

Chapter 1 - Introduction

[Abstract](#)

[Acknowledgments](#)

[Chapter 1](#)

[Chapter 2](#)

[Chapter 3](#)

[Chapter 4](#)

[Chapter 5](#)

[Chapter 6](#)

[Chapter 7](#)

[Chapter 8](#)

[Chapter 9](#)

[Chapter 10](#)

[Chapter 11](#)

[Appendix A](#)

[Appendix B](#)

[Appendix C](#)

[Appendix D](#)

[Bibliography](#)

In the winter of 1989, on Peterborough's community radio station, Trent Radio, I heard Hildegard Westerkamp's Cricket Voice. I was transported into a world in which the song of a single cricket reverberated and resonated in an expansive place, in a way that I had never heard before. Moreover, I felt urged to compose. It was an odd sensation. I had grown up listening to and playing a wide variety of music, and had always been drawn to electroacoustic music (even though initially I didn't call it that) since first hearing it in England at a very early age.¹ I had heard the work of hundreds of composers, and had never felt drawn to compose electroacoustic music before this. Yet now a powerful desire to record sounds and work with them on tape caused me to go out, rent equipment, and begin. Since then, I have discovered that, through her composition, teaching, and radio work, Westerkamp has had a similar effect on other composers, and is a particular source of inspiration to many women composers in Canada. I believe that this is due to the way she approaches soundscape. In the liner notes to Westerkamp's recent CD, *Transformations*, American composer Pauline Oliveros says:

One can journey with her sound to inner landscapes and find unexplored openings in our sound souls. The experience of her music vibrates the potential for change. Her compositions invite interaction a chance to awaken to one's own creativity.²

In this dissertation, I consider the significance of Hildegard Westerkamp's work to current scholarship in the area of feminist epistemology, and to contemporary electroacoustic music in the genre of soundscape composition. I focus specifically on her receptive, dialogic approach to particular places and their sonic, social, political and technological resonances.

The title of this dissertation, "Sounding Places," has several implications. It refers first to Westerkamp's insistence on a way of working that I call sounding, referring to the mariner's slow and careful navigation through unfamiliar waters, finding a channel through invisible topography.³ Westerkamp takes time to listen to places in depth in order to understand them, moving slowly and carefully through landscapes, listening to their resonances. Sounding places is also a term to describe the pieces that she composes, which explore the intricate sonic relationships of active environments, places that are sounding. The title also points to the importance of the concept of place in my discussion: the places where pieces are composed and performed, the mediated locations (such as radio shows or CDs) where the pieces are heard, and the places evoked in the responses of listeners.

The phrase "situated conversations" in my subtitle refers both to Westerkamp's approach to composition and to my method of analysis of her work. Donna Haraway writes: Situated knowledges require that the object of knowledge be pictured as an actor and agent, not a screen or a ground or a resource, never finally as slave to the master that closes off the dialectic in his unique agency and authorship of "objective" knowledge ... Accounts of a "real" world do not, then, depend on a logic of "discovery" but on a power-charged social relation of "conversation." (1991: 198) Consideration of the power of social relations in the construction of knowledge is also important in the work of Lorraine Code, who has developed a feminist epistemology that approaches knowledge as a social construct produced and validated through critical dialogue, engaged with the subjectivity of the knower. When I think of Westerkamp's soundscape work, I hear conversations with active sound environments in specific places in which she is always aware of her own position as recordist. My method of analysis of her work makes evident the diverse conversations between composer and listeners, composer and researcher, musical work as composed and as heard. In each of these conversations, the actors are situated, emplaced.

But Code's ideas are more fundamental to my work even than this. This dissertation is in many ways an exploration of the epistemic potential of friendship. In her discussion of the importance of second persons to the construction of knowledge, Code in distinction from feminist thinkers such as Sara Ruddick who suggest maternal thinking as a model proposes friendship as an epistemic paradigm:

In place of asserting a "natural," "found" sisterhood, appeals to friendship's epistemic dimension open up creative possibilities for achieving sound, morally and politically informed alliances, in which sisterhood, as Bidy Martin suggests, "is achieved, not assumed; it is based on affinities and shared but not identical histories." Alice Walker's conception of the "rigors of discernment" that such achievements demand; Hannah Arendt's alignment of friendship with thinking, a considered thoughtfulness, mutual respect her claim, for example, that "the dialogue of thought can be carried out only among friends" counters traditional associations of women's friendships with irrationality and triviality. At their best, women's friendships promote forms of solidarity that "are grounded not in claims to victimization but ... in the convergence of shared perspectives, shared competencies and shared pleasures." (1991: 102-103)

