

**Knowing Pandora in Sound:
Acoustemology and Ecomusicological Imagination
in Cameron's *Avatar***

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The sound of this little hand drum is filling the entire universe. Lonnie, my musical mentor, and I sit around a smoky ceremonial fire, each of us playing and singing a Mi'kmaq honour song.¹ This has become a regular, almost weekly ritual. We hike out into the forest, prepare a fire, and sing the songs we have learned from Mi'kmaq elders. The words of the songs are powerful even if I do not really understand many of them. I know a phrase here and there. Mostly, I am uttering foreign and beautiful sounds. But with each singing, the song becomes more familiar.

The song has ended. The entire universe is holding its breath as the resonance from the last drumbeat contracts, folding in along the edges of my universe-filling beats. I am returning to myself on the tides of my drumbeat. I feel myself filling my body again—hearing the birds and the crackle of a dry stick exploding into flames.

Mi'kmaq elders say that the drumbeat is our first encounter with our mother. The great beat of our mother's heart fills our newly emerging ears. I am ceremonially returning to this first experience. The elders explain our relationship to Earth and to life through our primal relationship with our biological mother. We are born into the world twice when we hear that sound. I was born both a son and a human.

I exhale. My eyes open as if attached to my lungs. The leaves of the surrounding trees appear a little greener. The fire seems to warm my face just

a little bit more than I remember. The cloudy sky may be richer. Everything seems just a little bit more vibrant. This is the experience I look forward to each week. It is as if I have plugged into a more complex world.

I reach into a leather pouch. I plunge my fingers into tobacco and feel the soft coolness. My imagination surges back through time, exploring nooks of my memory. I am exploring my subjective world like a dockworker flipping through a newly arrived ship's manifest.² I am ritually inspecting my most recent stowage. I am patrolling for a long-forgotten container left unnoticed, and unopened, or perhaps shelved too hastily. The tobacco, as well as the songs and fire, provide me with a method to review my life and its accompanying emotional baggage.

I feel the moist ball of tobacco in my hand. I press it with my fingers and reflect. I focus my energy on this newly noticed concern and feel its energy drain from somewhere in my subjective world. I can actually feel energy moving down my arm and into this little tobacco ball. I feel like opening my hand just to see if the tobacco has actually changed shape, but I resist. The download has finished.

The fire burns brightly. I drop my little tobacco package of immaterial tension, made material, into the open arms of the small ritual fire. I watch as the tobacco burns. I feel the release of tension as the tobacco is burned. The burning is another transformation. It is now smoke. Something that just minutes ago was a troubling territory in my subjectivity is now filtering up through the green canopy overhead on its way to another territory. The eagle, as messenger of the Great Spirit, now has access to my concerns. It's his job to ferry them to the Creator. As the ritual draws to a close, my healing begins, and so does my transformation.

Lonnie and I light cigarettes and sit casually around our fire. The world slowly returns to normal. But I feel that something in me will not return to the same shape it was before. I have been transformed, just a little, but enough. Perhaps more than I know.

Early the next morning, Lonnie and I are again together. But this time, we are on our way to a standoff with a mining company. The local government has succumbed to pressure from mining executives and has allowed for a development on public land. We have not considered the possibility that our ritual the day before could be connected to our attendance at this protest. We are attending because this is a great hiking area, not because we are spiritually connected to the land. Or are we? I am forced to re-evaluate when we arrive at the protest to find that we are two of very few European-Canadians in attendance. The Mi'kmaq elder raises an eagle wing overhead and dedicates our actions to the Creator. This time the honour song has many drums and many voices. Again, I am transformed. I have joined a "home culture" protecting our land.

