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## On the Limitations of Music Ecology

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### Introduction

The natural world has been a source of artistic inspiration for the musician for a very long time, across genre, time and place. This mimetic relationship can be demonstrated in genres as diverse as Chinese classic music, with titles such as 'Running Water' and 'Wild Geese Descending on the Beach' (Yu 2009), as well as prog rock band Jethro Tull's 1973 album *Songs from the Wood* (Tull 1973). However, it is the application of naturalistic tropes to the discourse of cultural diversity and sustainability that forms the focus of this study. In particular, I wish to discuss here the application of the ecology trope as it has been used to support arguments for the sustainability of diverse music cultures. In recent years, it appears that ecology has been applied to studies of music with increasing fervour. In Australia alone, there were at least three conferences where music ecology was the theme in 2013, reflecting similar conferences such as one held at City University London, with the theme of 'Sustaining a vibrant live music ecology' (Live Music Exchange 2013). Additionally, this link between ecological sustainability in the natural world and diverse music cultures was evident while on a field trip to WOMADelaide 2013, which had stalls ranging from those promoting sustainable living designs for one's house to stalls advertising TAFE courses on sustainability and carbon management.

Various versions of sonic ecologies – *music ecology*, *acoustic ecology*, *echo-muse-ecology* – have become popular in ethnomusicology and World Music studies since the 1990s. While the articulations of music and ecological tropes have changed over the years, more recently the ecology trope has been invoked to argue for sustainable relationships between subaltern and dominant music cultures. The temporal and tangible fragility of music as an art form has, in a sense, always been a defining feature of this art form (Rowell 1984: 60). However, there has been a great deal of discussion concerning the fragility of music styles in relation to the activities of transnational recording companies, market expansion and new technologies (see, for example, Erlman 1996; Stokes 2004). Much of this debate concerns the impacts of recording technology, transnational industry practices, representation, identity, authenticity, musical peripheries in relation to centres, and transmission<sup>1</sup> in a global age. Terms such as 'cultural grey out' (Lomax 1968) and 'cultural imperialism' (Erlman 1996) have been used to articulate the perceived threats posed by transnational music industry



practices with regards to the tensions between homogenous and heterogeneous themes ([Feld 1996](#); [Erlman 1996](#); [Stokes 2004](#)). Here, I explore the application and invocation of ecology as it is used to support arguments against these threats in favour of sustaining diverse music traditions, disciplines and cultures throughout the world. In this paper, I critically assess the usefulness of ecological metaphors in promoting the transmission of music disciplines.

## The Evolution of Music Ecology

An initial survey of the use of the ecology trope demonstrates that this particular term has resonated amongst a diversity of academic disciplines, and subsequently has been used differently for different purposes. In addition, this trope has had different histories in different disciplines, though there do appear to be some common themes that are invoked when the ecology trope is employed. This term has been used to describe an Ecology of Mind ([Bateson 1972](#)), and has been applied to such disciplines as Organizational Ecology ([Hannan 1993](#)), Landscape Ecology, ([Naveh 1990](#)), Ecology of Human Development ([Bronfenbrenner 1977](#)), Behavioural Ecology ([Krebs 1983](#)), Psychological Ecology ([Barker 1954](#)), Urban Ecology ([Berry 1977](#)), Cognitive Ecology ([Dukas 1998](#)), Ecology of Written Languages ([Barton 2007](#)), Information Ecology ([Davenport 1997](#)) and even Sacred Ecology ([Berkes 2008](#)). The ecology trope has even started to creep into the discourse of arts funding in Australia, such as Arts NSW's use of ecology to refer to 'a flourishing and innovative arts sector, with artists, arts and cultural organisations and creative industries being part of a dynamic ecology'. ([Arts NSW 2010–11: 68](#))

Evidently, some of these disciplines have more direct relevance to the study of music than others. While the ecology trope has been employed to mean different things in different circumstances, there remains a trace of its original use by German zoologist Ernst Haeckel in 1869<sup>2</sup>, referring to relationships within the natural environment and directing our thoughts to how these relationships contribute to healthy environments. Thus composer John Luther Adams, explaining his understanding of the place of music in ecology, writes, 'The central truth of ecology is that everything in this world is connected to everything else. The great challenge now facing the human species is to live by this truth' ([Adams 2009: 1](#)).

