

Nature, Sound Art and the Sacred

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"In the sound of these foxes, if they were foxes, there was nearly as much joy, and less grief. There was the frightening joy of hearing the world talk to itself, and the grief of incommunicability. In that grief I am now as then, with the small yet absolute comfort of knowing that communication of such a thing is not only beyond possibility but irrelevant to it..."

In the conclusion to his book, *Let Us Now Praise Famous Men*, James Agee describes the depth of meaning and intelligence conveyed through the late night calls of two foxes. In his nine page description of these calls he invokes archaic sentiments and a profound contradiction that humans must have always felt. We hear in the world talking to itself a sense of otherness that simultaneously mirrors our deepest sense of belonging. Agee compares the quality of laughter in these fox calls to the genius of Mozart, "at its angriest, cleanest, most masculine fire." Somehow we have always intuited that music is part of our reflection to and from the non-human world. We hear the alien quality of the non-human in our music and the humanity of music in nature.

The following discussion is an attempt to wrestle with the "grief of incommunicability" that arises through our attempts to both hear and talk to the world.

Part One: Assumptions

Each of us is constructed as a miraculous community of systems that function together to form the coherent totality of a living thing capable of sensing the external world. Since that coherence is finite there are real limits on what we *can* sense. All of the sound we hear is only a fraction of all the vibrating going on in our universe. What we do hear is the result of a dance between the world and how we are made. In a real sense, we organize our reality out of this dance. Since this is true for all living things, and since each thing is made differently, each form of life hears a slightly different *multiverse*. Each species of insect, frog, bird and mammal listens to a distinct reality that arises from the constraints of how they are constructed.

When we look at the world, our sense of vision emphasizes the distinct boundaries between phenomena. The forward focus of vision concentrates on the edges of things or on the details of color as they help us to define separate contours in space. We usually see things as one window frame of visual stimuli jumping to the next. The sounds that things make are often not so distinct and, in fact, the experience of listening is often one of perceiving the inseparability of phenomena. Think about the sound of ocean surf or the sound of wind in trees. While we often see something as distinct in its environment, we *hear* how it relates to other things. Take for instance the image of an airplane in

flight. What looks like a distant pinpoint object in the sky is heard as a web of sound that spreads out through the terrain beneath it, reverberating from the contour of the land into and around our bodies.

I do not mean to imply that our hearing is somehow less discriminating than our vision. Actually the number of nerve fibers that connect our ears to the brain is greater than the number that connects the eyes. Our ears are better at discriminating certain kinds of complex phenomena and we can often hear relationships between things that our eyes require external instrumentation to accomplish. The ease and exactness of matching two frequencies when tuning is something musicians take for granted. To do the same in the visual domain requires sophisticated tools. Mathematics in western culture was born from the sense of sound and not vision. Pythagoras heard the ratios of the monochord vibrating that became arithmetic. Since then philosophers from Plato to Adorno have discussed the sacred properties and special responsibilities of music to society.

I wonder if music might be our way of mapping reality through metaphors of sound as if it were a parallel way of thinking to the visually dominant metaphors of our speech and written symbols. I think that most musicians can relate to the idea that music is not just something we do to amuse ourselves. It is a different way of thinking about the world, a way to remind ourselves of a prior wholeness when the mind of the forest was not something out there, separate in the world, but something of which we were an intrinsic part. I think music may be a conservation strategy for keeping something alive that we may now need to make more conscious. a way of making sense of the world from which we might refashion our relationship to nonhuman living systems.

Personally I believe that we have yet to articulate the importance of music and the immense cognitive and social terrain that it addresses. The fact that we have yet to discover a human society without it says something very profound. Recent discoveries about the ability of music-making to alter the very hard-wiring of brain development say even more. I have a gut intuition that music, as this vast terrain of human activity and inheritance of our species, will provide us with clues to our future survival and that is a responsibility worth pursuing.

Most of us listen to recorded sounds in the form of music or broadcast media. Seldom is this done with direct concentration. As distinct from their former role in traditional societies as a primary social integrating mechanism, most forms of music are now used merely as a means of distraction. The merchandising of music has become what Jacques Attali has called a "disguise for the monologue of power... never before have musicians tried so hard to communicate with their audience, and never before has that communication been so deceiving. Music now seems hardly more than a somewhat clumsy excuse for the self-glorification of musicians and the growth of a new industrial sector."

