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The Role of Music in the Transition Towards a Culture of Sustainability

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Abstract: Music has a critical role to play in the transition towards a culture of sustainability. Music is essential to human survival and human development. Contrary to popular opinion, it is not an ‘add on;’ instead, it is the life-blood of culture and individual and collective identity and strengthens our bio-culture. Participatory music, in particular, may play a critical role in enabling human survival to climate change. Its ability to draw upon and illicit deep levels of both verbal and non-verbal imagery, symbols, emotions and social-knowledge-structures make it a vitalizing element for our current journey towards sustainability. Renewing our bio-culture is essential to connecting and living well together. To empower sustainability, we – researchers, program managers, activists, engineers, and others engaged with practical sustain-abilities – need to actively create music as an integral component of those practices from which a sustainable culture can emerge.

This paper first lifts up some of the rapidly growing literature concerning the cultural shift necessary to survive climate change and the role that art and music play in culture. I then offer a case study from my own work in creating music to empower sustainability and my reflections and lessons learned from this experience. Finally, based on the theoretical framework and my own experience, I encourage sustainability practitioners to engage in experiments with participatory music.

Keywords: sustainability; culture; music; art; climate change; survival; bio-culture

Transitioning Towards a Culture of Sustainability

The Need for a Cultural Shift

In light of the ongoing collapse of the systems that sustain life, it is questionable if sustainability is still possible (WorldWatch Institute 2013). If it is possible, dramatic cultural shifts are necessary. In his Encyclical, *Laudato Si*, Pope Francis voiced this concern in his call for a “cultural revolution.” The Pope echoes increasing numbers of respected academics calling for a new political-economic-cultural-social world order based on new worldviews and sustainability paradigms (Leach, Scoones, and Stirling 2010; O’Brien and Wolf 2010; Speth 2008). Former head of United Nations Development Programme, Gus Speth (2008) describes this need as the “bridge at the end of the world.” Religious scholar Karen Armstrong (2008) describes it as the second “Great Transformation” towards a compassionate way of living. Environmental leader David Korten (2007) describes it as a “Great Transition” towards a “new humanity.”

These thinkers recognize that our current system of non-sustainability contains interconnected behaviors and relationships stemming from a core set of worldviews and values that infiltrates and is reproduced in all aspects of dominant Western (and now global) culture. Michaels (2011) calls the dominant culture a “monoculture” in which the most powerful dominating values are hegemonic market-economic values leaving little room for bio-cultural diversity. As Kagan (2011) argues in his work on the intersection of art and sustainability, the mental frameworks and worldviews that enable modern economic capitalism to wreak havoc on environmental and social relationships is based on an atomized perspective that arises from the Cartesian split between body and mind, nature and society.

For decades, systems scientists such as Ervin Laszlo and Fritjof Capra have opposed the atomistic and individualistic, materialistic, and Eurocentric model of the human being rooted in a “fragmented understanding” caused by binary logic. An “object-centered consciousness” and a primary focus on linear and rational thinking are often found to be underlying market capitalism (Kagan 2011). The object-centered consciousness conceptualizes nature as a ‘thing’ separate from people. This has both perpetuated modern capitalism and made environmentalism a special-interest area, instead of part of the whole socio-ecological person.

But, the separation between human beings and the natural environment is a false dichotomy. We are nature. Nature is us. However, we keep acting as if culture and biology are separate. Nature is often considered an object (as in ‘natural resources’). So too is culture, including art and music. Linguistically, ‘art’ and ‘music’ are nouns. Kagan (2011) explains how the objectification of art (and I suggest by extrapolation music) by delineating it into a separate category of pursuits from sustainability, rather than integrated with the whole of life, perpetuates a non-sustainable system:

“[When] art becomes a closed and isolated system requiring nothing but itself to be itself, it derives from the objectifying metaphysics of science and the dualistic model of subject-object cognition that [formed] the prototype for Cartesian thinking [and from there non-sustainability]” (Kagan 2011, 86).

One of the unfortunate results of this is that it prevents us from recognizing the ways in which art and music perpetuate non-sustainable social formations. As British economist and playwright Tim Jackson said, “modern musical ‘pop-stars’ contribute as much to empire and consumerism as anyone else” (2010, 16). In Kagan’s words: “high art releases steam to allow the system to keep going” (2011, 95).

A culture of sustainability entails moving away from object-centered consciousness and nature-culture division and into a greater perceived and enacted connectedness with the bio-physical-chemical reality of the world. Just as art and music have been conceptualized as objects, they can also – and perhaps more accurately – be conceptualized as verbs: i.e., processes of ongoing communication formed in, through, and effecting the creation and performance of social relationships. Kagan (2012) agrees that “art is a verb” and musicologist Christopher Small (1998) argues that music is a verb. Small proposes using the word “musicking” to more accurately describe what is happening when people play music.

To better understand the process through which ‘musicking’ and ‘art-ing’ (my term) creates culture and society, I turn to Gregory Bateson, one of the foundational system-thinkers whose analyses of art and culture continues to inform musicologists, art sociologists, and sustainability scholars today.

Music as a Force for Survival and Integration

As Turino (2008, 3) explains, “Gregory Bateson (1972) notes that the arts [...] have an integrative function – integrating and uniting the members of social groups but also integrating individual selves, and selves with the world.” After all, if we only needed language, the arts would have died long ago. Instead, Bateson suggests that artists communicate through “forms and patterns that serve as integrated maps of sensations, imagination, and experience and that it is through these patterns that we are most deeply connected to and part of the natural world” (Turino 2008, 3).

