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Résumé de l'article

Le compositeur canadien et écologiste acoustique R. Murray Schafer est connu pour son travail artistique en extérieur. Un certain nombre de chercheurs ont examiné l'interaction entre musiciens et environnement physique dans les compositions de Schafer et ont établi un lien entre ces interactions et l'environnementalisme ainsi que l'identité canadienne. Le rôle et les implications de l'acoustique extérieure dans la musique de Schafer sont toutefois encore négligés par la recherche. Cet article examine l'esthétique de l'écho dans l'oeuvre théâtrale de Schafer intitulée *The Princess of the Stars* (1981–4). On montre ainsi que l'écho renvoie non seulement un son d'origine par l'entremise d'une surface, mais qu'il offre aussi un aperçu du rôle des sons musicaux dans la prescription d'une certaine interprétation de la nature.

ECHO AND THE RECOVERY OF THE PAST IN R. MURRAY SCHAFER'S *THE PRINCESS OF THE STARS*¹

Tyler Kinnear

There is perhaps no Canadian composer more well known for engagement with the outdoors than R. Murray Schafer (b. 1933).² Schafer has a long-standing preoccupation with new performance environments, ranging from the urban park to the remote forest. The wilderness lake is a recurring setting for his outdoor works, as demonstrated by such compositions as *Music for Wilderness Lake* (1979), *Patria the Prologue: The Princess of the Stars* (1981–4, revised 1986), and *Patria the Epilogue: And Wolf Shall Inherit the Moon* (1983–). On site, Schafer deploys symbols that have recognizable associations with a wilderness lake.³ For example, in *The Princess of the Stars* (*Princess*) canoes are used to enact the drama, and the vocal calls at the start of the work emulate the Common Loon. *Princess* also has musicians interact with the environment; they explore outdoor acoustics, mimic birds, and perform on found objects such as rocks and logs.

¹ I would like to thank the reviewers at *Intersections* for their careful eye and valuable feedback. Sections of this article appeared previously in chapter 3 of my dissertation (Kinnear 2017).

² There is a larger history of Canadian artists engaging landscapes, of course. Artists include painter and writer Emily Carr (1871–1945), members of the Group of Seven (Canadian landscape painters active from 1920 to 1933), and composers John Weinzwieg (*Edge of the World*, 1946), Harry Somers (*North Country: Four Movements for String Orchestra*, 1948), Barbara Pentland (*Suite Borealis*, 1966), and Glenn Gould (*The Idea of North*, 1967). Schafer is one of many artists in the 1960s and 1970s who began exploring new approaches to the physical environment in the arts. In the visual arts, Walter De Maria, Michael Heizer, Ana Mendieta, Dennis Oppenheim, Robert Smithson, and others moved beyond the limitations of the gallery by transcending the museum through the use of natural settings and materials in their works, a movement that came to be known as “land art” (or “earth art”). Composers and sound artists also began exploring the physical environment in new ways, primarily through their engagement with natural materials, recorded environmental sounds, and outdoor spaces. Works representative of these approaches include John Cage’s *Child of Tree* (1975), a solo concert-hall piece for amplified cactus and other “instruments,” Bill Fontana’s *Kirribilli Wharf* (1976), an eight-channel sound installation that presents recordings of waves lapping against eight blowholes on the underside of a pier in Sydney Harbour, and David Dunn’s *Sky Drift* (1977), an outdoor ensemble work premiered in a dry lake bed at Anza-Borrego Desert State Park, California.

³ The wilderness lake is an iconic Canadian setting. For discussion of this and other colonial and post-colonial Canadian symbols, see Francis (1997, especially chapter 6, “The Ideology of the Canoe: The Myth of Wilderness”).

Scholarship on Schafer's outdoor works discusses identity, environmentalism, performance practice, and the composer's creative use of birdcalls and spatialization. Scholars including Ellen Waterman and Kate Galloway have considered the collaboration between musicians and the physical world in Schafer's outdoor music, and have linked performer-environment interaction with Canadian identity and environmentalism (see Waterman 1997, 2001; Galloway 2007, 2010, 2012).⁴ Singer and educator Brooke Dufton provides a detailed guide to vocal techniques and challenges in Schafer's outdoor theatre works (Dufton 2018). There has also been discussion of birdcalls in Schafer's music, in particular the composer's representation of real and invented birdcalls in *Princess* (Harley 1998; Kinnear 2017). In terms of uses of spatialization in Schafer's outdoor works, Maria Anna Harley provides the most robust study to-date (Harley 1994). Harley focuses on the theatrical and ritualistic elements of space in Schafer's music, instead of on outdoor acoustics. In brief, the role and meaning of outdoor acoustics in Schafer's music remains understudied.

For Schafer, the activation of echoes in a wilderness setting is one step in the process of restoring the "original" soundscape he imagines. By re-sounding live musical sounds in a natural environment, echo closes the sense of space between performers, listeners, and the surrounding terrain. Echo not only sends an original sound back from a surface, but also offers insight into the role that musical sounds play in prescribing an interpretation of nature. This study seeks to illuminate how Schafer's use of echo in *Princess* illustrates his idea of recovering the past. Particular attention is given to "Aria of the Princess" (sometimes referred to as "Ariadne's Aria" or "The Princess's Aria"), the unaccompanied solo for soprano or mezzo-soprano that bookends the work. In this section, actual echoes are used for musical effect. In other sections, such as "The Dawn Light Breaks" and "Arrival of the Dawn Birds," musicians mimic other sounds.⁵

Echo and mimicry are different, of course. An echo repeats an original sound, either reflected off a surface (a natural echo) or simulated through audio effects, such as delay (an artificial echo). Mimicry is also the repetition of an original sound, yet the repeated sound is emitted from a different source(s), as when a musician imitates birdsong. In other words, a natural echo is defined by acoustics, whereas a human echo is defined by mimicry. Making a distinction between echo and reverberation is also important, for Schafer presents both in *Princess*. Echo and reverberation are both types of reflected sound. Barry Truax explains: "For a repetition to be distinct from the original, it must occur at least 50 ms afterwards without being masked by either the original signal or other sounds" (Truax 1978, 40). In other words, echo occurs when separate

⁴ On Schafer's life and oeuvre, see Scott (2019).

⁵ One may argue that the imitation of nature sounds in Schafer's music is an example of what Robert C. Cook calls a "vocal ecology"—that is, "where music [is heard] as acoustic expression in a soundscape and therefore in ecological terms" (Cook 2013, 123). Cook's claim is grounded in his observation of vocal sounds in the first movement of George Crumb's *Ancient Voices of Children* (1970), specifically how Crumb goes beyond the imitation of nature sounds for programmatic purposes (in this case crickets) to act in an ecological way (Cook 2013).

repetitions or partial repetitions of the original sound are distinguishable, and reverberation occurs when repetitions are not distinguishable. The properties of reflected sound vary, depending on the physical attributes of the performance location, atmospheric conditions, as well as instrument type and playing technique. Although Schafer does not comment on echo as a way to connect music with the environment, this study argues that echo aids the composer in his goal to re-sensitize participants to their immediate surroundings and restore an imagined soundscape. Before examining uses of echo in *Princess*, a brief discussion of the synopsis and design of the work is presented.