Music as a discipline has generally failed to transcend the constraints of its status as entertainment. Gregory Bateson has discussed an essential distinction between art and entertainment: while entertainment is the food of depression, being easy to engage but lacking long term interest, art

requires discipline to engage but leaves one richer in the end. In this time of ecological crisis we need to embrace every tool we have to remind us of the sacred. Not only can aural and musical metaphors provide us with a means to describe the world in ways that remind us of our physical connection to the environment, but the physical act of using our aural sense, in contrast to entertainment, can become a means to practice and engender integrative behavior.

Attentive listening to the sounds around us is one of the most venerable forms of meditative practice. It has been used to concentrate awareness on where and what we are, and to quiet the incessant chatter of the mind. What we hear from other forms of life, and the environment they reside in, is information that is unique and essential about patterns of relationship in context. It is an experiential basis from which we can shape an understanding of what Gregory Bateson has called the sacred: "the integrated fabric of mind that envelops us." The attempt to expand our ears toward a greater receptivity to our aural environment has been the major focus of some of the 20th century's most important musicians. Edgard Varese, Pierre Schaeffer, and John Cage sought to expand the resources of music beyond the vocabulary of pitch and harmony that had previously defined it. Through the "musical" manipulation of the noises of everyday life, they achieved an understanding of the meaning of these sounds as aesthetic phenomena, opportunities for a deepened awareness of the world we live in. Perhaps because of their contribution to art we now can understand the need to extend these ideas further. The sounds of living things are not just a resource for manipulation, they are evidence of mind in nature, and patterns of communication with which we share a common bond and meaning.

When Cage expressed that the emancipation of music required the use of all sounds as a resource for composition, he unfortunately was also establishing a precedent for the exploitation of "sound" as a decontextualized commodity that could be defined, and manipulated, by a set of cultural codes called *music*. The result of this ideological stance has been to set in motion a tautological game: the expansion of "music" becomes synonymous with an additive process of simply commandeering new phenomena into its cultural framework. Parallel to this process has been the asking of a supposedly profound question: *are these sound-making activities music?* Underneath the surface triviality of this question is the disturbing assumption that attaining the mere status of music itself forms a meaningful discourse.

The complex of activities that have formed the emergence of *environmental music* and *sound art* as artistic genre is in part a response to this dilemma. Such activities share a general impulse to not only differentiate themselves from traditional musical activities but to also ask a different question: *what is the meaning of these sound-making activities if they are not traditional music and not intended to be?* My answer to this question is in part the explicit content of my sound art work: *to recontextualize the perception of sound as it pertains to a necessary epistemological shift in the human relationship to our physical environment.* My belief is that there is an important role for the evolution of an art form that can address the phenomenon of sound as a prime integrating factor in the understanding of our place within the biosphere's fabric of mind.

As the ecology movement has repeatedly articulated, we must develop a participatory relationship between humanity and the greater environmental complexity of the biosphere that is mutually life-enhancing. The traditional epistemological dichotomies between humans and nature are no longer tenable. As we appear to be moving further away from a somatic relationship with a biological environment that we have irreversibly altered, we must confront the realization that if the biosphere is going to survive in a manner inclusive of human beings, then human beings must not only allow more room for the non-human, but face responsibility for the role of environmental maintenance that our technologies have already engendered. This realization must include an understanding that we have so altered our environment that *back-to-nature* campaigns will not suffice to solve our problems nor those of the biosphere.

The political implications of the preceding ideas seem poignant: 1) issues of freedom and dignity must now include the total fabric of life within which we reside and 2) we require new modes of experience that can help recover those aspects of human integrity that are rooted in a fundamental sense of connectedness with the non-human world. These demands not only require a heightened awareness of the role of art and the artist but of the very metaphors we use to organize reality. Francisco Varela has pointed out that visually-based spatiotemporal metaphors are the worst for describing the denseness of interpenetration of phenomena that gives rise to the world. When we predominantly speak of the world in topological terms we impose a fixed time/space relationship on the rich dance of living things. We constrain our understanding of the true interdependence of life. In Buddhism the concept of Sunya (a Sanskrit word translated as "emptiness") describes the complex chain of connection that forms the world. Each "thing" is so densely connected to everything else that it resides nowhere. We cannot isolate the thing from all the states of matter or energy that preceded it or to which it will become. Music as a language of vibration is one of the best means we have for thinking about this fabric of mind that resides everywhere. Sound as a vibrant plenum reminds us of the profound physical interconnectedness that is our true environment.