Bateson (1972) suggests that “artistic engagement [...] provides a root into primary process whereby the buried wisdom can be accessed and utilized” (Kagan 2011, 230). Primary process, for Bateson, is the “passing of imagery/ideas from the subconscious to conscious awareness without the filtering, reordering or domestication of ‘rational’ or symbolic thought” (Turino 2008, 237). Art links images and ideas in ways that might not be rational. This is relevant to the advancement of sustainability given that copious production of scientific facts regarding the reality of climate change has not led to governments changing fundamental policies (Moser 2007). Environmentalists have slowly come to realize that humans are not as ‘rational’ as was once assumed. Art, thus, has a pivotal role to play in expanding perceptions and shifting consciousness (and thus behavior) towards greater degrees of sustainability (Knebusch 2008; Moser 2007).

Further, Bateson argues that art can serve to balance the inner life with reason, sensitivity, and sense. This is particularly true during the actual process of making art or singing/playing music. Bateson (1972) writes:

“in making [art, the artist] must necessarily relax [arrogance] in favor of a creative experience in which his conscious mind plays only a small part. We might say that in creative art man must experience himself – his total self –as a cybernetic model” (as cited in Kagan 2011, 230).

Bateson, an Anthropologist, did extensive work with cybernetics. He appreciated that cybernetic models entailed a system with full systems-loops. Such feedback loops minimizes alienation. While comparing the art-creation process to a technological manifestation may seem contradictory to his ideals of the synthesis of the disjointed aspects of the individual, this comparison was a high compliment.

Recent research has validated the importance of music in establishing and maintaining connectivity at inter- and intra- personal levels. Ethnomusicology (see Turino 2009) has emphasized music's role in forming people's social identities. Rentfrow's (2012) extensive review of the research surrounding the \$4.7 billion American music industry and its effects on (American) social life finds that studies establish robust connections between music and emotion (especially around people recognizing moods in music and responding similarly to those moods), personality, self-identity, and relationships. Similarities in music preferences are associated with attraction, closeness, and relationship satisfaction. There is increasing research into the benefits of music in supporting internal harmony – including enhancing physical, psychological and spiritual well being (Fields 2001) – and supporting people with learning differences (Parambi et al. 2010).

Recognizing the power of music as a tool for binding people together, political leaders have long used music to promote conflicts (O'Connell and Castelo-Branco 2010) as well as to support peace-making efforts and to rebuild trust (Bergh 2008; Bingley 2011; Richards 2007). Hitler is well-known for his use of music to support the internal cohesion of the 'Aryan race' in Germany (Turino 2008). More recently, the Scandinavia White Power music has been used to attract recruits and disperse their ideology (Corte 2006 cited in Bergh 2008). Music has played notable roles in social justice movements, especially the civil rights movement (Eyerman and Jamison 1998). Corporations are also well aware of the power of music. Significant profits are made from supplying shops and workplaces with music that contributes to people working or shopping more (Bergh 2008, 353). Research has, thus, substantiated Bateson's early recognition concerning music's capacity to enable connectivity. Bateson further recognizes that these connections, especially at a non-verbal level, enable humans to survive.

A brief look at the history of one precarious moments of human survival – that of the African-American experience of slavery – shows how essential 'musicking' was in enabling the slaves to survive horrific situations. According to historians, slave music started as moaning when the slaves did not share a common language and were forbidden to use their traditional drums. These later became 'negro spirituals.' Historians strongly concur that this music enabled the slaves' capacity to survive a torturous existence for generations (Abbingtion 2009; Cone 1972; Jones 1993). If music enabled a people experiencing the horrors of slavery for generations to survive, we should certainly consider its potential for enabling climate refugees and other highly threatened populations to build resilience to climate change.

Music in the Bio-Culture

Music and other forms of culture also link us with our ecological as well as our social environments. Understanding these culture-music-nature links is a relatively new field for social scientists, musicians, sustainability practitioners, and others (Rothenberg 2011; Truax 2012). The notions of 'socio-economic systems,' 'bio-culture' and 'bio-cultural diversity' have emerged as attempts to re-connect these elements to build a post-Cartesian split era.

The term 'culture' derives from the Latin *cultural*. In classical usage, it referred to cultivating fields. Cultivating included the tilling, planning, growing, and caring for physical (agricultural) and intellectual capabilities (Hauser and Banse 2011). This history reminds us that even within the West, there is an ancient understanding of the symbiotic connection between the cultivation of the physical land (and thus our food) and the cultivation of the human mind. At least during one point in Western history, 'bio-culture' was assumed to be part of 'culture.'

For much of human history, land cultivation has been a highly musical experience. Music and dance have played a significant role in the seasonal rituals (planting and harvesting) as well as

regular activities of agricultural workers around the world. Songs and dances held critical knowledge – often highly specific to a particular region – about the eco-system and how humans historically did, could, and should relate to the land. As music can be highly adaptive and improvisational, these songs could change as the bioregion changed. Thus, I suggest that songs could form some of the feedback loops that leading thinkers in socio-ecological systems recognize as important for sustainability (Folke et al. 2010; Holling, Gunderson, and Ludwig 2001; Pelling 2010).