The ecology metaphor, as applied to music, can be traced back to the early 1960s in the work of William Kay Archer. In Archer's (1964) article 'On The Ecology of Music', he employs the term ecology to describe philosophical and semiotic shifts occurring at that time regarding the nature of communication. Applying these shifts to music, Archer uses ecology to speak of the relationship involved in the communication of musical messages between authors (composers) and a public actively engaged in the meaning-making process ([Archer 1964: 28](#)). For Archer, this included a broad spectrum of music-making, from the sourcing of material for instrument construction, developments in technology, and listening spaces ([Archer 1964: 28](#)). Concerning this music ecology, he writes:

We are seeking correlates and assume that all social correlates interrelate with music. We expect a music [culture] to be shaped by climate, by natural resources, by the incidence of certain diseases within the population (which may significantly affect needs of teaching in certain ways), by economy, by the type of political bureaucracy, by the capacities of technology ([Archer 1964: 29](#)).

For Archer, the ecology of music therefore describes the relationship of music to the 'dynamics of the total culture' ([Archer 1964: 29](#)). While Archer's use of ecology describes the relationships of the music making process to natural phenomena, it stops short of any discussion about the continued transmission of diverse music cultures around the globe. Where recent discussions have focused on the use of ecology to justify positions on the preservation and sustainability of particularly non-western music styles, it appears Archer had a rather dismissive and elitist view of certain other music cultures, as displayed by his comments concerning the universality of music: 'there is no one of the world's peoples which does not have a music; occasionally pitifully simple, but more often than not, of considerable sophistication and uniqueness' ([Archer 1964: 29](#)). The central framework for Archer's discussion, however, revolves around an ecology of meaning within the confines of various music cultures, the emotional and aesthetic qualities of these cultures, and their relationship to wider societal processes as a whole ([Archer 1964: 30–31](#)).

In 1977, Geoffrey Poole used the term 'musical ecology' in a vague sense to refer to the German classical music of the time ([Poole 1977: 37](#)). The reference to the 'ecology of music' in Daniel M. Neuman's (1980) book on music in North India is perhaps the closest articulation



to the way in which music ecology is being invoked in contemporary scholarship. Here, music ecology refers to how a musical system 'continues to maintain its integrity and anatomy in a world so vastly changed from that which gave it birth' (Neuman 1980: 18). Thus, this section is a study of music, musicians and the environments in which they must exist. Larry Polansky (1994) refers to ecology in mimetic terms when describing the thought processes behind his compositions in computer music during the period 1984–1992. Regarding his work 'Simple Actions', composed in March 1987, Polansky explains:

I envisioned the piece as an ecology with many little musical organisms, which composer Robert Marsanyihás called 'critters', wriggling around on a kind of sonic Petri dish, tripping over each other, altering each others' paths, and in general, creating a complex, unpredictable and hard-to-control musical result (Polansky 1994: 65).

The ecology trope continued to be used to refer to mimetic relationships between natural sound and the human organisation of sounds in the work of Kaipainen (1996). Drawing on the work of Neisser (1967, 1976) in psychology, Kaipainen's music ecology refers to the interactions of humans to their environments in a relationship in which the environment provides the resources for sound creation, and the human element provides the intentionality required to generate human musical sound (Kaipainen 1996: 175). While admitting the limitations of the method proposed in this research, Kaipainen attempts to generate complex formulas for quantifying human experiences of the musical environment.

These references to music ecology are in some ways rather isolated occurrences bearing no real connection to each other and certainly not expressing any sense of a cohesive research paradigm. Schafer's (1977) use of acoustic ecology has had a far more extensive influence in studies of ethnomusicology, World Music and environmental sound. Unlike Polansky and Kaipainen, Schafer's definition of acoustic ecology involves much more than describing mimetic relationships and experiences between the natural sound environment and human-constructed sounds. In this work, Schafer defines acoustic ecology in the following way:

Ecology is the study of the relationship between living organisms and their environment. Acoustic ecology is thus the study of the effects of the acoustic environment or SOUNDSCAPE on the physical responses or behavioural characteristics of creatures living within it. Its particular aim is to draw attention to imbalances which may have unhealthy or inimical effects (Schafer 1977: 271).