Part Two: My Work:

Over the past twenty-five years most of my creative work connected with the relationship of sound and nature can be described as fitting into two fairly separate categories. In the first category are environmental performance works intended for outdoor performance. The second category consists of tape compositions derived from environmental sounds that are a hybrid between electroacoustic composition and soundscape recording. What follows are descriptions of representative works from each of these two categories:

Category 1: Environmental Performance Works

Through these compositions it has been my goal to deconstruct the materials and attributes of music as a means to explore and demonstrate the emergent intelligence of non-human living systems. As

distinct from John Cage who wanted to decontextualize sounds so as to "allow them to be themselves," I have focused upon the recontextualization of the sounds of nature as evidence of purposeful minded systems: the song of a bird is not just grist for compositional manipulation, it is a code of signification not only between members of that particular species but also for the extended fabric of mind that forms the biohabitat within which that species resides. While Cage wanted to abstract these sounds, I'm interested in regarding these as conscious living systems with which I'm interacting. These sounds are the evidence of sentient beings and complex-minded systems. Many of my compositions have consisted of establishing an interactive process through which a collaborative dialogue emerges that is inclusive of this larger pattern of mind.

The resulting projects are not only descriptive of their environmental context but generate a linguistic structure intrinsic to the observer/observed relationship. They are an expression of the composite mind immanent in a particular connective instance. I refer to much of my work as "environmental language" so as to distinguish it from the more general term "environmental music." The issue is not, how can one bring out latent musical qualities in nature but rather, what is necessary to stipulate an intrinsic sonic structure emergent from a specific interaction with non-human systems? My process has been to set up an interaction with the environment using sound as the vehicle or medium through which the interaction unfolds. Since I cannot know what the outcome of these interactions will be, I am often gaining information from an experimental situation that can't be arrived at otherwise. While such a process is similar to what experimental refers to in the scientific sense, I am only making a claim for experimentation within the domain of an experiential exploration of sound and consciousness from a trans-disciplinary perspective. Through combinations of analog, digital and traditional sound-generating devices, I have designed realtime performance interactions in wilderness spaces where the resulting events reflect a larger system of mind inclusive of myself and these other living systems. Two of these works are described as follows:

1) *Mimus Polyglottos*

Mimus Polyglottos was an experiment in interspecies communication that Ric Cupples and I initiated in 1976. Both of us were fascinated by the mimicry of mockingbirds. Ric had been photographing them in their urban milieu, usually on top of one of their favorite perches, television aerials. I was living at one end of Florida Canyon with the famous San Diego Zoo at the other end. Some nights I would be awakened by the inexplicable sounds of monkeys and tropical birds from my backyard. It took me awhile to figure out that the sounds didn't come from zoo escapees but from the mockingbirds who travelled up and down the canyon.

Ric and I spent several months researching the literature on mockingbirds and recording them in the city. Our idea was to formulate an audio stimulus that could engage the birds but also challenge their ability to mimic. At first we did a variety of experiments in locating the birds by playing back recordings of one bird to another. This allowed us to acquire essential knowledge of proper

mockingbird etiquette, how to approach the birds and what sort of proximity to maintain. The final stimulus tape was made out of frequency-modulated square waves, a notoriously problematic waveform for audio systems. We made the tape with the mockingbird frequency range in mind and ratios of sound to silence that were characteristic of their song. The tape was first played without warning to a single bird at approximately 3:00 AM. The bird's response was typical of the reactions we got from several different mockingbirds. It initially reacted with enthusiasm trying to match various parameters of the electronic sound: pitch, rhythm, and timbre. At a certain point it appeared to withdraw but slowly began to build its confidence until it was interacting with an extraordinary range of accommodation to the stimulus sounds.