There are additional intersections between music and the environment that we are just starting to explore. Ethnomusicologists and musicians are just beginning to explore the ‘soundscape.’ The soundscape shapes the aural dimension of the landscape; it is the aural ‘space’ shared by humans, human technologies, and the natural world (Rothenberg 2011; Titon 2009; Truax 2012). Each place, from a city to a village to a classroom, has its own soundscape. Ethnomusicologist and folklorist Jeff Todd Titon exemplifies this for a case in Northern Canada, where mineral explorers fly helicopters over land caribou cross in. The noise confuses caribou, disturbing the flock’s communications. Unable to communicate properly, many of the flock change their migration route and some lose their way. The Innu, who traditionally depend on the caribou and who seek to maintain their culture, are impacted by the caribou’s confusion. Many of their traditional songs are about these migration routes and their relationship to the caribou in general (Titon 2013a). Increasingly, they sing of searching but not finding their caribou, a reflection of this sense of confusion.

Elsewhere, Titon (2013b) discusses the rich soundscapes that seem a prerequisite for humans sensing a strong belonging to a particular place. He suggests that natural sounds and human sounds can and do inform each other at physical, psychological, and social dimensions. These inform the ways we interact with the surroundings and the music that we create (Titon 2013b). We may suggest, thus, that soundscapes are critical components of feedback loops in socio-ecological systems.

Another critical component of the human-environmental link is found in the concept of “biocultural diversity,” popularized by Louisa Maffi (2005). Her research has charted the “inextricable link” between biological diversity and cultural (especially language) diversity. She showed that geographical areas with high levels of biodiversity also have high levels of linguistic diversity – a useful proxy for cultural diversity. Today the loss of cultural diversity, including the removal of indigenous peoples from their lands, the suppression of their languages, and the loss of traditional environmental knowledge and practices, coincides, increases, and reinforces the loss of local biodiversity (Belem Declaration 1988; Maffi 2001, 2005).

Sustaining biodiversity is increasingly recognized as essential for climate change adaptation, especially in places where subsistence farming plays a significant role in people’s livelihoods. Given cultural diversity’s connection with biodiversity, Maffi (2001) and others have been strongly advocating for the protection and preservation of cultural diversity, using online platforms¹ to do so. Protecting indigenous knowledge, including their music and art, is increasingly recognized as critical for sustainability.

However, as Titon (2009) points out, too often the policy-arena of cultural affairs and cultural management operates within a limiting “preservationist” mentality. Policy makers do not perceive music and culture as being renewable resources. Perpetuating what we should now recognize as a familiar pattern, indigenous cultures - including music - become objects to be

¹ For an example of such platforms, see www.terralingua.org

preserved, as if in a museum, rather than living traditions. Sacred objects, expressions, and instruments are placed in museums that often do not support the continual shifts and changes in culture. It is more helpful, Titon (2009) argues, to conceptualize culture as a “renewable resource” that is constantly changing. He strongly recommends that effective cultural policy could emerge out of working closely with highly trained but not necessarily professional musicians and culture-brokers in this process. Titon’s recommendation has resonances within the United States (see Loomis 1983) as well as internationally (see Seeger 2009).

There has been some success in revitalizing traditional culture including musical heritage as a powerful entry point to creating vibrant sustainable systems that are able to steer their identity away from modern forces and stand on their own two feet. Eco-philosopher and religious leader Alistair McIntosh shares the story of the Isle of Eigg, off the northern coast of Scotland. The islanders reclaimed ownership of the land after going through an empowerment process based on the restoration and respect for indigenous arts and knowledge from pre-British-invasion times (McIntosh 2008). More recently, the Isle of Eigg has become the first place to completely rely on self-generated renewable energy. The community has cut carbon usage by 50%. Locals attribute this significant change to their community’s investment in their own culture (Grozdonic 2014). Thus, reinvigorating culture may be the foundation of sustainable living.

Recent Trends in Music, Art and Sustainability

When “sustainable development” became an internationally recognized need with the Brundtland Report in 1972, the term did not incorporate culture into its triad of society, economics, and the environment. The overarching discourse about the importance of the links between art/music and sustainability has grown vastly since then. Increasingly, sustainability advocates call upon culture, including art and music, to help break through this alienation (often for the utilitarian purpose of making people care about climate change).

Geographer and lead author of reports by the United Nations Panel on Climate Change, Diana Liverman is not alone amongst scientists increasingly recognizing that “the arts seem able to provoke and inspire reactions, values and practices that could move global society to a more sustainable future” (Liverman 2010, 27). Concerned with entrenched epistemological patterns focused on rational thinking and technical solutions, which have not yielded the desired results, artists have been given permission that scientists do not always experience to use their capacities for more lateral thinking (Dieleman 2008).

Indeed, the past 20 years have seen significant shifts at the international level from culture being a weak thread in international development discourse, to the UN Economic and Social Council (ECOSOC) recently suggesting to the UN Cities that culture be recognized as the fourth pillar of sustainable development (ECOSOC 2013) and that the post-2015 Millennium Development Goals include culture. The Council argues that culture, including artistic creativity, heritage, knowledge, and diversity, should be “mainstreamed into development” due to its pivotal role in economic, social, and sustainable development.

