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Transparent Listening: Soundscape Composition's Objects of Study

Mitchell Akiyama

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Article abstract

Sous l'impulsion du Canadien R. Murray Schafer et du World Soundscape Project basé à Vancouver, l'éclosion de la composition de paysage sonore au début des années 1970 a clairement annoncé qu'un vent nouveau soufflait sur les différentes façons d'utiliser le son enregistré. Les premiers compositeurs qui se servaient de sons bruts pour leurs créations l'avaient fait en se donnant pour la plupart beaucoup de peine pour camoufler leurs sources. La création de paysage sonore mettait quant à elle l'accent sur la qualité représentative du son enregistré et ses praticiens sont partis du principe que leurs enregistrements établissaient des liens essentiels, indiciels, avec les lieux qu'ils captaient et s'appropriaient. Si la forme qu'ils empruntent est clairement d'ordre esthétique, elle est aussi l'héritière d'une longue tradition dans laquelle les techniques de représentation organisent le monde par le biais de la juxtaposition et de la comparaison. Les paysagistes sonores ont systématiquement archivé les sons prélevés dans des lieux déterminés en les présentant dans leurs travaux comme des quantités distinctes et comparables. De même, la « vue », apparue aux débuts de la photographie, s'est réclamée d'un régime de représentation tourné vers la science qui tentait de classifier le monde tout en l'esthétisant. C'est précisément ce double appel à la puissance esthétique et à la rationalité scientifique qui a permis à la composition de paysage sonore de s'affirmer à la fois comme forme de production artistique et comme instrument d'éducation et d'activisme environnemental.

Transparent Listening: Soundscape Composition's Objects of Study

Mitchell Akiyama, McGill University

Résumé

Sous l'impulsion du Canadien R. Murray Schafer et du World Soundscape Project basé à Vancouver, l'éclosion de la composition de paysage sonore au début des années 1970 a clairement annoncé qu'un vent nouveau soufflait sur les différentes façons d'utiliser le son enregistré. Les premiers compositeurs qui se servaient de sons bruts pour leurs créations l'avaient fait en se donnant pour la plupart beaucoup de peine pour camoufler leurs sources. La création de paysage sonore mettait quant à elle l'accent sur la qualité représentative du son enregistré et ses praticiens sont partis du principe que leurs enregistrements établissaient des liens essentiels, indiciels, avec les lieux qu'ils captaient et s'appropriaient. Si la forme qu'ils empruntent est clairement d'ordre esthétique, elle est aussi l'héritière d'une longue tradition dans laquelle les techniques de représentation organisent le monde par le biais de la juxtaposition et de la comparaison. Les paysagistes sonores ont systématiquement archivé les sons prélevés dans des lieux déterminés en les présentant dans leurs travaux comme des quantités distinctes et comparables. De même, la « vue », apparue aux débuts de la photographie, s'est réclamée d'un régime de représentation tourné vers la science qui tentait de classifier le monde tout en l'esthétisant. C'est précisément ce double appel à la puissance esthétique et à la rationalité scientifique qui a permis à la composition de paysage sonore de s'affirmer à la fois comme forme de production artistique et comme instrument d'éducation et d'activisme environnemental.

> This blurring of the edges between music and environmental sounds may eventually prove to be the most striking feature of all twentieth-century music.
>
> R. Murray Schafer[1]

In the early twentieth century the conventions of pitch, rhythm, and harmony that had traditionally governed Western music were all but undone. Opened up to include an array of sounds that had been hitherto considered unmusical, the definition of music was loosened. A wave of "isms" introduced new worlds of sound to art music: Futurism brought sirens and other industrial machines to the stage; Dadaism's magus, Hugo Ball, spat primitivist absurdities that challenged not only lyricism but sense itself; and Serialism's adoption of mathematical and algorithmic principles of composition challenged the very basis of Western tonality. In the 1930s, American composer John Cage formulated the most radical subversion of music seemingly possible. Cage sought to abolish the defining properties of Western art music by calling for a form that would include *all* sound. In doing so, he "opened music up into an emancipatory endgame."[2] His most infamous work, *4'33"* (the so-called silent piece), framed an unmediated world of sound; by inviting listeners to attend to an acoustic experience not structured by a performer, Cage effectively asked listeners to themselves become composers. With the emergence of Pierre Schaeffer's *musique concrète* in the 1940s, sound recording was introduced to the musical repertoire, serving as an empty medium in which all sounds could be stored, transformed, and reconfigured by the composer. *Musique concrète* was conceived as an "acousmatic"[3] practice, an approach to composition in which recorded environmental sounds were to be treated as non-signifying "objects." For Schaeffer the value of recorded sound lay in its aesthetic and formal dimensions and not necessarily in its ability to refer to a world outside the frame of mediation. In acousmatic music signification was to be avoided, if not obfuscated, through electroacoustic manipulation.[4]

In the late 1960s there was a return of sorts to Cage's radical listening project. Conceived in Vancouver by R. Murray Schafer and the World Soundscape Project, soundscape composition employed environmental sound recordings but broke with the European acousmatic school. Soundscape composition, while theorized as a musical style, put constraints on the manipulation of sound sources. Practitioners mandated that the link between source and recording be transparent; the location recorded had to remain recognizable to the listener. Soundscape composers used recorded sound to communicate environmental concerns and to educate listeners about the world of sound that they argued had been marginalized by the visual bias of Western culture. In spirit, they upheld Cage's mandate but were not willing to liberate sound and listening as radically; composers had final judgment over the form of the work.

