older performers, the music, the set, the music, the audience) on stage in time.

The effect of the activity can feed back on itself

Yvonne Rainer was also one of the postmodern dance innovators associated with the New York based Judson Church group. Demonstrating synergy between the development of the science of complexity and postmodernism, her 1970 project *Continuous Project - Altered Daily* created a system of rules that were given to the dancers to interpret, thus integrating into the performance their own feedback and the environmental circumstances pertaining at that time. Rainer, through the contrasting rules and possibilities for performing material given to the dancers

set in motion a mechanism for producing change, for promising and pursuing development and variation and at the same time deferring and displacing possible conclusions. In this way, and like that performance which is ostensibly 'minimalist', the Project puts into question the possibility of separating the 'work' from its immediate circumstances, and so of identifying those properties which it is in possession of and by which it is defined (Kaye 1994:116-117).

Kaye here highlights how feedback systems are deeply woven into such performance works, thus ensuring ever-changing outcomes and in addition he draws attention to the term 'minimalist' implying, in my terms, that it is connected with emergence. Minimalist work is foremost prescribed by repetition of simple phrases that may modulate over long periods of time. The term 'minimalism' is most often used to denote a style of contemporary music composition and includes compositions by artists such as Steve Reich, Philip Glass, John Adams and Gavin Bryars. Music by all of these artists has been used by established contemporary choreographers such as Lucinda Childs, Shobana Jeyasingh, Merce Cunningham and Anna Teresa De Keersmaeker. An example of this genre of music-dance collaboration, which I saw performed in 1999 in London's Queen Elizabeth Hall and excited me by its obvious emergent structuring, was De Keersmaeker's hour-long choreography to Steve Reich's *Drumming* (1970-71)⁸. The choreography for this piece unfolds from a single motion phrase, explored exhaustively for an hour through endless combinations, variations and transformations.

De Keersmaeker manipulates simple gestures and basic movements into drawn out swathes of pulsating dance patterns that heavily use repetition, giving a hypnotic effect that plays in contrast to sections of sensual simplicity and intimacy. At all times one is able to identify the simplicity (the base material, the human dimension) from which the complexity of the dance composition is derived.

It is through repetition that subtle differences can be fore grounded. Indeed, de Keersmaeker defines her own choreographic intention as follows:

I try to bring the "I" and the "you" to the surface. The structures give precisely the sort of freedom that allows individuality to emerge. It's like a machine that starts

⁸ This composition by Reich is exclusively written for percussion instruments and has been used by many choreographers (e.g. Laura Dean 1975) to accompany new dance performance.

up and must continue until it winds down by itself, but allowing flavours and colours to stand out more strongly⁹.

The use of repetition and feedback entwines dance and music and, for my purposes, also the individual and the group, so closely in Drumming that it shows the shape shifting nature of complexity. A dance where the performers use improvisational structures to create the raw material, and therefore are feeding into and contributing to the key images from which a performance work will be derived, can provide a tangible model of emergence at work and in so doing “model[s] the world” (Holland 1998:115).

Birds flocking can similarly be understood as made up of a web of local interactions that whilst invisible to the human eye are a key example of emergent behaviour. The patterns of the flock cannot be described by the behaviour of individual birds, and consequently have been a core inspiration for the computer modelling of complex systems (Waldrop 1993:241).

Complex systems are usually open systems

Artists such as Pina Bausch have created new performance works not by ‘choreographing on’ dancers but by asking questions her performers. These simple starting points, often concerning “everyday social experiences of the body” are modelled into “objectifying sequences of images and movements” (Servos 1998:38). And these sequences of images are put together in postmodern works as collage or montage. This principle of montage that Bausch established in her work is a methodology has influenced many contemporary performance makers. In the context of my work I was particularly drawn to Servos’s notion that

The linkage of scenes in free association, without the need for continuity of plot, psychology of character, or causality, also refuses to be deciphered in the normal way. It defies interpretation (ibid.).

Servos’ analysis of how Bausch’s work challenges theorists’ or critics’ attempts at deconstructing her performance work suggests that, in formal terms, her works could be seen as open systems. Open systems respond to their environments, and in Bausch’s performance works we see the use of unusual, challenging and distinct stage settings as a key creative strategy. In *Viktor* (1986) huge earth walls skirting the stage are gradually eroded as individuals throw shovels of the earth down into the performance space throughout the duration of a work which includes: a woman throwing bread gently to feed an origami paper bird; a woman approaching a microphone on a stand but her only utterance is a deep exhalation of tiredness? pain? after which she falls onto the extended arms of a line of men lying in a row next to her. The men pass her prone body across the line of them, she is put back onto her feet, walks back to the microphone and repeats the process; someone walks onto the stage with a sheep on a lead. *Carnations* (1982) has a stage covered in, as you might imagine, carnations, and for “1980” (1980) the stage was covered with grass. Such stage settings demand that a major part of the work is the relationship between the individual performer’s negotiation of their own material within the challenging environment. In these works we see the use of

systems whose state changes over time. Systems such as these are multifaceted, complex and interdependent. They constantly push and pull at themselves to

⁹ This quotation was taken from an on-line source relating to the Keersmaecker company that is no longer available. The author was Adolphe, Jean-Marc. Translation Duckworth, O. *Drumming*: ‘Stripping down complexity’ no date.

create the sensuous irregularity and unpredictability that is the signature of our physical environment (Briggs 1992:15).

Briggs' scientific definition of a dynamical system echoes the 'signature' strokes of Bausch's oeuvre, also created from sensuous, visceral activities between people in relationships of 'irregularity and unpredictability'. Briggs also refers to the 'push and pull' that is inherent within systems.

Complex systems operate far from equilibrium

This tension between the individual and an environment which is evident in Bausch's works is indicative of 'open' work and also illustrates how complex systems operate far from equilibrium as represented by an enormous concrete wall tumbling down at the start of her *"Palermo, Palermo,"* (1990). Such works have risk and change and the unexpected at core in mirroring the chaos and complexity of life. Sadly, the choreographer died in 2009 and so new epic works cannot be expected, but due to the enormous popularity of her work the world over the Bausch company continues to painstakingly reconstruct and tour works internationally for the benefit of current and future generations. Her intangible heritage is further celebrated in film maker Wim Wenders' film *PINA* (2011), created for her with her legendary company Tanztheatre Wuppertal.

The international popularity of her work beyond just 'dance' audiences shows the humanity in this complexity, that chaos is essential to the human heart here confirmed by Briggs. "Heart attacks and epileptic seizures are, scientists think, a form of self-organised chaos which occurs when the heart or brain suddenly becomes too regular" (Briggs 1992:110) and heart attacks often point towards death. The notion of death or complete inactivity and lifelessness is starkly antithetical to the art-form of dance particularly. Cilliers pointing to the importance of chaotic activity to healthy living systems, "Equilibrium is another word for death" (1998:6) makes an urgent case for its recognition which Katherine Lett shows is beginning. In her article 'A Case for Chaos Theory in Nursing' "Strategies such as abandoning false notions of control and acceptance of the uncertainty of the future are proposed as means by which nurses can apply chaos theory to their practice" (Lett 2001:16).

Complex systems have a history

Embracing the abandonment of 'false notions of control' and accepting paradox in creative states that are far from equilibrium in performance making as a liminal space where "people 'play' with the elements of the familiar and defamiliarize them" (Turner 1982:27). The work of anthropologist Victor Turner resonates with the multi-directional flow of possibilities of the spiral. A flow of information forwards and backwards through space and time brings us to the penultimate characteristic of complex systems and one that addresses so directly the concern with sustainability of performance and heritage. Whilst complexity states that systems change, unpredictably, they carry with them the histories of both themselves, and the elements that create them. In the arts we refer to the canon of work upon which the present or current sits. In performance, this may be the text – whether choreography, score, narrative – and also the disciplines and languages that the performers draw on in its presentation. Dance improvisation practitioner Juleyn Hamilton conjures the notion of these evolving iterations as an organic process: "Every movement has within it a seed of another movement. It is just like any lifeform. It has within it a living structure" (Hamilton [video 1993]). Parsing movement making with the evolution of live organisms suggests an interdisciplinary culture interested in the creation of hybrid forms made from Nature and Culture.

Performers, like birds flocking, in building a performance through responding to tasks in relation to time and space are part of a spiralling complex system that draws on their own own

history of experiences, physicalities, biologies, thus imbuing themselves integrally into the final performed work and it in them. Such mixing of material accords with neuroanthropologist Paul Howard Mason's observation that "New choreographies are, more often than not, some form of re-ordering of old worlds into new combinations" (2009:29).

This spiralling flow of new and old into unpredictable new patterning enables what is valued in a community's heritage to be up cycled by a, robust, complex system forward into new cultural form. Such sustainability, in terms of complex forms, is understood as clusters or hubs of material, which collectively shared, become new motifs or symbols. Such cultural signatures are sustained into the future because they are increasingly strengthened as they are repeatedly communicated. They are composite outcomes of a number of 'rules' in a system that seem to take hold that become higher level rules for future evolutions and communications. Points of interconnection are weighted and this "Clustering is ubiquitous... a generic property of complex networks (Barabasi 2003:51) ".

In terms of performance, and thus art, and ultimately in understanding cultural heritage through understanding this aspect of complexity, that it evolves higher level, more sophisticated language, reminds us that whilst seemingly impermanent, because dynamic, leaves permanent constructs.

Each element is ignorant of the behaviour of the system as a whole

To grasp the final tenet of a complex systems that demonstrates emergent behaviour is to consider the ant ecosystem as referenced earlier. The whole (the colony) is clearly greater than the sum of its parts in that the removal of one or several ants will not hinder the colony's survival and evolution. Each ant (element) is clearly unaware of what the majority of ants are doing and of the global shape of the colony it contributes to, instead concerning itself with getting information as to its task from interaction with other elements at a local level.

And towards conclusion, making a micro macro leap from the tiny ant to "one of the greatest figures of twentieth-century mathematics and, from the perspective of complexity, also of science" (Coveney & Highfield 1995:29) whose work and life perfectly demonstrates this principle. Traced to one of his last published papers by British mathematician Alan Turing, famous for his work breaking the German Enigma codes at Bletchley Park during the Second World War¹⁰ which "demonstrated using mathematical tools how a complex organism could assemble itself without any master planner calling the shots." (Johnson 2001:14). Turing has been acknowledged by those engaged in the study of emergence as its progenitor for he created the first blueprint of the computer which has subsequently "provided a tool for measuring complexity" (ibid.:30) and therefore enabled the scientific community to identify emergent phenomena.

The use of the term universal computer underlined a vital shift in mathematics, for Turing's abstract notion of a machine was designed to tackle any mathematical problem "in the sense that a modern computer can carry out any program" (Coveney & Highfield 1995:30). The computer, being capable of processing many different types of equations, languages and softwares to a considerable degree of complexity consequently opened the potential of cross-disciplinary dialogue on many levels, significantly contributing to a digital art-science culture which I consider myself part. Turing's universal machine has particular relevance to artists as it started "as a purely imaginary device, a "thought experiment" (Gribbin 2004:114). Such imagining/inventing constructions before knowing that they are feasible is one of the traditional routes of the artist.

¹⁰ A number of documentaries have been made about his work and life. In October 2014 a new film about his work and impact will be released and an orchestral work by the Pet Shop Boys had its world premier at the Royal Albert Hall as part of the 2014 BBC proms.

To my mind an analogy can be found between the use of the computer and postmodern dance, for just as the modern computer is able to take on the physical computational activity of a mathematical problem, a group of improvising dancers can take on a choreographic problem through detailed physical activity, turning ideas into movement and then performed dance. Just as it is the computer programs and systems that are the heart of a computer as a creative tool, it is the performance making system that can work with any number of ideas, or styles, or participants, and is, perhaps, the most important part in such a creative process.