In part, this dissertation explores how the growing friendship between Westerkamp and me opens up creative possibilities for a sound alliance between us, and contributes to our knowledge. This theme emerges throughout the dissertation, but most particularly in the methodologies chapter, the chapter on soundwalking, the chapter on Moments of Laughter, and in the conclusions, where I discuss some of the dimensions of this

continuing dialogue. This is a friendship that began with my curiosity about her work, and extended from there into many other areas of our lives. We have stayed at each others' homes, shared intimate details about our life histories, our children have met, and we have walked for miles together. She has trusted me to treat her and whatever knowledge she gives me with respect, as she treats the inhabitants of the soundscapes that she works with in her compositions.

Westerkamp's approach to composing is based on listening to the sounds of a place, and using electronic means to subtly highlight the voices of that place, drawing attention to its sonic specificities and musicalities. Because of Westerkamp's insistence on the specificity of places, it is important to consider current scholarship about place and music. Chapter Two begins with a discussion of the importance of the concepts "absolute" and "program" as they affect contemporary composers' approaches to place in music. I consider these concepts in light of current critical anthropological and geographical constructions of place.

In Western concert music, place has been considered important in relation to the musical societies or repertoires of a location. The physical effect of the sound environment and its significance to the compositional approaches of concert music composers has been discussed only rarely until recently, and traditionally has been considered an extramusical concern. For instance, the title of a thesis on environmental references in the work of R. Murray Schafer is called "Extramusical References in the Works of R. Murray Schafer" (Bradley 1983, my emphasis). Some recent publications about concert music, most notably *The Place of Music* (Leyshon, Matless and Revill 1998), are beginning to consider the influence of place in the compositional practices of certain composers. My discussion of Westerkamp's approach to place contributes to this literature.

Although some composers have succeeded in creating evocative images of places using acoustic instruments,⁴ tape recording has allowed electroacoustic composers to work with the actual sounds of places. Still, there has been very little writing until recently in this field about approaches to place. Among more recent examples, Trevor Wishart discusses the use of landscape in electroacoustic music. His focus is on the generalizable, symbolic properties of landscapes, not on the acoustic distinctions and relations among specific landscapes, and their relationships with social, political and geographical contexts. In his discussion of his work *Red Bird*, he generalizes the morphology of landscapes in order to create a symbolic virtual landscape that mimics the spatial qualities of real landscapes, without being closely related to any particular one. Wishart thinks of the sounds in *Red Bird* as symbols, and associations of meaning are derived from juxtapositions and gradual transformations between sounds that are not related to existing places:

The transformations [of sounds] are neither simply relatable to existing acoustic spaces, nor do they relate to any conceivable or visualizable events in the real world ... we find ourselves travelling in a dream landscape which has its own logic." (1986: 52) While Westerkamp considers the symbolic meaning of landscapes in her work, this is not the main focus. She maintains links with events in the real world throughout her play with the boundaries between dream and reality. Her discussions of her work focus on the particularity of places, and her situated perspective as recordist:

... the recordist's position and perspective, the physical, psychological, political and cultural stance shaping the choices when recording. My choices are influenced by an understanding of the sonic environment as an intimate reflection of the social, technological and natural conditions of the area. (Westerkamp 1994: 89)⁵ The logic of Westerkamp's compositions is a logic derived from conversations with the sound environment, a logic that reflects her experience of that environment: its transformations within her imaginary always shift and return to the outside world, echoing in a slightly different way each time.

Westerkamp's approach to place in soundscape composition has certainly been affected by her association with the World Soundscape Project (WSP) in Vancouver in the 1970s. The work of the WSP has received little mention in scholarly work about electroacoustic composition. As I discuss in my Master's thesis on the work of Canadian women composers of electroacoustic music (McCartney 1994: 15-17), there has been little said in international academic literature about the development of electroacoustic music in Canada as a whole, despite Canada's important contributions in acoustic ecology,⁶ *musique acousmatique*, and sound environments in virtual reality. Some international authors do not mention Canadian work at all, while others briefly discuss work at the University of Toronto studio, or early work by Hugh Le Caine at the National Research Council in Ottawa. Canada has generally been perceived as marginal to electroacoustic activity, with most of the literature concentrated on developments in Europe and the United States.