The very term "soundscape composition" rings strangely, almost paradoxically. To compose with environmental sound requires an immobilization and an ordering of the fluid, immaterial sonic world that is seemingly at odds with the ecological and sometimes romantic hands-off philosophies espoused by many of its practitioners. Soundscape composition begins with the act of recording, a gesture that, like taking a photograph, involves some measure of framing and exclusion. However, given that many composers are concerned with achieving an authentic representation of a place, the frame of sound recordings tends to widen to the point of vanishing. In contrast with acousmatic forms of electroacoustic composition—which advocate an abstraction of sound in order to cultivate a practice of "reduced listening"[5]—soundscape composers have argued that the trans-

formation of source material beyond the point of recognition is undesirable. For Canadian composer Barry Truax,

> The essential difference between an electroacoustic composition that uses prerecorded environmental sound as its source material, and a work that can be called a soundscape composition, is that in the former, the sound loses most of its environmental context….In the soundscape composition, on the other hand, it is precisely the environmental context that is preserved, enhanced, and exploited by the composer.[6]

While the distinction between environmental sound as source material and as an inviolable resource for soundscape composition might seem subtle, the difference registers on an ethical level. Works that fall outside the purview of soundscape composition do not make any explicit claim to represent a particular place. Soundscape compositions on the other hand exploit what is taken to be an indexical link between recording and source.[7] For German-Canadian composer Hildegard Westerkamp this verges on ontology: "In soundscape composition the artist *seeks to discover* the sonic/musical essence contained within the recordings and thus within the place and time where it was recorded."[8] Because of this essential and ontological connection to place, one is obligated to respect the integrity of the recording in the same way that one has a responsibility to respect the place and vice versa.

But what does it mean to compose with such charged recordings, to assemble musical works from what are taken to be fragments of the world? Composition before John Cage might be described as a set of instructions for activation: scores are dormant until interpreted by musical instruments, which are dormant until activated by musicians. Following in the wake of Cage and Schaeffer, soundscape composition, in fixing environmental sound with the intention of denoting a particular place and time, renders an acoustic event repeatable, reproducible, and therefore analyzable. The burgeoning field of Acoustic Ecology[9] has employed these works to educate the public about the dangers of sound pollution and to draw attention to the acoustic environment. But not all soundscape composers share this activist approach to recorded environmental sound. Some have called for a purely formal approach to listening and have gone against the discursive proviso that recordings must remain faithful to their sources.

It is important to explore these debates as they have consequences for how we think about sound recording and its ability to stand in or "speak" for a place. The practice of soundscape composition is a useful point of departure in that it treats the sound recording as an object that is isomorphically linked to a locale. As such, recordings are constructed as objects of study that are interchangeable with the sources from which they are taken. Furthermore, because they speak for a specific place, they can be mobilized as tools for social and environmental change. The obvious starting point for any discussion of soundscape composition is the work of R. Murray Schafer and the World Soundscape Project. Affiliated artists and educators—including, among others, Barry Truax, Hildegard Westerkamp, and Claude Schryer—have been instrumental in establishing a discourse of ecological engagement from the standpoint of acoustics. That artists are primarily responsible for establishing this discourse means that aesthetics have frequently been complementary to, and in some cases have prevailed over, more pragmatic or empirical concerns. But such a tension between a mode of expression and an expression of knowledge is hardly new. In the mid-nineteenth century, landscape photography occupied a similarly ambiguous position. Exhibited according to the conventions of the nascent physical and discursive spaces of the museum, the photograph stood, on the one hand, as a work of aesthetic production (if not of art); on the other, displayed next to other depictions of similar sites in catalogs, cabinets, and illustrating academic texts, the photograph functioned a tool for geographical survey and the gathering of knowledge.[10] By examining soundscape composers' attempts to produce both art objects and epistemological tools in light of photography's early history, interesting questions emerge: How do composers negotiate the discrepancy between aesthetic and empirical modes? Is soundscape composition more properly an epistemology of art or an inquiry into the art of epistemology? How do works of art come to be constructed as objects of study? What does this tell us about mediation and the ontological status of the object of representation?

Defining the Aural Landscape: The World Soundscape Project

> Soundscape composers listen to the relations of people and other inhabitants of places, producing works which are sonic expressions of not only landscape formations and lived environments but also the daily social histories and political organization of the space.
>
> Andra McCartney[11]

Landscape discourse tends to be biased towards the visual in spite of the term's tangled etymological roots. Kenneth Olwig traces the suffix "scape" to its myriad roots in Germanic languages: one variant, *shaft*, means "to carve out," while another is related to the verb "to shape."[12] Landscape, at its root, is tactile. As well, it is relational; the observer plays a role in shaping her surroundings, even through such benign activities as looking, listening, appreciating. In this respect landscape is not an objective fact; it is the act of framing one's perceptions. As D.W. Meinig notes, "Any landscape is composed not only of what lies

before our eyes but what lies within our heads."[13] According to this formulation, a landscape is paradoxially both objectively real and constructed by the observer.