Conclusion

In this writing I have addressed manifestations of complexity and emergence in different fields of activity demonstrating that emergence theory can be applied across disciplines, and are therefore as relevant to computer scientists and choreographers as to philosophers and biologists.

The themes permeating my practice-theory research infuse, in a micro-macro fashion, across my various teaching and choreographic activities.

This research is practice-led and is defined by these theories and by the work of influential and highly respected dance artists, highlighting the interplay between my choreographic research and a broader dance context. And like Wayne McGregor, Artistic Director Random Dance, Resident Company at Sadler's Wells, and Resident Choreographer of The Royal Ballet

as a choreographer committed to change, there has always been a seamless relationship for me between the investigation of process in professional work and that undertaken in an educational context (McGregor 2000).

McGregor, whose interests in the art-science-digital interface have particular affinities for me, underlines how all parts of his practice interconnect, from the local to the global, and points to change being an implicit focus in his work. He reminds us also that a dynamic of change or transformation is essential to creative activity echoing that in scientific terms, emergent behaviour self-organises as unique non-linear dynamic patterning from the bottom up and is subject to neighbour interaction, pattern recognition, feedback and indirect control (Johnson 2001). For, in proposing complexity as a methodology for ensuring the 'new' in performance, we surrender complete control and embrace collaboration and interconnection. Just as Barthes posited the death of the author (1977) in his now classic Image-Music-Text linking to a gestalt where the self is activated by relations to others/the environment, so too John Holland ruminates in *Emergence* on "the end of science" (1998:234). Whilst an actual end to either artistic or scientific activity doesn't appear to have come about as yet, these statements do point to a synergy in both scientific and artistic thought and therefore the end of fixed disciplinary boundaries. This writing references interdisciplinarity as central to a 21st century understanding that moves beyond traditional dualistic tension; that the sciences produce knowledge and the humanities address meaning. I propose that in practicing complexity we move away from polarity, which is so evidenced by conflict, towards different modes of knowing, shifting sands, that ripple across many fields.

What I aim to have achieved in connecting my choreographic activity, embedded in its postmodern dance context, to a growing cross-disciplinary field of emergent research with a sci-art interest in a digitally empowered global culture. In analysing and articulating my own history as a complex system dance-based practice-led research I have embedded my work within an interconnected dynamic of artistic and scientific activity that is working towards an understanding of how systems operate across our universe. Such interconnections will, I trust, trigger further understandings.

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Wayang golek ruatan: is “heritagisation” at stake?

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On the Way to a *Ruatan* Performance

It was already the afternoon when we reached the sea. It had been a long journey since the morning as we crossed a large part of West Java province from East to West. We stopped at the house of a friend of the puppeteer, in order to buy fish to bring back home with us. The *dalang* (puppeteer) came with his whole family: his wife, his four children and their own families, and me. The performance was programmed at a place where a Sufi community decided to settle down few years ago. Bamboo houses were dispatched in the hillside, facing the large bay. The road used to stop here, but it was freshly extended until a last impressive building. As we arrived at the stage, the offerings were being prepared. The children immediately jumped out of the cars and started playing on the stage. A moment later, a lady dressed in green came to the *dalang* and started talking to him in a low voice, as in secrecy in the middle of the tumult ... She had had a dream about this event, and she hoped it would save the world.

Later, the *dalang*, his son and I were invited to meet the leader of the community. The man was old and wore thick glasses. He was talking animatedly on his cellular phone, about a plan, a big amount of money, and the future of the Republic of Indonesia. The man spoke with riddles. I understood that he used to be close to Soekarno, the first President. He showed us that he was keeping Soekarno's car and chairs as important regalia. This man had many wives, who lived with him in the settlement. One of his daughters was getting married, and this brought him to ask for a *ruatan* to be held. Through the performance, he also meant to keep his community together around him and prove the unity and the omnipresence of God, following Sufi understanding. The *dalang* listened carefully and asked few questions in order to adapt his performance. It was already dark when we came back to the stage. Later that night, as the *ruatan* was starting, the lamp flickered and the *dalang* kept silent for a moment. This performance was witnessed by few of the most prominent Sufi leaders of the archipelago. The *dalang* told me later that this was his first *ruatan* and that he was a bit afraid of it beforehand as he did not exactly understand what his sponsor wanted. Performing *ruatan* is a heavy task for a *dalang*, the one you cannot escape the consequences.

This paper will propose a short description of a performing ritual that was not studied since the late 1970s, as well as an analysis of the transmission of cultural elements in time. Finally, we will study how practitioners understand and interpret *wayang golek* for *ruatan* in the 2010s, as well as the impact of cultural heritage paradigm and policies this local practice.

What is *Wayang Golek* and what is *Ruatan*?

Wayang golek is a rod puppet theatre, deriving from Javanese *wayang kulit* (leather shadow puppets). It has been played since the 19th century, mainly in the Western part of Java Island, known as Sunda. It is performed by a single *dalang* (puppeteer) playing the *wayang* (puppets) on a banana log (*jagat*). He is accompanied by *sinden* (female singers) and *nayaga* (musicians), playing on a *gamelan* (mainly percussive collective instrument). The troupe is completed by *peralatan* (technicians) who carry and set the *gamelan* and the sound system. The audience participates actively and is large, never limited in age, sex or social status. A *wayang golek* performance usually starts at 8:00 p.m. in the evening and lasts until 3:00 a.m. or 4:00 a.m. in the morning (it used to last until dawn). The classical (*purwa*) repertoire borrows episodes (*lakon*) from the great Indian epics of Mahabharata and Ramayana (more or

less derived), as well as from the local cycle of Babad Lokapala. For this reason, Sundanese *wayang golek* is also called *wayang golek purwa*, but here I will refer to it as *wayang golek*. They are performed in Sundanese and Kawi (old Javanese). *Wayang golek* is generally played for life-cycle events celebrations (wedding, circumcision), large scale public and political events such as cities' anniversaries or campaign for elections as a ritual entertainment considered as suited to unite population. It can also be performed for specific rituals such as propitiatory events and ... *ruatan*.

Ruatan is widespread in all Java and Bali islands and can be realised through various means such as *wayang kulit* (leather puppets) or the simple reading of mantras. In Sunda, *ruatan* is realised with *wayang golek*, as a particular type of performance. In this context, the puppet theatre becomes the ritual in itself and acquires a strong efficacy. It is then called *wayang golek ruatan* (*wayang golek* for *ruatan*, I will refer to it as *ruatan* throughout this paper) and uses the same setting and puppets as regular *wayang golek*. However, it is shorter in duration (three to four hours in general), as it starts usually at 00:00 in the morning, when Batara Kala is supposed to be hunting. *Ruatan* is normally performed after a regular *wayang golek* performance (that lasts between 8:00 p.m. – 00:00 a.m.). A performance of *wayang golek ruatan* is aimed at purifying or strengthening a person or a place that would fall under one of the five following configurations and hence become potential victims of Kala (*mapag Kala*) (Foley, 1984 and 2001):

1. Configuration of children in a family
2. Conditions surrounding the individual's birth
3. Conditions resulting from breaking taboo (*pamali*)
4. Conditions establishing a new endeavour
5. Individual's misconduct

Nowadays, *ruatan* is more often performed in a preventive way. It is supposed to protect every person in the audience as well, and there were times when leaving a *ruatan* performance before the end would be considered as extremely dangerous since Batara Kala is prowling around the stage. The price for such a ritual performance is out of value, as rich entrepreneurs would pay until hundreds of millions rupiahs for it in 2012. Sponsors include families who want to protect their children before marriage or circumcision, head of religious communities, business men.

The story (*lakon*) performed is always the same and is called Murwa Kala. It tells about Batara Kala's appetite for human flesh. This terrible god is Batara Guru's (Shiva) son born from his spilt seed that fell in the ocean. After asking for the permission of his father, Batara Kala receives a list of allowed victims and a weapon to kill them, the machete Simantawa. As Batara Kala departs, ready for hunting his victims, Batara Guru himself descent to Earth in order to try to control his demonic son, after sending god Vishnu as *dalang* (puppeteer) Kanda Buana in order to protect (*ngaruat*) the people threatened by Batara Kala through a *wayang* performance. Disarming the malevolent god and giving him food and the means to produce more of it through the multiples offerings present on the stage, Vishnu is one more time ordering and balancing the world while reassuring the agrarian basis of the Sundanese society. Thus, *ruatan* requires complex offerings of thirty three different types, including a complete set of food, drinks, clothes, cooking and farming tools as well as different types of seeds, all of them used for the final "domestication" of Batara Kala by the *dalang*.

[INSERT FIGURES 1, 2, and 3]

Figure 1. Batara Kala (left), receives the machete Simantawa from his father Batara Guru (middle). Dalang Asep Sunandar Sunarya in Karawang- West Java, 20 November, 2010.
(Source: Sarah A. Andrieu, 2010)

Figure 2. Batara Kala is hunting. Dalang Iden Subasrana Sunarya in Sukabumi-West Java, 28 October, 2012. (Source: Sarah A. Andrieu, 2012)

Figure 3. Batara Kala (left) arrives on the stage of dalang Kanda Buana (third right) and asks for his victim, the child Jatusmati (second right). Dalang Osid in Purwakarta-West Java, 07 July, 2012. (Source: Sarah A. Andrieu, 2012)

Dalang Ruatan

Ruatan performance is particularly focused on the specific role of the *dalang*, which goes along with the interpenetration of the story and the performance time through the story within the story about Vishnu becoming *dalang* Kanda Buana. However, not every *dalang* can perform *ruatan*. The genealogy of the *dalang* is essential: the puppeteer has to be from a *dalang* descent (in certain areas of Java, he has to prove seven generations of *dalang* at least) (Headley, 2000). *Dalang* in Sunda even connect their descent to the Nine Wali (*Wali Sanga*) who played an important role in the spread of Islam in Java and Indonesia, faithful to the Sufi brotherhoods tradition connecting their leaders to the historic leaders of Islam (including the Prophet Muhammad himself) through *silsilah* (genealogy). *Dalang* acknowledge that performing *ruatan* has a certain moral weight. The puppeteer cannot disappoint the person ordering it, and a refusal is impossible. Hence, *dalang* who can perform *ruatan* are chosen and, in a way, made by their sponsors, as much as they fulfill the basic conditions of experience and descent.

The *dalang* is seen as a mediator between the seen and the unseen world, and as such, his prestige is at the highest as well as is the risk of accident if something goes wrong during the performance. He is literally responsible (*tanggung jawab*) for what is happening to the people attending the performance as well as for his own troupe. His task is to deal with the problems of the sponsor as explained to him before the performance. To achieve this objective, the *dalang* uses few specific tools. The most powerful are five specific invocations or mantras (*Kidung*) he reads in a low voice from a book handed down from his master puppeteer. With them, altogether with incense burning and the use of a ritual *keris* (dagger), he turns the water from seven different sources into the holy water that will be used for bathing or even drinking for curing the person concerned

Ruatan In Changing Contexts

In 1945, Indonesia achieved independence after two hundred years of Dutch colonisation and three years of Japanese occupation. In the beginning of the 1960s, Soekarno, the first president of the young republic, came closer to the Indonesian Communist Party (PKI). The abduction of six generals on 30 September 1965 opened a year of massacres where militias killed five hundred thousand to one million of communists, their relatives and friends. It ended in 1966 with the coming to power of general Soeharto who started the authoritarian regime of the New Order that would last for the next thirty years. In 1998, the New Order regime collapsed with the withdrawal of General Soeharto, after the Asian monetary crisis (1997). A period of Reformation (*Reformasi*) followed, that was characterized by processes of democratisation of the political system and decentralisation of a formerly highly centralised State. The development of regional TV and radio channels, the teaching of “regional” languages (such as Sundanese) at school anticipated a kind of cultural revival. In recent years, traditional clothes (*pangsih*), headdress (*iket*), symbolic weapons (*kujang*) and bamboo objects considered as authentically Sundanese are sold in the streets of Bandung, at the core of the Sundanese land. Parallel to democratisation, a rise of political Islam and the emergence of radicalism has been observed (Feillard & Madinier, 2006), and the trend seems to be to Arabic standards and symbols.