The compositional work done by members of the World Soundscape Project (WSP) at Simon Fraser University in the 1970s is not mentioned at all in texts devoted to electroacoustic composition, perhaps because the project primarily emphasized research and education about the soundscape. On the other hand, they have been very productive and have published widely in the fields of music education,⁷ communications,⁸ radio art,⁹ and acoustic ecology.¹⁰ Most of the project members were composers, including Westerkamp, R. Murray Schafer (who directed the project), Barry Truax, Peter Huse, Bruce Davis, and Howard Broomfield. All of these composers produced musical works as a result of their association with the WSP. The only time that these works have been discussed in texts on contemporary electroacoustic composition

is in recent writings by Barry Truax.¹¹ This dissertation will contribute to the literature on electroacoustic composition in its detailed discussion of the electroacoustic compositions of Hildegard Westerkamp.

The second part of Chapter Two continues the discussion of place in music by focusing on Canadian music. I refer to contemporary Canadian literary, art, and musicological theory in my discussion of the idea of Canada as a place within concert music of the last century, how some Canadian concert composers deal with places within Canada, and how their ideas of place have interacted with current international conceptions of what Canada is. This section situates Westerkamp's work within the Canadian concert and electroacoustic music communities. I also differentiate the generalized myths that characterize nationalist music from music that refers to specific places, considering also how associations with current conceptions of the "true North" can affect a composer's canonicity and acceptance in the national and international communities.

Soundscape composition as a genre has remained relatively marginalized within the field of electroacoustic music. In Chapter Three, I focus on the development of contemporary soundscape composition, its lack of canonical acceptance within the field of electroacoustic music, and the epistemological significance of its positioning within this field, using feminist epistemology as a critical lens. I discuss definitions of electroacoustic music, and the categorization of the field in several electroacoustic textbooks, focusing particularly on how tape music, and more specifically soundscape music, is represented. I then examine the dialogues among several composers (Pierre Schaeffer, Karlheinz Stockhausen, John Cage, and Pierre Boulez) who influenced thought about electroacoustic composition in the late 1940s and 1950s, at the time when the first studios began to be established. Finally, I discuss two women composers, one whose influence was circumscribed by her isolation (Daphne Oram), and one who has influenced Westerkamp's work (Pauline Oliveros), and end with an investigation of Westerkamp's thinking. I discuss how the canonical positions of these composers, or their failure to achieve canonical status within the field of electroacoustic music, is related to their acceptance of assumptions that structure the genre.

One of the assumptions that has structured conventions of tape music is the idea of the isolated "sound object" [objet sonore] originated by Pierre Schaeffer. Soundscape composition considers sounds in relation to each other, in relation to listeners, and as intrinsic sound objects. Barry Truax describes this contextual approach as concerned with listeners' experiences and associations with sounds.

In the soundscape composition ... it is precisely the environmental context that is preserved, enhanced and exploited by the composer. The listener's past experience, associations, and patterns of soundscape perception are called upon by the composer and thereby integrated within the compositional strategy. Part of the composer's intent may also be to enhance the listener's awareness of environmental sound. (Truax 1984: 207)

Truax focuses primarily on the relationship between composer and listener, in which the composer calls on and integrates the listener's sonic associations. Awareness of the sonic environment is a secondary intent in his description, partial and possible. Hildegard Westerkamp describes an ongoing interaction in which the environment is central. "The word soundscape always implies interaction between environment and individual, and between environment and community" (Westerkamp 1988: 3). This contextual approach of soundscape composition is often undervalued or misunderstood in the field of electroacoustic music which values skillful manipulation of isolated sounds as abstractions, following the traditions of *musique concrète* and *elektronische Musik*.¹³

Recent work in feminist musicology questions the basis of values in musical communities using insights about the relationships between power and knowledge derived from the work of feminist epistemologists, including the analysis of such gendered dichotomies as the culture-nature and abstract-concrete pairs, and their relationship to canonical issues.¹⁴ This dissertation extends those insights to a consideration of the epistemological bases of musical values in the field of electroacoustic music, specifically focusing on the position of soundscape composition in relation to the electroacoustic canon. My emphasis in this chapter on the writings and musical works of several important composers in the field facilitates a discussion of their particular approaches, and of how they reflect, express, and contest these epistemological roots through their work.