Schafer's acoustic ecology, therefore, involves much more than a muse for composition, and involves the political and social dimensions of all kinds of sounds (both naturally occurring and human-generated) and the effects of these sounds on the creatures that exist within these spaces.

Appropriating Schafer's use of acoustic ecology, Feld (1994: 3) details his journey from linguistics, anthropology, ethnomusicology, into what he has described as echo-muse-ecology. In a talk given at the Tuning of the World Conference on Acoustic Ecology, Feld eloquently represents the relationship between music cultures and the environment in his work with the Kaluli people of the Bosavi forest. He talks of musical ecology as a relationship of symbiosis, a reciprocal relationship between the musical sounds of the Kaluli people and the bird songs of the forest. Speaking of the birds of the Bosavi forest in anthropomorphic terms, he describes this symbiotic relationship in the following way:

My interpretation showed how Bosavi birds turn into Kaluli singers and weepers, how Kaluli singers and weepers turn into Bosavi birds, and how all of this is a local ecology of 'voices in the forest' (Feld 1994: 2).

In the case where the birds of the Bosavi forest are viewed as spirits by the Kaluli, perhaps one could speak of music ecology as symbiosis, a mutually dependent and mutually generating sonic relationship. Here the language of ecology may be more relevant than in other examples, useful for describing the particular relationship of dependence on the part of the Kaluli people with their natural environment and the role that both human and non-human sounds have in this interplay. The survival (or sustainability) of this music culture depends



therefore on their unique relationship *to* and dependence *on* the context in which they live. From this, one could argue that actions such as deforestation in this area would have an absolutely devastating effect on the sonic cultures of the Kaluli. The boundaries of ecology as a metaphor for human cultural forms and ecology as the study of interconnected relationships within the natural world are blurred in Feld's echo-muse-ecology.

Writing at a similar time to Feld, Maria Harley (1996) proposed a new research paradigm by which we may approach the study of music cultures – music ecology. Where she views the chief concern of traditional methodologies is to comprehend the embedded significations in musical sound, Harley proposes a more holistic model to previous musicological study. Here, musical ecology or 'eco-musicology', refers to the relationship between music as sound material and other sonic realities, those found in the non-human natural world and sounds generated through various advances in technology (Harley 1996: 2). According to Harley (1996: 4), music ecology is the study of music in its environments. However, the scope of this term needs to include the relationship of music cultures with the natural world, and not just human social relationships (Harley 1996: 4). Thus, music ecology would suggest the broader definition of music to include in-organic and non-human sonic material (Harley 1996: 5).

Perhaps where Harley's paper is most useful is in its presentation of various ways in which human beings have positioned themselves with regard to nature and how those deep philosophical and very often religious world views impact the significance of the term 'ecology' in any application towards music cultures. Harley articulates music ecology in reference to a particular understanding of the relationship between humans and the natural world. She builds on Naess' (1973, 1989) conception of eco-philosophy, which locates humans within natural processes rather than as distinct from them, in order to inform her articulation of music ecology (Harley 1996: 3). Additionally, the value of self-realisation is dialectically opposed to the values of increasing one's own wealth and consumption, while the values of diversity and complexity are argued along the lines of symbiosis (Harley 1996: 4).

While Harley acknowledges the different perspectives on the human relationship to nature, she does not argue why one should accept Naess' articulation of eco-philosophy as the correct understanding of this relationship and, henceforth, the most appropriate philosophical paradigm for discussing the complexities of diverse music cultures: it is merely assumed. It begs the question, therefore, why should we employ such a view of the relationship between humans, sound and the natural world? Harley's arguments involve an idealised relationship of humans and human musical culture in particular, within the natural world. Harley's argument that 'plastic and electronic' instruments, as opposed to 'naturally' created instruments such as the Indian drum<sup>3</sup> (Harley 1996: 7), betrays at best naivety, at worst a nostalgia for a lost Eden where the noble savage demonstrates the path back towards environmental equilibrium. The moralistic distinctions here are a repeated articulation of the well-documented values of privileging the natural over the artificial, the old over the new (Rowell 1984: 39).