Ruatan was part of the modernisation process in Indonesia during the 1960s and 1970s, as it was often performed before the opening of new factories and academic buildings

in the industrial suburbs of Bandung (Foley, 2001). In the 2010s, *ruatan* can be seen as a way to answer and deal with globalisation, facing world crises such as the 2008 financial etc. If we compare the data on *wayang golek ruatan* in the 1970s as documented by Kathy Foley (1984, 2001) with recent research, we can observe few changes within the actual performance of the ritual. First of all, *ruatan* can now be held during daytime and is usually followed by a regular *wayang golek* performance at night. A second element subject to changes is the use of the *keris*, as religious *ustad* (religion masters) are afraid that people believe in and worship the *keris*' power rather in God's power. As such, *keris* seems to have been neutralised and I never witnessed any *dalang* holding it on the forehead of the person for whom the performance has been commissioned, as described in the 1970s (Foley, 1984).

Another element concerns the use of water. Water is the physical centre of *ruatan* as it concentrates the power expressed by the different Kidung or mantras. The ritual assumes that this water has to be from seven different sources that become one. A big *jajambaran* (clay pot) of water is situated close to the *dalang* on the stage, under the banana logs (*jagat*) where the *dalang* fixes *wayang* during the performance. This water, mixed with seven different flowers, is going to be used by the person for whom the ritual is performed and eventually his/her family. It is the closest to incense too, and the *dalang* puts the *keris* inside when he is not using it. A water drum is set in front of the stage with the same water. This is meant for public use and the audience will get closer and try to get few drops or a full bottle as soon as the performance is over. This water used to be used for drinking and bathing, but nowadays *dalang* advise the population not to drink it anymore, for health reason. Finally, people like to put mineral water bottles on the stage next to the *dalang*. They put their names on it and open the cap in order to fill them with sacredness. Classically, *ruatan* ends with the *rebutan* of the sacred water, as well as of the offerings displayed on and around the stage. *Rebutan* is an act of struggle and dissemination, where one tries to grab some of the benefit of the event. It echoes fertility rituals and seems to constitute the dark side of the coin of the polite and ordered *slametan* ritual (also called *syukuran* in Sunda) (Pemberton, 1994).

On 3 December 2010, in Purwakarta regency, I witnessed a *ruatan* performed during the day for a bride who was about to get married few hours later. During the last Kidung (Kidung Panundung), as Batara Kala is satisfied and ready to leave the stage wrapped in a white cloth, the audience was ready for the *rebutan*. However, there are strict rules concerning the very moment the *rebutan* is allowed and a few people from the *wayang* group had to retain people from seizing the offerings. As the tension increased while the *dalang* was finishing the last mantra, musicians gathered around the *dalang*. People from the audience asked for water from under the *jagat*, as the bride, dressed in red, was installed in front of the big drum. Finally, as the audience jumped on the stage and literally ripped of the hanging offering, the bride was given holy water first, and the access to it was freed after that. Everyone tried to wash their face or get a glass or a bottle of the precious liquid, in a loud atmosphere. Two years after, I observed two other *ruatan*, one hold for a successful entrepreneur in Jakarta, the other for a religious community in Sukabumi regency. For both of these occasions, offerings were displayed on the stage, next and in front of the banana log. On the end, no one tried to get the offerings except the troupe and the family of the *dalang*. In Jakarta, the participants queued politely with empty bottles in order to fill them at the big container. In Sukabumi, the holy water was guarded by watchers in combat trousers and again, participants would queue in order to get some water. The ritual seemed to be domesticated, just as Batara Kala had been, a few minutes before.

[INSERT Figures 4 and 5]

Figure 4. Rebutan for water. Dalang Sinar in Cirebon-West Java, 14 February, 2007. (Source: Sarah A. Andrieu)

Figure 5. The keris in sacred water under the banana log. Right and left: mineral water put down by the audience. Dalang Asep Sunandar Sunarya in Karawang-West Java, 20 November, 2010. (Source: Sarah A. Andrieu)

The Search for Continuity

Many political, religious and aesthetics interrogations revolve around *wayang golek ruatan* in Sunda, but no one actually seems to be questioning its efficacy. I showed somewhere else that *wayang golek* can be considered as the missing link between the Hindu Pajajaran kingdom and the Islamised Sundanese society while recovering from Javanese domination during Dutch colonisation (Andrieu, 2014). Similarly, *wayang golek ruatan* seems to express a strong search for continuity. Headley mentions that the continuity of *ruatan* depends from the recitation of the myth of Batara Kala, as well as from its ritual efficacy through the Kidung recited (Headley, 2000). The core of *ruatan* remains indeed the invocations, or mantras, called Kidung. Although Islam is predominant in the Sundanese region since the 17th century, *ruatan* practices do not seem to have been challenged by it. Kidung are nowadays pronounced in Arabic, in addition to classical Jangjawokan (a mixed language of Sundanese and Kawi, old Javanese). Usually understood as a mantra or invocation, many *dalang* speak nowadays about Kidung in terms of prayers (*do'a*) or in pronouncing the numerous God's names. Kidung are transmitted in books from master to disciple, from father to son. They are considered as a powerful heritage (*warisan*). This is an interesting element, considering that the transmission of *wayang golek* in general follows the examples of skilled *dalang*, through observation, hearing and listening. The essence is then the prayer, so that the faith remains strong, as expressed by a younger *dalang*. The language used for Kidung has to remain secret (hence the mixed language and the low voice recitation, almost not perceptible by the audience). One *dalang* explained that the important thing is not the textual comprehension of it, but it has to be listened to with the heart, with feeling and not with reason, addressing the participants in their outer and inner selves (*lahir batin*), according to Sundanese definition of the human being and worldly perception (van Zanten, 1997). The same *dalang* added that Kidung are the vehicle for communicating with God, so the audience does not need to understand them. The content of the invocations is sacred and has to remain hidden, secret.

Talking about *Ruatan*: Shifting Interpretations and Categories

Ruatan has been understood in many ways, especially in a religious one, where Islam comes to reinforce the efficacy of the practice. According to a *dalang*, *ruatan* is about proving and praising the presence of God. "The people now already start losing balance", says another *dalang*. "They are getting further and further from God". According to him, *ruatan* represents a specific interaction with the magic world (*gaib*). It is about bringing peace (*mendamaikan*) to the relationship between men and between humans and supernatural creatures identified as *jinns* whose task is to disturb humans. Some *dalang* chose to fight them, while others try to find peaceful agreements. The same *dalang* acknowledges that whether he wanted it or not, performing *ruatan* forced him into mysticism. Many *dalang* mention that they receive signs from the supernatural world during *ruatan* performance or even before, through dreams usually. At the same time, several *dalang* consider that *ruatan* is actually destined to leaders who are now getting further from religious teaching and only think about money. *Ruatan* reminds them that one day they will also be victims of time and age, as anyone is, and that "Time is the most powerful in the world". Batara Kala is indeed the time that picks people (Basset, 2010), regardless of their social origin or functions.

In parallel, many performers consider Murwa Kala and the *ruatan* performance as the origin, a kind of paradigm for *wayang*. Foley (1984) mentions that the *lakon* Murwa Kala is also a kind of "ur-myth underlying the three great epics of *wayang* repertoire" (p. 63) (Babad Lokapala, Ramayana and Mahabharata) as evil forces are challenged and balanced anew by God Vishnu. As such, it seems to constitute also a prototype of all *wayang* performances

where order is re-established after being troubled by malevolent characters. Finally, *dalang* also reckon that *ruatan* is *buhun*, ancient, at the origin of the Sundanese culture, which renewed valorisation becomes an element of continuity of the practice.

Culture and Heritage

On the one hand, this emphasis put on Sundanese elements seems to echo the Sundanese renaissance that was at the origin of *wayang golek* in the 19th century. On the other hand, it participates to the construction of the Sundanese culture, inherently essentialised. I showed somewhere else (Andrieu, 2014) that considering a practice as “cultural” is nothing but neutral, especially in Indonesia (and even more specifically in Java) where “culture”, “tradition”, “ritual” categories (and their translation in Indonesian as “*budaya*”, “*kebudayaan*”, “*tradisi*” and “*ritual*”) were created as political tools for the domestication of the elites that had lost military, political and economical power due to the Dutch colonisation (Pemberton, 1994). On the other hand, considering something as “cultural” is often a way to deny its other dimensions and to essentialise identities, as shown by Amselle (Amselle, 2001). Between the 19th and the 20th century, supported by the impulsion of Orientalist studies from Europe (mainly the Netherlands) and by the need of Javanese elites to hold on to something and reassure their power on the population through new media, many practices were thus categorised as culture, arts, traditions or even rituals, whereas these same elements were previously not distinguished from their context, be them ordinary or extraordinary. In doing so, the same elements became isolated, easier to manipulate for achieving political objectives such as colonial control, nationalism and finally the construction of an Indonesian culture and identity since the independence of the country in 1945. As early as the beginning of the 19th century, *wayang* has been considered as an art, part and/or constitutive of Javanese culture. In Sunda, the elite had been under Javanese domination since 1579 that marked the fall of the last West-Javanese Kingdom of Pajajaran (Hindu) under the onslaught of the Sultan of Banten. The creation of *wayang golek purwa* seemed to provide the perfect missing link in Sundanese identity as it used a Muslim media (rod puppets are said to have been invented for the propagation of Islam in Java by the Nine Wali (Wali Songo), while *wayang kulit* (leather puppets) was still much filled with Hindu elements) with Indian and local stories (from the great epics of Ramayana and Mahabharata as well as Babad Lokapala) in Sundanese language that was banned for three centuries. Soon, *wayang golek* spread within the population of the highlands and the number of *dalang* increased as they followed the needs and the desire of their audiences.

As a “cultural” element, *wayang golek* was used during the independence war (1945-1949) against the Netherlands, and then by the government of the young Republic of Indonesia, as it was considered as one of the “cultural summits” constitutive of the national Indonesian culture. But is *wayang golek* really cultural? What if the interactions of the practice within its context were so much wider than an “artistic” or “cultural practice”? New research outcomes show that the attention put to textual messages in *wayang* was excessive (Mrázek, 2002), as for regular *wayang golek*, the important thing is not only the story performed or the textual message delivered by the puppeteer. *Wayang* seems to be an all-encompassing event that is not depicting life, as it is, in itself, a particular form of life for its participants (Andrieu, 2014). Hence the use of “performance” (Schechner, 1977), as a more open analytical tool for *wayang golek* rather than “art”, “culture” or “ritual” for *wayang ruatan* that set unsuitable limits.