PRINCESS IN CONTEXT

Princess is the prologue to Schafer's music-theatre cycle, *Patria* (1966–).⁶ The twelve works that currently make up the cycle vary in instrumentation, duration, and performance location. Although *Patria* explores different world cultures and time periods (ranging from ancient Egypt to medieval Europe), several archetypes appear throughout the cycle. For example, *Patria* features four recurring characters: a masculine, instinctual hero who is sent on a series of journeys in search of spiritual power (Wolf/Theseus), an innocent princess who waits for the hero to rescue her (Princess/Ariadne), a sly creature who creates obstacles for the hero and keeps the princess captive (the Three-Horned Enemy/Minotaur), and a venerated god that reigns over the protagonists (the Sun Disk/Ra) (Waterman 2001, 25).⁷

Princess tells the story of the Sun Disk's daughter, the Princess of the Stars, who has fallen from the sky and is held captive at the bottom of the lake by the Three-Horned Enemy. The work begins with an unaccompanied aria by the Princess at the far end of the lake (she is the only character not visible to the audience). During the aria, the Presenter is paddled in a single canoe from just beyond the position of the Princess. The Presenter serves as interpreter to the audience, translating the language of the characters into English. Upon arrival, the Presenter informs the audience of the events leading up to the Princess's capture, and then turns the audience into trees by reciting words invented by Schafer. "The figures you see here are not human, therefore, in order that you might witness without disturbing these actions, I shall turn you into trees. WÍT-TI ...SKÉGI ... TO-WÓ-GAN ... WIF ... WAF ... WIF-WAF PÚF ... PÚF ... PÚF" (Schafer 1986, 22). Only through this transformation can they witness the actions of characters that, according to Schafer, are beyond the perception of humans.⁸ With the help of six Dawn Birds, Wolf arrives at the

⁶ *Patria* is Latin for "homeland."

⁷ At moments in the cycle, the creature is destructive and evil, and in other instances it is well-intentioned. For discussion of the changing role of the Three-Horned Enemy across *Patria*, see MacKenzie (1992).

⁸ In *Princess*, language is a barrier that is resolved through translation (i.e., the Presenter translates the language of other characters into English). Unresolved is the physical separation of the audience from the action taking place on the lake. In this way, the shoreline functions as a proscenium line. For a rich discussion of correlations between wilderness space and theatre space, see Sweeting and Crochunis (2001).

lake to find the Princess. The Three-Horned Enemy challenges Wolf's efforts; a fight ensues between the two characters, the Sun Disk interrupts, driving away the Enemy and commanding Wolf to embark on a journey that will lead him to the Princess. The Sun Disk orders the Dawn Birds to cover the lake with ice and to not sing until Wolf succeeds. The work concludes as it began, with the voice of the Princess heard in the distance.

The character names and roles in *Princess* parallel those in the ancient Greek myth "Theseus and the Minotaur."⁹ Wolf is a hero that must battle a monster to rescue the Princess of the Stars (instead of saving a people), Three-Horned Enemy is a monster that controls a lake (instead of a maze), and the Sun Disk is the ruler of the universe (not a kingdom). There are two similarities between the Princess and Ariadne: she is the daughter of a ruler, and a hero is infatuated with her. Unlike Ariadne, the Princess is not in love with Wolf, nor does she assist him over the course of the composition. There are other ways in which Schafer's narrative differs from the classical story. For example, there is no sacrificial rite in *Princess*, and the Three-Horned Enemy does not have human qualities—Schafer's character is amphibious with plated armour, a beak, and webbed feet.

At eighty minutes in duration, *Princess* is scored for four "sound poets" (i.e., actors), six dancers, a solo soprano or mezzo-soprano, a double SATB chorus, instrumental ensemble, and approximately twenty canoeists. The score specifies that the work should be realized on a lake of a certain size and shape: "The lake should be about half a kilometre wide and a kilometre long with an irregular shoreline to allow the principal characters to enter in their canoes from 'off stage'" (Schafer 1986, 4). These specifications help stage the work on a lake that is conducive to echoes. Singer and educator Brooke Dufton explains:

The larger the lake, the more disruptive the wind; and if the lake is too large, the singer's sound energy can be dispersed and absorbed before it reaches the audience's ears. If it is too small, the sound may lack echoes and can be more present than is ideal. I have sung on rivers and lakes that do not match the ideal and the results appear to please audiences enough. However, the experience is noticeably optimized on a lake approximately one to two kilometres in diameter, irregular in shape, with two opposing bays as Schafer's location selections for *Wilderness Lake* and *Princess* productions suggest. (Dufton 2018, 100)

Echoes are also promoted by the use of megaphones by the Princess, Wolf, the Sun Disk, choristers, and the Enemy. Additionally, the composition should be performed during a particular season (autumn) and start at a specific time (precisely fifty-two minutes before dawn) in order for events in the libretto to

⁹ In the legend, King Minos of Crete forces the Athenians to provide seven boys and seven girls every nine years in order to avoid additional sanctions. Those offered serve as prey to Minotaur, a half-man half-bull that lives in the labyrinth on King Minos's grounds. The sacrifice of Athenians ends when Theseus, the son of an Aegean ruler, is sent to Crete as one of the youths to be sacrificed. Once in the labyrinth he kills the Minotaur and manages to escape with the aid of Minos's daughter, Ariadne. Ariadne falls in love with Theseus upon his arrival, and gives him a sword and a ball of thread to help him slay Minotaur and return from the labyrinth (Plutarch 2009).

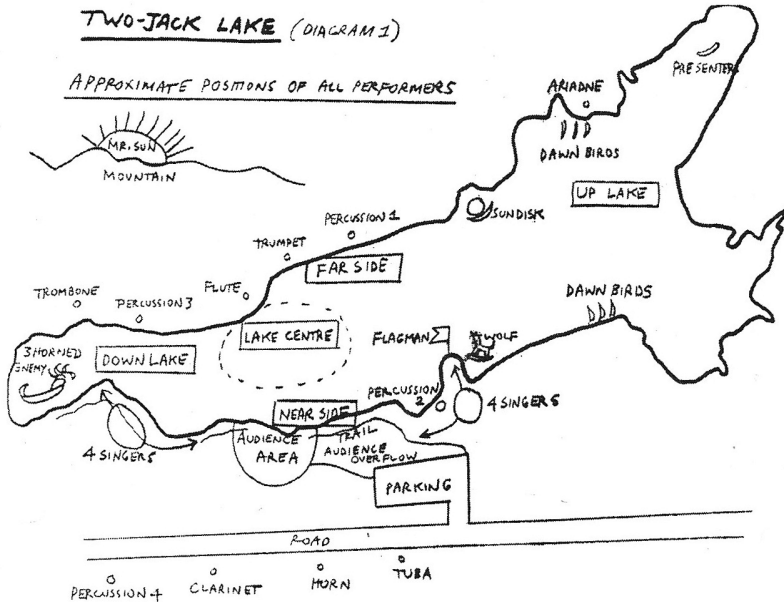


Figure 1. Layout for the 1985 production of *Princess* at Two Jack Lake (Wilson 1985, 30). Available from the Banff Centre Library and Archives. Used by permission.

correspond to natural phenomena: the work concludes with the Dawn Birds covering the lake with ice (a metaphor for the annual freezing of northern lakes) and the appearance of the Sun Disk (an event that corresponds with the sunrise).

Princess premiered at Heart Lake outside Toronto in 1981, and has since been staged (in full or in part) at Two Jake Lake in Alberta (1985), Lake Muskoka in Ontario (1995), as well as Wildcat Lake (1997), Bone Lake (2007), and Columbia Lake (2014), also in Ontario.¹⁰ As seen in the production map of the 1985 production at Two Jack Lake, outside Banff, Alberta, before sunrise performers are strategically positioned around the shoreline (figure 1).¹¹ Canoes mounting characters enact the story by paddling around the lake in choreographed patterns. Furthermore, atmospheric conditions, the physical attributes of the terrain, non-human sounds in the area, and the position of the audience in relation to the rising sun make each performance distinct. For example, the sunrise was to this audience's front left during the production at Two Jack Lake. In contrast, the sunrise was to the front right during the 2007 production at Bone Lake.¹²

During a performance of *Princess*, audience members are invited to move freely around the production site as long as they remain quiet and do not

¹⁰ At the time of writing this article, *Princess* has not yet been performed outside of Canada.