A brief summary of this history is as follows. As early as 1982, UNESCO held a World Conference on Cultural Policies in Mexico City, leading to the World Decade for Cultural Development (WDCD), which promoted the importance of culture. Additionally, the UNESCO Summit on Culture and Sustainable Development in 1998 proclaimed the interdependence of culture and sustainable development. The WDCD report went so far as to set cultural diversity as the goal of development. While its encouragement of a “global ethic” runs into the inherent problem of whose values would define such an ethic, the report’s attempt to include diverse cultural practices – including non-capitalist ones – as valid in and of themselves, and not simply

as “on the path towards development,” was a significant departure from earlier developmental stances (Rana and Piracha 2007). Cultural advocates point out that commerce and government are secondary institutions that derive from culture – common languages, behavioral codes, and shared sense of purpose (social capital) form the bases of trust from which commerce can arise. While cultural diversity is not even close to being as common a developmental goal as is GDP growth, empirical evidence of the importance of culture is forcing even conventional economists to recognize its importance (Rana and Piracha 2007). More recently, the UN issued the “Creative Economy Reports” (UNCTAD 2011) and, in 2011, the UN General Assembly passed a resolution calling for the mainstreaming of culture in development policies. Discussion of cultural indicators, including creating proxies to measure ‘intangibilities’ such as values, has gained substantial ground (Adger, Lorenzoni, and O’Brien 2009; Barrett 2013; Burford et al. 2013; Choe, Marcotullio, and Piracha 2007; Hall 2006). Still, most national and regional cultural policy is only just beginning to consider its links with sustainability (Titon 2013). Much, though not all, of this work tends to see music/art/culture in a utilitarian manner that will help sustainability, instead of as part and parcel of an emerging sustainable culture.

Important advancements come from artists themselves and from artists engaging with scientists. For example, in the Cape Farewell² project, dialogue between scientists and artists are cultivated via fieldtrips to areas immediately impacted by climate change such as the arctic. Tipping Point³ runs workshops where climate science is discussed by both scientists and artists. Kagan emphasizes that sustainable art must be an experiment; an emphasis that underlines Bateson’s experience-based notion of the power of art to reach into the critical, non-rational aspect of art that forms the “sensibilities which connect.” He argues that good ecological art should actualize the culture we strive to move into:

“Good ecological art links multi-dimensional issues combining ecological, social, cultural, political and economic dimensions with each other... bringing to visibility the relationships between humans and others here and now as well as then and there” (Kagan 2012, 19).

Kagan (2012, 267) further argues that the “aesthetics of sustainability should concur with the development of a literacy of complexity.” He illustrates artists creating projects that both illustrate complexity (i.e. tracing the path of a particular food product) and engages communities and scientists in creative exercises of intersectionality. As the failure to hold a systemic understanding of bio-cultural independence – especially across disciplines and between different components of the ecological system and the production system – is so prevalent, ‘intersectionality’ (such as the intersection between a rise in Internally Displaced Persons and a rise in climate-caused extreme weather events) is critical. Dieleman (2008) specifically links this back to the importance of feedback loops, as highlighted in systems thinking. Reflexivity is one important mechanism to create change. While others generally focus on the ‘thinking’ and ‘talking’ elements of reflexivity, Dieleman (2008) emphasizes that a “more than rational” approach is needed. He argues that artists and designers can significantly contribute to aesthetic, hermeneutic, ontological, and professional aspects of rationality. Artists are increasingly engaged in these endeavors (Dieleman 2008; Kagan and Kirchberg 2008) and there are increasing programs to support them. For example, the Australian government is now supporting substantial work with music and sustainability, which they call ‘museology’⁴, and

² www.capefarewell.org

³ www.tippingpoint.org.uk

⁴ For more information, see <http://museology.griffith.edu.au/>

Roger Malina is charting the emerging relationship between art and technology, especially neurology, at the University of Texas, Dallas⁵.

The process of creating alternative, sustainable art can be difficult because it entails what Kagan (2012) describes as a “double entrepreneurship.” Artists must both envision and create (i.e. act as entrepreneurs) in developing new artistic modes that embody complex dynamics and, at the same time, act as entrepreneurs in the dominant art world itself. As Kagan explains, both endeavors are necessary to change the prevailing conventions and neither can be successfully done by lone individuals.

Two Types of Music: Participatory Music and Performance Music

Much of the above discussion focuses on visual art. Music both follows these larger trends and has its own dimensions. Significantly less attention has been given to the intersections of sustainability and music. Most discussion about sustainability and music focuses on preserving cultural diversity, which is negatively impacted by globalization, as well as maintaining and revitalizing threatened cultural heritage (Grant 2013), instead of music and ecological sustainability (Titon 2009). There are efforts to ‘green’ the music industry (Bottrill 2007), including music festivals (Roberts 2013). However, it is rarely emphasized the potential of music to help communities survive trauma and adapt to uncertain conditions. As certain effects of climate change traumatize people and uncertainty is rampant, it is essential to consider music as part of climate adaptation.

Thomas Turino and Jeff Todd Titon have both offered thought leadership in considering the intersections of music and sustainability. Turino (2008) argues that to understand how music can create the relationships to enable sustainable cultures, we need to differentiate between what he terms “participatory” versus “performance” music. Participatory and performance music can be found across genres – from rock to folk to classical music. While Turino does not situate his theory with Small’s (1998) notion of ‘musicking’ the difference is important to consider. The term ‘musicking,’ as mentioned earlier, reminds us that music is an emerging social phenomenon. Musicking arises between the listener and the player. Listeners are inherent parts of any musical experience, even if they are listening to a recorded piece of classical music on their phone.