Home Culture Music

My emergence into this home culture was a personal moment of potent political transformation. I began to see myself as an environmental activist and to lobby the government to protect this land, my home. We were successful. In the years that followed, I was part of a number of environmental causes, struggling against industrial development and working toward environmental cleanup. In all these struggles, I worked alongside indigenous and non-indigenous allies from a variety of ethnic groups. It seemed that we were all motivated by a shared and deep connection to this place, by what might be summed up as a feeling of home. In the introduction to *At Home on the Earth: Becoming Native to Our Place*, David Landis Barnhill (1999, 3) writes:

For a heavenly vision of nature we have substituted one that is not earthy but commercial, and the enormous power of this perspective resides in its blindness to the earth and to our embeddedness in nature. There is another kind of vision. The eyes feel the curve and slope of the earth as it flows, following the water to the sea. The mind follows as well, wondering what creek lies below, what stream below that, what river. It is a geographical vision. What is here does not end here; all is unbroken. Place molds the sensual mind.

In some cases, home culture has been conflated with indigeneity, but it seems important to resist this kind of reduction. My opening example illustrates that there are categories where home might be shared beyond race and ethnicity. I am strategically resisting the application of indigenous and settler culture tropes (e.g., Starn 2011; Simpson 2011). As my discussion illustrates, it is possible to join a home culture as an ally. I did not become indigenous, in the ethnic sense, but I did join a home culture as an active participant who felt a responsibility. I joined a home culture as a neighbour might join a community, taking on the responsibilities of place and space. In my example, the gateway to home culture was music education provided by elders. My environmental responsibility *emerged* as a property of belonging to this home culture, and this belonging emerged following a sound-oriented epistemology—a way of knowing (epistemology) that occurs through sound (acoustics) and music and that Steven Feld (2003, 223) has named “acoustemology.” Feld argues that “soundscapes, no less than landscapes, are not just physical exteriors, spatially surrounding or apart from human activity. Soundscapes are perceived and interpreted by human actors who attend to them as a way of making their place in and through the world” (226). Building upon this notion, I will suggest that acoustemology is a way to connect with the world experienced as home culture.

Home culture, since at least J. W. Herder’s work in Western philosophy, has also been the root of folk culture (Hayes 1927, 720). But when folk culture

is used as the basis of the colonial nation-state, a break emerges between indigeneity and the folk. Both indigeneity and the folk become racially marked. Folk culture is the home culture of “whites,” and indigeneity the home culture of non-white, and often colonized, peoples. This racialized slip and obfuscation of home culture within the history of anthropological discourse continues to impact music scholarship. Often there is little or no connection between folk music scholarship and indigenous music scholarship, even though both may be more productively understood as home culture musics. Folk music has been completely digested by global systems of music capital (i.e., the music industry), and this process is also evident in the world music economy, which has impacted musical indigeneity. Arguing for home culture as a replacement for folk and indigenous culture will, I am sure, have its own problems, but it also seems to be an interesting idea to explore. My interest in home culture, as the above story illustrates, emerges from my experience of local people of different “ethnic” communities working together to protect “their” land from outside industrial interests. It is from this perspective that I view James Cameron’s *Avatar* (2009), which I will use as the basis for a thought experiment to illustrate how an understanding of home culture music might allow for a richer understanding of the important role that music plays in supporting environmental awareness.

An Ethnomusicologist Views *Avatar*

A surface analysis of the music production process in James Cameron’s *Avatar* is enough to illustrate that the music score contradicts and undermines the storyline of the film. The dramatic thrust of *Avatar* warns against the destructive impacts of unwelcome mining of indigenous lands. Cameron clearly draws inspiration from plenty of real world cases. One need only look to the documentaries *Crude* (2009) or *The Pipe* (2010), or follow the ongoing dispute over the direction of proposed pipelines that will carry bitumen from the Alberta oil sands. Environmentalists such as David Suzuki, Bill McKibben, and Al Gore have been warning about the environmental impact of unregulated resource extraction for decades. Their arguments have linked the root of environmental degradation to a culture of racist dislocation of indigenous peoples. Cameron draws upon what David Harvey (2005) calls “accumulation by dispossession” to inform *Avatar*’s conflict, so it is perhaps surprising that this ethic does not inform the production of music in the film. In fact, James Horner, Cameron’s long-time composer, mines and then processes “indigenous” music in the same way in which the antagonist in his film mines the commodity resource unobtainium. The contemporary ethnomusicologist is in a related position.