¹¹ Schafer's adaptation of ideas from his earlier work *Music for Wilderness Lake* (1979) is apparent. *Music for Wilderness Lake* positions three trombone quartets around a lake at dawn and at dusk, antiphonal effects are used, and echoes are explored.

¹² The layout for the 2007 production of *Princess* at Bone Lake can be found in Galloway (2012).

disrupt the performance. Schafer explains: “What makes my pieces different is that the audience is actually moving to a location, sitting on a shore or on a beach. They’re free to get up and walk around, they don’t have to stay there. In fact a lot of people at the first *Princess* [at Heart Lake] got up and walked around the lake to hear it from the other side, which they’re free to do” (quoted in Wilson 1985, 31). It is surprising that Schafer welcomes audience members to walk around during a performance of *Princess*, given that the Presenter transforms them into trees at the outset of the work. There is also the contradiction of Schafer’s desire to protect wilderness and the disruption of it by encouraging audience members to move around (potentially over sensitive plant life) as well as having performers project (amplified) musical sounds into the wilderness setting. Amplified sounds in *Princess* will be discussed later in this article. At the production of *Princess* at Two Jack Lake, sound recordist Tim Wilson noticed that the clicks of camera shutters were prominent during quiet sections, explained by the human impulse to document a “rare” experience (“CBC Morningside” 1985). Although any production of *Princess* may disrupt its wilderness setting (in the least temporarily), Schafer affirms that mounting an outdoor work that features musician-environment interaction is a productive way to recondition both audience members and performers to nature.

In other works in the *Patria* cycle, such as *RA* (1982) and *The Enchanted Forest* (1993), the audience functions as active participants in the drama. The longest work in the cycle, *And Wolf Shall Inherit the Moon* (1983–), places a troupe of artists in the Haliburton Forest and Wildlife Reserve in Ontario. Participants are divided into “clans” (each named after a totem animal native to the region) and, over the course of eight days, engage in a series of ritual activities. These include greeting the sun and four cardinal directions, dancing, storytelling, and performing various types of music. The clans convene on the final day to perform a ceremony, whereupon Wolf is united with Ariadne (two characters first introduced in *Princess*).¹³

Schafer’s interest in positioning musicians outdoors and inviting them to actively listen to and perform with their surroundings stems not only from his attraction to the natural world, but also his dissatisfaction with Western classical music aesthetics. His efforts to revitalize music theatre led to the development of a theory known as The Theatre of Confluence.¹⁴ Similar to Richard Wagner’s concept of *Gesamtkunstwerk*, Schafer’s idea of a confluent theatre aspires to give the arts an equal part in shaping a staged work. However, Schafer critiques Wagner’s concept on the basis that it maintains a hierarchical relationship among the arts, where music is still privileged as the “highest” form of art (Rea 1974). Schafer responded to this challenge by encouraging alternative

¹³ A group of dedicated participants, known as The Wolf Project, has performed and developed *And Wolf Shall Inherit the Moon* since 1992. Campsites are set up at Wildcat Lake and at Crow Lake, both located in the Haliburton Forest and Wildlife Reserve. As material is added and revised with each performance, it is difficult to distinguish what material is attributed to Schafer and what belongs to others. For more on *And Wolf Shall Inherit the Moon*, see Galloway (2012), Scheffer (2010), Crossman (2007), Doolittle (2001), and Waterman (1998a, 1998b).

¹⁴ See “The Theatre of Confluence I,” “The Theatre of Confluence II,” and “The Theatre of Confluence III,” in Schafer (2002).

ways of performing and experiencing a music-theatre work. Among these techniques is a multi-sensory engagement with the performance site, increased audience participation in the form of travel to the performance location and movement through the site during the performance and, in the spirit of John Cage, recognition of environmental sounds as part of the work.

THE RE-TUNING OF THE WORLD

The wilderness lake, for Schafer, is an ideal setting to recondition—or at least reawaken—participants to what he understands as a “balanced” soundscape.¹⁵ Schafer draws on both ecology and communication models to distinguish between “balance” and “imbalance” as they pertain to soundscapes. In terms of ecology, he considers humans in balance with their surroundings when their sounds are on the same scale as those from non-human sources; that is, where human-associated sounds do not mask non-human sounds.¹⁶ Applying a communication model, he critiques what he views as the transformation of environments from high-fidelity soundscapes (where sound signals are easily recognizable) to low-fidelity ones (where the sheer amount of acoustic information jeopardizes the audibility of certain sound events) (Schafer 1977).¹⁷

With the topic of fidelity in mind, the low ambient noise level at a wilderness lake is desirable for staging a work such as *Princess*, given the conditions are right (i.e., there is no heavy wind, thunder, overhead airplanes, etc.). Quality here applies to musical sounds as well as outdoor acoustics. The Princess sings her aria from around one kilometre away from the audience. Although the singer’s voice is amplified by a non-electric megaphone, the audience must still listen to the voice from a significant distance; this is not possible in a “lo-fi” soundscape. In line with Schafer’s application of audio fidelity to soundscapes, in a “hi-fi” soundscape musical sounds sent back from remote surfaces are preserved in their “highest” quality.

¹⁵ Ideas of “balance” and “imbalance” in Schafer’s writing and music can be traced to his work with the World Soundscape Project (WSP), a research team that Schafer founded in 1969 at Simon Fraser University in Burnaby, British Columbia. The members of the WSP were Howard Broomfield, Bruce Davis, Peter Huse, R. Murray Schafer, and Barry Truax. Several students assisted the group, most notably Hildegard Westerkamp. The WSP conducted the first systematic study of an acoustic environment in an effort to raise awareness of noise pollution and document sonic landmarks. The team’s findings were published as a 1973 book and double LP titled *The Vancouver Soundscape*. Subsequently, the WSP conducted similar studies across Canada (*Soundscapes of Canada*, 1974) and in Europe (*Five Village Soundscapes*, 1977). The team also explored the environmental and social conditions of soundscapes through sonic art. For more on the WSP and directions taken since the team’s foundational work on soundscapes, see Droumeva and Jordan (2019).

¹⁶ Schafer’s use of an ecology metaphor in his theory of soundscape can be understood as a continuation of the renewed—and popularized—interest in “ecological” thinking in the 1950s. For a discussion of the appropriation of ecology discourse in music, see Keogh and Collinson (2016).

¹⁷ Schafer attributes the decline in the health of the global soundscape to developments in technology since the Industrial Revolution. There are low-fidelity natural sounds, of course, like a waterfall or windstorm. However, such sounds are generally absent from the writings of Schafer. He instead focuses on “lo-fi” mechanical sounds such as airplanes and cars that are deemed damaging to otherwise “hi-fi” soundscapes. See Schafer (1969, 1977).

Related to qualities of soundscape, Schafer critiques human noise pollution in *Princess* (and in other works) through the types of sounds he scores.¹⁸ As expected, certain vocal styles contribute to a balanced soundscape, whereas one style in particular, that of the Three-Horned Enemy, “pollutes” it. For example, characters such as Wolf, the Princess, and Sun Disk slide between pitches. At times, Wolf howls in a way that seems natural in a wilderness setting, like the animal of the same name. In contrast, the Three-Horned Enemy projects gruff articulations that are out of place in a “hi-fi” natural environment. The Enemy is also polarized from the other characters with its use of electric amplification technology. The Princess, the Sun Disk, and Wolf use non-electric megaphones, whereas the Enemy uses a 20-watt megaphone and an optional walkie-talkie with additional walkie-talkies located in trees around the audience.¹⁹

Arguably, Schafer creates a dichotomy between natural and mechanical sound sources by giving the Princess, the Sun Disk, and Wolf non-electric megaphones and the Enemy an electric one. The composer’s use of electric amplification comments on humans “polluting” the environment with technology; the Enemy is the *true* enemy of nature, as Schafer views it. However, it is ironic that the composer uses amplification technology in *Princess*, given his concerns over noise pollution attributed to humans. By juxtaposing natural sounds with mechanical ones, Schafer frames nature as being inherently “good” in a world of human “evil” (Cronon 1996).²⁰ As such, what remains of the natural world is deemed worthy of preservation and it is human conduct that needs regulation. In light of Schafer’s aim at reconditioning humans to the soundscape, the wilderness lake serves as a place to employ new compositional techniques, a way to cultivate acuity to sounds beyond the concert hall.