Participatory music is created through a different set of social relationships with their related manifestation of values than does performance music. Turino (2008) finds that most traditional and indigenous music from Africa to the Appalachian Mountains in America is highly participatory in nature. In participatory music, “there are no artist-audience distinctions: only participants and potential participants” (Turino 2008, 28). While the quality of sound and motion is key, the experience is judged primarily on the level of participation achieved and how participants feel, rather than how it might sound or look from the perspective of those not involved. It is simple enough for anyone to participate and it usually includes ways for highly skilled musicians to exercise their abilities and to not become bored. Participatory music is a very embodied experience; movement (clapping, snapping, foot stomping, hip shaking, and full-bodied dancing) is an integral part of the experience. Indeed, for many ethnomusicologists, the relationship between music and dance is more of a flow than a sharp division.

Turino (2008) compares participatory musical scenes to a cocktail party in the US: one would not go to a cocktail party and not expect to chat with the other people there. Similarly, one would not attend a participatory musical space without expecting to play, sing, or (usually)

⁵ See <http://malina.diatrope.com/what-rogers-doing/cogsciart-white-paper/>

dance. The focus of the group creating the music is primarily inward (into their own experience) and on the other participants. It provides a space for people to work out differences and disagreements with one another in (usually) non-verbal ways. Participatory music and dance are potentially strong forces for enabling everyone to feel and experience the power of their own voice in effecting the forces that determine their physical and emotional experiences for the duration of the musical session. This experience can become a training ground for learning and experimenting with participation in other areas of life.

When Titon reflected on a participatory old-time string band jam session, he commented that “there is more than music going on here – good sessions model creative and democratic social communities at their best” (Titon 2009, 14). Indeed, while civil society is often primarily linked to places with lots of language-based communication, Titon follows DeWitt’s (2009) argument that the social capital in participatory music-dance scenes “fuels public cultural expression, an aspect of civil society often overlooked and a public good in its own right.” (2009,15).

Participatory music tends to be a highly democratic, life-enriching, and non-consumption-focused engagement. Turino (2008; 2009) argues that, as such, it perpetuates an inherently anti-capitalistic set of social relationships. It is also highly valuable for creating strong bonds of trust and cooperation (Anshel and Kipper 1988), which are essential to build the social networks deemed critical to surviving climate-induced disasters (Adger, Lorenzoni, and O’Brien 2009). While participatory music spaces certainly exist in the West, they tend to be conceptualized as ‘less-than’ the more ‘important’ (i.e. professional and performative) spaces. This reflects the Western culture’s high degree of capitalist-cosmopolitan formation, where profit making is a primary goal.

It is important to note that not all participatory music is ‘good.’ Content still matters. Turino (2008) reminds us of the obvious difference between the impact thousands of people chanting “kill the Jews” within Nazi Germany versus thousands of people singing “we shall overcome” during the Civil Rights movement. Both were highly participatory and re-formed social identity and societal interactions – but towards vastly different outcomes.

Differently than participatory music, performance music is often done on stage for an audience that is expected to have minimal participation (clapping versus fully co-creating). It has fundamentally different social patterns, structures, and thus, values. Performance music is much more attuned to a consumerist culture. There is no need to buy something you participated in creating. However, one can buy (consume) something created by others. Therefore, performance music lends itself particularly well to a colonial/capitalistic mentality with its strong focus on consumption. Turino (2008) charts the shift in West Africa from using primarily participatory musical forms to performance music – which includes the capacity to sell their music and thus increase their livelihood. As musicians become better known – even globally recognized, their traditional art and culture becomes appreciated. However, the rise of one particular group into the performance space often shifts the participatory space of the social dynamics at home. Two classes often emerge. One values the ‘concert’ lifestyle where people are polite and listen. The other values the ‘village’ style. While both have their own inherent value, market economies value – and price – the ‘concert’ above the ‘village.’ In some cases, pure participatory spaces fade as a few individuals become musicians creating performance music; other times, both exist in tandem (Turino 2008).

The difference between these two types of music is reflected in their actual structure. Across cultures, Turino (2008) has found consistent similarities within the sounds and practices (including form, repetition, rhythm, social synchrony, musical texture, timbre, tuning and density, virtuosity and soloing) in participatory and performance music. They represent different ends of

a spectrum rather than completely separate categories and can and often are used together. In Zimbabwe, for example, the government used a combination of performance music by putting multiple tribes on national stages and inviting everyone to watch them perform and to help the people imagine themselves as one nation. This was complimented with group chanting and singing. Combined, participatory and performance music enabled Zimbabweans to both imagine and experience themselves as one nation in carefully choreographed, ritual-like settings.

Turino (2009) is quite careful to demonstrate that one musical form is not better than the other. While participatory music can “make artists of us all,” it places constraints on individual creativity. Presentational performance offers the “challenge of demonstrating heightened abilities [...] however it generates anxiety” (109). Certainly, many performance artists of all types are increasingly finding ways to empower sustainability (Heras and Tabara 2014). For our purposes, however, we must note that because participatory performance pays no attention to audiences (since there should not be any), it yields very little profit and so is of little interest to capitalist culture⁶. Turino (2009) argues that participatory music is antithetical to capitalist ethics and a powerful resource for building and sustaining communities.