Ethnomusicologist Wanda Bryant was hired by Cameron to assist James Horner in the production of the *Avatar* soundtrack.³ Bryant was charged with finding sound resources for Horner. A dutiful researcher, Bryant explored recording archives to compile raw resources, which Horner then electronically manipulated. The sounds were combined, layered, stretched, and mutated to produce an “authentically indigenous” soundscape. Sounds were mined by an ethnomusicologist for the economic profit of a global entertainment company. In this way, the production of the soundtrack works against the ethical core of the film.⁴

The history of anthropology, like industry and environmentalism, is tied up with colonization. In the film, human anthropologists use avatars to study the Na’vi in a project funded by an intergalactic mining company. Presumably, the anthropologists try to naively “game the system” to generate legitimate documentation of Pandora’s indigenous peoples, but unsurprisingly, the research gets used against both the Na’vi and the (questionably) innocent anthropologists. The “evil” company executives—who presumably promised to deal with the indigenous peoples in a fair and equitable way when hiring academic researchers in the first place—eventually dismiss the researchers when “negotiation” with the indigenous landowners fails. The industry response to failed negotiation, unsurprisingly, is to unleash a private military brought along “for security.” The anthropologists struggle in vain to negotiate an ethical position vis-à-vis an impossibly compromised position familiar to all first-year anthropology students.

This critique needs to be added to the mounting criticism that Cameron made *Dances with Wolves in Space* as a white saviour discourse that assists colonialist audiences in creating psychological distance between the viewer in the Global North and the actions of our colonial ancestors, while also shielding contemporary actors from their roles in global resource exploitation. Everyone gets to be Jake Sully, the broken soldier of capitalism who becomes freed from his disability by the magic of indigeneity. *Avatar* needs to face this criticism.

Acoustemology and Ecomusicological Imagination

Given that Cameron needed to have a soundtrack for a film about indigenous subjects and that the only current model available for composing a soundtrack is a compositional method that is not anthropologically sensitive, what could be done? I suggest an anthropologically sensitive compositional practice that would require thinking ecologically to develop an “ecomusicological imagination.” While this suggestion might sound theoretically outrageous, I would like to point out that it is precisely this process that I have outlined in the opening of this paper. My opening account

illustrates that home culture may be experienced as an emergent property of a network of music, community, and environment. While ethical and environmental concerns might seem distant to most composers, these are not distant concerns for ethnomusicologists and filmmakers. Anthropologically sensitive composition might lead to a different form of film music. Instead of an ethnomusicologist assisting a composer by supplying sound resources (what could be called a “colonial model”), an ethnomusicologist might assist the composer to develop connection between sound resources and acoustemology (possibly a “post-colonial model”) in the formation of a space-based ecomusicological imagination.

I will illustrate how this might have been done for James Horner in the preparation of the score for *Avatar*. I will draw upon four famous anthropological/ethnomusicological case studies, all of which illustrate aspects of home culture acoustemology that are seen, but not necessarily heard, in *Avatar*. Had Wanda Bryant brought these examples to James Horner, how might the musical score sounded, and what might its impact have been on the audience?

Musical Emergence

An ecomusicological perspective requires an understanding of musical emergence. Emergence in art is the idea that musical practices and musical subjects arise from a scaffolding of complex interconnections. Emergence, as a term, can be traced to nineteenth-century physical, chemical, and biological studies.⁵ Darwin, for instance, discussed emergence in his description of the riverbank, wherein complex interconnections may be viewed as “ecology.”⁶ More recently, Gilles Deleuze and Felix Guattari (1983, 1987) extended emergence in their discussion of “becoming” within a rhizome. The rhizome, like Darwin’s riverbank, is a model in which complex interactions produce the basis for the emergence of an assemblage—in this case, an ecology. Assemblages have emergent properties: for example, the complex interactions of synapses in the brain allow for the emergence of the mind, the complex interactions of the mind allow for the emergence of subjectivity, the complex interactions of subjectivities allow for the emergence of culture, and from culture come works of art.⁷