LISTENING TO ECHOES

Echoes provide listeners with insight into the size, shape, and material(s) of a space. Echoes also indicate, in time (often in milliseconds), the distance between a sound source and a given surface. The context in which echoes are used is wide ranging, from sailors activating echoes to determine their distance from a shoreline to the blind tapping a stick to activate reflections off nearby surfaces. In music, an echo can be heard as a repetition of an original sound or as a distinct sound (i.e., a sound that takes on new life), among other interpretations.

An echo does not repeat an original sound verbatim because its sonic properties are shaped by the terrain and atmospheric conditions. In this way, echo can be understood as a separate entity. Henry David Thoreau writes, “The echo

¹⁸ Another example is the concert-hall piece *North/White* (1979). This work directs attention to the transformation of northern environments by industry and transportation through the juxtaposition of a quiet, restrained orchestra (representing the Northern landscape) and a blaring—if not offensive—snowmobile.

¹⁹ Arguably, any megaphone (electric or non-electric) is unnatural, given that it is a technological device.

²⁰ Environmental historian William Cronon identifies this view of nature as a “moral imperative” (Cronon 1996).

is, to some extent, an original sound, and therein is the magic and charm of it. It is not merely a repetition ... but partly the voice of the wood” (Thoreau 2004, 120). When we associate an echo with its source and understand it as a repetition, it becomes what Jeff Todd Titon calls a signal of “co-presence” (Titon 2012). In line with Thoreau and Titon, echoes have agency through their distinct qualities. By shaping an utterance, an echo announces its own presence. One may interpret that presence as the “voice” of a place; echo literally is the sounding of an environment.

Echo also carries the past through its statement in the present. Historian Mark M. Smith observes,

An echo is nothing if not historical. To varying degrees it is a faded facsimile of an original sound, a reflection of time passed. It invites a habit of listening that not only allows us to locate origin (temporally and spatially) but, more importantly, test authenticity: how illustrative the sound was of the historical moment in which it was produced. The extent to which echo can, does, or should have fidelity to the original sound is a question preoccupying historians of any period (Smith 2015, 55).

This idea of past in the present pervades Schafer’s writing as well as his music. He looks to the past to find hope for a world that he sees as being increasingly polluted by human-associated sounds. Schafer remarks that in order to create more sustainable soundscapes, “we must return to the waters of instinct and the unshatterable unity of the unconscious, letting the long waves of Ur-sound sweep us beneath the surface, where, listening blindly to our ancestors and the wild creatures, we will feel it surge within us again, in our speaking and in our music (Schafer 1985, 22). To restore this “original” soundscape we must, according to Schafer, recondition ourselves to the natural world and redesign acoustic space accordingly. The prefix *re-* is central to Schafer’s theorization of soundscape. This prefix suggests “anew,” “again,” or “once more.” Schafer maintains that humans can return to a state of equilibrium with the planet, an idea that is upheld by many environmentalists.²¹ In a way, the prefix *re-* is to language as echo is to sound. Both refer to the past through their statement in the present.

Questions of fidelity are also of concern to Schafer. For Schafer, recorded sounds evoke a certain anxiety. He coins the term *schizophonia* to describe the storage and transmission of sounds. Schafer notes that *schizophonia* is meant to evoke a “sense of aberration and drama,” for it illustrates in contemporary society that fewer sounds are emitted directly from their source (Schafer 1969, 43). Like a recording, an echo presents a modified version of a previously made

²¹ This desire to restore nature to an “original” state continues to pervade much environmentalist thought. Journalist J. B. MacKinnon asks, “Where in the billions of years of life on earth could we possibly draw that line [i.e., the ‘original’ baseline that marks nature in balance]?” (MacKinnon 2014, 51). MacKinnon turns to the end of the last Ice Age, a time when the web of life was deemed most complete. In an effort to create what he considers to be a more natural environment, MacKinnon endorses a method in conservation ecology known as rewilding. That method entails the reintroduction of apex predators and keystone species and the expansion of wilderness areas, in particular corridors connecting protected zones.

sound. However, for Schafer, an echo is more “authentic” than a recording because of its connection to the original source. Both an echo and a recorded sound are separated from their source (restatement and playback, respectively), but an echo exists in the same space, whereas a recording is removed from its original environment. Also present in a recording are various forms of “distortion.”²²

Three recordings of the “Aria of the Princess”—two of which are commercially available—capture different qualities of reflected sound, and present different environmental sounds (audio examples 1–3). These are mezzo-soprano Eleanor James’s performance on 8–10 August 1985 at Two Jack Lake, soprano Wendy Humphreys’s performance on 12–14 September 1997 at Wildcat Lake near Haliburton, Ontario, and Humphreys’s performance on 8 September 1995 at Lake Muskoka near Gravenhurst, Ontario (see *Discography*).²³ Echoes are prominent at Two Jack Lake, lasting around two seconds after an utterance. Echoes are still prominent at Wildcat Lake (around one second), and they are less prominent at Lake Muskoka (milliseconds in duration). This difference in the duration of echoes is due in part to terrain: jagged mountains of exposed soil and rock provide the backdrop for Two Jack Lake, whereas low-lying deciduous forests interspersed with rock outcrops surround Wildcat Lake and Lake Muskoka. Other factors include lake size and shape, and atmospheric conditions, notably air pressure and wind direction. The environmental sounds present on the three recordings also differ. Only the infrequent sounds of lapping water and birdcalls are present on the Two Jack Lake recording, whereas rain (including raindrops striking an umbrella), wind interference, occasional birdcalls, and an overhead airplane are present on the Wildcat Lake recording. Bird activity is abundant on the Lake Muskoka recording.

Audio example 1. Two Jack Lake, Eleanor James, 8–10 August 1985. “*Princess of the Stars: Copy of Edited Master (1999)*.” © Banff Centre Archives. Used by permission. <https://www.youtube.com/watch?v=EsTrP8AzRqo>

Audio example 2. Wildcat Lake, Wendy Humphreys, 12–14 September 1997. *Canadian Composers Portraits: R. Murray Schafer* (2002). © Centrediscs/Centredisques. Used by permission. <https://youtu.be/9A9-X8rdV-M>

Audio example 3. Lake Muskoka, Wendy Humphreys, 8 September 1995. *Patria—R. Murray Schafer* (2009). © Opening Day. Used by permission. https://youtu.be/3VZQ_Hdn4Os

Tim Wilson captured the performance at Two Jack Lake, Jacob Harnoy at Lake Muskoka, and David Jaeger, David (“Stretch”) Quinney, and Steve Sweeney at Wildcat Lake. In a recent phone interview with the author, Wilson recalls, “Both Murray and I were big on having natural ambience represented authentically. Even though microphones impose their own perspective, we wanted to be faithful to the natural distinctions among sound sources and the

²² “No recording is an exact reproduction of living sound. Distortions are introduced in both its production and its playback” (Schafer 1969, 45).