This has been recently reinforced with the introduction of the paradigm of heritage across the world, especially through the actions of the UNESCO for world heritage (World Heritage Convention 1972) and intangible cultural heritage (Convention for the Safeguarding of Intangible Cultural Heritage 2003 and program of the Masterpieces of Oral and Intangible Heritage of Humanity 1998-2005). An analysis of the texts of the UNESCO shows that heritage has culture for its basic premise (as the tacit basis for the so-called “communities”), and as such, it reinforces the idea of impermeable culture and isolated practices, whereas *wayang golek* has always been highly permeable to its social setting and its numerous

historical sources and developments. Besides the idea of an essentialised culture, heritage, as promoted by the UNESCO is based on two other principles: the nation-state as the relevant level of decision and action as well as risk or danger as the motivator for safeguarding heritage (Andrieu, 2014). On the other hand, the definition of intangible cultural heritage proposed by the UNESCO in the Convention for the safeguarding of intangible cultural heritage is related to the past and to its community of origin:

“The “intangible cultural heritage” means the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity. For the purposes of this Convention, consideration will be given solely to such intangible cultural heritage as is compatible with existing international human rights instruments, as well as with the requirements of mutual respect among communities, groups and individuals, and of sustainable development.”
(Article 2 – underlined by the author)

However, this definition must not bring confusion: intangible cultural heritage is not a scientific or analytical category (Tornatore, 2011), but a political one, oriented to the creation and implementation of (mainly) cultural policies at the international as well as at the national level. As such, it is difficult to emphasize the living aspect of the practices and to encourage their changes as the “community” keeps pace with the times. Hence the risk to fix the practices, especially when it comes about representation of national culture and identity. This is what is often happening with Indonesian national cultural policies, which tend to select “cultural summits” (*puncak kebudayaan*) in the diverse regions of the country, to standardise and integrate them into national culture (Andrieu, 2014). As such, the selected cultural item is essentialised as well as is the culture of administrative regions (provinces) juxtaposed with supposed ethnic and cultural borders. It also implies a comparison, based on other cultural features that would not be selected. For instance, at the national level, *wayang golek* is considered and fixed as one of the cultural summits for West Javanese culture and identity, often shortened as Sundanese, although the inhabitant of West Javanese province do not always identify themselves as such.

In 2003, Indonesian *Wayang* was proclaimed “Masterpiece” and joined the Representative List of Intangible Heritage of Humanity in 2008 (after the acceptance of the 2003 Convention by the Indonesian Republic). The candidature was prepared by Sena Wangi (*Sekretariat Nasional Wayang Indonesia*), a national organisation. In this context, *wayang golek* was seen as a sub-category of Indonesian *Wayang*, representative of West Javanese province. This application was descriptive as well as prescriptive, as the action plan proposed by Sena Wangi and validated by the UNESCO concerned the standardisation of *wayang* transmission through the creation of schools displaying standard education about *wayang* theory and practice with regional flavour. In doing so, Central Javanese *wayang kulit* was epitomized as the matrix and the model for all kinds of *wayang* in the whole archipelago. However, this seems to remain an idealistic cultural policy for the national government. Indeed, at the local level, *wayang golek* performers and participants keep pacing with the times and seem to mistrust or remain unconcerned about Sena Wangi actions. In doing so, they ignore heritagisation, defined in this context as the compliance to international and national categories and policies referring to cultural heritage. However, at first sight, *wayang golek ruatan* seems highly compatible with this process.

Conclusion. Heritagisation: a Convenient Tool or a Restricting Policy?

Echoing the international obsession with cultural heritage, *wayang golek*, and more specifically *wayang golek ruatan*, is introducing the question of the presence of the past within the present and suggesting that we may let things go while others should be kept (such as with the *keris*). For *wayang golek ruatan*, the clear inscription in time (reference to the genealogy of the *dalang* sometimes connected with the Wali, the use of ancient language and formulae) is combined with the essential adaptive introduction of new elements (such as mineral water bottles that can be used as holy water), while the idea that *wayang golek* for *ruatan* is the origin of *wayang* and has to be reproduced as before seems to match the most fixing Indonesian cultural policies. But by juxtaposing the rhetoric of culture and heritage to the practice of *wayang golek* (including *wayang golek ruatan*), we can also observe a shifting in its representations. As culture or heritage, *ruatan* can be strategically performed and legitimated in a context where “arabisation” and radicalisation of the religious practice could oppose to it. A *dalang* said about his *ruatan* performance: “Abah cuma menjaga dan merealisasikan budaya saja” (“I just keep and realize culture”), denying his power to save anyone by performing the ritual. At the same time, considering *wayang golek* as culture or heritage is also a way to gain new prestige and value in the eyes of the nation and the world by performing something that was acknowledged by one of the highest international institutions, and performers often seize the opportunity to express their pride and their hopes for better political representation of the Sundanese population. On the other hand, to try to make *ruatan* fit into the cultural heritage frame only (so called heritagisation) presents the risk to fix the practice that would then lose its adaptability and its meaning for the Sundanese society.

However, *ruatan* can also be considered as the actual performance and illustration of the problematic of heritage and transmission as Sundanese experience it, or how the past is constitutive of the present and vice versa. The very presence of secrecy and mystery (around Kidung texts, around the actual performance and its consequences on the participants and even more on the performer) shows that *ruatan* is far beyond the limits of cultural heritage or culture, because it requires deep social keys as well as a specific context, and remains strongly adaptive. Secrecy seems to be the way to keep *ruatan* alive and meaningful, to avoid fixation and essentialisation, as it displays the immensity of the secrets of nature and God. The juxtaposition of any other category may be considered as imperfect and limited translations for the outer world that do not affect the core of the practice.

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Attitudes and Practices of Malaysian General Music Teachers Towards Multicultural Music Education

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The awareness of the importance of multicultural music in the Malaysian primary music education has increased due to the requirements set by the National Curriculum Standards for Primary School in music education in Malaysia. Therefore, it can be said that multicultural music is not an optional component to be included or disregarded at the discretion of the teacher in the music classroom. Music teachers are expected to foster multicultural music educational programs that address the diverse needs of students. As formal teaching and learning is one basic means of sustaining musical heritage, multicultural music education can assist in the transmission of musical knowledge and skills from one generation to the next and also lead to preserving, conserving and sustaining arts and culture. In the context of sustainable of multicultural music education, it is important to know that the current status of music teachers' attitudes and practices with regard to multicultural music such as what and how effective are the practices and their perceptions as far as multicultural music is concerned. Hence, this study examined Malaysian general music teachers' utilization of multicultural music education in the music curriculum, specifically exploring the relationship between the general music teachers' attitudes and their efforts in developing and implementing multicultural music education in music classes. This study utilised an adaptation of the original *Music Specialist's Multicultural Music Education Survey* instrument which was administered to 456 of primary schools' general music teachers in the Klang Valley. Results indicate that there is limited implementation of multicultural music education in the music classrooms due to inadequate preparation and limited resources, and insufficient knowledge in multicultural music. Thus, it is important to ensure music teachers develop more critical deeper understandings of multicultural music education through music teacher training programs. Other efforts to help music teachers overcome challenges in implementing multicultural music education include producing and developing more instructional materials and learning aids, which are suitable for primary students and appropriate for the local context.

Multicultural music education is essential in a culturally diverse country like Malaysia. The Malaysian population is often described by ethnicity and religious multiplicity (Zaid Ahmad, 2007). Malaysia is inhabited by over 28 million of people typified by the three ethnic groups of Malays (67.4%) which include the *Bumiputera* (*Orang Asli, Kadazan, Bajau, Iban, Melanau, Bidayuh, Penan, etc.*), Chinese (24.6%) and Indians (7.3%); and other minority races (0.7%) such as Arabs, Sinhalese, Eurasians, etc. (Department of Statistics, 2010). As a country whose population is made up of many different ethnic groups, Malaysia is a suitable location for its people to develop into open-minded and respectable world citizens. Therefore, the education system of the country plays an important part in shaping the future of the nation. Education is seen as a feasible venue for promoting racial integration in the multiracial Malaysian society and the Malaysian Ministry of Education realizing that the importance of schools as the common ground for bringing together the children of different ethnicity, race and religion (Malakoluntu, 2009).

In Malaysia, music education supports these ideals which play a part in developing each individual's self-esteem and patriotism through students' awareness and participation in different musical cultures and genres in Malaysia (Integrated Primary School Curriculum in Music Education (*KBSR*), 2000). The goal of music education in Malaysia is not only to teach children about musical concepts. It is also to broaden students' understanding and appreciation for various kind of music (Shehan, 1996; Hicken, 1991; Fung, 1994). Therefore,

the challenge for music teachers in Malaysia is to present an effective multicultural music education foundation by means of which all children can learn to accept others musical cultures from other ethnic groups. For the purpose of clarity, multicultural music education is defined in the present study as educating students from a perspective that will enable them to function musically within the multiple music cultures of a society.

Elementary general music teachers play significant roles in the construction and implementation of music curricula, as their attitudes and current practices within the general music classroom form a critical basis for the future of multicultural music in today's public schools (Meidinger, 2002). Petersen (2005) further states that elementary general music teachers are also in a unique position to provide the foundation for students' understanding of and participation with multicultural music in a global society. This statement raises important questions as to the current status of music teachers' attitudes and practices with regard to multicultural music in Malaysia. It would be important to identify how effective these practices and their perceptions as far as multicultural music is concerned, as well as aspects upon which they need to improve.

Music Curriculum in Malaysian Primary Schools

Music education in Malaysia is emphasized at the primary level from ages 7 – 12 and is compulsory in primary schools. In 1983, the music education curriculum known as the 'Integrated Primary School Curriculum' (*Kurikulum Bersepadu Sekolah Rendah, KBSR*) was first introduced as a compulsory subject in Malaysian primary schools. This is a six-year program containing two levels: Level I, which encompasses Years 1 to 3 (aged 7 – 9), and Level II which encompasses Years 4 to 6 (aged 10 – 12). In 1983, Level I music education was first introduced as a compulsory subject in all primary schools; followed by Level II in 1986 for all schools as well.

The Malaysian Ministry of Education provides the curricula, textbooks and teaching materials to all primary schools. Offered as part of the primary curricula, music is taken as a compulsory but non-examination subject for the majority of Malaysian students. Music lessons are conducted twice a week and lasts between 30 to 45 minutes. As education is centralized, all the public schools are based on the same music curriculum. This subject aims at providing the knowledge of musical elements; different kinds of music and musical instruments; and also the opportunity to make simple music. The syllabus of this curriculum covers the aspects of musical language, musical experience, creative expression and aesthetic appreciation (Integrated Primary School Curriculum in Music Education (*KBSR*), 2000). In this curriculum, students are able to seek personal growth in terms of aesthetics appreciation in musical arts. In line with the curriculum's status in the structure of the *KBSR*, this course stresses on the domain development of the students, specifically in the field of arts. In addition, its syllabus is designed to guide students towards musical appreciation and enjoyment intellectually ((Integrated Primary School Curriculum in Music Education (*KBSR*), 2000).

The importance of multicultural music in the Malaysian primary music education has increased due to the requirements set by the Integrated Curriculum for Primary School in music education. Its contents are compiled based on the following standards:

- a. Aesthetic perception: knowledge and understanding of musical concepts.
- b. Musical experience: singing and playing musical instruments (recorder and percussion).
- c. Creative expression: developing self-expression and creativity, and basic composition.
- d. Aesthetic appreciation: appreciating various types of Malaysian music and culture.

Under the four standards of the Integrated Curriculum for Primary School in music education, one of the standards requires students to appreciate the different kinds of

Malaysian music and cultures. This particular standard pertains to multicultural music education whereas remaining standards are related to the other aspects of music which are mainly based on Western classical music. The objective of employing multicultural music is to let children keep in touch with the music and cultures of different ethnic groups in Malaysia, and with that, they can understand the distinctiveness and variety of Malaysian music and culture and build mutual respect and tolerance towards people of different cultures. Therefore, multicultural music is not an optional type to be included or disregarded at the discretion of the teacher but it is required by the National Curriculum Standards for music education in Malaysia. In recent times, efforts have been made by the Malaysian music educators to re-evaluate the nature of the existing curriculum. In order to make improvements to the existing Integrated Curriculum for Primary School in music education, the Standard Curriculum for Primary School (*Kurikulum Standard Sekolah Rendah, KSSR*) of World Music has replaced the existing curriculum in stages starting with Year One students in year 2011 (Standard Curriculum for Primary School of World Music (*KSSR*), 2010).