The possibility that our ears also discern and interpret landscape was largely ignored until the Canadian composer R. Murray Schafer's pioneering work on acoustic ecology and sound studies. Schafer coined the term "soundscape," which he defined broadly as "any acoustic field of study." The definition and scope of soundscape is almost Cagean in its expansiveness: "We may speak of a musical composition as a soundscape, or a radio program as a soundscape or an acoustic environment as a soundscape."[14] The nascent field of study was commensurately wide reaching; soundscape studies was conceived as a multidisciplinary undertaking, comprising analysis, pedagogy, design, communication, and aesthetics.

The primary engine of soundscape studies, the World Soundscape Project, was established at Simon Fraser University in Vancouver in the late 1960s. Under Schafer's leadership, it was among the first attempts to formally study the acoustic landscape. The group's objectives were to analyze the contemporary acoustic environment, to educate, and to participate in the design of viable soundscapes.[15] The project's inception was a timely response to mounting concerns about noise pollution that had taken hold in the midst of the fledgling environmental movement. Of course, noise had been a problem since at least the Industrial Revolution.[16] The din of mechanical modernity forever changed the soundscape. In his 1913 manifesto, *The Art of Noises,* the Italian Futurist composer Luigi Russolo proclaimed, "Noise was really not born before the 19th century, with the advent of machinery."[17] Russolo celebrated the racket of modernity and praised the potential of noise to cut through the sonic stagnation of the nineteenth century. But half a century later, Schafer decried the unabated acoustic assault on humanity. He observed that the pre-industrial soundscape was dynamic and punctuated; natural sounds emerge and decay in complex ways. He described the modern soundscape as congested, or "lo-fi": "The Industrial Revolution introduced a multitude of new sounds with unhappy consequences for many of the natural and human sounds which they tended to obscure."[18] The World Soundscape Project's initial aim was to examine the effects of the noise pollution caused by modern technology. But, rather than simply advocate noise abatement, a strategy that had failed in the 1930s,[19] the group tried to promote an improvement in the "orchestration of the soundscape."[20] They conceived of the sonic environment as a composition, the elements of which might be shaped into a consonant whole.

The World Soundscape Project developed a lexicon for describing the soundscape loosely based on the language of landscape, substituting the aural for the visual. Landmarks became "soundmarks," clairvoyance turned into "clairaudience," and eyewitnesses were recast as "earwitnesses." The facetiousness of these reclamations belies the hold that visual imagery has on language and brings the absurdity of this deep visual bias in language to the surface. Schafer's neologisms alert us to the invisibility and banality of visual metaphors by reimagining language as implicitly aural. Barry Truax, quoting an all too recognizable hypothetical speaker, similarly calls attention to absurdity of the prevalence of the visual:

> Colloquial [language] is…invaded: "Seen in this light, one must review each person's background, you see, and focus attention on putting the entire spectrum of viewpoints into perspective, having the foresight to overlook no apparent alternative that would cast a visible shadow of doubt or reflect an inability to make one's basic outlook transparently clear from any vantage point."[21]

The World Soundscape Project sought to correct this visual bias. But in doing so the participants unconsciously underwrote the dichotomy between seeing and hearing. Maintaining such a divide made it possible to restore to sound its presence in language and argue for its singular importance.[22]

For the World Soundscape Project, visuality was equated with passivity; one inspects the landscape, reading it like a book at one's leisure. In contrast, sound was described as active and participatory. As Truax suggests in his book *Acoustic Communication*, "The individual listener within a soundscape is not engaged in a passive type of energy reception, but rather is part of a dynamic system of information exchange."[23] Similarly, soundscape composition is an open circuit in which the composer communicates the essence of a place to listeners. Of course, other styles of music can be said to communicate: in the Western classical tradition, program music is intended to evoke nonmusical imagery. However, the subject represented by the work evidently is not reproduced. Alternatively, through use of lyrics, music can speak *about* something. But soundscape composition *reproduces* the sounds of things in and of themselves and transposes them into a musical context. It is the analogousness, this causal connection, of the representation with the thing represented that, from the World Soundscape Project's perspective, lends soundscape composition its authority to speak for and about the world of sound. The group's first publication, *The Vancouver Soundscape* (1973), an audio document and book, was, according to Schafer, "the first attempt anywhere in the world to record, measure and document the acoustic pulse of a city."[24] The project was undertaken, at least explicitly, as a purely scientific, dispassionate study. Schafer would later comment, "We were not trying to produce works of art with these recordings; we were using them as source material for the study of past and present soundscapes and ultimately to assist us

in what I might call soundscape design."[25] However, as John Drever notes, the World Soundscape Project's work did involve some manipulation of source material and "veered away from scientific study towards more aesthetic concerns such as shaping, pacing, and pitch relationships."[26] Given that the project was conceived by composers, it is not surprising that aesthetic concerns took its creators beyond objective soundscape analysis. Their data, the "source material" for their research, was treated as malleable and would become the basis for artistic practice. Sound recordings were initially intended to serve as neutral source materials for analysis; later, however, they would also be used for more expressive means. This creative interpretation of data would become the salient feature of the World Soundscape Project's output.