²³ A recording of the complete performance of *Princess* at Lake Muskoka is available at the Canadian Music Centre’s Ann Southam Audio Archive (see *Discography*).

distances between them. To the best of my recollection we did absolutely no treatment with EQ [i.e., equalization].”²⁴

Similarly, Jaeger reports, “There was no reverb whatsoever added. The reflections from the rocks and trees provided plenty of this.”²⁵ It remains unknown whether any effects were used on the Lake Muskoka recording. In light of Schafer’s critique of audio storage and transmission, it stands out that echoes on both the Two Jack Lake and Wildcat Lake recordings were not enhanced with effects. The preservation of unprocessed sounds on the recordings aligns with Schafer’s preference for “natural” sounds. The unmodified recordings of *Princess* illustrate the original performance more accurately (or “authentically,” as Wilson and Smith put it).²⁶

Although both the Two Jack Lake and Wildcat Lake recordings present unprocessed sounds, they are not without influences like microphone design and placement. Wilson states that, using a stereo Nagra reel-to-reel recorder with two microphones (possibly a Neumann U87 set) in an XY configuration, he recorded at several locations around the lake and made selective editing to create a “seamless” mix.²⁷ On recording at Wildcat Lake, Jaeger writes,

My cargo—two condenser microphones and a portable digital recorder—and I were heading out to a floating platform on the far side of the lake, where I would, in the pitch black night, attach the gear to a pre-positioned mic stand bolted to the float, start the recorder, head to the nearest shore, hide with my canoe behind a boulder and await the start of Murray Schafer’s opera, *Princess of the Stars*. At the same time, my two colleagues, recording engineers David (Stretch) Quinney and Steve Sweeney paddled to two more locations and engaged two more recording positions. We were about a kilometre apart from one another, and we would record several performances of Schafer’s “environmental opera” over the course of a week, to be mixed and assembled for broadcast on our contemporary music show, *Two New Hours* on CBC Radio Two. (Jaeger 2016)

The recording techniques used by the Canadian Broadcasting Corporation (CBC) team to capture the premiere of *Music for Wilderness Lake* reflect similar attention to the spatialization of musical sounds, which makes sense, given that Jaeger was also the producer of that recording.²⁸ As shown in figure 2, the team made audio recordings from three canoes on the lake and also from a

²⁴ Tim Wilson, phone interview, 28 February 2020.

²⁵ David Jaeger, email correspondence, 2 March 2020.

²⁶ On the topic of capturing outdoor compositions, an ambitious multi-track recording was made in June 2012 of John Luther Adams’s *Inuksuit* (2009), a percussion work scored for nine to ninety-nine musicians. In 2012 the piece was recorded with thirty-four percussionists in the forest surrounding the Guilford Sound recording studio in Vermont. On preparing to record the performance, owner of Guilford Sound, Dave Snyder, announced, “It’s going to take us a while because we have about 8,000–7,000 feet of cable and forty-eight inputs” (Mondo Mediaworks 2012). The deluxe version of the album (available from Cantaloupe Music) presents both stereo and surround-sound versions.

²⁷ Wilson phone interview.

²⁸ *Music for Wilderness Lake* premiered at O’Grady Lake (near Bancroft, Ontario) on 22 September 1979 by the Sonaré ensemble. In addition to being recorded for radio play by the CBC, the performance was made into a documentary film by Fichman-Sweete Productions (now Bullfrog Films).

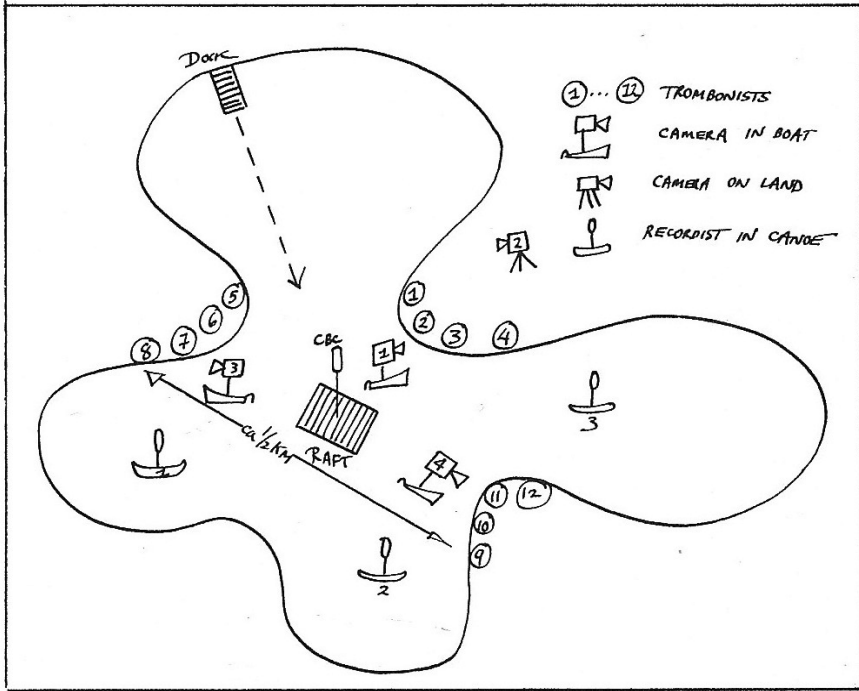


Figure 2. Setup for the recording and filming of *Music for Wilderness Lake* (Schafer 1981, 4).
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raft at the centre of the lake. The final stereo recording presents a composite of these different positions. As a result, the location of each ensemble is heightened in the stereo field. Players 1–4 have a strong presence in the centre channel, whereas players 5–8 and 9–12 are positioned in the far left and right channels, respectively. Outdoor acoustics on the recording are also heightened; that is, echoes and reverberation sound especially “full.”

Regarding *Princess*, close listening reveals differences among the three recordings in recording technique. On the Two Jack Lake recording, there is a pronounced separation of James’s voice (in the left channel) and echoes (in the right). As well, James is positioned relatively close to the microphone (although not close-miked), whereas the primary surface on which echoes are activated is significantly farther away from the microphone. The Wildcat Lake recording presents Humphreys’s voice right-centre, with echoes heard left-centre. Humphreys is also positioned relatively close to the microphone(s), and echoes are activated on terrain that is closer to the microphone(s) than at Two Jack Lake.²⁹ The microphone is positioned closest to the singer on the Lake Muskoka recording. As Humphreys turns to activate different echoes, we can hear her voice move across the stereo field, but not too far from the centre of the channel—she

²⁹ It is difficult to know whether the singer was captured on more than one microphone, given that multiple microphones were used at Wildcat Lake.

seems to turn no more than 45 degrees. The echoes are less localized on the recording, in part because they are less prominent at Lake Muskoka, but also because of microphone placement (directed at Humphreys).

The separation of voice and echo is audible on all three recordings, but that separation is most pronounced on the Two Jack Lake recording with its channel separation and microphone placement. The Two Jack Lake recording emphasizes space *between* voice and echo, whereas the Wildcat Lake and Lake Muskoka recordings place the voice near the centre of the stereo field, which seemingly closes their distance. Furthermore, ambient sounds are as prominent at Wildcat Lake as voice and echo, with a full texture of rain sounds, wind interference, and an airplane; the airplane (from ~5'05" to ~8'35") nearly masks Humphreys's voice when it flies directly overhead (at 6'50"). The Lake Muskoka recording highlights the singer's exploration of echoes by capturing her voice being projected in different directions.

These distinctions among the three recordings raise the question of whether one is more authentic than the others.³⁰ In light of Wilson's and Jaeger's above comments on authenticity, it would seem that the Two Jake Lake and Wildcat Lake recordings are faithful to the live performance on the basis that both present unmodified sounds. Perhaps the debate lies in the type and number of microphones used as well as their placement in relation to sound sources. Production decisions play a central role in how echo is presented on a recording of "The Aria of the Princess" (or any outdoor performance), but the music itself and how it is interpreted by the singer also inform our experience of echo in the aria.