The Standard Curriculum for Primary School of World Music is a learning program for the first three years of primary schooling (Level 1). The curriculum is designed with a focus on cognitive development and skills of students in music. Pupils are given numerous opportunities to express their creative musical ideas and increase the aesthetic appreciation of music. This new music curriculum aims to build the potential in students towards creative individuals who appreciate and enjoy music intellectually through musical activities. In addition, a wider range of musical genres was introduced in the new music curriculum to represent World Music. This new music curriculum includes various musical styles such as Asian music, Western classical music, popular music, instrumental music and Malaysian traditional music.

The Standard Curriculum for Primary School of World Music is based on three curricular modules such as the following:

- a. Musical Experience Module: Pupils obtain musical experience through activities such as singing, movement and playing musical instruments.
- b. Music Production Module: Students express creative ideas through musical activities experienced during the process of teaching and learning.
- c. Music Appreciation Module: Students appreciate the variety of music through the exposure of music from various cultures.

This new music education curriculum has also fixed the range in developing the fundamentals multicultural where students appreciate the uniqueness of the variety of music from various cultures in Malaysia. Therefore, it can be said that the music programs in Malaysia are aiming at developing interest and appreciation in the music and songs of Malaysian culture among pupils in general (Shahanum Mohd Shah, 2006).

The Purpose of Study

The purpose of this study was to examine the general music teachers' attitudes toward multicultural music education and their efforts in developing and implementing multicultural music education in the music classroom.

Research Questions

Specifically, we explored the following questions:

- (i) To what extent do general music teachers' attitudes toward the definition of multicultural music education?
- (ii) To what extent do general music teachers' attitudes in multicultural music education?
- (iii) To what extent do general music teachers' attitudes toward training and support with multicultural music education?

- (iv) To what extent do general music teachers' attitudes toward the practices of multicultural music education?

Method

Participants. This study is a self-report questionnaire involving 456 primary school general music teachers in Malaysia. Subjects included male and female general music teachers representing the different ethnic of Malaysia, i.e., 266 Malay, 140 Chinese, 42 Indians and 8 others; 75 males and 381 females.

Research Instruments. The questionnaire namely Music Specialist's Multicultural Music Education Survey, was adapted from Petersen (2005) who has done the study on the subject matter. The questions were used and modified to suit the context of this study. This questionnaire contained 40 items to measure a primary schools' general music teacher's attitudes, practices, and utilization of multicultural music education. The questionnaire contains the following categories: a) Definition of multicultural music education, b) Attitudes in multicultural music education, c) Training and support with multicultural music education, and d) Practices of multicultural music education. Subjects responded to each statement using a five point. Likert type scale with the response numbered 1 designating strongly disagree, 2 as disagree, 3 as undecided, 4 as agree, and 5 interpreted as strongly agree.

Finding and Discussions

(i) Definition of multicultural music education

After analyzing the general music teachers' attitudes toward the definition of multicultural music education, the following findings were obtained:

- 97% of the general music teachers felt that multicultural music education should include diverse music of all cultures and also used to increase self-awareness and self-esteem of minority students.
- 70% of the general music teachers agreed that multicultural music education should not only include western classical music.
- 88% of the general music teachers thought that world music should be included in multicultural music education and believed that multicultural music education is as valuable for minority students.
- Only 13% of the general music teachers disagreed or strongly disagreed that multicultural music education should focus on racial and ethnic differences.

Results yielded that music teachers in Malaysia think that by including multicultural music it is hoped that students will value the wide spectrum of cultures and celebrate the diverse music. Besides, music teachers' believe that multicultural music education should not only reference majorities but also include minorities and the music teachers' classrooms tend to have a variety of cultures' music represented.

(ii) Attitudes in multicultural music education

After analyzing the general music teachers' attitudes in multicultural music education, the following findings were obtained:

- 75 % of the general music teachers think that multicultural music education is an important part of elementary education .
- 90 % of general music teachers think that multicultural music education can be used to promote better understanding among people.

- 54% of general music teachers disagreed or strongly disagreed that multicultural music education is a threat to social.
- 72% of general music teachers agreed that teachers should choose to attend professional development courses related to the music of the other cultures.
- 81% of general music teachers enjoyed learning about the musical traditions of cultures other than their own.
- 74% of general music teachers enjoyed teaching the musical traditions of cultures other than their own.
- 67% of general music teachers felt comfortable teaching songs in languages other than their own.

Many of the music teachers reported that they had received insufficient multicultural training. Many of them feel inadequate in areas outside the realm of western classical music. Nonetheless, they are happy and comfortable teaching multicultural music. In addition, most of the general music teachers think that multicultural music education is an important part of elementary education and it can be used to promote better understanding among people which is consistent with Meidinger's study (2002). As Anderson and Campbell (1989) described, a multicultural approach can help develop sensitivity, understanding, and respect for peoples from a broad spectrum of ethnic cultural backgrounds.

(iii) Training and support with multicultural music education

With regards to sufficiency of training and support in multicultural music education,

- 55% of the general music teachers reported that they have not had enough training during their college courses.
- 50% of the general music teachers indicated that they did not attend an adequate number of workshops related to multicultural music education; and there is a lack of resources and materials for them to incorporate multicultural music in their classroom.
- 51% of general music teachers agreed or strongly agreed that they have received supportive measures from their schools' administrators on the application of multicultural music education.
- Only 38% of the general music teachers been offered by their respective districts for professional development programs related to multicultural issues.

The present study implies that general music teachers in Malaysia are lacking of awareness in multicultural instructional materials and Malaysian educational policies, causing music teachers to expend time and effort conducting independent research for self-education. There are many reasons to account for this concern. Even though the National Curriculum Standards for music education in Malaysia contain some multicultural aspects, but a fully multicultural music education system is not implemented. In addition, many music teachers are not required to take any courses specifically related to multicultural music education either at college or university levels in Malaysia. In fact, many music teachers acquainted themselves with multicultural music education concepts and practices through a variety of avenues based on their own interests and levels of motivation.

Most often, multicultural music education concepts are being constructed as an additional item to music education rather than being infused into the music curriculum and instruction. Moreover, diverse music of all cultures was not clearly defined in the Malaysian music curriculum when they started their career as music teachers. Consequently, it would not only hinder the preparation of music teachers in Malaysia to play creative roles in multicultural curriculum development and may further contribute to the unwillingness of many music teachers to teach multicultural music in the classroom.

(iv) Practices of Multicultural Music Education

To address the extent of practices of multicultural music education, the general music teachers were asked to indicate the degree to which they agree with the multicultural activities that commonly used in music classes.

- 58% of the general music teachers indicated that they use music textbooks which contain multicultural music.
- 57% of the general music teachers agreed that they sing songs in the native languages of multiple cultures.
- 73% of general music teachers reported that they are demonstrating the relationship between music and culture by dancing and listening to music of multiple cultures.
- 61% of general music teachers always encourage students to experience a culture by playing ethnic musical instruments.
- 67 % of the general music teachers agreed that they develop appreciation for ethnic music among students by recognizing the contributions of different ethnic groups.
- 68% of the general music teachers consider the cultural heritage of the students in the music classes when planning music curriculum.
- 85% of the general music teachers indicated that they are utilizing music the ethnic Malays.
- 56% of the general music teachers reported that there is an insufficient amount of ethnic instruments in the music classroom.
- Only 18% of general music teachers agreed or strongly agreed that they are provided sufficient amount of authentic recordings of music from diverse cultures in the classroom.
- 63% of the general music teachers reported that they are utilizing technology when teaching the music of diverse cultures (internet resources, CDs, DVDs).

Based on the analysis of data, it shows that utilizing music of the ethnic Malays and demonstrating the relationship between music and culture by dancing and listening to music of multiple cultures were reported most frequently. Realizing that Malay is the dominant ethnic group in Malaysia, Malay music is considered as one of the important cultural heritages of the nation. Therefore, Malay culture contributes to the largest part in the nations' daily lives, including music. Due to that, the content of the program implemented in Malaysia primary schools and secondary schools would also emphasize on Malay music (Shahanum Mohd Shah, 2000). This explains the highest frequency of exposure to Malay music by the music teachers.

Besides, the results also reported that less than 20% of general music teachers agreed or strongly agreed that they are provided sufficient amount of authentic recordings of music from diverse cultures in the classroom. Fung (1995) suggested that the music teachers should try to use the most authentic recordings as possible in the classroom. Furthermore, they should also be able to connect between the student knowledge and the new music to enhance better understanding (Blair and Kondo, 2008).

Descriptive statistics were computed for each of the 40 items of the Music Specialist's Multicultural Music Education Survey (see Table 1). Results showed that "Multicultural music education should introduce the diverse music of cultures to all students regardless of their own ethnic background" was ranked the highest (with a mean value of 4.47) among all the items while "I have sufficient knowledge of the musical contribution of Indigenous" does not give much of a significant value to the music teachers.

Table 1. Descriptive Statistics for the 40 Items of the Music Specialist's Multicultural Music Education Survey

[INSERT Table 1]

Overall, the lowest five items of Music Specialist's Multicultural Music Education Survey, listed in order of descending mean values are:

- 1) Multicultural music education is a threat to social unity because it focuses on cultural differences.
- 2) I had sufficient training in multicultural music education during my college courses.
- 3) I have a sufficient amount of authentic recordings of music from diverse cultures in my classroom.
- 4) I have a sufficient amount of ethnic instruments in my classroom.
- 5) I have sufficient knowledge of the musical contribution of indigenous people.

When sorting data according to the statistical mean on a scale of “1” to “5” with “5” being the highest rating of “Strongly Agree”, Item 10, 15, 35, 37 and 38 carry an average less than a mean of 2.6. For example, Item 10 – “Multicultural music education is a threat to social unity because it focuses on cultural differences” had a mean of 2.54. Perhaps most of the music teachers in Malaysia believe that multicultural music education is not a threat to social unity but rather an opportunity to enhance better understanding, improve relationships and self-concepts among students and also help improve multicultural climates in schools.

For Item 15 – “I had sufficient training in multicultural music education during my college courses” had a mean score of 2.52. Results indicated that undergraduate music education programs or music training programs in Malaysia do not prepare the pre-service teachers to teach multiculturally. Meidinger (2002) also reported that music teachers had received limited training in multicultural music within their music education degree programs and were basically self-taught with regards to multicultural music. A possible solution advocated by Volk (1998) and Robinson (2002) is a world music course for music education majors oriented around multicultural teaching methods. A course like this could include instruction in a diversity of musical genres, while also attending to various philosophical and practical considerations of multicultural music education and implement curricula that encourage multicultural awareness.

“I have sufficient knowledge of the musical contribution of indigenous people” as Item 35 had received a mean score of 2.38. One could reasonably argue that the music teachers in Malaysia are generally lacking in knowledge of musics from a more global perspective and are not familiar with the musical contribution of indigenous people. This specified a general need to equip music teachers with knowledge in this area so that they understand better about the musical cultures of students whose ethnicity, race, exceptionalities, language and religion was different from their own.