Picturing Sound

> Sound artist Peter Cusack regretted the fact that it is impossible to make sound recordings that are the equivalent of photographs: in other words, audio recordings lasting 1/16 of a second, or thereabouts, that capture an entire scene (albeit sonic), and can then be seen in their entirety, in one glance, or perused in detail and at leisure.
>
> David Toop[27]

According to Schafer, "To record sounds is to put a frame around them. Just as a photograph frames a visual environment, which may be inspected at leisure and in detail, so a recording isolates an acoustic environment and makes it a repeatable event for study purposes."[28] For Schafer, sound recording, like photography, offers the possibility of capturing an evanescent event. But why does he compare the perpetual temporal unfolding of sound recording to the stasis of photography? Surprisingly, in soundscape discourse comparisons to photography are abundant and greatly outnumber references to film or video; sound recording is rarely compared to other time-based media. Aside from a sharing a putative ability to reproduce reality, there is evidently a wide ontological gulf between sound recordings and photographs. Sound recordings reinforce the constant immanence of experience while photographs seem to freeze time. Sound recordings must be experienced in real time while photographs can be apprehended (at least partially) in an instant. Composer Claude Schryer writes,

> Electroacoustic soundscape composition is most closely related to the visual field of photography. Images of the sonic environment can be captured, processed and represented as a reflection of reality and/or as an artistic creation. It is a technique where the acoustic environment is both the subject and the content of a composition, teetering ambiguously on the border between representation and abstraction.[29]

Schryer's comparison of sound recording to photography is striking, but what is perhaps more interesting and important than a misapprehended media ontology are the historical resonances related to the deployment of these representations as objects of study. By invoking photography, soundscape composers are echoing a one hundred-year-old uncertainty about a medium's status as a form of art or science.

Sound recording was much slower to develop than photography, lagging several decades behind. By the time of Edison's 1877 success in reproducing sound, photography was already over fifty years old.[30] As with early photographic equipment, sound recording machinery was cumbersome and difficult to operate. Recording outside of the studio was unwieldy and largely limited to speech, and vocal and instrumental performances of music. It was not until the commercial availability of magnetic audio tape in the late 1940s that environmental recording emerged.[31] Despite the discrepancy in chronology, sound recording's ambiguous relationship with representation and abstraction, with documentation and expression, has remained similar to that of photography.

Both media owe much of their power to their conferred status as copies of reality and not to the subjectivity of an individual artist's consciousness or intention. While it is ontologically impossible to duplicate an event, recording media tacitly purport to do the next best thing: hold its accurate copy in stasis (in the case of photography) or in repeatability (in the case of sound recording). This status of copy is upheld by claims to fidelity. As Jonathan Sterne notes, "The technology enabling the reproduction of sound…is supposed to be a 'vanishing' mediator—rendering the relation as transparent, as if it were not there."[32]

Of course, recording media have also served as objects of aesthetic expression and appreciation, and have indeed been scrutinized both in terms of materiality and non-referentiality. But it is their transparent access to reality that would seem to explain what makes them so powerful and affecting. In the case of photography, "material chemistry and apparatus were felt by many to guarantee sufficiently the medium's authority as scientific truth, while its expressive potential (in the hands of artists) assured its prestige in the symbolic realm."[33] Tangible and enduring, recording media are granted the privilege of standing in for reality. Transformable and referentially dense, recording media can also be turned to comment on the things they putatively capture.

Since its inception, soundscape composition has straddled the line between musical and documentary modes. Practitioners produce artistic works that are intended to be assessed in aesthetic terms; at the same time, these works are often presented as materials of scientific and/or pedagogical importance. Rosalind Krauss reveals a similar ambiguity in early practices of photographic display. She reminds us that in the mid-nineteenth

century what we now refer to as photographic landscapes were typically called "views." Filed in cabinets, views were organized by geographical order. These early likenesses of nature were rationalized, tabulated, and deployed as objects for scientific study. Views were often exhibited under conditions belonging to emerging museum-based practices of display, but as Krauss notes, "Even when consciously entering the space of exhibition, [photographers] tended to choose view rather than landscape as their descriptive category….The one composes an image of geographic order; the other represents the space of an autonomous Art and its idealized, specialized History, which is constituted by aesthetic discourse."[34] The meaning of a photograph, then, was constructed discursively and in complicity with its mode of display. In a scientific context, these objects were understood metonymically; it was almost a priori that they would be ordered according to certain assumptions about the natural world. To display them incorrectly would be to disrupt this logic. And yet, considered on a purely artistic level, photographs belonged to a discourse concerned with aesthetics, composition, and beauty.

The early period of Canadian soundscape composition, with its intention to compile an ecologically and geographically coherent body of documentation, echoes the underlying encyclopedic nature of the view. Early World Soundscape Project pieces, such as *Okeanos* (1971), *The Music for Horns and Whistles* (1973), and *Soundmarks of Canada* (1973), group, order, and arrange similar or thematically linked sounds and environments, effectively creating an aural catalogue. These works are not merely invested in representation or expression, they are also underwritten by a drive to render soundscapes comparable. It is this juxtaposition that constitutes a "play of affirmations and negations [that] establish the legitimacy of resemblances within representation, and guarantee the objectivity and operation of concepts."[35] As such—ordered and comparable—soundscape compositions can be positioned as scientifically veracious.

