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## **Analogies and links between cultural and biological diversity**

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*This paper reviews the current state of knowledge about the links – metaphorical and real - between cultural and biological diversity. By way of approach, it focuses on language and music cultures, two areas of intangible cultural heritage whose diversity has come under threat in recent decades. The paper suggests some ways in which recent advances in the fields of ecolinguistics, biolinguistic diversity, and music sustainability further our knowledge of the links between cultural diversity and biodiversity. Metaphorical parallels between biodiversity and cultural diversity (such as the interconnectedness of the various forms of intangible cultural heritage, as in a biological ecosystem) can, to some extent, inform the development of models for supporting intangible cultural heritage such as language and music. Moreover, the very real interconnections between these two kinds of 'diversities' hold implications for cultural heritage management, since efforts to safeguard cultural diversity will be impacted by the successes and failures of efforts to protect biodiversity, and vice versa. For this reason, the issues explored in this review hold implications for policy-makers, governments, non-governmental organisations, culture-bearers themselves, and other stakeholders in the viability and diversity of cultural heritage.*

**Keywords:** cultural diversity, cultural heritage, cultural sustainability, biocultural diversity, intangible heritage

**Article classification:** General review

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### **1. Introduction**

Recent years have seen increased research, publications and documents on cultural diversity and ways to stimulate, protect and promote it: not only cultural diversity at large (e.g. Ang, Brand, Noble, & Wilding, 2002; Berger & Huntington, 2002; Heuberger, 2007; Susser & Patterson, 2001; UNESCO, 2001, 2002; UNESCO, 2005, 2008) but also specifically musical diversity (e.g. Alliance for Musical Diversity, n.d.; Campbell, et al., 2005; Letts, 2006; Schippers, 2010; Slobin, 1993) and linguistic diversity (e.g. Cunningham, Ingram, & Sumbuk, 2006; Dalby, 2003; Maffi, 2000; Nettle, 1996, 1999). With a focus on musical and linguistic diversity by way of illustration, this article provides an overview of some of the metaphorical parallels and actual links between cultural and biological diversity. By exploring through the

existing literature the nature and scope of these analogies and links, the paper identifies some implications for the sustainable management and safeguarding of intangible cultural heritage.

This article adopts UNESCO's definition of *cultural diversity*, namely:

the manifold ways in which the cultures of groups and societies find expression. These expressions are passed on within and among groups and societies. Cultural diversity is made manifest not only through the varied ways in which the cultural heritage of humanity is expressed, augmented and transmitted through the variety of cultural expressions, but also through diverse modes of artistic creation, production, dissemination, distribution and enjoyment, whatever the means and technologies used. (2005, Article 4)

## 2. Cultural diversity and biodiversity: Analogies and links

### *Analogies*

International concern for cultural diversity lagged behind concern for biodiversity by a number of years: It was 1993 when the international *Convention on Biological Diversity* entered into force, with its primary goal to conserve biological diversity (UNESCO, 2003); another eight years passed before an international declaration on cultural diversity was adopted. Yet a comparison between the two is made even in Article 1 of the *Universal Declaration on Cultural Diversity*, which proclaims: "As a source of exchange, innovation and creativity, cultural diversity is as necessary for humankind as biodiversity is for nature" (UNESCO, 2001). More pragmatically, French ethnologist Claude Levi-Strauss wrote that it should be possible

to maintain and encourage cultural diversity to a degree by preserving the cultural characteristics of different social groups: and in the same way as gene banks of plant species are created to prevent the impoverishment of biological diversity and the impairment of our earthly environment, we must, if we are to safeguard the vitality of our societies, preserve at the very least the vivid memories of irreplaceable customs, practices and know-how that should not be allowed to disappear. (cited in UNESCO, 2002, p. 16)

The analogy between cultural diversity and biological diversity certainly has its limits. Significantly, with regard to language and music, both are culturally, not genetically, acquired; also, species identity is unique, whereas humans can be both multilingual (see Austin, 2006, p. 7) and "polymusical" (see Nettl, 1994, pp. 171-172; c.f. Hood, 1960; Solis, 2004). However, affinities do exist, and are brought into relief by the frequent ecology metaphors in research on cultural diversity (e.g. Lasimbang & Kinajil, 2000; Liddicoat & Bryant, 2000; Mühlhäusler, 1996; Mühlhäusler & Wilson, 2004; Taylor-Leech, 2007). One example of the analogy lies even in the title of the Australian Research Council-funded project *Sustainable Futures for Music Cultures: Towards an Ecology of Musical Diversity* (Queensland Conservatorium Research Centre [QCRC], 2011), which both draws on the ecology metaphor and makes the connection between it and diversity. While natural ecosystems models are used in contexts as diverse as musicology, sociolinguistics, business management, finance, and information technology (Fahmi, 2009), the way the ecology analogy is employed across

and within disciplines runs the gamut from loose metaphor to more concrete applications of its conceptual frameworks.