INTERPRETING ECHO

For the duration of the "Aria of the Princess" (approximately seven minutes), a solo soprano or mezzo-soprano produces echoes and reverberation. Schafer enhances the interaction between the human voice and the immediate outdoor environment by combining pause, vowel sounds, interval, pitch, and dynamics. As shown in example 1, approximately two minutes into the aria, the soloist alternates between passages that activate echoes and those that stimulate reverberation. In the score, Schafer does not present notation distinguishing between echo and reverberation, but his use of extended figurations followed by a short pause creates strong reverberation (sections in blue) and sustained notes followed by a longer pause produce distinct echoes (sections in red).

In addition to varying lengths of pause, the soloist uses vowel sounds to explore outdoor acoustics, in particular "A" (/ä/, as in "father"), "I" (/ē/, as in "see"; the preface to the score explains that "E" is pronounced /ä/, as in "fate"), and "O" (/ō/, as in "coat").³¹ As seen in the score, the singer regularly sustains

³⁰ Authenticity is a contested concept in various fields. On authenticity in music performance, see Fabian (2001) and Davies (1987).

³¹ According to the International Phonetic Alphabet, these vowel sounds are based on the following degrees of vowel height (Schafer's writing in parenthesis): "ä" (A) = central open; "i" (I) = front close; "o" (O) = back close-mid. The Ottawa Indigenous group uses the same three vowels in pronunciation, but these are short (ä, as in "what"; i, as in "bit"; o, as in "oat") (Rhodes 1985, xxvii).

Example 1. “Aria of the Princess” (version for higher voice) at 2'13" (Schafer 1986, 8). Coloration added. © Arcana Editions. Used by permission.

tones on “A” (/ä/), and a few are held on “O” (/ō/). One possible explanation for using these two long vowels is that “A” and “O” are easy to project and sustain. Another is that both vowels are in the word “NÍ-O-TAI” (a variation on the Seneca word for “lake”), which is recited by the Presenter following the “Aria of the Princess.” Schafer avoids consonants, except for “P” (/p/, as in “pet”) approximately halfway through the aria.

Schafer also changes the duration and intensity of sound reflection through the use of both interval and pitch. For example, the aria begins with the voice moving between C and D^b (the first two pitch classes of the row in prime form) (example 2). The singer sustains a C₅, crescendos and accelerates through a C₅–D^b oscillation, peaks on a D^b₅ tremolo, decrescendos and slows down through the same C₅–D^b₅ oscillation, and fades on C₅ to a long fermata. Such passages share characteristics with the call of the Common Loon. Extending the amount of time spent on each pitch class gives the singer ample time to explore the activated echo.

“Aria of the Princess” is based on the prime and retrograde forms of an all-interval twelve-tone row known as a “wedge” series (example 3). The “wedge” series is used throughout the *Patria* cycle as a unifying device, and is commonly referred to as the “*Patria* row.” Although Schafer refers to *Princess* as “almost completely a 12-tone piece of music,” the composition is not strictly serial (Pearson 1983, 9). In “Aria of the Princess,” he follows the row sequence, but is flexible in his application of twelve-tone techniques. For example, Schafer often elaborates on a given pitch class in the row using the previous pitch class before proceeding through the sequence. In other scenes, such as “Dance of the Dawn Birds,” pitch collections from the row are used, but the row is not stated in its entirety. In this way, Schafer rejects the strict control that serial techniques can

Example 2. “Aria of the Princess” (version for higher voice) at 0’00” (Schafer 1986, 8).
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Example 3. *Patria* row

offer and instead uses the “wedge” series as a formal device, a way to connect sections of *Princess* through pitch content.

The “wedge” series is distinct in its measured interval displacement; that is, the space between pitches widens consistently, regardless of row transformation. The *Patria* row starts on C₄ and expands by semitone in alternating directions. Schafer utilizes this quality of expansion by structuring the aria as a loose palindrome. In the “Aria of the Princess” the prime form of the row unfolds until 3’07”, where the row closes back in retrograde.³² As the intervals widen, the singer activates a variety of echoes, and as they close back towards C₄ those same echoes are triggered but are now narrower in scope.

Another important feature of this row is the tritone, in particular the E^b–A in the prime form of the row, which serves as a linchpin for the series. The E^b–A tritone creates an inversive axis in the middle of the row, where the corresponding tritone for each pitch expands outward (E^b–A, B^b–E^b, D^b–A^b, etc.). Schafer appears to use tritones primarily to create momentum that leads to a resting point. These resting points are generally followed by a change in pitch content, which, in certain passages, introduces new pitches in the series. Such is the case at 2’13” (see example 1) where the E^b–A tritone features prominently in a brisk, repeated motive. This passage builds to *fortissimo* where, after an extended pause at ~2’20”, three new pitches are introduced (E–A^b [written G^b]³–F). This passage is the only one in the aria that presents three new pitch classes in sequence. Upon completion of the row in prime form, several pitches from the retrograde ordering repeat over a crescendo at ~3’04”. This leads to a series of glissandi, which activate some of the most prominent echoes heard in the aria.

³² Note that the score uses time measurement, instead of measure numbers. One possible explanation for the use of time measurement in *Princess* is that it helps guarantee that the climax of the work will correspond with the sunrise.

Schafer draws attention to the echoes when he writes at the bottom right of the score, “pause for echoes.”

Schafer consistently returns to the pitch class A in “Aria of the Princess” (F# in the version for lower voice), such as at 2'13", 2'30", 2'40", 5'35", 5'55". To recall, A is the first pitch class introduced in the work, sustained at o'oo" on “A” (/ä/). The pitch content around A is different in each restatement. Furthermore, A is sung on “I” (/ē/) and “O” (/ō/) in several passages. In a way, these restatements of the opening note can be heard as an echo in the aria. Herein lies a second type of metaphorical echo in *Princess* (the other type being mimicry). Positioned around new pitch content, the A recalls the opening of the work, including the actual echo it produces.

The Princess repeats her aria while the Presenter is paddled from the far end of the lake towards the audience during “The Dawn Light Breaks.” This section extends the dialogue between the Princess and the environment to include the Presenter, double chorus, and four percussionists. The Presenter pauses three times on the lake (at approximately two-minute intervals), reciting “KÁ-NI-O-TAI” and “NÍ-O-TAI” (variations on Onondaga and Seneca words for “lake”). Following each recitation, the two SATB groups (positioned to the left and right of the audience) repeat the music sung by the Princess but with additional words in Algonquin-Delaware, Cherokee, Cree, Iroquois, Micmac, and Mohawk. The SATB groups present five variations on the word “star,” four on “lake,” “moon,” and “wolf,” and two on “princess.” The soprano and alto in Group One are the first to enter, followed by the soprano and alto in Group Two, and finally the tenors and basses in both groups.³³

The performers not only stimulate new echoes, but also each other by singing antiphonally. Schafer writes in the score, “At times a singer may also echo another singer who has previously echoed the Princess. The effect of the echoes should be gradually accumulative, but never to the point where the aria of the Princess is obscured” (Schafer 1986, 10). As the musicians transmit the voice of the Princess around the lake, the voice of the Princess multiplies. This presents another type of echo: mimicry. By responding to the calls of the Princess in addition to other singers in the SATB groups, the voices create human echoes around the lake. This effect is created through the distribution of musicians and their position away from the shoreline (see figure 1).