In the mid-nineteenth century, photographic views imprinted the illusion of depth and the aura of place on the imagination and rendered visual a world that had previously existed in the two-dimensions of books and maps. A hundred years later, soundscape recordings were employed to educate listeners, not only about the world out of earshot of their sound community, but also about their own acoustic environment and their capacity to participate in the soundscape.

Sound Objects, Objects of Study

That a sound recording can be used as an educational or polemical tool is possible because it seems to divorce a source from its context, rendering it repeatable. As such, it becomes a standardized unit; sound becomes an object of study. Facetiously relating this separation to a mental state in which perception is dissociated from reality, Schafer dubbed this mechanical separation of sound from source "schizophonia." For Schafer, the mediation imposed by recording technology is problematic and "contributes generously to the lo-fi problem [and] creates a synthetic soundscape in which natural sounds are becoming increasingly unnatural while machine-made substitutes are providing the operative signals directing modern life."[36] Recorded sound wrenches us from a supposed state of natural harmony and wholeness by populating the world not only with noise but with an excess of signs.

Schafer and the World Soundscape Project employed other pedagogical techniques including "sound walking," an exercise in which listeners are given guided sonic tours of local environments. In contrast to this particular practice's less mediated approach, electroacoustic composition remains an integral part of the group's acoustic pedagogy. But the World Soundscape Project's insistence on utilizing schizophonic technology in their efforts to sensitize students to the acoustic environment is clearly inconsistent.[37] Its advocacy of mediated sound is in direct conflict with a desire to return to a time before mediated sound. Hildegard Westerkamp, a composer and member of the World Soundscape Project, describes this paradox in the liner notes to her album *Transformations*:

> These compositions are now on this disc, an altogether abstract place, far away from the places in which the sounds originated. They now may have to put up with bad playback equipment and noisy living rooms, with car radios or distracted ears. A forest piece in an apartment by a freeway… can it draw the listener back into the forest? An urban piece in quiet country living… is it necessary? [38]

Her answer is yes; soundscape composition can "make use of the schizophonic medium to awaken our curiosity and to create a desire for deeper knowledge and information about our own as well as other places and cultures."[39] This is a great deal of responsibility to delegate to a recording, a responsibility that would have it call attention both to that which it denotes and to a wider ethic of acoustics. However, given the position staked by Schafer—that the separation of sound from source already constitutes an ethical infringement—it is difficult to understand how a schizophonic work of art might restore a fragmented world of sound to its supposed original wholeness. What underlies this tension is the assumption that there is indeed such a thing as a world of sound that exists in a state of integrity and plenitude prior to disintegrating acts of schizophonic mediation. As Jonathan Sterne notes, this belief "assume[s] that face-to-face communication and bodily presence are the yardsticks by which to measure all communicative activity."[40] He reminds us that the distress at the loss of an integrated subject—one

whose sounds are hers and hers alone—occurs at the moment that this technology brings this separation into being.[41]

The schizophonic separation of sound from object has profound implications for soundscape composition's status as a musical style. The score—the only means of storing music prior to the advent of the phonograph—allowed for the distribution of identical copies of musical instructions but could not standardize their presentation. Recording, on the other hand, turned instrumental music into a standardized commodity.[42] But sound recording is Janus-faced: it simultaneously preserves a unique performance and produces a new, repeatable and identical product.[43] However, reproducible as they are, these objects are not necessarily definitive; a piece of music might be recorded multiple times by different artists. As with other forms of electronic music, soundscape composition exists solely in the realm of the schizophonic; its existence is entirely contingent on the medium. Without the medium it is something else entirely. It is Cage's musical endgame of total sonic liberty.

Environmental Music

Soundscape composition derives the privilege of standing in for a place from what is taken to be an indexical link between recording and source. Environmental audio recordings, here, are ontologically and essentially bound to the locale from which they come. They might be thought of as fragments of a place rather than representations and, as such, are imbued with a value intrinsic to the site in which they were recorded. It is the metonymic force of this relationship that gives soundscape composition its power and authority to address specific local issues.

Soundscape composition's roots in the World Soundscape Project have made it almost synonymous with environmentalist discourse. Considering works produced by World Soundscape Project acolytes, we find that not only are ecological concerns front and center, they are considered fundamental to the genre. For Hildegard Westerkamp, "Composers and musicians…are the ones that make listening and working with sound [their] profession. It is therefore a logical extension that we would also be concerned about the ecological health of our acoustic environment."[44] Many of Westerkamp's works directly address environmental concerns and are intended to educate and potentially change the attitudes of her audience. Her elegy for the old-growth forests of British Columbia, *Beneath the Forest Floor* (1992), is a delicately layered montage of sounds recorded in Carmanah Valley on Vancouver Island. Wind blowing through leaves, cawing crows, gurgling streams mesh with sounds not of that environment—creaking doors, heavily abstracted rumbles and drones—to create a haunting, poetic soundscape. It is full of dramatic gestures; sounds pan rapidly across the stereo field, dense sections suddenly drop to silence. And, it is unmistakably composed: the form of the piece is symphonic in its establishment of themes, in its variations and refrains. Large sections of the *Beneath the Forest Floor* dissolve into diaphanous tones stripped of reference. In her notes, Westerkamp explains that the piece is meant to create a space for the contemplation of the forest and reveals a "shadow world" that is beyond our perception. She hopes that her work will "encourage listeners to visit a place like Carmanah, half of which has already been destroyed by clear-cut logging."[45] It is debatable as to whether or not this piece disobeys Truax's mandate for the genre: the preservation of environmental context. Long sections of *Beneath the Forest Floor* are barely recognizable as environmental recordings, let alone as fragments of a specific locale. But in obscuring place, this blurring is exactly what produces the shadowy, mysterious quality that makes Westerkamp's piece so intriguing. Ironically, in obscuring place, Westerkamp invites the listener to enter more deeply into the piece and share her disquiet.