Cameron’s fictional world, Pandora, is a rhizome, with its complexities and interconnections. We discover that the Na’vi are an emergent property of the Pandora ecology. The Na’vi are able to biologically plug into the energies that flow through their environment. They connect themselves to the animals they ride and the trees through which they hear the voices of their ancestors. It is genius to see how the Na’vi are immersed within the rhizome, the non-centralized connections that permeate all strata of

life! *Musical* emergence then—music as an emergent property of the rhizome—is not far-fetched.

Transversality and the Rhizome

Subjectivity might be understood as an emergent property of a society. Subjectivity is a much more expansive terrain than notions of identity: “Information and communication operate at the heart of human subjectivity, not only within its memory and intelligence, but within its sensibility, affects and unconscious fantasm” (Guattari 1995, 4). For instance, the transformation that Sully undergoes behind the eyes of his avatar occurs within subjective space. It is not simply that Sully’s identity changes. Technology might have provided an opportunity for Sully to experience new worlds of experience, new possibilities of life, but it is Sully’s understanding of his connection to Pandora and the Na’vi that ultimately changes. Guattari (1995) calls this movement between possible subjective worlds “transversality.” Transversality is a type of subjective movement. Kaluli and Suyá compositions, in the discussions below, are an emergent property of this form of motion. A human transforming into a Muni bird or a deer or a soul communicating from another place is a musical expression of transversality. Transversality might also be a source of Na’vi musicality. The film composer might find music that allows for connection with the rhizome and that facilitates musical emergence, even if from a fictional world. But where would one look for examples of ways of doing this? I have illustrated what might be emergent musical properties of transversal movement, but how might a composer understand imaginative travel?

We need to understand transversality to be able to answer this question. In Guattari’s (1995) model, subjectivity is not fixed. It is an auto-developing experience of self that “belongs to the processual subject’s engendering of an existential territory and self-transportation beyond it” (Genosko 2002, 55).⁸ Guattari based this idea, in part, upon Bateson’s *Steps to an Ecology of Mind* (1972), which itself emerged from already circulating notions of the need to expand Western philosophy.⁹ Guattari’s ideas have an ecological element probably drawn from Arne Naess’s work in deep ecology and ecosophy (Naess 1973). Fictionalized musical emergence, which uses new pathways of subjective travel as a way of knowing the world through sound, might assist in the creation of film music that works to make sense of the world of the film rather than, as it currently stands, an external application of romantic conventions (e.g., sweeping strings and orchestral platitudes).

As I illustrated in the opening of this chapter, music might be a type of knowing-through-sound (acoustemology), which requires simultaneous travel and transformation. What is the pathway that leads the soul of the

Suyá to the land of bees or the pathway to the muni bird, which the young Kaluli travels? Guattari (1995) suggests that this travel, transversality, is the becoming of a subject. This is a different sort of thinking about motion, motion as becoming, and becoming as travel through space. In the following examples, “musicians” travel *somewhere* by becoming something else, just as space changes as it intersects with an informed subjectivity in motion.

If we begin to look around at the lifeways of indigenous peoples on Earth, with an eye for music as a form of subjective travel, we find examples that resemble the Na’vi. There are accounts of indigenous peoples who maintain a relationship with what we call “nature” in a way that is at least as sophisticated as the Na’vi.¹⁰ In *Avatar*, the Na’vi can use music as a method of transversal movement through ecological universes of experience. This travel might occur through flows of energies along pathways between all things. A rhizome exists in the film. The sum total of this collective energy is given the name of Eywa by the Na’vi. Eywa, an emergent property of Pandora, does not appear as an individual character but is experienced in signs interpreted by the Na’vi. This emergence is captured in the Cree notion of “Mistabeo,” an ancient animating energy moving through the world that “manifests himself in the material world by his actions, influencing events or providing knowledge (as in what we call good or bad luck), in sorcery’s illnesses, in cures, in predicting the future, and in explanations of the past” (Preston 2002, 127).