Research from the relatively new linguistic subdiscipline known as *ecolinguistics* (e.g. Edwards, 2001; Hajek, 2000; Haugen, 1971; Liddicoat, 2000; Liddicoat & Bryant, 2000; Mithun, 1998; Mühlhäusler, 1996; Mühlhäusler & Wilson, 2004; Mufwene, 2001; Nettle, 1996; Spolsky, 2005) exemplifies and makes explicit how the ecology model directly informs thinking and writing about linguistic diversity, and by extension, cultural diversity. In general, the field acknowledges that languages (as well as people's practices, beliefs and ideologies relating to them) exist in "highly complex, interacting and dynamic contexts, the modification of any part of which may have correlated effects (and causes) on any other part" (Spolsky, 2005, p. 2153). This is applicable to other forms of intangible cultural heritage, such as music, especially in the current globalised world with its information networks, mass media, and commonplace international (and intercultural) travel (QCRC, 2008a, p. 1).

If language ecology is "the study of the interactions between any given language and its environment" (Spolsky, 2005, p. 2153, after Haugen, 1971), then *music ecology* might be an apposite term to refer to interactions between any given music genre and its environment. However, while the discipline of ethnomusicology itself has largely comprised investigation of these very interactions, particularly since the 1970s (Nettl, 2003, p. 300), ethnomusicological literature has rarely made discerning or explicit connections between music and ecology frameworks. The potential benefits of doing so are considerable: Ecology frameworks may inform the development of a model of musical diversity that defines with greater clarity what constitutes sustainable musical environments; that indicates how to gauge their health; that helps identify the challenges they face; that points to methods which may resolve those challenges; and that helps anticipate future outcomes of our actions (and inactions).

The likenesses between musical and ecological frameworks have not gone entirely unnoticed by music researchers. Stubington (1987) draws on an environmental analogy with regard to distinguishing between "preserving" and "conserving" music genres. Letts mentions the ecosystem analogy in passing, with regard to musical diversity (2006, pp. 9-10), and Hayward perceives parallels between (applied) ethnomusicological research and his own work as a "kind of low-scale green activist" (in QCRC, 2008b, p. 2). Nevertheless, in contrast with research on linguistic diversity, research into musical diversity has drawn neither systematically nor extensively upon ecology-based models that could potentially lay valuable groundwork for further research on endangerment and safeguarding. Absent from the literature, for example, is an equivalent for music of Harmon's cross-mapping of linguistic with biological diversity (in Maffi, 2005, p. 618). There is as yet no "Index of Musical Diversity" to quantitatively measure trends in the vitality of music genres across the world, akin to Terralingua's evolving Index of Linguistic Diversity (Terralingua, 2009; Harmon & Loh, 2010)); nor is there even an authoritative map plotting the distribution of the world's music genres (as in Gordon, 2005, for languages), although the immense difficulty of that task is clear.

### *Inextricable links*

In addition to the metaphorical parallels between natural ecosystems and human cultures, and between cultural diversity and biodiversity, the literature also explores what the Declaration of Belem calls the *inextricable links* between these pairs (International Society of Ethnobiology, 1988; see also Maffi, 2000; UNESCO, 2008). Certain natural environments are strongly bound with the cultural practices of their local people, including their traditional customs, land use, local knowledge, and spiritual beliefs. The Uluru-Kata Tjuta region of central Australia, which holds not only unique environmental significance but also cultural importance for its Aboriginal inhabitants, exemplifies an intimate relationship between a physical environment and its human population (UNESCO, 2002). Protection and preservation of so-called *biosphere reserves* like Uluru-Kata Tjuta, then, help to sustain cultural, as well as biological, diversity (UNESCO, 2002, p. 68). Conversely, certain biosphere reserves, such as those protected by the spiritual beliefs of their human inhabitants, owe their retained biological diversity largely due to cultural forces (Cocks, 2006; Laird, 1999).

Recognition of the links between biological and cultural diversity is often embedded within international instruments to promote the one or the other. The *Convention on Biological Diversity*, for example, acknowledges the importance of the *Traditional Environmental Knowledge* (TEK) of indigenous and local peoples in protecting and promoting biodiversity (UNESCO, 2003). The International Union for the Conservation of Nature features “Managing ecosystems for human well-being” (including cultural and social interactions) as one of five key program areas in its strategy for 2009-2012 (International Union for Conservation of Nature, 2009). Significantly, too, linguistic diversity is used as an international measure of trends in biodiversity loss: “Status and trends in linguistic diversity and numbers of speakers of indigenous languages” was one of 22 key indicators used to measure progress towards the 2010 Biodiversity Target (UNESCO, 2007, p. 22).