Canadian composer Claude Schryer, also closely affiliated with the World Soundscape Project, shares Westerkamp's environmental concerns: "The questions of the survival, of our responsibility for, and interpretation of our environment have haunted me for the last few years and have incited me to compose pieces where both the subject and material are the acoustic environment."[46] His work *Autour* (1997) "brings together four pieces which form a cycle of compositions focusing on environmental awareness and the musicality of the North American acoustic environment."[47] The album's first track, *Musique de l'Odyssée sonore*, reworks sound recordings drawn from a documentary by Louis Ricard that explores R. Murray Schafer's theories of sound. Schryer assembles iconic Canadian sounds—train whistles, lake water lapping at the shore, Native American chanting—in a montage that nostalgically, perhaps even romantically, evokes an idealized northern soundscape.

While Barry Truax, an original member of the World Soundscape Project, has been less explicit about his environmental concerns when directly addressing his work, he laments the lack of activist engagement in the broader electronic music community:

> Unfortunately people in computer music do not seem to have the same kind of broader concerns for social issues or the media, or if they do they don't see these as related to their professional work. For the most part composers seem wedded to abstract music, despite the fact that this limits their audience and places them on the fringes of the culture. Their work doesn't influence the environment and they don't let the environment influence their music.[48]

Much of Truax's work employs environmental sound recordings, often manipulating them with a digital process called Granular Synthesis.[49] This technique—which Truax helped to

pioneer—slices digital sound into tiny "grains" that can be independently altered in real-time. The result is a kaleidoscopic rendering of sonic information that often leaves the source identifiable while deeply altering its texture. Truax's piece *Pacific* (1990) stretches the sound of the ocean into glassy filaments. True to his definition of soundscape composition, Truax's work, despite drastically altering its source material, is deeply rooted to its geographical origin. But such abstraction also calls the soundscape composition's ethic of place into question. If the source is not recognizable then its indexical relationship to place, to the extent that it can be said to still exist, becomes almost entirely nominal.

Outside the Frame of Reference

While the influence of Schafer, Truax, and the World Soundscape Project has been great, not all artists espouse educational and activist positions. Many composers and artists using environmental recordings see their practices as primarily aesthetic. This stance is often directly and concertedly in opposition to the thought of Schafer et al.

The Spanish composer Francisco Lopez is adamant that his work be considered primarily in aesthetics terms rather than be scrutinized for its transparent connection to the environments he records. Lopez, a biologist as well as a composer, creates densely layered soundscapes that are a surfeit of their sources. His works, composed exclusively of environmental recordings, are overwhelming and dense to the point that they force us to reconsider our definitions of noise. If the chirping of insects or the everyday sound of a rainforest can be transformed into a punishing sonic onslaught, how might we rethink the urban soundscape? If noise is subjective, what are the implications of advocating wholesale changes to the acoustic environment? Lopez considers his work to be absolute; it neither necessarily refers to nor invokes a world outside itself: it should be experienced as abstractly as possible. In direct confrontation to the didacticism of work associated with the World Soundscape Project, Lopez contends,

> A musical composition (no matter whether based on soundscapes or not) must be a free action in the sense of not having to refuse any extraction of elements from reality and also in the sense of having the full right to be self-referential, not being subjected to a pragmatic goal such as a supposed, unjustified re-integration of the listener with the environment.[50]

For Lopez, Schafer's notion of "tuning" the world to diminish the "noise" of modernity constitutes a "silencing."[51] Lopez rejects the notion that sounds should be judged. This applies most directly to recorded sound. The requirement that works using environmental recordings must educate or communicate drains them of their power to simply stir the imagination. In Lopez's work, revelation comes in the form of a physical, visceral response to sound. The environment that is most important is the one in which the listener engages the work, not the one to which it refers.

Michael Rüsenberg, another composer who works primarily with field recordings, also objects to the idea that soundscape composition must be referential. In formal terms, his works do not greatly differ from those created by the soundscape school. Rüsenberg records bridges and cityscapes, and he leaves his materials largely unprocessed. He is not interested in the connection between recording and place; rather, "[a]ll that interests [him] is the by-product of the situation, not the situation itself."[52] Rüsenberg might be described as a nominalist: for him what counts is the "as-if" of context. Music is not an inherent, structural property of sound, rather, it is a construction, an arbitrary human ordering of the wide range of acoustic experience. To the structural engineer, the sound of cars thundering across a bridge is noise and perhaps a diagnostic tool. But for the engaged listener, especially for the composer that removes sound from its context, it can be a musical epiphany.