The result of this experiment is one of my favorite examples of the unexpected ability of humans and animals to be aware of each other and to engage creatively. I'm also fascinated by the fact that this occurs through something generally regarded as artificial. While humans often reject aspects of technology as something evil when compared to the rest of nature, the bird does not. To my ears the mockingbird is just as fascinated by the sound made by these dancing electrons as by another bird. Of course I've also heard them imitate washing machines and Volkswagen motors so there's no accounting for taste even among mockingbirds.

2) *Entrainments 2*

Entrainments 2 was composed for and performed in a specific wilderness site. Three performers pre-recorded stream-of-consciousness descriptions and observations of the surrounding environment from three mountain peaks in the Cuyamaca Mountains of California. These recordings were subsequently mixed with static drones derived from an astrological chart for the time and location of the performance. Playback of these sounds occurred from portable cassette recorders with self-amplified loudspeakers and sufficient amplitude to be audible from the center of the performance configuration. In the center of the space was placed a computer programmed to sample and immediately output periodic sound blocks through a central loudspeaker. The input signal to the computer was from a parabolic microphone. A performer carried this microphone while walking slowly around the perimeter of a large central circle. This performer also recorded the overall performance with binaural microphones. Three other performers carried portable, self-amplified oscillators while walking slowly around the perimeter of three outer circles. The performance took place at Azalea Glen, Cuyamaca State Park, California, on May 19, 1985.

While *Entrainments 2* intentionally borrows metaphors from a variety of archaic philosophical traditions (feng shui, geomancy), it can most readily be understood as an attempt to be in contact with the "spirit of a place." More precisely this spirit can be defined through a cybernetic definition of mind that serves as a heuristic hypothesis. An important scientific concept of the later 20th century has been the idea of emergent properties: patterns can arise from a complex process that appear to transcend the agents that bring the process into being. In the case of this composition, mind can be

understood to reside in all of the pathways of interaction that arise from the system of sound making that we specified and in which we participated. Experientially this was most evident in the relationship to time that the prerecorded voices evidenced. Observations made days before the performance coincided exactly with realtime events occurring during the performance. The resulting time and memory compression was experienced as if, on their prior visits, the speaking voices describe events that will happen in the future, and then those events do take place.

These descriptions illustrate a transition that my work has pursued over the past two decades: a progressive expansion of context, moving from interactions with a single member of another species toward interactions with complex environments. In a very direct way I have tried to expand the sense of "mindedness" that I'm working with. My idea of environmental language is an experiential, dynamic process that explores whatever tools and metaphors are available toward a greater understanding of the profound interconnections between sound, language and the environment. It is my contention that the exploration of these linkages suggests an essential role for the evolution of sound art and music: the creation of human actions which reinforce the inclusiveness of the larger systemic mentality resident in the interactions of environment and consciousness.

Category 2: Hybrid Soundscape Compositions

There are many parallels in the collecting of sounds to other means by which we document and "bind time" in order to study, intensify experience, or cherish the past. The similarity of recorded sound to photography has been considered but "phonography" has yet to be taken seriously as a discipline beyond its commercial or scientific applications. Its status as an artistic genre is still quite tentative despite appropriate efforts in this direction. While the best known and most serious work in this area has been the soundscape recording movement initiated by R. Murray Schafer and his colleagues at the World Soundscape Project, and later the World Forum for Acoustic Ecology, the audio documentation of "natural" acoustic environments has become a commercial success story. Several recordists market their recordings as purist audio documentation of pristine natural environments with particular appeal to the armchair environmental movement. Personally I find something perverse about many of these recordings, as if the encoding of a semiotic referent in the form of an audio description of place could ever be something other than a human invention. Sometimes the sounds are intrinsically beautiful but are too often marketed as if their mere existence were somehow doing the environment a big favor. I can certainly understand arguments for the preservation of actual biohabitats but not as recorded sonic objects. The premise appears to be that these recordings will somehow sensitize the listener to a greater appreciation of the natural world when in fact they are more often perpetuating a 19th century vision of nature and at best merely documenting a state of affairs that will soon disappear.