Item 37 – “I have a sufficient amount of ethnic instruments in my classroom” and Item 38 – “I have a sufficient amount of authentic recordings of music from diverse cultures in my classroom” had a mean score of 2.42 and 2.45 respectively. Results indicated that most of the general music teachers in Malaysia understand that the ethnic musical instruments and authentic music recordings are mostly unavailable in the classroom or limited for general music instruction in classroom. A possible explanation of the lack of ethnically authentic materials and equipment available to music teachers is budgetary constraints in schools that hinder the procurement of authentic materials for classroom usage. O Neil (2009) pointed out that “many music teachers avoid making music choices that they feel uncomfortable, inadequate or less efficient teaching”. Consequently, the lack of the use of multicultural music resources will cause the music teachers’ positive attitudes and values about multiculturalism which further affect the effectiveness in teaching multiculturalism in music classroom.

In contrast, the top five items of Music Specialist’s Multicultural Music Education Survey, as selected by the music teachers are:

- 1) Multicultural music education should introduce the diverse music of cultures to all students regardless of their own ethnic background.

- 2) Multicultural music education can be used to promote better understanding among people.
- 3) Multicultural music education is about teaching world music.
- 4) Multicultural music education is used to increase self-awareness and self-esteem of ethnically and culturally minority students.
- 5) Multicultural music education is an important part of elementary education.

Item 1 “Multicultural music education should introduce the diverse music of cultures to all students regardless of their own ethnic background” had the highest mean score of 4.47. Results showed that these music teachers agree that the exposure to different types of music is vital for students who live in a culturally diverse society, particularly in Malaysia. As suggested by Schaus (2007), music is an important part of culture and multicultural music can be taught at schools in order to recognize the diverse student population and to expose students to different culture.

Item 3 - “Multicultural music education is about teaching world music” had a mean of 4.16. This revealed that music teachers in Malaysia believe the term “multicultural music” includes world music. One might infer that the term “world music education” was favored equally by most of the music teachers. This result is further corroborated by Meidinger (2002) that music teachers agreed to the synonymy of the terms “world music” and “multicultural music”.

Item 5 – “Multicultural music education is used to increase self-awareness and self-esteem of ethnically and culturally minority students” reported an average mean of 4.09. Results shows that the music teachers in Malaysia believe that teaching music from a minority ethnic group encouraged students from that group to share with their culture. It also shows that their ethnicity is being recognized by society. As a result, it will help minority students develop ethnic identity, which can in turn, help them become actively involved in society at large and their specific group. This is further supported by Schau’s (2007) assertion that where a minority population can strongly relate to both their ethnic culture and the mainstream culture, a healthy ethnic identity must be developed.

Item 7 – “Multicultural music education is an important part of elementary education” and Item 8 – “Multicultural music education can be used to promote better understanding among people” expressed a mean of 4.08 and 4.23 respectively. The results indicated that the general music teachers believe that multicultural music education enables students to understand the uniqueness of cultures in Malaysia while also appreciating the universal qualities that bind cultures together. This is in line with Trehud (2003) who suggested that music is a subject that deserves the same status as language and math because it is a universal phenomenon and a potential that is born within every human being.

In view of the data collected from the four classifications of Music Specialist’s Multicultural Music Education Survey, results in table 2 revealed that the general music teachers (N=456) ranked the “Definition of multicultural music education” as the highest with a mean score of $\bar{M}$ = 4.03, followed by the “Attitudes in multicultural music education” with a mean score of $\bar{M}$ = 3.75. The mean score was $\bar{M}$ = 3.12 for the category of “Practices of multicultural music education” which was slightly lower than “Attitudes in multicultural music education”. Lastly, “Training and support with multicultural music education” had received the lowest mean score $\bar{M}$ = 2.90 among the four classifications.

Table 2. Average mean scores for four classifications of the Music Specialist’s Multicultural Music Education Survey

[INSERT Table 2]

Based on the analysis of data, the results of this research affirmed that multicultural music education was widely perceived by the general music teachers to be an important part of elementary education for all students, as it helps them to be aware of multicultural diversity and to promote better understanding, tolerance and acceptance for peoples around them. In

this study, the teachers strongly agreed that introducing the diverse music of cultures to all students in the music curriculum is an important benefit to their students. Nonetheless, the main reasons that contribute to the limited implementation of multicultural music education in the music classroom in this study were the music teacher's inadequate preparation and resources, and insufficient content knowledge of multicultural music. In teaching multicultural music, teachers should adapt and apply multicultural music and materials to assist students in developing knowledge, positive attitudes, and relevant skills which will help them function in a diverse world with a more global viewpoint that is more realistic to their everyday lives (Lockwood, 1992; Banks, 1991; Carolin, 2006).

Conclusion

Malaysia is a society of diverse population, which is often referred to as a national advantage. Therefore, the music curriculum should be injected and sustained with multicultural musical values in order to promote an equalized education and society. It is believed that multicultural music education for sustainability involves not only the curriculum, but also demands responses in terms of teachers' attitudes and practices. It is affirmed here that the inclusion of multicultural music education for sustainability in the curriculum in Malaysian primary schools is hollow and insincere in the absence of practical action in schools. Music teachers in this study have identified a number of constraints with regard to the multicultural music education in Malaysia. As the music teachers pointed out that they have not had enough training and support related to multicultural music during their college or university courses. It is vital for educators and tutors involved in music education to initiate a pro-active way of including multicultural perspectives in higher education, whether in existing courses or in the process of developing new courses in music education curricula. This study suggests that multicultural music teacher training needs to develop the music teachers' capacity for teaching multicultural music with students from different cultures. Malaysian music teachers should be trained in methods for analyzing students' conceptions and learning obstacles towards multicultural music in Malaysia. They should know how to train students to be able to function musically within the multiple cultures in the Malaysian society and also how to teach about the sustainable development of the multicultural music in Malaysia. Thus, music teacher training for multicultural music education should be a blend of information and pedagogical methods. In addition, Malaysia's Ministry of Education must ensure that music teachers have full and easy access to multicultural materials, teaching methods and authentic musical examples from a wide range of cultures. All these should be assembled in a package, which is designed to improve music teachers' competency in implementing effective approaches to multicultural music education and also helping them to understand and master issues related to sustainable development of multicultural music in Malaysia's musical heritage.

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Stimulating The Brain Through Auditory Entrainment

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Music may be regarded as a guardian of culture framed by its sustainability within time, place and the sharing of traditions and creative practices of its peoples. Technology has galvanised interdisciplinary research promoting new ways of understanding arts practices through collaborative scientific-humanistic avenues. The study of music's impact on the brain and its application to human wellness is critical to the sustainability of cultural and musical heritage in increasingly globalized societies. The positive impact of music in brain plasticity has been well established through neuro-scientific enquiry. Neuroimaging has enabled the identification of specific parts of the brain being stimulated by music through auditory entrainment paving the way for further innovative means to promote learning, cognition and well-being.

This chapter posits developments in music-neuroscience research and extrapolates the creation of an original work for auditory entrainment premised on practice-led research. It illuminates literature relating to the human anatomy in processing auditory waves and how the brain functions in firing neurons to ignite cognition. It examines the role of the locus coeruleus or "blue spot" in the chemical release (neuro transmitter) of adrenaline flow to connect synaptic nerve cells resulting in the transmission of different electrical signals or brainwave activity. It refers to traditional cultures that use ritualistic music to "alter consciousness" and further extrapolates how individuals may voluntarily learn to alter (and align) the frequencies of their brainwave activity through the process of auditory entrainment.

The study of music and the brain has escalated in the last two decades. Significant strides in music neuroscience research have been made as a result of technological advances in brain mapping and imaging. Researchers are increasingly interested in the relationships between science, culture and the mind. The cognitive neuroscience of music is the scientific study of brain-based mechanisms involved in the cognitive processes underlying musical activities such as listening, composing and performing. It is associated with music psychology and focuses on direct observations of the brain using electrical and imaging techniques such as functional magnetic resonance imaging (fMRI), magnetoencephalography (MEG), positron emission tomography (PET) and electroencephalography (EEG). Accumulating evidence from neuroimaging studies of participants suggest that the acoustic features of music triggers a series of cognitive, emotive and motor responses in the brain at the onset of decoding accoustical information into neural signals (Trainor, 2012; Tillmann et al., 2013; Pantev et al., 2001). Music cognition has been found to be closely related to the part of the brain associated with language processing (Brown et al., 2006). The following figure illustrates the human brain lobes and areas associated with particular functions.

[INSERT Figure 1]

Figure 1. Brain Lobes & Associated Functions (Aneurysm and AVM Foundation)

Understanding early developments of musical behavior can make a significant contribution to important questions such as the evolutionary origins of music, cross-cultural similarity and diversity, the effects of experience on musical processing, and relations between music and other domains (Gerry, et al., 2012; Fujioika et al., 2006). The field of neuroscience thus includes the study of (i) its historical development of current concepts, the nervous system structure and its cells, (ii) neural communication through the neurotransmitter systems, information transfer at the synapse, action potential and resting neuronal membrane,

(iii) the sensory and motor systems involving the control of touch, temperature and pain, taste and smell (chemical senses), hearing equilibrium, eye and visual processing, (iv) psychobiology effecting the control of the brain and behavior through chemicals, learning and motivation, neuronal determinants of emotion, sleep rhythm within the brain, action determinants (finding focus) and (v) memory mechanisms, stress and diseases of the nervous system (Vartanian, et al., 2013; Masters, 1993).

As music engages the mind and promotes cognitive development, there is much interest as to how specific parts of the brain receive, respond and react to musical stimuli. Controversies concerning the brain, mind and consciousness have existed since debates by early Greek philosophers. Arguments about the intricacies of brain functions continue to fascinate researchers in comprehending the nature of human thought, action and interaction. Some neurologists claimed to have “located” the mind in the brain, arguing that consciousness is the result of electrochemical neurological activity. However, there are growing observations to the contrary. Wilder Penfield (1891-1976), a pioneering neurosurgeon known for his work in mapping different functions of the brain, found that the human mind continued to work in spite of the brain’s reduced activity under anesthesia (Penfield, 1975). Brain waves were nearly absent while the mind was just as active as in the waking state. The only difference was in the content of the conscious experience. Following Penfield’s work, other researchers (*Frontiers of Neuroscience*, 2014) have found evidence of awareness in comatose patients and there is a growing body of evidence which suggests that reduced cortical arousal while maintaining conscious awareness is possible. These states are variously referred to as meditative, trance, altered, hypnogogic, hypnotic, and twilight-learning states (Griffiths et al., 2005; Fachner, 2007).

The brain has some one hundred billion neurons connecting a huge network that exchanges billions of electrical signals per second with one another. Neurons relay signals through tiny spaces between the nerve cells called the synapse. Until the early twentieth century, scientists assumed that the majority of synaptic communication in the brain was electrical. However, through histological examinations by Ramón y Cajal (1852–1934), a 20 to 40 nm gap between neurons, known today as the synaptic cleft was discovered (see Figure 2). The presence of such a gap suggested communication via chemical messengers traversing the synaptic cleft. In 1921 German pharmacologist Otto Loewi (1873–1961) confirmed that neurons can communicate by releasing chemicals.

Neurons form elaborate networks through which nerve impulses (action potentials) travel. Each neuron has as many as 15,000 connections with other neurons. Neurotransmitter is a chemical that relays signals from one neuron to another connecting the synapse, firing other neurons to communicate information through the receptor. The action that follows the activation of a receptor site may be either depolarization (an excitatory postsynaptic potential) or a hyperpolarization (an inhibitory postsynaptic potential). Hence some neurotransmitters are commonly described as being excitatory or inhibitory. The direct effect of a neurotransmitter is to activate one or more types of receptors (Peng Zhou et al., 2013). Figure 2 illustrates how neurons ‘communicate’.