Participatory music is able to build and create new sustainable communities because it engages people in an experience social scientists call “communitas:” a liminal phase in elaborate rituals when social distinctions are stripped away. These are spaces where people have the opportunity to engage in, practice, and henceforth replicate participatory values. Within Western, capitalist societies, groups of people engaging in participatory music and dance often form a cohort, i.e. an alternative space outside of the mainstream values-system. Over time (usually across generations) cohorts can (though do not always) become cultural formations, i.e. essential elements of a particular culture (Turino 2009). Practices, values, and traditions gain strength and become a cultural formation that may play a pivotal role in empowering sustainability.

Towards Greater Creative Experimentation

Above, I argued that the “great transition” entails a cultural shift from a non-sustainable bio-culture towards a sustainable bio-culture. Given the need and potential for new imaginaries, as well as our immense capacity to create new cultures that are rooted in and intertwined with the bio-system, there is a clear demand to enhance bio-cultural diversity. Participatory music is most likely the best musical form to engage in this process of enabling a new social life. The more this music is linked to and arises from within sustainability endeavors – e.g. including practices in sustainable agriculture, integrated water management, natural health practices, local governance of natural resources – the more likely it will be able to enhance and empower sustainability initiatives.

I suggest that we go beyond building the resilience of and renewing bio-cultural diversity and the ancient wisdom held by indigenous peoples, although those are critically important. Even if we were highly successful in this endeavor, it would not account for the significant changes that have occurred over time. As environmentalist Bill McKibben (2010) argues, the bio-physical construction of planet Earth has so significantly altered over the past fifty years that he proposes a new name: “Eearth.” This indicates that we cannot afford to rely only upon knowledge from the

⁶ The influence that the capitalist economy has on musical diversity (as in agricultural diversity) should not be underestimated. For example, in the United States, in 1995, Clear Channel owned 39 communication stations (i.e. radio). In 2005, that number had increased to 1,184 stations. That is an increase of approximately 30 times over ten years. Program content subsequently consolidated, which reduced the diversity of music that was on the air. Subsequent consolidation of program content has also been well documented (see Wilcken 2009).

past. Our 'new' planet Eearth needs both old songs and new songs reflecting both our heritage and our discoveries.

Thus, even if all of the old songs and dances of indigenous people were revitalized and recognized as important as sustainability reports in guiding interactions with the natural environment, the knowledge embedded in the music and dance would not necessarily inform modern society on how to interact with the Earth. The planet has and is continuing to change in unprecedented directions. Rains no longer come when they used to. Crops that used to work well in one area no longer grow so well. If we hope to use music to enhance biological diversity – and we have ample evidence to suggest that biological diversity and cultural (including musical) diversity go hand in hand – then we need to create new songs.

It is a reflection of our times that, even when we recognize the importance of bio-cultural diversity, we have put so little effort into creating new music and dance – essential elements of culture – to create sustainable bio-cultures. I suggest that those who are not necessarily professional artists or musicians, and may never have considered themselves capable of creating music, start experimenting with music as a form of communication that can empower sustainability. As practitioners from different sectors and parts of the world create new music, bio-cultural diversity is enhanced, especially if the efforts are in congruence with revitalizing traditional languages.

Given the importance of music described above, could music be what lead systems thinker Donna Meadows (1999) refers to as a “leverage point” for sustainability? Experimentation is needed to begin to answer that question. I now turn to an experiment I conducted and the lessons I learned.

Cultivating a Culture of Sustainability

Context and Team

I have rarely observed sustainability initiatives and programs that significantly integrate music. For instance, the return to traditional agricultural practices (sometimes with modern adaptations) to build climate change resilience fails to include efforts to revive old agricultural music and dance rituals. Some do not understand the significance of music either to themselves or to the larger soundscape that co-arises with the landscape. Some may only think of music as a performance or as something that communities and indigenous people do. A wide cultural revival through and with sustainable health and agricultural practices could (and perhaps needs to) be a highly musical one that is largely off-stage. But, most sustainable change-makers do not know where to begin.

I had the opportunity to experiment with participatory music while working with a vibrant network of young professional adults (ages 25 to 35) in Chennai, India between 2012 and 2013. Unlike McIntosh's (2008) island community off the coast of Scotland, these young urbanites do not have a strong sense of a traditional culture from which they can build a sustainable culture. Often, they view their traditional culture as constraining. These young men found one another after individual experiences (mostly as professional engineers) convinced them that materialistic lifestyles were inherently unsatisfying and destructive to their own and future generations. Their search for a better life for themselves and their society led them to organic farming as a way to start healing the damage done by their own professional activities and their society's lack of sustainability. When I met them in early 2012, they had successfully transitioned from knowing nothing about farming to running a locally admired model organic farm called Nalla Keerai

(Tamil for 'Good Greens'). They had implemented innovative marketing strategies to bring down the cost of growing organic greens so that it would be accessible to most people.