Westerkamp has developed a way of working in which she constantly questions her own position as composer, recordist, presenter, and listener. Her Master of Arts in Communications at Simon Fraser University was a critical examination of her own life history as it shaped her musical experience, as was the performance piece *Breathing Room 3*, written in 1991. Chapter Four is a biography that takes these works as a starting point, then continues to the present day, documenting Westerkamp's life and work, and showing how her various roles as composer, radio artist, educator, acoustic ecology activist and mother have intersected in her work. Many of Westerkamp's earlier pieces were composed specifically for radio, produced as a program series called "Soundwalking" on Vancouver Cooperative Radio in 1978-79, based on the soundscapes of various places in the Vancouver area, heard as she walked through and recorded them. She later took part in the "Radio Rethink" project at the Banff Centre for the Arts. The pieces that she created for these projects ride the borders between narrative documentary and musical discourse, between broadcasting and listening.

In her teaching at Simon Fraser University, Westerkamp has encouraged students to think of the filtering and sound processing capabilities of their own bodies, and their bodily relationships with technology and with the sound environment. Her work as a founding member of the World Forum for Acoustic Ecology has combined editorial and educational roles with composition and research. Most recently, she has led workshops in Vancouver, India, Japan and Brazil that integrate education and acoustic research with group and individual composition by local and international composers. A discussion of her life and work therefore contributes to thinking about music technology, education and acoustic research as well as contemporary composition, suggesting an approach which integrates these disciplines rather than delineating them.

In Chapter Five I discuss the analytical methods that I use to approach Westerkamp's work. Electroacoustic music has defied traditional methods of analysis that rely on scores, because they rarely exist in this genre. My approach brings together critical and feminist theory with James Tenney's gestalt approach to musical analysis, and a wide range of listener responses, to discuss the music in context. While work with listener responses is fairly well developed in the analysis of popular music and in ethnomusicological projects, it has not received as much attention in the analysis of contemporary Western concert works. There are very few analytical projects in electroacoustic music that refer to listener responses, and those that do exist tend to cite responses en masse, without specific quotes or discussion of the relative authority of different listeners. My project contributes to reception studies in its focus on bringing the responses of listeners from varied listening backgrounds directly into the discussion of the music, as well as considering relationships between these responses and the gestalt perceptual principles elaborated in Tenney's work. This provides the means to discuss sonic, musical, social, and political issues that arise in the works. While Westerkamp is interested in conveying a sense of place, each listener constructs a different place¹⁵ depending on their own experiences and memories. My method of analysis explores relationships among the perceptions and attitudes of listeners, those of the researcher, and those of the composer.

I chose five works for analysis. Kits Beach Soundwalk is related to Westerkamp's important work as a radio artist at Vancouver Cooperative Radio. Cricket Voice reflects Westerkamp's ideas about wilderness and acoustic ecology. Moments of Laughter is an example of a piece for live performance and tape, demonstrating her approach to the performer, and to the relationship between performer and tape. It is also an exploration of the musical importance to her of children's voices. I chose Breathing Room because this short tape piece was intended to encapsulate her style. Finally, I focused on Gently Penetrating Beneath the Sounding Surfaces of Another Place as representative of her recent international work and her deep interest in the Indian soundscape.

In Chapter Six I discuss the importance of soundwalking to Westerkamp's association with acoustic ecology, to her early compositional formation, as well as to her work as a radio artist. Kits Beach Soundwalk is a concert piece that refers to Westerkamp's earlier Soundwalking radio series. In August of 1997, I did a soundwalk with Westerkamp, which took place in Queen Elizabeth Park, Vancouver, a location which is the subject of her first article on soundwalking (Westerkamp 1974). Westerkamp recorded the soundwalk, with both of us listening using headphones, while I photographed it. This resulted in a website about the soundwalk, which includes discussions of listening strategies, and the relationship of soundwalking to compositional practice. This is currently online at .16

I also produced an interactive multimedia installation based on this soundwalk.¹⁷ In this installation, I composed a number of short soundscape pieces from Westerkamp's initial recording, using a compositional style similar to hers. While I have worked in soundscape composition for some time, this particular experience was singular. I was working with Westerkamp's recording, and was influenced by our conversation about the place, while developing my own response to the soundwalk. The imagery associated with each musical piece was developed based on listening to the soundwalk, and using the theoretical bases of gestalt musical analysis. A description of the compositional process involved in the creation of this work is included in Appendix G. These two multimedia projects gave me a chance to engage further with the types of compositional processes that Westerkamp uses, exploring this connection between us, while noting differences in our approaches, such as my use of soundwalks as a more integral part of the compositional process, as well as my preference for multimedia and online projects as a mode of presentation.¹⁸