Jeff Todd Titon has written extensively on music ecology and has a dedicated research blog on the subject of sustainability and music. Throughout Titon's work in this area, there is an implicit assumption that studies of the biological world are transferrable to the cultural. Titon articulates this assumption in his work, stating, 'if we are willing to entertain the idea that music cultures behave as ecosystems, then from ecology we can discern four broad principles' (Titon, 2009a: 121). From this assumption, Titon derives four principles that should be used in cultural policy debates concerning cultural diversity (Titon, 2009b). These include, firstly, the adaptive value of diversity; secondly, unlimited growth is unsustainable; thirdly, the fundamental connectedness of music cultures; and, fourthly, the responsibility of humans as stewards of resources (adapted from Titon 2009a: 121). In an earlier book, Titon refers to individual music cultures as analogous to environmental ecosystems:

Although each world [of music] may seem strange at first, all are organized, purposeful, and coherent. Each world can be regarded as an ecological system, with the forces that combine to make up the music culture (ideas, social organization, repertoires, movement) in a dynamic equilibrium. A change in any part of the ecosystem affects the whole of it (Titon and Slobin 1992: 9).

While it may be possible to entertain the idea that a music culture behaves like an ecosystem, here I critically assess this assertion. For one thing, Titon seems to suggest in the above quotation that music cultures are individual totalities living separate and cohesive existences. This assertion is difficult to support, as most contemporary scholars of music and globalisation are constantly affirming the



myriad ways in which global cultural exchange transgresses any imposed boundaries (see for example [Nercissan 2002: 8](#); [Isar 2012](#)). Even if we were to think of a music culture as part of the broader musical ecosystem of planet earth, one would be hard pressed to explain any music culture in its totality and it would be difficult to account for the intricacies of these changes given the complexities of causes and effects. Our lack of omniscience, unfortunately, limits our ability to see the whole. Similarly, cultural exchange and sonic encounters, on either a global or local level, cannot be thought of as equating to some kind of equilibrium. Rather, its dynamic nature is constantly shifting according to changes in human power struggles, which are far from balanced and cohesive (see, for example, [Omojola 2009](#)).

In any case, it seems Titon has shifted in his thinking, at least on the application of ecosystems models to music culture. On his blog on sustainable music, he muses ([Titon 2011](#)) over the implications of shifts in biological thinking over the 20<sup>th</sup> century for music sustainability: 'Indeed, the ecosystem concept itself, which once ruled ecology, is no longer at the centre of the discipline'. He then asks ([Titon 2011](#)),

Where has ecological science moved in response to this critique, what is the centre of the discipline today, and what are the implications of this change for musical and cultural sustainability?

These and other questions concerning the assumed relationship between music and ecology are pursued on Titon's blog. Included on this blog is a selection of conference papers and entries that discuss the sustainability of the biological world and how that relates to human cultural forms. Titon discusses shifts in scientific thought regarding such issues as resilience versus sustainability; whether ecosystems should be understood as in equilibrium, reaching climax stage, or simply chaotic; and the distinction between ecology as a politically neutral scientific discipline as opposed to environmentalism ([Titon 2011](#)). This same assumption is present in the description of the conference Changing Times for Live Music: Sustaining a Vibrant Live Music Ecology. The conference description reads:

Our starting premise is that live music practice exists within the constantly shifting relationships between state and commercial investors, small scale and corporate interests, and hence should be examined ecologically ([Dickenson 2013](#)).