Recognizing music as an emergent property and as subjective travel, however, does not—by itself, anyway—assist a composer in the development of the ecomusicological imagination. Recognizing that *knowing* the physical world through sound (acoustemology) helps create home culture might assist us in *hearing* the Na’vi’s connection to the rhizome of Pandora. Guidance in this process might be drawn from anthropological and ethnomusicological literature. What follows are sketches of ecomusicological imagination drawn from existing ethnomusicology literature, which, while not claiming to be exhaustive, present some examples of acoustemology. My suggestion is that we can learn something about the connection between the development of subjectivity and musicality that might inform deeper ecological thinking about music and imagination.

The Kaluli of Papua New Guinea¹¹

In an important Kaluli myth, a boy and his sister go fishing for crayfish and they call each other *ade*. After the sister catches many crayfish, the brother demands to have one. The sister says no repeatedly and the brother begins to weep. In his weeping, he loses the power of speech and turns into a muni bird. The boy flies away, leaving the sister calling after him. This story

illustrates the relationship between the Kaluli and birds. It is this connection that ethnomusicologist Stephen Feld (1982) built into a sophisticated ecologically oriented Kaluli musicology. The story illustrates that “becoming a bird is the core Kaluli aesthetic metaphor. Understanding that metaphor is an exercise in how cultural and semantic fields are organized in myth, language, expressive codes, and behaviors” (217). For the Kaluli, the singing of the muni bird is the singing of ancestors.

In Feld’s very personal ethnographic account of his research, he admits having problems trying to figure out an aspect of a particular taxonomy when his Kaluli partner responded, “Listen—to you they are birds, to me they are voices in the forest.” Feld writes, “I was startled by this, not because it was so direct (Kaluli tend to be very direct, even confrontative, in face-to-face interaction) but because it so thoroughly expressed the necessity of approaching Kaluli natural history as part of a cultural system” (45).

The relationship between the Kaluli and ornithology illustrates that “birds become a metaphoric human society, and their sounds come to stand for particular forms of sentiment and ethos” (31). Birds are, therefore, not just birds. Understanding Kaluli lifeways required, for Feld, an “essential unity of natural history and symbolism”; it required seeing “Kaluli feelings about birds as a complex and many-layered cultural configuration that intersected with other areas of thought and action.” Feld saw a need to avoid “trying to separate zoology and myth as distinct and neatly bounded modes of observation and deduction” (45). One might choose to see this as an ecomusicological practice. Drawing from R. Murray Schafer’s *The Soundscape: Our Sonic Environment and the Tuning of the World* (1977), Feld (2003, 225) synthesized acoustic ecology and soundscape studies in his work with the Kaluli and recognized that “the mediation between this rainforest ecology and Bosavi music turned out to be cosmological, for Kaluli consider birds not just singers but spirits of their dead. Birds appear to one another and speak as people, and to the living their presence is a constant reminder of histories of human loss, an absence made present in sound and motion.”

It is impossible to discuss the Kaluli and birds as separate elements. They are interconnected parts of a complex whole (rhizome) and music is an emergent property that “communicates the most deeply felt sentiments in Kaluli social life” (Feld 1982, 217–18). This might be a model for Na’vi song—music as an emergent property of the rhizome and the planetary energy of Pandora. Na’vi music might connect to the central energy flows of the moon Pandora. The film composer might consider musical ideas that illustrate the interconnections that the Na’vi have with the Hometree, the voices of the ancestors, and the voices of the animals to which they

connect their queues. Indeed, this seems to be suggested when group Na'vi singing assists the migration of Dr. Augustine's human body energy into the body of Eywa.