In Chapter Seven, I analyze Cricket Voice, a wilderness piece which has been included on two major electroacoustic anthologies. This is one of Westerkamp's more abstract works: it does not include any spoken words, or live performance elements. Because of its appearance on the anthologies, it was for many years one of her best-known works. It is based on the night song of a single cricket, recorded in the Mexican Zone of Silence, a desert area. It is a piece both about the cricket in the desert and about the urban person's experience of desert: as a spacious and sparse environment that provides respite from the crowded noise of the city, as an alien environment that may seem hostile, as a source of spiritual strength. A particularly interesting group of listener responses to this work imagined an alien species of giant crickets. I discuss these responses in relation to sound design in contemporary science fiction film, particularly the movie *Alien*. Unlike the majority of Canadian works that deal with the idea of wilderness, the environment of Cricket Voice is neither a Canadian wilderness nor a northern environment. At the end of this chapter, I compare Westerkamp's approach to Cricket Voice with Murray Schafer's *Princess of the Stars*, specifically in relation to ideas about

northernness, authenticity, and technology.

Moments of Laughter, the subject of Chapter Eight, is a performance piece based on Westerkamp's musical relationship with her daughter. I performed this piece myself as part of the process of analyzing it. This piece raises really interesting questions about what different people hear as music, and how this is related to what they believe should remain private. Moments of Laughter transgresses the border between private and public, bringing the sonic relationship between a mother and child into a public place, the concert hall. It also raises many interesting questions about the shifting identities of mothers and children, and how these are voiced, how they become stereotypes. Westerkamp based the piece on recordings of her daughter's voice from birth to seven years, recordings begun by Westerkamp and continued by her daughter once she was old enough to operate the recorder. She derived the title of the piece from the work of Julia Kristeva, who describes moments of laughter as the first times that a child recognizes others as distinct from herself: unlike theorists who describe this realization in terms of existential angst, Kristeva argues that the child feels joy on realizing that another is willing to provide pleasure and relief. She further links this feeling of joy to creative urges:

Oral eroticism, the smile at the mother, and the first vocalizations are contemporaneous ... The inaugural sublimation ... brings us not only to the foundations of narcissism ... but to the riant wellsprings of the imaginary. The imaginary takes over from childhood laughter: it is a joy without words. (1980: 283) This quote indicates some of the transgressive issues raised by this piece: the association of oral eroticism with motherhood and mother-child vocalizations is one that is repressed in modern Western culture. The further association of early vocalizations with a wellspring of creativity, a laughing imaginary built upon joy without words recognizes an importance in the sounds of children rather than dismissing those sounds as "baby babble." The CD ROM includes excerpts of Moments of Laughter linked to images produced by adolescent girls as they listened to it, and score excerpts that indicate the relationship between tape part and performer.

In Chapter Nine, I analyze Breathing Room, a miniature intended to reflect Westerkamp's overall style, which she created for an anthology of short electroacoustic works.¹⁹ I interpret Breathing Room as a representation of a cyborg body, using Donna Haraway's image of the ironic cyborg, part organic and part cybernetic, an image which is "about the tension of holding incompatible things together because both or all are necessary and true" (1991: 149). Westerkamp's Breathing Room is structured around the breath: lying in the studio, she metaphorically breathes in a variety of recorded sounds birds, water, insects, machines impelled by a mechanical heart, sonically reflecting her ambivalent feelings about technology, maintaining throughout a tension between heart and breath that never resolves.