[INSERT Figure 2]

Figure 2. Neurons in communication

Neuroscience of creativity

Studies in the neuroscience of creativity have revealed that both sides of the brain are involved in creative acts (Vartanian et al., 2013; Ward et al., 1999). Ordinary cognitive processes and underlying neural mechanisms are also utilized in creative acts such as music making. Cognitive neuroscientists have also found that the right brain-left brain distinction is flawed when it comes to understanding how creativity is implemented in the brain, arguing that creativity does not involve a single brain region or a single side of the brain but instead

the creative process engages many interacting cognitive processes and emotions depending on the stage of the creative process and the task at hand. Different structures from both the right and left brain hemispheres are recruited, suggesting that cognition results from the dynamic interactions of distributed brain areas operating in large-scale networks (Schon, et al. 2010; Gabora & Ranjan, 2013). For instance, widespread interactions between the linguistic and musical dimensions of sung words within the network of brain areas, posits that brain regions cannot be considered as specific to either language or music processing, thus arguing against domain specificity and providing additional evidence for a common cerebral network involved in both lexical/phonological and melodic processing (Patel, 2003; Burkhard et al., 2001). Several neural networks are in play during creative tasks, postulating that various patterns of neural activation and deactivations are engaged at different stages of the creative process (Dietrich, 2004).

The cognitive neuroscience of creativity has been extensively studied using non-invasive electrical recordings from the scalp called electroencephalograms (EEG) and event-related potentials (ERP). An important text, the ‘Neuroscience of Creativity’ (Vartanion, Bristol & Kaufman, Ed. 2013) reveals empirical and theoretical approaches in the neurobiological bases of creativity. For instance, in the process of coarse coding (a basic principle of memory), each neuron participates in the encoding of a constellation of other neurons. As memory is content addressable (meaning, there is a relationship between the content of an item in which particular neurons respond), the associative strictures of the brain reflect statistical regularities of one’s experiences. This implicit knowledge of the relationship of content, although perhaps not consciously noticed, is referred to as the creative process in the neuroscience of creativity.

From auditory waves to brainwaves

Hearing is enabled by auditory waves travelling from the outer through the middle and into the inner ear, triggering nerve cells to communicate with the brain. Essentially, sound waves are collected by the outer ear (pinna). They travel through the auditory ear canal, bump against the tympanic membrane (ear drum) which vibrates with these sound waves. The vibration moves tiny bones (ossicles) in the middle ear which then carry vibrations into the inner ear to a fluid-filled tube called the cochlea. The fluid inside the cochlea vibrates a series of tiny hairs called cilia which are attached to auditory nerves. The movement of these cilia stimulates the nerve cells. This wave-like motion causes the basilar membrane to vibrate. As the basilar membrane moves up and down, the tiny hairs (stereocilia) on top of the hair cells open and close to change the electrical charge of the cell. This results in a release of chemicals (neurotransmitter), which signals auditory nerve fibres to fire. The auditory nerve sends these impulses up to the brain promoting listening and learning (Ross, 2013). The following diagram illustrates the path of auditory waves as it transforms into brainwaves.

[INSERT Figure 3]

Figure 3. From auditory waves to brainwaves

The brain processes these signals into the sounds we hear, identifying the sound vibrations as familiar words or music. The brain does not automatically translate these words into the message they are conveying. That is essentially what “listening” is – determining the meaning of the sounds in an active process that involves much more than assigning labels. It is an *act* of interpretation. Hence, listening to music not only involves the cognitive but evaluative and affective processes as well. Listeners have been found to unconsciously assess the quality of the music heard according to a positive or negative value on the basis of properties such as the overall structure, melodic attractiveness, rhythmic and harmonic congruousness (Janata et al., 2002).

Arousing Locus Coeruleus

The locus coeruleus is a nucleus located in the brain stem. Discovered in the year 1700 by Félix Vicq-d'Azyr, the locus coeruleus, literally meaning “blue spot” in Latin, was named so because of its cerulean exterior due to the presence of melanin granules inside the neurons. Located in the dorsal wall of the rostral pons, the locus coeruleus is perched on the fourth ventricle’s lateral floor. As the main hub for noradrenaline synthesis, this most primitive part of the brain is composed of medium-sized neurons pigmented with melanin, hence its colour. Approximately 20,000 to 50,000 neurons can be found in the locus coeruleus, an area critical for arousal and wakefulness. It is the major noradrenergic nucleus of the brain giving rise to fibres innervating extensive areas throughout the neuraxis with neuronal circuits controlling a number of physiological functions, the two main ones being the regulation of arousal and autonomic function (Bouret & Sara, 2005; Berridge & Waterhouse, 2003).

Locus coeruleus neurons have wide but specific projections. Its neurons vary not only with arousal but also with specific cognitive processes, resulting in concerted release of noradrenaline in multiple target areas with very complex effects depending upon local parameters. This key neuromodulatory system is currently thought to be critical for numerous functions including responses relating to stress, emotion, motivation, decision-making and memory (Berridge et al., 1993; Samuels & Szabadi, 2008). It also influences behavior, attention and intuition through increased noradrenergic flow. The presence of these substances in the bloodstream then leads to heightened awareness and carefulness. In times of fear, the locus coeruleus helps in the activation of the body’s avoid/attack response. Adrenaline is carried in the bloodstream and affects the autonomous nervous system which controls functions such as the heart rate, dilation of the pupils and the secretion of sweat and saliva, contributing to a variety of inter-related functions (Bouret & Sara, 2010; Aston-Jones et al., 1999; Berridge et al., 2005).

Music as sustainable heritage

Humans discovered the effects of music on their own wellness at the dawn of the pre-historical age. Charles Darwin hypothesized that music may have even been a protolanguage in ancient times. The use of music in eliciting organic reactions and as a medium for healing dates back to ancient times as evidenced in biblical scriptures and the historical writings of ancient civilisations such as Egypt, China, India, Rome and Greece. Apollo was the Greek god of music and medicine and Aesculapius used music and song to cure diseases of the mind. Aristotle taught that music affects the soul and purifies the emotions. Plato believed that music influences the character of an individual. Aulus Celsus used cymbals to treat mental disorders. Hippocrates played music to mental patients. In the thirteenth century, Arab hospitals had music rooms for patients. Robert Burton (1577-1640) in his classic text, *The Anatomy of Melancholy* first published in 1621, argued for music and dance in the treatment of mental illness.

From a cultural perspective, the term “music” is harder to define since it has varied through history, having evolved in different regions and within changing societies. Nevertheless, ancient musical rituals, such as body swaying and shaking, wooden-drums beating and vocalizing (either as animal voice imitation or as an extension of its native spoken language) may even represent the oldest forms of religious beliefs and perhaps of medicine, with communities in search of (and often attaining) a sense of depersonalization and well-being. For example, the roots of musical therapy in India can be traced back to ancient Hindu mythology, Vedic texts, and local folk traditions (Cook, 1997).

Music often accompanies ceremonial rituals to induce altered states of consciousness thereby changing the focus of attention, mood and type of thoughts about the world and the self in many traditional cultures. For instance, the enactment of rituals such as the *Main Puteri* may aim to redress an individual’s cerebral imbalance, psychosomatic ailment or depression through reinstating the patient’s spiritual energy (*Semangat / Angin*). A community may also hold series of cleansing ceremonies (*Semah Kampung*) lasting up to a week through traditional performances such as *Makyung*, *Mek Mulung*, *Menora*. Music plays

a significant role in these healing ceremonies which may include acts of exorcism to communicate with the nether world, providing scope for neuro-musicological study in this lesser known domain of auditory “entrainment”.

There are ongoing debates as to whether the music itself that induces the changes or whether it is primarily the environment and ritualistic act, supported by music, that induces altered states (Aldridge & Fachner, 2005). Loaded with iconographic representations, rituals involve the expression of conflicting impulses or transitional states. Often using words and music, rituals act as a content carrier of cultural symbols therein producing meaningful sequences of information that are processed individually and which correspond to the biographic development and personal meaning of health and illness targeted at participants.

Hence, all civilizations have a variety of narratives, communal activities and rituals which make reference to the positive effects of music in the psychology of human behavior and wellness, although its use may not be termed as “therapy”, its application may be therapeutic. Music therapy, as we know it, began in the aftermath of World Wars I and II, when, particularly in the USA and United Kingdom, musicians would travel to hospitals and play music for soldiers suffering from war-related emotional and physical trauma. Music is a powerful tool in shaping human emotion (De Seligman, 2011; Juslin & Sloboda 2001).

Brainwaves and associated mental states

Brain cells use electricity to communicate with each other. The combination of millions of neurons sending signals simultaneously produces an enormous amount of electrical activity in the brain, which can be detected using electroencephalography which measures electricity levels over areas of the scalp. Studies have indicated that music listening balances hemispheric brainwave activity thus promoting learning. Comparisons of brainwave activity among violinists performing with and without music have yielded differences in brainwave activity within a performance situation. Five states of consciousness are associated with various categories of human brainwave patterns each corresponding to a band of frequencies aligned to its frequency oscillations. The following table, expanded from an earlier study (Ross et al. 2014), illustrates the five types of brainwaves in relation to frequency and when these waves are normally prevalent.

Table 1. Types of Brainwave, Frequency & Prevalence

Brainwaves	Frequency (Hz)	Prevalence
Delta	0.1 – 3	Deep sleep, dreamless state
Theta	4 – 7	Dreaming, drowsy
Alpha	8 – 12	Consciousness, awareness of body, integration of feelings, relaxed mood
Beta	13 – 38	Concentration, thinking, perception, mental activity, alertness
Gamma	30-100+	Creativity, high level of information processing, musical activity

Synchronized brain waves have long been associated with meditative and hypnagogic states. For example, experienced meditators aim to attain the alpha brainwave state (8 hz-12 hz) since alpha is a highly receptive mental state. These waves are triggered when the eyes are closed. The further lowering of frequencies will enable one to reach the theta brainwave state (4-7 hz) to reach deep relaxation which may be used for hypnosis and self/mental programming. A deep dreamless sleep is reached when delta brainwaves (0.2hz – 3 hz) are dominant. On the other spectrum, beta waves (13 hz- 38 hz) dominate when we are wide awake. More recently identified is the gamma wave band at 30 hz and upwards. 40hz is

typical in humans during the awake state. Gamma waves have been shown to disappear during deep sleep induced by anesthesia, but return with the transition back to a wakeful state. Gamma is associated with high level information processing, the formation of ideas, memory processing and musical stimulation (Snyder & Large, 2005; Shahin et al., 2008).

Brainwave Entrainment

Brainwave entrainment is also known as auditory entrainment. It refers to the brain's electrical response to rhythmic sensory stimulation such as pulses of sound or light. When the brain is stimulated, through the eyes, ears or other senses, it emits an electrical charge known as Cortical Evoked Response creating brainwave activity which can be measured using sensitive electrodes attached to the scalp.

Essentially, entrainment is a principle of physics, defined as the synchronization of two or more rhythmic cycles. When the brain is presented with rhythmic stimulus, such as drum beats, the rhythm is reproduced in the brain in the form of electrical impulses. If the rhythm becomes fast and consistent enough, it can start to resemble the natural internal rhythms of the brain (brainwaves). When this happens, the brain responds by synchronizing its own electric cycles to the same rhythm, recorded as Frequency Following Response (Hung & Charyton 2008; Brady & Stevens, 2000).

The knowledge of a person's Frequency Following Response is useful since brainwaves are closely related to one's mental state. For example, since a 4 hz brainwave is associated with sleep, the exposure to a 4 hz sound pattern may help engender the sleep state in the brain. The same concept can be applied to many other mental states, including concentration, creativity and meditation. Similarly, the 40 hz frequency is known to regulate memory processing improve memory recall and even heightened sensory perception. In applying such knowledge as practice, a 40 hz frequency was used in framing the fundamental layer of isochronic tones in the writer's composition "Ceruleus" as elaborated in the latter part of this article.