The Suyá of the Brazilian Rainforest¹²

Anthony Seeger studied the musical practice of the Suyá in Brazil and focused on compositional practice. In *Why Suyá Sing* (2004), he illustrates three ways in which songs are composed. I will describe two of these that might be useful for rethinking Na'vi home culture music.

People without souls compose the first form. Witches among the Suyá are responsible for a great deal of magic. They are also responsible for nearly all sickness and death. Sometimes this sickness is caused by jealousy. This occurs when a hunter is particularly successful in a hunt, in fishing, or in collecting honey. Witches may become jealous with this success and transform themselves into nighttime creatures, sneak into the offending person's home while he sleeps, and steal his soul. The soul is then carried away. If the hunter dies, it is because the soul is carried to the place of the dead. But often the sorcerers will leave the soul in a land associated with their particular jealousy. For instance, as Seeger recounts, if the jealousy was due to a successful day of fishing, the soul may be left in the world of the fishes, in the river. Or if it was due to an abundant harvest of honey, the soul may be left in the land of the bees. In either case, once the soul is taken, the now soulless person will become very sick. If the person recovers, he or she will continue with life but now in conversation with his or her now displaced soul. This is where songs come from among the Suyá: they are the communications of a trapped soul. Seeger (2004, 53, brackets in original) recounts this story, told to him by Takuti, an older Suyá man:

[A witch takes a man's spirit] to the birds. He has convulsions and lies in his hammock for a long time. He lies in his hammock while his spirit is with the birds. A vulture takes the man's spirit flying with him in the sky, and the man has convulsions. Then he sees himself [discovers that his spirit is with the birds in a dream or delirium vision]. . . . Then the man begins to hear the birds' shout songs (*akia*), and the birds' unison songs (*ngére*). He hears the birds singing about themselves. His health improves and he lives as before.

The second type of song comes from people who, outside of the village, are transformed into animals (69). For instance, "a man who was slowly turning into a large deer sang a song that has since always been sung in the Savannah Deer Ceremony; a man who became a wild pig/person sang a song that became the Wild Pig Ceremony for the initiation of young boys" (52). Musical emergence for the Na'vi might emerge from moving through

spaces of interconnection within the rhizome. This might be understood in terms of transversal subjectivity.

The Cree of Central and Western Canada¹³

For the Cree, “men are only one kind of person in a world populated by many kinds of persons” (Preston 2002, 210). The Cree attribute to animals human qualities, such as logical thought, dreams, and emotions (203), and these qualities appear in the characters of the animals as represented in dreams, and in songs that “link images in the dream world to animals in the real world” (Whidden 2007, 51). For the Eastern Cree hunter, this relationship involves a “sincere belief in a reciprocal attitude of love between men and animals” (Preston 2002, 199). The Cree hunter has two ways of communicating with the natural world. The first way is his relationship with the ancient spirit *Mistabeo* (210); the second is through song. Both of these are interrelated and will help us conceptualize Pandora-as-rhizome. Ritual communication with *Mistabeo*, about whom there are many myths, aids the Cree hunter in his life in the world. *Mistabeo* flows through all life and blurs the distinction between the material and non-material worlds.¹⁴

Lynn Whidden (2007, 49) suggests that Cree song should be understood as traditional ecological knowledge (TEK): that is, a “holistic way of knowing, specific to a place and to a people, and generally different in form from other types of knowledge.” Cree songs have words that are “more esoteric than secret, where understanding is acquired through the experience of hearing songs *and* of participating in the environmental, social, and emotional milieu that the songs express” (Preston 2002, 198). Just as we have seen in the other examples, music is an emergent property of the rhizome. *Eywa*, like *Mistabeo*, is understood by experience. Sully becomes Na’vi through a coming-into-awareness of *Eywa*. This process occurs, in part, through the soundworld of Pandora; it is Sully’s acoustemology. In a brief example of ritual music, we see how the Na’vi connect with *Eywa* both through biological connections (their queues) and sound connections (singing). A sound approach may also be seen in the lifeways of the Achuar of Ecuador.