In Chapter Ten, I analyze Gently Penetrating Beneath the Sounding Surfaces of Another Place, which is representative of Westerkamp's current international work.²⁰ In recent years, Westerkamp has been invited to several international locations to lead soundscape workshops: in Japan, Brazil, Israel and India. She has visited India most frequently, and Gently Penetrating... as well as the India Sound Journals are based on her experiences of sound in New Delhi. In this work, she places herself in a position which is in some ways similar to, yet in other ways different from her position when she produced the Soundwalking series, years earlier: similar in that she is a newcomer to the culture, different in that she is not a resident of that culture, but a visitor. Her position of authority is different, too: she is invited to lead workshops in these places as an expert in soundscape composition, an insider to the soundscape at the same time as she is an outsider to the culture. I analyze this piece in relation to a recent presentation of Westerkamp's in which she considers this doubled position of the soundscape recordist, both inside and outside the soundscape. One of the responses to this work describes Westerkamp as being able to move fluidly between time, space and cultures. This evocative description led me to consider Westerkamp's work in this chapter in terms of Homi Bhabha's (1992) formulation of the "time-lag" as a liminal space that encourages re-location and cultural difference, and of Rosi Braidotti's (1994) concept of the figurative mode in the production of nomadic subjects. Westerkamp creates a liminal space by transforming sounds to evoke both the place represented as well as a range of other related places, encouraging the listener to listen to the place of recording and link it to memories of other places in their own experience. "In the Studio" includes an introduction to how Westerkamp created Gently Penetrating. This multimedia presentation includes imagery from the place represented in the composition as well as computer score fragments linked to sound files, accompanied by Westerkamp's comments about her use of each file in the resulting composition, and its relationship to the context of the sound environment.

In the conclusions, Chapter Eleven, I consider in what ways this dissertation works as a situated conversation, between composer, researcher, and listeners, and in what ways the conversation has hardly begun. Part of this discussion will focus on how I am presenting this dialogue, the means I have chosen. I was drawn to a hybrid form, part text and part hyper-text, because of the ability of hypertext to present images and sound with text, and because of its potential for intersubjective interactivity. While computer technologies are well known for their ability to create completely imaginary, competitive virtual environments such as video games, they are also becoming known for their function as social arenas encouraging communication over distance and interaction that goes beyond the mouse-click to engage "conscious agencies in conversation, playfully

and spontaneously developing a mutual discourse."²¹ Current research in what Rosi Braidotti²² calls "cyberfeminism" suggests some approaches used by feminists to construct virtual environments that are situated and intersubjective. These range from new approaches to video games,²³ multimedia performance,²⁴ and interactions through the internet,²⁵ which attempt to encourage intersubjectivity through the format of the presentation as well as connections to places and conversations with people beyond the confines of the computer.

The multimedia format gives people access to materials such as colour imagery and music that are not usually available in a written dissertation, as well as scores, music analysis, bibliography, discography, footnotes and so on, with choices about how these are presented. In my website, I employ hypertext links to related academic and artistic internet sites, for up-to-date information and connections to organizations such as the World Forum for Acoustic Ecology. Visitors to the site are invited to converse with me through email links on the site. At the same time, I have often chosen to use more traditional forms of writing in order to pay attention to practical concerns (wanting to read sometimes away from a computer screen, for instance). The conclusions will consider interactivity in the hybrid form of the dissertation, in the developing relationship between Westerkamp and myself, and in the listener responses.

1 On the program Dr. Who. After thirty years, I can still hear it. I wasn't aware at that time that the music for this British TV show was composed by Tristram Cary, an electroacoustic composer who is perhaps better known in the electroacoustic world for his work on the VCS3 or Putney synthesizer (Chadabe 1997: 53-54; 150-152).

2 Oliveros, Pauline. "The Music and Soundscapes of Hildegard Westerkamp." Transformations CD liner notes. Montréal: DIFFUSION i MÝDIA, 1996, 18.

3 Especially in difficult weather: "In fog, mist, falling snow or heavy rainstorms, whether by day or by night, the signals described in this Article shall be used" (The International Regulations for Preventing Collisions at Sea Article 15, paragraph 4. This set of regulations is known colloquially to seamen as the Rules of the Road at Sea and was adopted by the International Convention for the Safety of Life at Sea (SOLAS) in 1929). Mariners would listen to fog horns, ships' sirens and echoes to judge distances from other vessels and the shoreline. Officers on sea-going vessels are expected to know all the rules. I am grateful to my father, Capt. Jeffrey McCartney, for this information. As an officer and examiner of Masters and Mates, he was expected to know these rules by heart and be able to quote them.

4 For example, Claude Debussy's *La Mer*, or R. Murray Schafer's *Waves*, which uses the timing of ocean waves as a structural basis.

6 Acoustic ecology is the study of the relationship between living organisms and their sonic environment or soundscape. The World Forum for Acoustic Ecology (WFAE), founded in Banff, Alberta in 1993, is an international interdisciplinary coalition of individuals and institutions concerned with the state of the world soundscape. The Canadian Association of Sound Ecology (CASE) is a regional affiliate of WFAE. Westerkamp and I are founding members of both organizations.