Creating Music

After intermittently working and living with them for over a year, I suggested that we create a music film about their experience. There was initial resistance. The team was concerned about "showing off" and perpetuating the music video culture, which they felt exasperated consumerism and did not support building communitarian values. I pointed out that communities can form around films, and that this was a chance to use the music video genre differently. The team acknowledged that music videos, which could be shared via phones by people from mixed castes, were an excellent strategy to reach a large audience across both rural and urban populations, particularly Indian and South-Asian youth. Finally, the team came to agree with the value of my proposal.

At first, they wanted the film's topic to be about organics. Having witnessed their personal as well as collective journeys, I argued that the film needed to include not only the benefits of organic farming, but also the larger context of the personal and collective transformation they had experienced. This conversation forced the group to consider how they defined sustainability. Is it going organic? Or, is it about dissolving caste barriers? Or, is it about being the change they wished to see? Or, is it some combination thereof? Thus, even before the song-writing process began, we had started a collective conversation, a reflective process.

None of the Tamil members of the group perceived him/herself as songwriters. Although I had recently started creating songs, I knew the importance of the song being written in the local language, which I did not speak, with local rhythms, which I did not easily grasp. Therefore, I acted as a facilitator for the creation of a song on sustainable transformation in a foreign language and culture. This was surprisingly effective, not only because of the time I had spent building up trust within the community, but also because of the general willingness to engage in what was seen to be a 'cool' experiment in social justice and becoming what I might call a cultural innovator.

We found a local folk singer (and music professor at a grammar school in Chennai) who created a song based on our description of what we wanted. However, only certain phrases and musical expressions captured our intent. Curious with what might happen if we integrated folk music and rgs (pronounced raags), a fundamental component of classical Indian music, I sought out classical musicians. Some rgs originate in folk music and then are refined in classical music. They are often said to musically express certain sentiments and are known to affect emotional states and physiological levels (Fields 2001; Krumhansl 1997). Some people say that every soul resonates with a particular rg; one of life's ambitions is to discover what that rg is and to practice it until it can flow into and appropriately guide one's spiritual life-journey.

I found one of the most talented young classical musicians and composers in Chennai. I visited his studio with one of the young men from the farm team. Fortunately, we had no sense of pressure. None of us had any expectations as to what would happen in the jamming session. We were able to just be with music and see what would happen. I now see this was a critical element to the experience and the learning that followed.

We played the folk musician's song highlighting the parts that we liked. I asked if it was a rg. He said "yes" and sang the rg. When the team member heard the rg he said: "Wow, that really captures what it was like before we started the farm."

We asked the classical musician about the meaning of the *rg*. He explained that this *rg* captures the sentiment of longing. In the Indian classical music mindset, that longing is a longing for the Divine. The explanation silenced the young man. He started shaking his head in wonder. “I can’t believe it,” he said. “It is true. When I was searching for the farm I was searching for God.” His comment brought us into a long moment of shared silence. None of us had fully conceptualized that the search for sustainability – especially in the practicality of making manure from cow dung - could also be seen as a search for the Divine.

At that point, the song began to take shape. Later, more members of the team listened to our phone recordings of the music. In our reflective discourse, they agreed with the first young man’s experience: the search for sustainability was a search for the Divine. A new collective awareness began to take shape. The group began to think differently about the music and the process of creating it. Later, I asked that same young engineer about the impact of hearing the musical expression of his personal quest. He said: “I can never fully go back to what I was doing before (non-sustainable living). I was already headed in that direction, but now I know I cannot.”

Lessons From Experimenting with Music

The process of creating music was a powerful one. It showed us aspects of sustainability that we had not seen before. I did not enter into this experiment with the above theoretical appreciation (see Wolcott 2013). I was motivated by a simple observation: ancient sustainable agricultural communities seemed to have a much higher level of engagement with music than did modern farming practices. So, what if one of the key missing dynamics to empowering sustainable agriculture resilient to climate change is actually culture? This question led me to create the musical experiment. Reflecting on both the literature and the experiment, I find several areas of intersection and divergence.

Creating Bio-Cultural Diversity

Nalla-Keerai is an exercise in enhancing biological diversity. The young “recovering engineers” (their own self-description) cultivate between 15-25 varieties of greens. In creating music, we were, to a small extent, enhancing cultural diversity. The music process reflected the ethos and the place. It was urban and peri-urban. It drew on folk, modern, and classical musical strands. The experience demonstrates the potential for urban and semi-urban farmers as well as other practitioners to enhance bio-cultural diversity. The music stemmed from their experience on the land.

Products/Objects Versus Flow/Relationships

I did not enter the process aiming for a participatory process. I was, initially, concerned with creating a finished product, i.e. a music video. However, it became evident very early on that the finished product would only be a small part of the benefit of engaging in this endeavor. It also became evident that even if the film were never made, the process would be worthy. Thus, what had started as a utilitarian exercise, aiming at spreading the word of sustainability through music, became an experience of collective human growth and empowerment. The later felt significantly more honest to the overall Nalla Keerai ethos. The experiment also demonstrates that music is not only an object, but also a process.

Non-Musicians Can Make Music

There was great reluctance on behalf of the team to creating the music by themselves. They wanted me to work with the two or three team members who were serious amateur musicians. Having recently gone through my own process of realizing that I, as a non-musician, could

actually create songs, I refused to endorse their prejudice. Over time, they came to agree with me. “It is much better if it is our music,” one of them said. Sustainability practitioners might expect initial resistance from people who do not self-identify as musicians (especially those influenced by the culture of professionalization of music), but this can be overcome. While we found it helpful to work with both folk and classical musicians, over time, the team started making more of the music. The boundaries between musician and non-musician significantly lessened.