The brain may be "entrained" by different kinds of stimuli such as drum beats, clicks, light flickers, physical vibrations or electric pulses. In fact, many ancient cultures have and continue to use drums to enter into deeply relaxed trance states during Shamanic rituals. For instance, the *rebab* is commonly used in Malay healing rituals called "Main Puteri" in the state of Kelantan (Nasaruddin & Ishak, 2014). Each year, thousands of spectators throng to witness Kavadi carriers honouring their vows during the Hindu Thaipusam Festival at Batu Caves, Malaysia (Morton, 2014). Many of these devotees carry Kavadi with multiple needles pierced through their skin with no apparent pain or injury. They fast for several days and are "prepared" mentally and spiritually to enter into trance states with the aid of music and chanting. Although these activities are not referred to as "brainwave entrainment", such overt cultural practices provide scope for scientific inquiry as to how their brains may have been subconsciously "wired" by external stimuli such as music to enter into altered states and achieve these feats.

The primary aim of auditory entrainment is to stimulate brainwave frequencies to "align" with periodic stimulus which has a frequency that corresponds to the intended brain-state (Filimon, 2010; Atwater, 1997). Audio waves with embedded binaural beats have the ability to induce and alter states of consciousness. The reason for this is physiological. Each ear is "hardwired" (so to speak) to both hemispheres of the brain. Each hemisphere has its own olivary nucleus (sound-processing center) which receives signals from each ear. In keeping with this physiological structure, when a binaural beat is perceived there are actually two standing waves of equal amplitude and frequency present, one in each hemisphere.

When the brain is presented with a rhythmic stimulus, such as a drum beat for example, the rhythm is reproduced in the brain to form electrical impulses. Rhythmic sound waves enter the ears resulting in a phenomenon termed "entrainment" whereby brain waves match and resonate at the same frequency as the stimulating audio frequency (Herrmann et al., 2004; Bertrand & Tallon-Baudry, 2000). In auditory entrainment, the hemispheres of the brain produce symmetrical brain waves that are highly similar in frequency, amplitude, phase,

and coherence. The practice depends upon a frequency-following response based on the assumption that the human brain has a tendency to alter its dominant electroencephalograph brainwave frequencies to that of a dominant external frequency using aural stimuli. In embedded entrainment techniques, layers of music or nature sounds may be superimposed over the entrainment beats so that it is more inviting for the listener to concentrate for longer periods rather than just listening to the pure beat-tones. This approach was used in the creation of “Ceruleus”.

Brainwave entrainment, however, may work for some people and not for others. Mind-consciousness is not the brain and there is no objective way to measure mind or consciousness with an instrument. Mind-consciousness appears to be a field phenomenon which interfaces with the body and the neurological structures of the brain. However, brainwave signals may serve as indirect means of assessing mind-consciousness as a result of electroneurological activity. Audio with embedded binaural beats alters the electrochemical environment of the brain (Bhattacharya et al., 2001; Gaser & Schlaug, 2003). This allows mind-consciousness to have different experiences. When the brain is entrained to lower frequencies and awareness is maintained, a unique state of consciousness termed hypnogogia (mind awake-body asleep) emerges. Induced gamma band activity has been shown to correlate with many perceptual and cognitive phenomena in music listening and performing. The brains of musicians and non-musicians have also been found to be different (Munte et al., 2002; Antev et al. 1998, Trainor & Corrigall, 2010). Therefore, it is argued that “entrainment” lies in the will of the participant.

Creating “Ceruleus” for auditory entrainment

This composition embodies the creative consciousness of the writer-composer (Valerie Ross) in crafting a score which communicates the process and output of a piece premised on auditory entrainment practice. Music created for entrainment purposes is normally arranged and mixed in a studio setting with largely pre-recorded sound samples. In this case, original music composed over isochronic tones with acoustic instruments played live alongside a newly created electronic soundscape is novel. Furthermore, scoring the work using different notational approaches (graphic, conventional and representative) to illustrate the sounds of the electronic soundscape and the acoustic instrumentation (Western and traditional instruments) including extended voice is a challenge in itself. Professional musicians performing live alongside an electronic score in real-time with embedded isochronic tones within a performative space provides an added interactive dimension to its interpretation. A series of electroacoustic pieces have been created for auditory entrainment research. These processes follow the principles of practice-led methodology where the creative output and its critical reflection are products of research, both of which are closely intertwined and significant to each another in its practice.

“Ceruleus” is an electro-acoustic work which was premiered on 19 September 2014 at the Malaysian Electronic Festival by the UiTM Electroacoustic Ensemble followed by its second performance at the Esplanade, Petrosience Festival, Kuala Lumpur City Centre (KLCC) on 20 September 2014. “Blue Spot,” another piece in the series, is based on a similar approach in designing the electronic framework but using different traditional instruments such as the Saz, Tsugaru Shamisen and Tabla. Premiered on 25 October 2014 at the BIBAC2014 International Conference, Building Interdisciplinary Bridges Across Cultures, University of Cambridge, a “body” personified the “Blue Spot” of human consciousness.

“Ceruleus”, as the name suggests, is premised on the writer-composer’s interest in how musical impulse affects the human brain, particularly among musicians. It is part of a study where original music is composed over isochronic tones at specific hertz for auditory entrainment in mapping brainwave activity using EEG during listening and while performing. It supports the outcomes of a recent study on the efficacy of embedded binaural beats in gamma brainwave synchronization, where results indicated the embedded binaural beats have an effect comparable to pure binaural beats on the AEP (auditory evoked potential) measured

at selected PFC (prefrontal cortex) locations at the 40 Hz gamma frequency (Deraman et al., 2014), prompting the creation of embedded isochronic tones in musical textures that enhances listening desirability in auditory entrainment research. Nevertheless, it should be noted that brainwave entrainment has yet been clinically proven in long term or large-scale studies, although there is increasing scientific evidence of its impact on brain activity as recorded in small-scale studies.

The composition, “Ceruleus” is twelve minutes in duration, comprising twelve one minute real-time slots divided into fifteen-second time bars. Each real-time slot is made up of sixty crotchet beats per minute. This is to facilitate “real-time” scoring and conventional scoring due to the nature of the compositional structure, electro-acoustic instrumentation and the compositional aesthetics in (co)relating real-time with conventional musical tempo. It also takes into consideration the performative intentions of the composer and her knowledge in writing new music for performers from diverse musical traditions. The score encompasses graphic, representative and standard notation capturing the composer’s sonic spectrum of electronic and acoustic images. The waveforms of isochronic tones are graphically represented as with ambient tonescapes. The gamelan (“saron barung”) part was created and played by the composer while listening to the isochronic tones at 40 Hz using headphones in a recording studio. This approach in creating embedded isochronic tones was critical to the methodology undertaken. The following figure illustrates the structural framework of “Ceruleus”.

[INSERT Figure 4]

Figure 4. Structural Framework of “Ceruleus”

In selecting the type of beats to be used, the composer was faced with several options. The most well-known form of brainwave entrainment is binaural beats, where a slightly different tone is presented into each ear through headphones. When pure tones are mixed together, their waveforms add and subtract from one another, resulting in a pulse. Binaural beats are created when two tones close in frequency (say 410 Hz and 400 Hz) generate a subsonic beat frequency (10 Hz) causing temporary “entrainment” to occur due to the brain responding directly to the frequency of the signal introduced.

Monaural beats are based on the same concept as binaural beats – combining two tones to form a beat. The difference is that monaural beats are formed when two tones combine digitally or naturally before the sound reaches the ears, as opposed to combining in the brain like binaural beats. Isochronic tones on the other hand are evenly spaced tone pulses. Unlike binaural and monaural beats, isochronic tones do not rely on the combination of two tones as the “beat” is created by turning a tone on and off. Regarded as the most effective tone-based method, isochronic beats have been known to produce strong cortical responses in the brain.

[INSERT Figure 5]

Figure 5. Isochronic tones

In creating the electronic soundscape, five base types of tonescapes were selected using Ableton Live, a music software sequencer and digital audio workstation for audio production and live performance. They were then mapped onto the fundamental structure at different points in time. Pitch and timbre bands of each of the soundscapes were modified and layered over the isochronic tones and gamelan fundamental structure. The tonescapes comprise (i) Ecstasy, (ii) Blackhole, (iii) Nazca, (iv) Ambient, and (v) Fly Chorus. They were designed with a number of criteria in mind, namely, (i) sonic compatibility, (ii) textural shape, (iii) purpose, (iv) intensity, and (v) spatial relationship with each other and with the ensuing instrumental/vocal parts which are played with the electronic score during the live performance and recorded.

[INSERT Figure 6]

Figure 6. Layering Soundscapes of “Ceruleus”

Any work with the inclusion of voices demands additional consideration as lyrics or narratives tend to place a work in a more ‘literal’ plane. In this instance, Sanskrit words which conjured sonic images with “meditative” qualities were used. The syllables using extended voice techniques were melded into the score to augment and “rise above” the textural motion of the electronic tonescapes. The use of Sanskrit rather than English also avoided an instantaneous association of literal meaning by the listener (unless of course, s/he speaks Sanskrit). The text is sung by two voices (male and/or female) with the second voice largely echoing the first voice canonically, reminiscent of one’s “self” and “other” in thoughtful reflection.

Each word is broken up into syllabic parts with each word taking the duration of about a minute enunciated with rubato, rhythmic vibrato and vocal tone colours. English translations of the Sanskrit words provide performers with interpretive guidance and the composer’s intentions at the specific moment in time, phrased as follows.

*Asshaa amritanadi palasa
Jagrata yaachate shaantiM
Rasayati durdante chupa
Rava atitaranti sushupti...pavanaH*

*Hope flow of consciousness petal
Waking state plead peace
Feel untamed sound
Transcend dreamless sleep...breath*

(Poetic text created by V. Ross)

The string part is created for two players, the first playing for eight minutes fifteen seconds (Bars 1-33), followed by another string player (Bar 34) who literally walks onto the stage, signaling the exit of the first player who rises and leaves the performance space. This symbolic gesture personifies overt change or transformation as a result of covert decision making strategies. This change imposes a shift in performance balance impacting fellow performers and the audience, perhaps probing our “blue spot” to wonder *why* this was necessary, while the percussion player continues to mark the passage of time oblivious to surrounding events. An excerpt from the score rounds-up insights into the creation of “Ceruleus”.

[INSERT Figure 7]

Figure 7. “Ceruleus” (Score Excerpt)

Conclusion

This article positioned creative outputs of interdisciplinary practice-led research as artifacts by which culture, heritage and musical practice may be better understood and sustained through scientific-humanistic enquiry. It discussed recent developments in the field of music neuroscience and brainwave entrainment, tracing the layering of soundscapes and acoustic instruments over isochronic tones designed for auditory entrainment research. Literature relating to the processing of auditory waves and how the brain functions in firing neurons to ignite cognition was examined. It extrapolated the role of the locus coeruleus or “blue spot” in the chemical release of adrenaline flow to connect synaptic nerve cells resulting in the transmission of brainwave signals. It makes reference to traditional cultures and heritage in Malaysia that use ritualistic music to alter consciousness, and illuminates on how individuals may voluntarily learn to align the frequencies of their brainwave activity through the process of auditory entrainment. This chapter concludes with a reflection on the opening statement

which posits that cultural sustainability, heritage and musical practices resonate with technological advances in an increasingly connected world where people, societies, cultural practices and personal space interact inextricably with technology, and where health management gadgets, personalized digital brainwave mapping and thought-activated mechanisms may well become part of our everyday lives in our quest to manipulate our thoughts, minds and desires.

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