German artist Christina Kubisch's "Electrical Walks" also deal with sensory revelation. Kubisch supplies audiences with customized headphones that convert the ubiquitous electrical fields that surround us into sound. In doing so, she uncovers an imperceptible aspect of the soundscape, rendering the inaudible musical. This work reminds us that all sound reproduction is a mediation of experience. Like Lopez, Kubisch shies away from using art as a tool for activism. Although she acknowledges that Schafer was "the first to place importance on simply listening," she states, "In contrast to Schafer, I don't want to make demands on the listener in advance."[53]

Aural Plenitude and the Saturation of Music

Compositions emerging from the World Soundscape Project's sphere of influence tend to be treated as documentary fragments of a world that is biased towards the visual and in dire need of what Schafer calls "ear cleaning." It is this claim to documentary truth, or to a substantiality beyond representation, that gives them their force and has allowed them to function simultaneously as works of art and as evidence. They are *of* music while operating on a discursive level. The definition of music, exploded by Cage, no longer simply includes all sound; it has come to admit an extra-aural dimension. By insisting that soundscape compositions have an ontological link to the locale in which they are recorded, practitioners have effectively expanded the definition of music to include place. It seems as though the musical endgame had room for one more move. It remains to be

seen what else music can be made to accommodate, but if Cage has taught us anything, it is that all categories can be dissolved if they are saturated with the plenitude of the world.

Notes

1 R. Murray Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World* (Rochester, 1977), 111.

2 Douglas Kahn, *Noise, Water, Meat* (Cambridge, Mass., 1999), 165.

3 The term "acousmatic" derives from the Pythagorean tradition of speaking from behind a curtain so as to effect a separation of voice from the body that speaks. Schaeffer, in his essay on acousmatics, quotes the Larousse dictionary: "Acousmatic, adjective: is said of a noise that one hears without seeing what causes it." Pierre Schaeffer, "Acousmatics," in *Audio Culture: Readings in Modern Music*, ed. Christophe Cox & Daniel Warner (New York, 2004), 77.

4 For a more detailed, historical account of the use of environmental sound in composition, see Andra McCartney, "Soundscape Composition and the Subversion of Electroacoustic Norms," *Organised Sound* VII, no. 1 (2002).

5 Schaeffer, "Acousmatics," 77–78.

6 Barry Truax, *Acoustic Communication* (Westport, 2001), 237.

7 I am drawing here on Peirce's concept of indexicality as a causal connection between things. See C.S. Peirce, *Philosophical Writings of Peirce* (New York, 1955), 98–119.

8 Hildegard Westerkamp, "Linking Soundscape Composition and Acoustic Ecology," *Organised Sound* VII, no. 1 (2002): 54 (emphasis in original).

9 Schafer defines Acoustic Ecology as "the study of sounds in relationship to life and society." He posits that this ecological approach should serve as the basis for a practice of acoustic design that would correct the inadequacies of the soundscape. Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World*, 205.

10 Rosalind Krauss, "Photography's Discursive Spaces: Landscape/View," *Art Journal* XLII, no. 4 (Winter 1982).

11 McCartney, "Soundscape Composition and the Subversion of Electroacoustic Norms," 1.

12 Kenneth Olwig, "Sexual Cosmology: Nation and Landscape at the Conceptual Interstices of Nature and Culture; or, What Does Landscape Really Mean?" in *Landscape: Politics and Perspectives*, ed. Barbara Bender (Providence, 1993), 307.

13 D.W. Meinig, "The Beholding Eye: Ten Versions of the Same Scene," in *The Interpretation of Ordinary Landscapes*, ed. D.W. Meinig (New York, 1979), 34.

14 Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World*, 7.

15 R. Murray Schafer, "Preface," in *The Handbook for Acoustic Ecology*, ed. Barry Truax (Vancouver, n.d.), iv.

16 For histories of modern/industrial noise, see Emily Ann Thompson, *The Soundscape of Modernity: Architectural Acoustics and the Culture of Listening in America, 1900–1933* (Cambridge, Mass., 2002); Peter A. Coates, "The Strange Stillness of the Past: Toward an Environmental History of Sound and Noise," *Environmental History* 10, no. 4 (2005); and Karin Bijsterveld, *Mechanical Sound: Technology, Culture, and Public Problems of Noise in the Twentieth Century* (Cambridge, Mass., 2008). It should be noted that the pre-industrial city could also be unbearably noisy; see John Picker, *Victorian in England, 1600–1770* (New Haven, 2007). See also John Picker, *Victorian Soundscapes* (Oxford, 2003); and Emily Cockayne, *Hubbub: Filth, Noise, and Stench in England, 1600–1770* (New Haven, 2007).

17 Luigi Russolo, *The Art of Noises* (New York, 1986), 4.

18 Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World*, 71.

19 Thompson, *The Soundscape of Modernity*, 157–68.

20 R. Murray Schafer, *The Vancouver Soundscape* (Burnaby, BC, 1973), 64.

21 Barry Truax, "Introduction," in *The Handbook for Acoustic Ecology*, ed. Barry Truax (Vancouver, n.d.), v.

22 For a nuanced and provocative look at sound as a "special case," see Jonathan Sterne, *The Audible Past: Cultural Origins of Sound Reproduction* (Durham, NC, 2003), 10–19.