It is the 'should' in this sentence that requires explanation. According to what evidence should the human cultural practice of music be examined through ecological prisms? What is the nature of the correlation between the scientific study of the natural world and musical sustainability? In some sense, Titon attempts to justify this transfer from ecology to human cultural sustainability through what he terms 'Nature's economy' ([Titon 2010](#)). He wrestles with two agendas – that of the economist and that of the advocate of cultural sustainability – and seeks to reconcile these by referring to Nature as the 'greatest economist' ([Titon 2010](#)). By looking at the shared etymological precursors to economy and ecology – deriving from the Greek term, *eikos*, meaning 'household' – Titon argues that the best way to manage human economies and cultural heritage is by looking at how Nature manages her household ([Titon 2010](#)). However, this raises more questions concerning the implicit agency ascribed to Nature, and does not yet provide any answer as to why we should assume that the scientific study of the observed natural world has any bearing on human music cultures. Before critically assessing the implications of applying biological science to human cultural forms, I do wish to note a certain degree of hesitance that I have towards making the assumption that music behaves in a similar fashion to ecology. There seems to be a methodological transfer from the biological sciences on top of the social sciences, in which the former discipline appears to function with increasing gravitas and influence on how we understand and study human culture. If this is indeed the case, we need to proceed with caution and perhaps more clarity as to what exactly is meant by, and on what basis is, the comparison being made between the biological and social sciences with respect to music cultures.

The ecosystems analogy, quite aside from scholarly shifts away from this in ecological science, has certainly struck a particular resonance in the academic community. Since 2011, a project funded by the Australian Research Council in partnership with the International Music Council, the World Music and Dance Centre, the Music Council of Australia and seven universities across Australia, Europe and the US, has been directly concerned with the sustainability of diverse music cultures across the globe. The project is structured around the natural metaphor of musical ecosystems in which five domains have been articulated as an intentional strategy to counter the threats facing diverse musical styles across the globe. These include: 1) Learning and Teaching, 2) Musicians and Communities, 3) Contexts and Constructs, 4) Infrastructure and Regulations, and 5) Media and the Music Industry ([Griffith University 2011](#)). In this project, Seeger



argues that the rate at which musical subspecies are disappearing is ‘well beyond [the] natural process of musical styles and genres emerging, changing and disappearing over time due to changing tastes’ ([Griffith University 2011](#)). While the articulation of these spheres of music is extremely useful in seeking to provide support for the continual transmission of diverse music cultures across the globe, the question remains: can these allusions to nature be justified to make a cohesive argument for the active instigation of sustainability measures in this regard? For example, have these natural processes of emergence and change been documented? Have they been observed? If so, what is the rate of natural change – or, to employ biological terminology, ‘mutation’ – that we can expect in order to determine what is unnatural?

In summary, it appears that one of the difficulties in discussing music ecology is that there is such diversity in the way that it is applied in each of these cases. While there are significant differences between Schafer’s acoustic ecology, Feld’s echo-muse-ecology, Harley’s music ecology, and Titon’s discussion of biology and culture, in each of these examples there is an articulation of some kind of relationship between music and the biological environment. In the case of Neuman, Seeger and Titon, the conservation and sustainability arguments, prevalent in biology and more recent discourse regarding climate change, are applied to music cultures. But how transferable are our understandings of biology to human cultural activity and what might be the ramifications for doing so?

## Is Music Ecology Sustainable?

While the desire to promote the continual transmission of diverse music cultures across the globe may indeed be admirable, I raise two concerns that I have regarding the effectiveness of these ecological tropes to make a cohesive argument for musical sustainability measures. Here I question the assumption used by Titon whereby music cultures supposedly behave as ecosystems and I emphasise some of the limitations of using natural metaphors and tropes in order to understand human cultural forms.

My first concern is this: how does one distinguish between natural and unnatural action when everything exists inside the system?

Let us begin by assuming Harley’s position on music ecology in which human cultural activity, and music cultures more specifically, do not exist outside of, but rather are part of the natural world, subject to a secular understanding of evolutionary biology. Based on this understanding, where does one locate human agency? If we are all inside the system, then we are all subject to it, part of a connected but endless cycle of causes and effects, where any understanding of human agency is simply an illusion. Despite Titon’s descriptions of Nature as an anthropomorphised, gendered agent, demonstrated through pronouns such as ‘her’, agency articulated in the contemporary biological sense could simply be seen as the result of evolutionary processes – a biological development born in the fires of survival.<sup>4</sup> If this is the case, how do we understand the actions of the ethnomusicologist, or music conservationist? Are they simply protecting their own subject matter, their area of study, which is linked to systems of reliance, the distribution of resources, or, in biological terms, the competition for resources?