There were two experiences in particular that charged my cynicism about soundscape work and the aesthetic role of phonography:

Several years ago I was hired to do audio field recordings for a new aquarium project. Since the focus of the exhibition was on two of the major watersheds of North America, the Mississippi and Tennessee river basins, my job (along with a colleague) was to gather sound from the corresponding biohabitats that would later be mixed and correlated to the aquarium exhibits as canned audio playback. We were to provide the raw source materials that would later be used to sonically conjure a portrait of these places. This specifically meant that we were to travel to the remaining sites of virgin hardwood forest in the Smokey Mountains of Tennessee and the cypress swamps of the Atchafalaya Basin of Louisiana and document the acoustical environments. Both of these expeditions turned out to be extraordinarily difficult since these environments were, for our purposes at least, non-existent. What remained were small vestiges of these once grand habitats. So small, in fact, that there was simply no unique acoustical identity left to capture. We subsequently spent weeks in each location waiting out the long periods of incessant automobile, plane and boat traffic in order to capture enough snippets of wildlife sounds that phoney mixes could be constructed as convincing audio portraits of places that do not actually exist.

While doing sound recordings in an African game park for a zoo project, I travelled to remote waterhole habitats. The fantasy I had been nurturing for weeks about my impending great African safari experience, and a confrontation with true wilderness, was instantly shattered when I set up my equipment. As I put on my headphones I immediately heard the sound of a kerosene driven pump used to bring water up from the aquifer to the watering hole. I was later told that this was the rule and not the exception. These pumps are a common feature in many game parks that resulted from the artificial boundaries imposed upon wildlife by man. Without them much of the wildlife would perish. At first I found their presence to be a real disturbance to my wild safari fantasy. Later I understood that Africa is no different from the rest of the Earth's fast transition of wilderness into global park. The important thing to understand is not only how humanity has radically altered the biosphere but the depth of the responsibility we now carry for its future survival.

In both of these situations I came away feeling that my involvement supported something duplicitous. My job was to pretend that I was not present in the situation in order to create a false representation of the reality and then foist this upon a naive public. It would have been a classic example of confusing the map for the territory except that the map wasn't even in the right ballpark. Such fakery is even more reprehensible because it lures people into the belief that these places still fulfill their Romantic expectations and that all is well.

As an alternative position I have preferred to apply a compositional aesthetic to the creation of soundscape works. I am interested in evolving an intrinsic relationship to a subject rather than "inventing" or fantasizing a musical event. This is the idea of composition as a strategy for expanding the boundary of what is reality itself. If I want to transcend the limiting conditions that my current state of knowledge imposes upon me, to invent or improvise something from that condition will obviously not suffice. I will merely reiterate the previously known conditions. By paying close attention to the reality of what actually is, there arises the opportunity to participate in the emergence

of something that is mutually created between the subject and myself. I have then danced toward a definition of the reality that I am participating in, rather than from a preconceived one that is probably no longer relevant. Given this philosophical stance, it is obvious that I will be very "present" in the editing process, but this does not mean that I wish to impose myself or some fantasy on the materials. Instead, I seek to invoke patterns of relationship intrinsic to the materials themselves.

Discussion of two such works follows:

1) The Lion in Which the Spirits of the Royal Ancestors Make Their Home

The title derives from the Shona phrase "Mhondoro Dzemidzimu" that I ran across in David Lan's book, "Guns and Pain: Guerillas and Spirit Mediums in Zimbabwe." Lan is a writer and social anthropologist who was born in South Africa. His book is a brilliantly written account of the role that traditional spirit mediums played in Zimbabwe's war for independence. He details the facts concerning the profound significance of an anti-colonial war fought with the guidance of the Shona royal ancestors communicating through these spirit mediums. The title specifically refers to one of the traditional beliefs of Shona religion that I took as emblematic of African religious beliefs in general.

The concept for the disc originated after the fact. I went to Zimbabwe partially as a tourist and partially on "assignment" (as described above) for a friend who's sound design firm specializes in audio installations for large public institutions. We needed to gather some sounds from African watering hole habitats for a couple of projects then under development. The concept of how to "compose" the overall piece came a few years later in response to a request for an extended radio piece from the Australian Broadcasting Commission. The unifying premise arose from the realization that none of these sounds were "pure" in the sense of simple naturalistic representations of the African environment or traditional culture. All of the sounds I recorded were clearly problematic and contradictory. They were recordings of the current reality of social and environmental change and not representations of a fantasy Africa that no longer exists. In that sense it was the reality of Zimbabwe that led me to the piece and not a preconceived idea.