Particularly in the last decade or so, researchers have attempted to analyse these links between biological and cultural diversity, generating both the transdisciplinary research field of *biocultural diversity* (Cocks, 2006; Dasman, 1991; Loh & Harmon, 2005; Maffi, 2001, 2005; Maffi & Woodley, 2010; Manne, 2003; McNeely, 2000; Oviedo, Maffi, & Larsen, 2000; Posey, 1999) and its sub-field, *biolinguistic diversity* (Harmon, 1996; Harmon & Maffi, 2002; Maffi, 2000; Mühlhäusler, 1995; Suckling, 2000). Researchers on biocultural diversity sometimes use linguistic diversity as a proxy for cultural diversity (e.g. Manne, 2003; Oviedo, et al., 2000), demonstrating a close perceived link between all three diversities. In its report *Links Between Biological and Cultural Diversity*, UNESCO points out that since biocultural diversity research clarifies the interrelatedness of cultural and biological diversity, it holds implications for safeguarding approaches in both areas (2008, p. 8).

In recognition of that fact, UNESCO has developed several projects that foreground this interdependence, such as the Oral and Intangible Heritage project whose endeavour to maintain the Zápara language of Ecuador/Peru was driven by the end-goal of safeguarding the Zápara people’s intimate knowledge of their natural environment (UNESCO, 2008, pp. 43-44). Another example is UNESCO’s Local and Indigenous Knowledge Systems (LINKS) Programme (launched 2002), whereby “the environmental knowledge of local and indigenous peoples has been used for the conservation of both biological and cultural diversity” (UNESCO, 2007, p. 18). Such initiatives are by no means only UNESCO-driven: Terralingua recently ran a project on “eco-cultural health” among the Sierra Tarahumara of Mexico (Terralingua, 2008); its publication *Biocultural Diversity Conservation: A Global Source Book* details dozens of grassroots projects across all continents (Maffi & Woodley, 2010).

Given the connections between cultural and biological diversity, it is perhaps not surprising that there are instances of three-way links between language, music, and the native environment, particularly among indigenous peoples. One manifestation of this is found among the Kaluli of Papua New Guinea, for whom

the composer's craft is not to tell people about places but to suspend them into those places. Singing a place name is not a descriptive act but rather one that "impregnates" identity into place, tree, water, and sound names, because Kaluli are known by the lands on which they live, the places they cultivate and frequent. (Feld, 1990, p. 135)

Similarly, singers of the endangered Sami *yoiking* tradition "try to realize their 'social ties' by yoiking about the native environment: the mountains, lakes, herding places, animals, or even the mosquito girl who helps to drive the flocks faster" (Stockmann, 1994, p. 10). Other researchers have noted similar relationships between language, music, and the natural environment (e.g. Marett, 2005; McLean, 1996; Miyashita & Shoe, 2009, p. 126; Strehlow, 1971; Tamisari, 2002).

### **3. On safeguarding**

The various manifestations of intangible cultural heritage itself – including music, dance, ritual, drama, and story-telling – are also intricately connected (see Johnson, 2005; Nettl, 1998, p. 8; Stubington, 1987, p. 7). Inasmuch as these constituent parts of a cultural 'ecosystem' interrelate with each other and with the whole, they are analogous with biological ecosystems. Clarifying the nature of this analogy is important, since it may inform the development of appropriate strategies to protect and promote those constituent cultural elements in particular, and cultural diversity in general.

The close link between manifestations of intangible cultural heritage, especially in indigenous cultures, is suggested by the fact that sometimes a single word represents both song (or music) and dance (see e.g. Kisliuk, 1997, p. 30). A survey of safeguarding initiatives yields specific examples of this link, with regard to vitality. UNESCO, for example, runs a project to strengthen a Chinese tradition that incorporates theatre, music, story, and "complex choreography combining acrobatics and symbolic gestures" (Safeguarding, Revitalization and Promotion of the Kunqu Opera; UNESCO, 2009c, para. 1); another focuses on a Tongan tradition involving dance, recitation, song, and music (Safeguarding of Lakalaka, Sung Speeches with Choreographed Movements; UNESCO, 2009b). The Korean genre *p'ansori* includes literary, musical, and dramatic aspects; Howard (2006) examines at length the role of the Intangible Cultural Properties system in preserving it.