Furthermore, if we were to apply a biological understanding of ecology, we would have to come to terms with an understanding of power differentials as they occur in the natural world. Left up to the ‘blind watchmaker’, Nature does not care about whether a particular species thrives or perishes and no one species is more important than any other. Richard Dawkins writes, ‘Natural selection is the blind watchmaker, blind because it does not see ahead, does not plan consequences, has no purpose in view’ ([Dawkins 1987](#)). Nature does not care about diversity; it does not manage its economy ([Titon 2009b](#)) because Nature is not an agent.<sup>5</sup> Disappearance, destruction, extinction are all part of the observed world in which we live, and as music ecologists, it would be necessary to simply let this process of natural musical selection unfold. In this articulation of music ecology, there is no sense of Nature being unsympathetic and unsentimental, no sense of the competition for the resources to survive, of having to destroy something in order to continue living. Here, even the human ability to radically change one’s physical environment, including actions such as logging, poaching and stealing the music from subaltern music cultures, can be seen as an adaptation.

Is this not the antithesis of music sustainability? Is this not the antithesis of promoting the continuity of musical transmission, or identifying intangible cultural heritage? To let things die out, to be eaten and their energy redistributed seems to contradict the aims of the music ecologist, who seeks to justify the protection of certain musical subspecies as though they had intrinsic worth and a right to survival.



My second concern is this: can music ecology sufficiently justify the production of a universal and normalised ethic regarding sustainability?

It could be that, as in the case of the Kaluli, nature *has* some kind of agency. This is the case where the birds of the Bosavi forest are viewed as spirits and exist in a symbiotic relationship with human beings. Ecology can thus be understood to describe ethical relationships and modes of symbiotic interdependence of two or more conscious agents. If, however, for arguments sake, we removed the animism and spiritual agency applied to the Bosavi birds and the forest, I believe we return to a discussion of mimetic relationships, relationships whereby human music cultures are inspired by the natural world. And where the music of the Kaluli may exist in a co-dependent mimetic state, it is certainly possible to imagine a situation in which the sounds of the Bosavi forest could continue without the presence of human culture, assuming that a tree falling in a forest makes a noise even if there is no one present to hear it.

In this case, I believe we run into Hume's ethical problem of deriving 'ought' from 'is'. While some naturalistic philosophers don't see a problem with deriving ethical principles in this way, let us consider this in light of music and sustainability. For example, how can we compare the following statements: a) there is a mimetic relationship between the Kaluli and their environment; b) there is a logging company seeking to capitalise on the resources of the Bosavi forest. If we were to follow the telos of both of these statements, assuming that we have prior insight into their purpose, the 'oughts' that may be derived from these statements are in conflict with each other. Or, to take another example from Feld: a) the Mbuti pygmies in the Ituri forest of Zaïre have a music culture; b) the sounds of these cultures have been caught in the processes of schizophonia and schizmogonesis and capitalised on by pop stars such as Madonna, Herbie Hancock and Deep Forest. What 'oughts' might be derived from these statements of being? Are both statements natural, just part of the music ecology? Are the actions of transnational music companies to be understood simply as playing the role of a class A predator? If all human action is natural, then nothing is unnatural, it simply is, which includes everything we perceive to be horrific about the human condition.

In light of the above statements, I question whether or not these appeals to biological metaphors are really sufficient to constrain industrial and government powers to be ethically bound to preserve and promote diverse music cultures. By applying ecology to music in this biological sense, I believe we actually disarm ourselves of the ability to speak in ethical terms. If we are not going to apply it in a biological sense, where ecology simply functions in place of context, space, or place, I question the purpose of using a natural metaphor when there are already sufficient theoretical tools to frame such issues.