This same passage encourages the audience to not associate sound with source, and to allow the spatial richness of the Princess’s voice echoing around the lake to saturate their ears. Keep in mind that this scene is performed pre-dawn, which arguably affects both temporal and spatial perception; that is, sensory deprivation may result in alterations in temporal and spatial processing (see Bell et al. 2019). The idea of separating sound from source rubs against Schafer’s theorization of soundscape, where sounds are strongly associated with their environmental and social context. However, the singers enhance the Princess’s call by activating varying echoes and reverberation. As her message spreads among the ensemble, new echoes emerge and existing echoes are even

³³ Schafer (1986, 87). A similar effect is created during “Arrival of the Sun Disk.”

more pronounced. This passage offers musicians the opportunity to listen to other performers as well as actual echoes. With this cacophony of vocal utterances and echoes, the line between original sounds and reflected sounds is blurred. As a result, some participants may interpret certain voices as originating from the landscape itself (i.e., echoes as being an original source).

The use of echo in *Princess*, in both role and sound quality, departs in several ways from canonic music settings. Consider, for example, the similarities between *Princess of the Stars* and the legend of Orpheus and Eurydice: both the Princess and Eurydice are trapped, awaiting the rescue of someone driven by love (Wolf, in the case of *Princess*; Orpheus, in the case of Orpheus and Eurydice). However, in *Princess* the echo re-sounds the voice of the prisoner, not the hero. Furthermore, the Princess has greater control of the echo than that of Orpheus in canonic musical settings. For example, in Monteverdi's *L'Orfeo* the echo silences Orpheus.³⁴ The Princess, on the other hand, uses pause, vowel sounds, interval, pitch, and dynamics to control echoes. Still, echo has agency in that it takes on distinct qualities based on the terrain of a given performance location. This agency depends on the environment, however. Echoes would lose their agency if the performance site of *Princess* were not conducive to sound reflection, for echoes are beholden to the terrain, atmospheric conditions, and a low ambient noise level (compare audio examples 1–3).

Schafer's echo also resonates with the story of Echo and Narcissus. To recall, in *Metamorphoses*, book 3, Ovid tells of Narcissus, a hunter known for his beauty, who is chasing after Echo, a wood nymph, in the attempt to seduce her. As he is running, he trips on a branch, falls next to a stream, and sees his reflection for the first time. In this moment, he falls in love with his own reflection. Echo realizes that Narcissus is no longer chasing her. She calls out in an attempt to get his attention, but Narcissus has traded his hearing for his reflected image. Echo's voice reflects into the distance unheard. Actual echoes are like those in Ovid's story in that they can only repeat what they are "told" (i.e., the signal they receive is what they send back).³⁵ In contrast, the Princess's call is clearly audible to other characters in the production (Wolf hears her call, which draws him to the lake), to the musicians (they mimic her call), and also to the audience (only after the Presenter has transformed them into trees). In a way, the Princess's voice is a call for humans to rediscover their own listening. Like Echo, the Princess's voice raises questions about who, if anyone, is listening. Have humans become like Narcissus?³⁶

³⁴ For more on echoes in Western classical opera, see Chua (2006).

³⁵ Art historian Rosemary Barrow observes that Echo is secondary to Narcissus throughout historical representations (Barrow 2017). Similarly, the Princess remains a secondary character in Schafer's *Princess*. Although she is the cause for action (the reason why Wolf visits the lake), her "stage" presence is limited; she sings at the opening, for a brief moment before the arrival of the Three-Horned Enemy, and at the conclusion to the work.

³⁶ Derrick de Kerckhove engages this question in conversation with Tim Wilson (de Kerckhove and Wilson 2002). Wilson asks, "Can you speculate about the difference between the pre-literate and post-literate person in terms of their relationship to the natural world, and specifically to the soundscape?" De Kerckhove responds, "The Story of Echo and Narcissus is the story of the fall into silence, that's like what happened with alphabetization. The loss of Echo is the loss of the ear." He continues:

CONCLUSION: ECHOES, NATURE, AND CANADIAN IDENTITY

By mythologizing the fluctuations of nature we have intensified our own experience of it. We begin to flow with it rather than against it. We no longer spite it or shut it out as we do in covered theatres. This is our stage set, and we have become one with it, breathing it, feeling it in all its mystery and majesty. (Schafer 2002, 108)

The Princess of the Stars creates a heightened experience of nature by staging a mythic story on a lake where musician–environment interaction plays a key role. “Aria of the Princess” exemplifies one key way in which Schafer directs musicians to engage their surroundings: the activation of outdoor acoustics. Schafer invites audience members and performers alike to reassess concert-hall aesthetics through his use of unconventional compositional techniques in an outdoor setting and by giving nature an active role in his work.

Princess also revisits how we understand our place in the environment as humans—specifically, how we both shape and interpret our immediate surroundings and what we might do to improve our environment. Essentially, Schafer maintains a romantic aesthetic of nature. His position aligns with that of earlier transcendentalists and Romantics such as Henry David Thoreau, Ralph Waldo Emerson, and William Wordsworth. In hindsight, this conception of nature is problematic, not unlike Schafer’s model of soundscape.³⁷ On Thoreau, Daniel Bullen observes,

His writing is a little too quick to swerve away from lived experiences that haunted his time and continue to haunt our national history: the desperation the Natives and African slaves felt in the face of the gun barrels of extinction or the shackles and whips of subjugation As much as Thoreau scolds America for its contradictions, he doesn’t show us how to work alongside our neighbors, to repair the damage in this legacy. He instead shows us how to dodge into nature, to find a fount of perpetual inspiration there (Bullen 2019).

Like Thoreau, Schafer locates his work in nature; that is, he understands his composition as being part of nature and nature being part of his art. Schafer presents the wilderness setting as a space where nature can restore and inspire

“He [Narcissus] literally loses his hearing. That for me is the mythical moment where the alphabetic man loses connection with Nature, loses connection with the other senses” (16).

³⁷ Several scholars criticize Schafer for his preference for “hi-fi” soundscapes, arguing for a non-prescriptive definition. For example, Ari Kelman claims that the idea of soundscape becomes a problem when prejudice is held against urban sounds (Kelman 2010). Timothy Ingold argues against the term altogether, asserting that sound is not an object of perception; rather, it is “the medium of our perception. It is what we hear in” (Ingold 2007, 11). To deem the sounds of the natural world as well as quiet and silence as more valuable culturally, ecologically, and aesthetically than human sounds suggests a prejudice in favour of nature. This is not to dismiss the importance of “balanced” soundscapes to human psychological well-being and ecosystem health; rather, it is to say that a hierarchical approach to categorization, as found in Schafer’s writing and music, warrants closer consideration.

those exposed to it. This is essentially a colonization of nature, whereby nature serves the aesthetic goals of the Western composer.³⁸

In the case of *Princess*, mapping a tale of mythic proportions onto a lake distracts from the environmental, socio-political, and cultural issues associated with the body of water, or the surrounding area. Consider, for example, Two Jack Lake, the site of the 1985 production of *Princess*. The visual experience of the Canadian Rockies from the southwest shore (where the audience was positioned) is indeed breath-taking. However, the lake is anything but untouched wilderness. A canal runs from Two Jack Lake to the largest artificial lake in Banff National Park: Lake Minnewanka. Lake Minnewanka Scenic Drive passes by Two Jack Lake and connects two campgrounds that are located near the shoreline. One reason that Two Jack Lake was chosen as the Banff performance location was because it afforded ample parking for the audience.³⁹

What is now Banff National Park has a rich history of Indigenous peoples dating back approximately 13,000 years (Nalewicki 2017).⁴⁰ Yet Schafer draws exclusively on the Indigenous cultures of the Plains and Eastern Woodlands people of Canada and the United States.⁴¹ When the plot is infused with Indigenous cultures, audience members and performers are encouraged to experience the wilderness lake as a place that is both sacred and rich in mythology.⁴² The use of Indigenous languages, legends, and rituals in *Princess*—and other works by Schafer—is controversial. Schafer’s own “colonization” of Indigenous cultures is contradictory, given his critique of colonialism in Canadian identity. Ultimately, the cost of freely using elements of First Nations culture in a work such as *Princess* is that such borrowing raises issues of cultural appropriation.⁴³

In the interest of embracing the natural world more fully, Schafer has both the audience and those involved in the production surrender to it. The

³⁸ A promising topic of future study is shared topics in Schafer’s and Thoreau’s works. Although Schafer has not (in writing, at least) identified with Thoreau, or transcendentalism more broadly, he and Thoreau share an interest in both Indigenous culture and environmental sound, including echoes. See Titon (2012) and Scheffer (2010).