The Achuar of Ecuador¹⁵

Philippe Descola (1994) writes that for the Achuar, the world is marked by a network of highly diversified spatiotemporal coordinates. These include “astronomical and climatic cycles, seasonal periodicity of various types of natural resources, landmark systems, and the organization of the universe into layers as defined in mythic thought” (62). For the Achuar, the world is an interconnected set of planes experienced at a variety of registers, a rhizome.

The everyday act of identifying cardinal directions illustrates this. The passage of the sun (which is broken down into periods) and the flow of rivers (downstream-upstream) relate to two directions (sun=east-to-west and river=west-to-east), illustrating the way the Earthly disc is connected to the heavens. Descola notes that for the Achuar, the “terraqueous disk and the celestial hemisphere are joined by a band of water, the source of all rivers and their final destination” (67).

Humans and animals are also connected in continuum. There is no disconnect between human life and “nature.” The natural is no more real than the supernatural (93), and in a myth that relates the transformation of a human being into an animal of the same name, the change of status is often marked by the loss of spoken language and the acquisition of a specific call (83). All of “nature’s beings have some features in common with mankind, and the laws they go by are more or less the same as those governing civil society. Humans and most plants, animals, and meteors are persons (*aents*) with a soul (*wakan*) and an individual life” (93).

As Descola recounts:

In mythical times, nature’s beings had a human appearance too, and only their names contained the idea of what they would later become. If these human-looking animals were already potentially possessed of their future animal destiny in their name, this is because their common predicate as nature’s beings is not man as species, but humankind as condition. When they lost their human form, they also, *ipso facto*, lost their speech organs and therefore the capacity to express themselves in spoken language; they did retain several features of their former state, however, to wit, consciousness—of which dreams are the most direct manifestation—and, for certain species, a social life organized according to the rules of the world of “complete persons.” (93)

Since all living things are essentially persons, the faculty of speech is useful for communication. But speech does not come from the mouth but from the soul, which “transcends all linguistic barriers and transforms every plant and animal into a subject capable of producing meaning. . . . Normally humans speak to plants and animals by means of incantations, which are supposed to go straight to the heart of whoever [*sic*] they are addressed to” (99). These incantations are another example of a form of musical emergence from the home culture rhizome.

Conclusion

I have used the music of James Cameron’s *Avatar* to reflect upon a way of knowing-through-sound called acoustemology. Drawing upon four ethnomusicological case studies to illustrate how musical emergence and eco-

musicological imagination might point the direction to a *sound* approach to “knowing,” I have illustrated how James Horner, assisted by ethnomusicologist Wanda Bryant, produced a film score for *Avatar* that did not draw upon indigenous acoustemology. My interest is to point out how ethnomusicologists, like colonial anthropologists of the past, risk becoming complicit in the very thing that *Avatar* criticizes. This presents an interesting challenge for thinking about film music. Film music, which seeks to represent indigenous people, might need to explore anthropological and ethnomusicological literature for instances of how music is used by indigenous people, not just how it sounds. Anthropologically sensitive composers might begin to practise acoustemology as they attempt to compose film music to assist viewers in their transversal travel through the fictional rhizome that they musically characterize. If James Horner had considered Pandora acoustemologically, *Avatar*’s soundscape might have been as captivating, imaginative, and immersive as its visual images.