Sometimes the link between language, music, and other forms of intangible cultural heritage hinders safeguarding (suggesting that cross-disciplinary collaboration is essential). For example, orthographic difficulties and the linguistic diversity among Sami groups impeded researchers who had hoped to decipher and transcribe yoik texts, significantly retarding documentation of the music (Stockmann, 1994, p. 4). But beyond matters of safeguarding, an even deeper repercussion of the interconnectedness of the various forms of intangible cultural heritage is that the endangerment of one form has the potential to jeopardise the vitality of another (as in biological ecosystems). Marett provides an arresting example from

northern Australia, which demonstrates in this way the interdependence of music, dance, and language:

The simplification of rhythmical and metrical practices [in the Walakandha *wangga*] by the late 1980s is almost certainly related to the reduction in the number of styles of dance that were performed to the Walakandha *wangga*, which in turn is related to the social pressures inherent in making one repertory serve the interests of several language groups. (2005, p. 52)

This interdependence between the vitality of forms of cultural heritage is especially acute between language and sung music genres. In many indigenous and minority cultures in particular, certain words, phrases, linguistic structures, constructs, and semantics are only found in sung language, not in spoken discourse (Feld, 1990; Miyashita & Shoe, 2009; Turpin, 2007). The sombre implication is that if such a music genre disappears, so will the unique language embedded within it. According to the theory of linguistic relativity best known as the Sapir-Whorf hypothesis, whereby the unique cultural constructs and classifications inherent in any language both influence and represent its speakers' experience of reality (Kay & Kempton, 1984; Lucy, 1997), this means the loss of a world view.

Musical and linguistic diversity, then, are connected by more than merely conceptual parallels. A positive upshot of this interrelationship is that, redolent of the dynamics of natural ecosystems, the renewed vitality of a language can boost the vitality of music within a culture, and vice versa. The corollary is that safeguarding initiatives targeting the one form of intangible cultural heritage may also benefit the other. Two recent projects capitalising on this fact are a small-scale initiative collecting and transcribing Blackfoot lullabies in order to use them in language revitalisation efforts (Miyashita & Shoe, 2009), and the UNESCO project *Documenting and Preserving the Khang Language in Vietnam*, which involves recording folk songs to help safeguard the Khang language and culture (UNESCO, 2009a).

Both these projects suggest that music can be a valuable tool in safeguarding languages (see also Abley, 2003, p. 115; Johnson, 2005). As a part of a language revival project for the Kurna language of Adelaide and the Adelaide Plains, a songwriters' workshop was held, resulting in a book of songs in the language (Ngarrindjeri Narrunga and Kurna Languages Project, 1990). Amery comments:

Beginning with songs proved to be an excellent strategy to introduce the language . . . . It is far easier to learn language through the medium of song, rather than spoken language. Many of the songs written were exceedingly popular with children and their families. (2002, p. 7)

On the Channel Island of Jersey, the local language of Jèrriais is promoted through song in the context of language classes, nursery rhymes, hymns, carol singing, contests, and festivals (Johnson, 2005). Other initiatives which utilise music to keep languages strong include the award-winning Kaytetye language and music program, which involves writing songs in language (Turpin, 2007, pers. comm.), *Pāhana Haku Mele* ("Compose a Song Project") in Hawaiian language immersion schools (Warschauer, Donaghy, & Kuamojo, 1997, pp. 358-359), and the newly-launched multimedia resource for the Australian Aboriginal language Gamilaraay, which incorporates songs as a language-learning aide (Giacon & Nathan, 2009).

## 4. Conclusions

The focus in this article on the global diversity of language and music, both intangible components of culture, underscores some specific ways in which cultural diversity may affect, and be affected by, biological diversity. Metaphorical parallels between biodiversity and cultural diversity find resonance within research on the sustainable management of endangered linguistic and musical heritage. Many researchers in these areas continue to draw inspiration from the analogies, and at times endeavour to apply ecological frameworks when developing and implementing strategies that aim to protect and promote the cultural diversity of the planet. The potential remains for greater understanding and employment of ecological models within these areas of enquiry (especially for music, where research is relatively incipient).

Beyond the metaphors, current perspectives on the very real interconnections between cultural and biological diversity also hold implications for the safeguarding and sustainable management of intangible cultural heritage. The protection and rehabilitation of diverse natural ecosystems can bolster efforts to preserve and revitalise cultural diversity. Conversely, strategies that foster cultural diversity can encourage and stimulate biodiversity. If the diminishment of one kind of diversity can adversely affect the other, this represents a powerful advocacy argument for the need to promote each, and both. For these reasons, it is important for researchers to continue advancing understanding of these connections, in the interests of optimising strategies for the sustainable management of both biological and cultural heritage.

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