³⁹ Nearby Johnson Lake was considered as a performance site, but it did not have ample parking like Two Jack Lake (“Artistic Committee Meeting” 1985).

⁴⁰ The Town of Banff is located within the region of Treaty 7. Signed in 1877, Treaty 7 encompasses the traditional territory of the Blackfoot Confederacy (comprising the Siksika, Kainai, and Piikani Nations), the Tsuut’ina First Nations, and the Stoney Nakoda Nations of Chiniki, Wesley, and Bearspaw (Town of Banff n.d.). For more on the cultural history of Lake Minnewanka, see Parks Canada (2017). On the relationship between Indigenous peoples and Parks Canada, see Hamilton (2017).

⁴¹ *Princess* is not the first composition in which Schafer draws on Indigenous languages, nor is it the first work by the composer that shares a connection to the Banff area. Schafer refers to Lake Minnewanka in the title to his choral work *Miniwanka or the Moments of Water* (1971). *Miniwanka* both names and imitates various states of water, with text in Achomawi, Chinook, Crow, Dakota, Klamath, Luiseno, Natick, Otchipwe, Salish, and Wappo.

⁴² Victoria Adamenko (now Bowles) has coined the term “neo-mythologism” to explain the use of ancient myths in twentieth-century music (Adamenko 2007).

⁴³ Ellen Waterman (2001) views Schafer’s engagement with Indigenous cultures as problematic, whereas Harley (1998) sees his approach as one of appreciation. In recent years, the Canadian government has taken steps to address the abuses of Indigenous peoples in Canada. See Truth and Reconciliation Commission of Canada (2015) and National Inquiry into Missing and Murdered Indigenous Women and Girls (2019). For more on appropriation in music, see Born and Hesmondhalgh (2000) and Taylor (1997).

audience sacrifices the comforts of the concert hall, and performers permit the environment to shape their sounds. In exchange, audience members and musicians are given the opportunity to participate in the soundscape in new ways (as listeners and as sound-makers). It is at locations such as Two Jack Lake, Wildcat Lake, and Lake Muskoka that nature is arguably free to self-govern, where nature is generally perceived as being “untouched.”

Schafer’s aim of re-sensitizing performers and audience members alike can be understood specifically in a Canadian context. Canadian identity and nature are two prominent—and arguably inseparable—themes in the music and writing of Schafer. In his collection of essays *On Canadian Music*, Schafer claims that Canadians have relied largely on colonial models for their identity and, as a result, have failed to distinguish their own culture (Schafer 1984, viii–ix).⁴⁴ Schafer’s concern extends to the relationship between Canadians and the natural environment. Ellen Waterman explains, “For Schafer, the central problem in the development of Canadian identity is the alienation of Canadians from the vast northern wilderness they inhabit. Only by seeking an integrated relationship with the land can Canadians develop an indigenous cultural identity” (Waterman 1997, 72). As Waterman observes, Schafer’s concern is that Canadians must connect to the landscape in order to develop a sense of inclusion and belonging. One challenge here is the perpetuation of colonial discourse through ideas of land ownership (i.e., in order to “develop an Indigenous cultural identity” Canadians must claim the land that alienates them).

Along similar lines, Schafer claims that if Canadian music is to break away from its reliance on European cultural models, composers need to identify with the natural environment that defines their nation-state. In “Canadian Culture: Colonial Culture” (1983), Schafer provides *Music for Wilderness Lake* and *Princess* as examples of works where culture is shaped by climate and geography. Echoes play a key role in this process of connecting to the landscape. Echoes bring life to the landscape by activating the terrain and presenting a restatement of an original voice. Inasmuch as echoes repeat a sound, they depend on the type of sound produced, atmospheric conditions, as well as the terrain. In an ideal setting, echoes can be heard in all their acoustic detail. In this way, the “hi-fi” environment is the ideal place to experience echoes in Schafer’s work.

Echoes are also a way to empower voices. Such is the case with the Princess of the Stars who is held captive under the lake. Echoes empower the Princess by re-sounding her aria far beyond her immediate location. Her voice is slowed and amplified, and the timbre is modified. If we understand timbre as what defines her identity from the perspective of sound, then in these moments the echo is simultaneously its own entity and a heightened version of the original—we hear the Princess, but we also hear the terrain shaping her voice. In other words, echoes are both an extension of an original sound (a repetition) and their own entity (a “new” sound that is shaped by the land). Some listeners may interpret the dual presence of the voice of the Princess and the re-sounding of

⁴⁴ For more on the complex topic of Canadian identity, see Resnick (2005), Kymlicka (2003), Grace (2001), Francis (1997), Shields (1991), and Taylor (1991).

her voice as synergistic. However, this is not a union between a human voice and the physical environment as “voiced” by outdoor acoustics. Instead, the echo assists the Princess in her call for help; echoes pass her message out beyond the lake.

In light of Schafer’s idealization of a past time when humans were in an assumed balance or harmony with the earth, echo can be interpreted *as* past. Temporally, the past is being re-sounded in the present in *Princess*. The voice of the Princess can be heard as being in the past: she is captured below the lake and the audience hears her cries as an utterance that carries from the past into the present. Again, echoes are achieved by carrying an original sound (uttered in the past) into the present through sound reflection. The Princess’s cries are echoes heard in the landscape surrounding the lake. Another interpretation is that the echo is the voice of the land itself: echo is created by sound reflecting off various surfaces—rocks, trees, water, etc. As such, the land “speaks” back. In other sections, such as “The Dawn Light Breaks” and “Arrival of the Dawn Birds,” performers echo other musicians. This combination of actual echoes and metaphorical ones achieves one of Schafer’s primary goals: to create an all-sensorial wilderness experience that can be utilized as a method to invite a return to an idealized past where humans become part of a larger, truly grand Canadian landscape.

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ABSTRACT

Canadian composer and acoustic ecologist R. Murray Schafer is known for his outdoor works. Other scholars have considered the collaboration between musicians and the physical world in Schafer's compositions and have linked performer-environment interaction with Canadian identity and environmentalism. Yet the role and meaning of outdoor acoustics in Schafer's music remains understudied. This article investigates the aesthetics of echo in Schafer's outdoor theatre work *The Princess of the Stars*

(1981–4). Echo not only sends an original sound back from a surface but also offers insight into the role that musical sounds play in prescribing an interpretation of nature.

RÉSUMÉ

Le compositeur canadien et écologiste acoustique R. Murray Schafer est connu pour son travail artistique en extérieur. Un certain nombre de chercheurs ont examiné l'interaction entre musiciens et environnement physique dans les compositions de Schafer et ont établi un lien entre ces interactions et l'environnementalisme ainsi que l'identité canadienne. Le rôle et les implications de l'acoustique extérieure dans la musique de Schafer sont toutefois encore négligés par la recherche. Cet article examine l'esthétique de l'écho dans l'œuvre théâtrale de Schafer intitulée *The Princess of the Stars* (1981–4). On montre ainsi que l'écho renvoie non seulement un son d'origine par l'entremise d'une surface, mais qu'il offre aussi un aperçu du rôle des sons musicaux dans la prescription d'une certaine interprétation de la nature.

BIOGRAPHY

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