Notes

- 1 The Mik’maq are a Canadian First Nation whose traditional territory includes western Newfoundland, Nova Scotia, New Brunswick, and northern Maine.
- 2 I use the concept of “subjectivity” as understood in Strozier’s *Foucault, Subjectivity, and Identity* (2002).
- 3 For an interview with Dr. Bryant that explains her working relationship with James Horner, please see <http://www.youtube.com/watch?v=9WI3kJIObHE>.
- 4 From an interview with Dr. Bryant about the process, this is quite obvious:
 Some of the examples I brought in were from a woman named Susanne Rosenberg who does these beautiful Swedish cattle herding calls that are phenomenally gorgeous. I took in South African mining songs, girls’ greeting songs from Burundi, Bolivian aerophones, singing from Comoros Islands (between Madagascar and Mozambique), Värttinä, which is a Finnish female singing group, voices from the Naga culture in Northeast India. . . . I would just play examples. I would hit track one, and James would sit there with his eyes closed. After five or ten seconds he would say, “No. I’d go next track. No. . . . no. . . . aww, I like that. I like that. What is that? Where’s that from? Save that one.”
 Access the full interview, “LA Ethnomusicologist Brings Otherworldly Sounds to Biggest Motion Picture of All Time,” at http://www.music.ucla.edu/blog/2010/02/02/avatar_ethnomusicology.
- 5 More on the history of the term *emergence* can be found in Jon McCormack and Alan Dorin (2001).
- 6 For more on this and its role for twenty-first-century ecology, see Morton (2011).
- 7 While emergence is beginning to become established in philosophy with some Deleuzian scholars writing about music and art, little musicology identifies emergence in music practice.

- 8 I will suggest here, however, that our theoretical imagination needs to expand beyond the linear model of progress at the core of neo-liberalism and beyond the dialectical materialism of the various Marxisms. Guattari's (2008) model of ecosophy and the "three ecologies," developed upon Gregory Bateson's influential *Steps to an Ecology of Mind* (1972), may provide the starting point for a re-evaluation of existing anthropological writings.
- 9 This movement can be seen in Wilhelm Dupre's *Religion in Primitive Cultures: A Study of Ethnophilosophy* (1975). Ethnophilosophy developed from themes included in some anthropology and psychology of the period. A brief list would include Freud's *Totem and Taboo* (1950) and Lévi-Strauss's *The Savage Mind* (1966) and *Myth and Meaning* (1978).
- 10 There are also some indicators that this process is occurring within Western philosophy. Perhaps the development of New Age literature suggests that there is a connection between the natural and physical worlds that people in industrialized culture still feel. Michael Harner (1980, 57) suggests that "millennia before Charles Darwin, people in shamanic cultures were convinced that humans and animals were related. In their myths, for example, the animal characters were commonly portrayed as essentially human in physical form." Bron Taylor (2010, 197), picking up on this theme, describes "the traits typical of dark green religion—such as a stress on ecological interdependence, an affective connection to the earth as home and to nonhuman organisms as kin, and the overturning of anthropocentric hubris—are unlikely to promote either the suppression of others or lead to cultural homogenization, let alone virulent strains of nationalism." Taylor suggests that "what matters is whether people are moved and inspired when they encounter such [green] spirituality. What matters is whether they find meaning and value in its beliefs and practices, whether they identify with it and are drawn to others engaged in it, whether it will spread and influence the way people relate to, live from, and change the biosphere" (220).
- 11 For musical examples, please see "Voices of the Rainforest," *Smithsonian Folkways*, <http://www.folkways.si.edu/albumdetails.aspx?itemid=3295>.
- 12 For musical examples, please see "Anthology of Brazilian Indian Music," *Smithsonian Folkways*, <http://www.folkways.si.edu/albumdetails.aspx?itemid=760>.
- 13 For musical examples, please see "Music of the Algonkians," *Smithsonian Folkways*, <http://www.folkways.si.edu/albumdetails.aspx?itemid=735>.
- 14 Guattari's (2008) focus on the in-between fluxes of the three ecologies closely approximates the flows for which Mistabeo is a sign. Living ecosophy, in the language developed by Deleuze and Guattari (1983; 1987), is to live in the fluxes and flows of the becoming-in-between.
- 15 As of the writing of this paper, I have not been able to identify any online recordings of Achuar songs. But the short video "The Achuar and Occidental Petroleum," about the struggle between the Achuar and oil industries in Peru uses home culture music in the introduction: <http://www.youtube.com/watch?v=qg2v5sabLFc>.

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