## Conclusion

Having acknowledged the broader uses of the ecology trope as it has been applied across disciplinary boundaries such as media, biology and psychology, this paper has focused on the use of the ecology trope as it has been applied to the study of music. From this research, it appears that the ecology trope, even within the disciplinary boundaries of music studies, has a wide range of meanings. Music ecology has been used to refer to mimetic relationships between human-constructed sound and the sounds of the natural world as evidenced by: composers such as Polansky ([1994](#)); the environment in which music takes place (what Schafer ([1977](#)) describes as the soundscape) ([Archer 1964](#)); the connectedness between human-constructed sounds and the natural world ([Harley 1996](#); [Feld 1994](#)); and the connectedness between human-constructed sounds and the social, political and economic environment ([Feld 1994, 1996, 2000](#)). Of specific interest in this paper has been the invocation of the ecology trope in the fourth sense, as it relates to the sustainability and continual transmission of diverse music cultures.

While there are, perhaps, some comparable themes between biological understandings of ecology and the ways in which human culture has been theorised, the transfer of the ecology trope onto human cultural activities, such as music, is not without its difficulties. Moreover, as with Harley's ([1996](#)) articulation of music ecology, those seminal philosophical questions of what makes us human, and how we see ourselves with respect to the natural world, seem to have been passed over in a rush to articulate some justification for a particular understanding of ethical exchanges between the music of humans and the sounds of the natural world. One could certainly question



whether or not the moral conclusions drawn by Harley are self-evident within a discourse of ecological relationships. Similarly, though the aims of the Sustainable Futures Project are certainly admirable, the ecology trope is not, in my view, the most robust terminology to support arguments for the sustainability of diverse music cultures across the globe.

By no means has this paper attempted to argue against the human responsibility to care for the natural world, or for that matter, the continuation and transmission of diverse music cultures. In fact, I wish to affirm my support for both of these ideals. I have reservations, however, concerning the conflation of the two in music ecology. I don't see how the application of the ecology trope can provide a robust counter discourse to the threats of such cultural forces as globalisation, cultural grey-out, industrialisation and capitalist expansion. And, while these natural metaphors may be inspired by broader discussions on environmental sustainability and climate change, it is one thing to convince people rising temperatures are bad, but another thing entirely to convince people to care about such music cultures as the Kaluli, especially where, for most people, the music industry seems to provide all the musical diversity they require.

## ENDNOTES

1. Here and throughout the paper, I use 'transmission' in the same way that Eric Hobsbawm and Terence Ranger use the term in *The Invention of Tradition* 1983. This does not imply cultural stasis in the transmission process. In fact, the opposite is true: transmission inevitably involves changes of some sort.
2. Haeckel is known to have coined the term 'ecology' in his work *Siphonofora*, which he published in 1869.
3. Obviously, Harley's lack of specificity here is a problem, but more importantly for this argument is the assumption that the 'Indian drum' is somehow more natural than an instrument made from plastic. According to what principles? The logic here appears somewhat deficient.
4. I am aware that this invokes the very contentious free will versus determinism debates in philosophy and free will versus predestination in theology. Here I have only the space to speculate about the implications of a deterministic causal understanding of ecology and the application of such an understanding to the concern for the sustainability of diverse music cultures.
5. This is, of course, operating within a materialist position. If there is spiritual agency in nature, as per the Kaluli belief, or there is some kind of deity that exists outside of the created order, then there is a whole new set of implications regarding what could be understood as 'Nature's economy'.

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## ABSTRACT

The term 'ecology', originally coined by German zoologist Ernst Haeckel in 1869, has been used since the 1950s as a trope in various ways for understanding aspects of human culture. The ecology trope has been applied to a wide range of disciplines within the social sciences and even within music studies. Terms such as 'acoustic ecology', 'music ecology', and 'echo-muse-ecology' have been used to describe and legitimise a broad range of practices and relationships between music cultures and their environments. More recently, the ecology trope has been utilised to garner support for defending sustainability arguments with regard to diverse music cultures perceived to be under threat by hegemonic practices of global interests as they expand economically. This paper explores the development of the ecology trope, the ways in which it has been utilised in contemporary discourse on music sustainability, and the limitations of applying naturalistic tropes in support of the conservation of human cultural forms.

**Key Words:** sustainability, conservation, ecology, ethnomusicology, tropes

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