My foremost interest was in composing an articulation of those patterns of the sacred which emerge or persist within (and despite) the contradictions and conundrums of rapid cultural change. While these sounds can be heard as further evidence of an environment, nation and world undergoing mutation and threat of annihilation, they also can be heard as evidence for processes of dynamical adaptation where the tribal and wilderness voices speak not only as something under siege but as phenomena capable of survival in a way that may inform our collective survival here on Earth.

For example: in one of the recording cuts we hear a human habitation wedged between the African wilderness and a two lane paved highway that serves as a major trucking route. The length of this cut is just about the average time between passing vehicles. In the foreground are various nocturnal

insects. In the distance are frogs and the village ambience itself: voices, drums, and a braying donkey. This recording reinforces one of the most powerful impressions I had of the relationship between African culture and environment: an overwhelming sense of the persistence of spirit as an intrinsic component of the African ecology. For many African people the sounds of animals are not merely the calls of separate organisms. They are the voice of a spirit form resident in that individual but also present in all the members of its species. That spirit is like a persistent and collective intelligence that defies geographic separation. This concept is not only present in the beliefs of the traditional religious practices but appears as an essential trait of domestic life. It can even be understood to include the influence of the dead (both human and animal) as a resonance from the past that not only informs all aspects of daily life but is essential to the vitality and interaction of all living things.

2) Chaos and the Emergent Mind of the Pond

We usually associate the intelligence of life forms with how big they are or with their proximity to us on the evolutionary tree. The tiny size and alien quality of insects and spiders presents us with a challenge. How could they possess anything but the most rudimentary of mental functions, tiny automatons without thought or feeling? The amazing sophistication of social insects betrays this assumption. Ant societies are particularly impressive while the observed behavior of bee colonies has taken on mythic proportions. We know that bees communicate a large range of information about the details of their environment through dance (along with sound and smell). While this “waggle dance” is regarded as the only insect “language” yet known, there are clues that others await discovery. One candidate is a water beetle of the genus *Berosus*. These little critters appear to have a vocabulary of faint sounds that they emit underwater for purposes of warning and mating.

This work was composed entirely from underwater sound recordings made in vernal pools in North America and Africa. My intent was to articulate the amazing complexity and apparent intelligence that these sounds signified. After a couple years of listening to these small ponds and marshes, I came to understand a pattern to their underwater sound-making.

The one consistent factor is how beautiful and complex these miniature sounds are. I have finally reconciled myself to the gut feeling that **these sounds are an emergent property of the pond. Something that speaks as a collective voice for a mind that is beyond my grasp. I know that this is not a scientific way of thinking but I can't help myself. Now when I see a pond, I think of the water's surface as a membrane enclosing something deep in thought.**

Even for someone who has had a lot of experience listening to animal sounds, the feeling that these pond sounds are some sort of alien language is irresistible.

The philosopher Wittgenstein once said: "If a lion could talk, we could not understand him." He meant that the schism between human culture and the lion's world is so great that a mere linguistic code cannot bridge the gap. What I like about this statement is how it respects the otherness of the animal world and recognizes how codes of communication, like these insect sounds, arise from the unique organization of living things.

Science has begun to probe deeply into the possibility that our assumptions about animal intelligence and communication have been too simplistic. For centuries much of humanity has claimed superiority over the nonhuman world and our older models of evolution have guaranteed this view. The justification for this argument was often based upon an assumption that since animals did not possess language, they were simply organic machines to be ruthlessly exploited. New evidence suggests that **thinking does not require language in human terms and that each form of life may have its own way of being self-aware. Life and cognition might be considered synonymous even at the cellular level.**

We can embrace the alien for its right to exist without destroying it or demanding that it either serve us or exhibit human traits. Along with humans, **other forms of life exist as co-conspirators in a mystery of which we only have a small glimpse. Perhaps the most important feature of their being alien is that they are part of a puzzle through which we can truly know what we are.**