Participatory Engagement and Trust

I had no interest in objectivity or in standing aside to see what would happen. I had an idea and I pushed to make it happen. The group agreed that had I not done that, the experiment would not have happened. But my strong-handed approach came *after* I had built strong trust with the team. By the time I proposed this idea, I was no longer an outsider: it was *my* team. I ate, slept, worked, relaxed, pulled weeds, argued, laughed, celebrated, turned off the lights, and cleaned up our space along with everyone else. Our mutual trust was well earned. I would not encourage such a strong-handed approach, especially not from a white American woman, without at least some of this trust and a firm understanding of local as well as international power dynamics.

Complexity, Connectivity, and the Real Challenge of Time

Although the group was unaware of the literature discussed in this paper, the experiment entailed some of what Speth (2008), Kagan (2011), and others seem to encourage: i.e. it was new, contextual, collaborative, emergent, networked, creative, and participatory. It also entailed joining across fields and social classes (as suggested by Montuori 2010). We absolutely saw this as a collective endeavor. Partly, that is the ethos of the Nalla Keerai team (including myself). Possibly, it also results from the larger Indian context, which does not see creativity as a purely individual endeavor as much as does the West (Montuori 2010). We engaged with the complexities of interfacing concerns of sustainable agriculture, spirituality, being the change, and ‘connecting the dots’ in ways that would inspire others (Dieleman 2008; Kagan 2012).

Our greatest challenges were a) our preconceived notion of what a music video was (as an object that fit certain conventional frameworks) versus what we needed to do for our own processes; b) internal team dynamics that included significant shifts in the primary team members; and c) time/scheduling dilemmas of a group of people who already had multiple commitments in different parts of Chennai and the world. Time and space became our biggest hurdles.

Further Possibilities

We were not trying to create the kinds of ritual agricultural dances that have informed Indian agriculture for thousands of years, although a dance element was always envisioned. I suspect that dance and rituals could positively impact the long-term sustainability of the worker-owned farming collective and in revitalizing organic farming practices more widely. We were not creating music while we were farming, which is how most traditional agricultural songs come into being. Most likely, doing this with greater intentionality to create what would become future cultural formations would be helpful.

This Was a Highly Spiritual Endeavor

We did not talk about creating music, dance, and films as a spiritual exercise. This was quite naïve of us – or at least of me, given the extensive flow between music/dance and spirituality

within the Indian historical and contemporary context. Further research is needed to explore the potential dynamics between music, spirituality, and sustainable cultures.

Having reviewed both some of the literature and my own experience, I highlight the importance of creating diverse bio-cultural expressions to enable the “great transition.” Finding multiple ways of doing this will likely empower sustainability. My experience and reflections are primarily geared towards the water, agricultural, and health sectors. But, the discussion presented here most likely holds relevance for other sectors as well. More research is needed in these areas, especially research integrated with practice. We need to hold up the extent to which music can help us survive, particularly overcoming the traumatizing elements of climate change. Rather than being an ‘extra’ or an ‘add on,’ music is fundamental to building a culture of sustainability.

To create sustainable culture, create music

Maybe sustainability is very simple. Maybe sustainability is that which gives and sustains life. Music helps to sustain life.

Music, especially participatory music, sustained African Americans through the horrors of generations of slavery. It was key to enabling the life and spirit of the Civil Rights movement and played a critical role in the anti-Vietnam movement. Some have invited established and upcoming artists and musicians to get on board the sustainability train (Kagan 2011; Rothenberg 2011; Tilton 2013a; Turino 2009). This paper, instead, invites non-professional musicians, who are engaged in creating sustainable solutions, from organic farms to cooking healthier food, to create music. Do not just write about what you are doing on blogs and newspapers. Do not just tell your neighbors about it. Sing it. Dance it out. Simple songs and dances that you can do with others might be better than fancy, complex ones. Better yet: create it with others, in the ancient process of “sudden music” (Rothenberg 2011).

We do not all need to sing the same song. Bio-cultural diversity includes diversity of music, songs, and dance. But, whenever possible, songs and dances should allow many people to participate in them. The music may be part of programs, but they will not succeed if they are trapped in the constraints of being part of sustainability performance criteria. While integrating music into our monitoring and evaluation forms will undoubtedly encourage more people to make more music, we have to be careful not to expect music to become another box to check. Music has a life of its own, and does not conform to two-dimensional reports.

Soundscapes – from our own lips and instruments to the call of the birds beckoning the start of a new planting season to the sounds of highways – inform our beings, our sense of belonging to our landscapes (Tilton 2013b; Rothenberg 2011), and the collective zeitgeist. We do not know what the impact of our singing will be. We do not know what knowledge we will garner and share through creating participatory music and dance inviting people to work through new-and-ancient ways of ‘musicking’ together. What will happen if, as we plant organic seeds, build renewable energy systems, and implement integrated water management systems, we let our music participate in the wider soundscape? It might be both a protest to the cacophony that makes the sounds of much of the emerging-markets soundscape. It might be an announcement and discovery of our own life-enhancing activities. Songs are like seeds: we do not know when we sing them what fruit they will bear. But, as humans, we have been given a voice to sing with: let us let this gift sustain us.

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