23 Truax, *Acoustic Communication*, 11.

24 R. Murray Schafer, "The Sounding City' (2005), http://alcor.concordia.ca/~senses/sensing-the-city-lecture-RMurraySchafer.htm.

25 Schafer, "The Sounding City."

26 John Levack Drever, "Soundscape Composition: The Convergence of Ethnography and Acousmatic Music," *Organised Sound* VII, no. 1 (2002): 21.

27 David Toop, *Haunted Weather* (London, 2004), 57.

28 Schafer, *The Vancouver Soundscape*.

29 Claude Schryer, "À la recherche de l'effet Sharawadji / Electroacoustic Soundscape Composition," *eContact!* 1.4 (1998).

30 While Edison's phonograph is generally acknowledged as the first device to record and reproduce sound, it should be noted that in 1857 Édouard-Léon Scott de Martinville patented the phonautograph, a machine capable of transposing sound into graphic form. Scott's device was not able to reproduce the recordings as sound, nor was this even an objective for him. See Jonathan Sterne and Mitchell Akiyama, "The Recording That Never Wanted to Be Heard, and Other Stories of Sonification," in *The Oxford Guide to Sound Studies*, ed. Karin Bijsterveld and Trevor Pinch (Oxford: Oxford University Press, in review). For an account of the early history and social uptake of the phonograph, see Lisa Gitelman, *Always already new: media, history and the data of culture* (Cambridge, Mass., 2006).

31 Ethnographers had been making "field recordings" since the late 1880s, and John and Alan Lomax made extensive musical recordings in the American South in the 1930s. However the machines, which at first cut wax cylinders and later aluminum discs, were

enormous and unwieldy and would have been too noisy to produce a nuanced environmental recording. See Erika Brady, *A Spiral Way: How the Phonograph Changed Ethnography* (Jackson, Miss., 1999), 311–33; Alan Lomax, *The Land Where the Blues Began* (New York, 1993); and Sterne, *The Audible Past: Cultural Origins of Sound Reproduction*.

32 Sterne, *The Audible Past: Cultural Origins of Sound Reproduction*, 218.

33 Deborah Bright, "The Machine in the Garden Revisited: American Environmentalism and Photographic Aesthetics," *Art Journal* LI, no. 2 (Summer 1992): 60.

34 Rosalind Krauss, "Photography's Discursive Spaces: Landscape/View," 314–15.

35 Michel Foucault, *Language, Counter-Memory, Practice: Selected Essays and Interviews*, ed. Donald F. Bouchard, trans. Donald F. Boucher and Sherry Simon (Ithaca, NY, 1977), 186.

36 Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World*, 91.

37 Truax seems to gesture towards this inconsistency without explicitly acknowledging the contradiction. He notes that a sound can never be wholly "referential" once it has been removed from its context. On the other hand, by maintaining that a sound can be abstracted to the point of non-referentiality, it is arguable that he is implicitly and tacitly supporting the notion that there really is something transcendently *there* of the place in the recording. Truax, *Acoustic Communication*, 237.

38 Hildegard Westerkamp, *Transformations* (empreintes DIGITALes, 1996), liner notes.

39 Hildegard Westerkamp, "Gently Penetrating" (1997), http://www.omroep.nl/nps/radio/supplement/99/soundscapes/westerkamp.html.

40 Sterne, *The Audible Past: Cultural Origins of Sound Reproduction*, 20.

41 Sterne, *The Audible Past*, 21. Adorno made a similar observation in the late 1920s, albeit thanks to a much different consideration. He remarked that the gramophone (early versions of which were not able play back at a consistent speeds, thereby distorting pitch) required an original for reference. For Adorno, the problem of mediation was paradoxical: "Its abstraction presupposes the full concreteness of its object, if it is to become in any way graspable, thereby circumscribing the domain of what can be reproduced." Theodor W. Adorno, *Essays on Music*, ed. Richard Leppert, trans. Susan H. Gillespie (Berkeley, 2002).

42 For a critique of the commodity status, repeatability, and standardization of sound recording, see Jacques Attali, *Noise*, trans. Brian Massumi (Minneapolis, 1985); and Max Horkheimer and Theodor Adorno, *Dialectic of Enlightenment* (Stanford, 2002).

43 Of course, this line begins to blur as soon as instrumental performances are submitted to electronic manipulation.

44 Westerkamp, "Linking Soundscape Composition and Acoustic Ecology," 52.

45 Westerkamp, *Transformations*.

46 Claude Schryer, *Autour* (empreintes DIGITALes, 1997), liner notes.

47 Schryer, *Autour*.

48 Toru Iwatake, http://www.sfu.ca/~truax/barry.html.

49 Barry Truax, "Granulation of Sampled Sound," http://www.sfu.ca/~truax/gsample.html.

50 Francisco Lopez, "Schizophonia vs. l'objet sonore: le paysage sonore (soundscape) et la liberté artistique / Schizophonia vs. l'object sonore: soundscapes and artistic freedom," *eContact!* 1.4 (1998).

51 Lopez, "Schizophonia."

52 Quoted in Toop, *Haunted Weather*, 76.

53 Quoted in Toop, *Haunted Weather*, 78.