7 For instance, Murray Schafer's *A Sound Education*, Indian River, Ontario: Arcana, 1992; and *The Thinking Ear*, Indian River: Arcana, 1986.

8 For example Barry Truax' *Acoustic Communication*, Norwood, NJ: Ablex, 1984.

9 See for instance Schafer's and Westerkamp's contributions to *Sound By Artists*, Banff AB: Walter Phillips, 1990; and Westerkamp's contribution to *Radio Rethink: Art, Sound and Transmission*, Banff, AB: Walter Phillips, 1994.

10 The most obvious example here is Schafer's well-known *The Tuning of the World*, Toronto: McClelland and Stewart, 1977. There were many other publications produced as a result of the work of the World Soundscape Project; however Schafer's large volume is the best known internationally, having been translated into several different languages.

11 Truax, Barry. *Acoustic Communication*. Ablex: Norwood, NJ, 1984. This book, primarily concerned with an acoustic approach to communication studies, has a chapter on electroacoustic composition. Soundscape composition is discussed within that section. The more recent "Soundscape, Acoustic Communication and Environmental Sound Composition" (1996) focuses specifically on soundscape work at Simon Fraser University in relationship to contemporary composition.

12 An approach to working with recorded sounds developed by Pierre Schaeffer in Paris shortly after WW II. Later work by this studio became known as acousmatic music.

13 An approach developed by composers working at the Cologne studio in the early 1950s, using electrically-produced sounds composed according to the serial method.

14 See for instance Citron (1993) for a discussion of the construction of generic norms in Western art music; McClary (1991) for a brief discussion of the norms of electroacoustic music in relation to the work of performance artist Laurie Anderson.

15 I use the word 'place' here advisedly. Westerkamp says that she wants to transport

her audience to a place when they listen.

16 I have expanded this soundwalk site to include more recent soundwalks that I have done at sound art festivals in Kitchener, Ontario, and Chicago, Illinois. The site was recently selected to be part of the Maid in Cyberspace Encore online exhibition curated by Studio XX in Montréal.

17 This resulted in a show at the Eleanor Winters Gallery at York University, a video installation at the Kitchen in New York City as part of the Music from Nature festival, and a show at the Modern Fuel Gallery in Kingston, Ontario.

18 I have published an article about these projects and the influence of Westerkamp on my compositional style: "Soundwalk in the Park with Hildegard Westerkamp," Musicworks 72, Fall 1998: 6-15, with music excerpts from the installation on the accompanying CD.

19 Breathing Room. "Lectroclips." 1990. Montréal: empreintes DIGITALes. CD. DIFFUSION i MÝDIA. The producers asked each composer to create a piece under three minutes in length that encapsulated his or her musical style.

20 This is the same piece that is the basis of the "In the Studio" section of the CD ROM.

21 Allucqure, Rosanne Stone. "Sex, Death and Machinery Or How I Fell In Love With My Prosthesis." The War of Desire and Technology at the Close of the Mechanical Age. Cambridge, Mass: MIT Press, 1995: 11.

22 Braidotti, Rosi. "Cyberfeminism with a difference."
http://www.let.ruu.nl/somwnes_studies/rosi/cyberfem.htm. Accessed February 7, 1997, 5:25 pm. Last modified: July 3, 1996.

23 See, for instance, Sanders, Toby. "Boys and Girls Take to Oregon Trail II." Global Navigator Inc. <http://gnn.com/gnn/meta/edu/features/archive/ot2.html>. Accessed March 7, 1996; Koch, Melissa. "Education Center: No Girls Allowed!" Global Navigator Inc. <http://www.gnn.com/gnn/meta/edu/features/archive/gtech.html>. Accessed March 14, 1996; Favre, Gregory. "Logged On or Left Out? Women and Computers: A Sacramento Bee special report." The Sacramento Bee online. <http://www.nando.net/sacbee/women/> Accessed March 14, 1996; Cassell, Justine. Personal homepage: "Justine Cassell." <http://justine.www.media.mit.edu/people/justine/>. Accessed March 7, 1996.

24 Recent multimedia performances by myself and Selena Cryderman define interactivity not merely by the inclusion of mouse-clicks but by mutual discourse between the performers. See for instance <http://www.finearts.yorku.ca/selena/sonic.html>. Also, see the discussion of interactivity in Allucqure 1995: 10ff.

25 Keng Chua. "Gender and the Web." AusWeb '95.
<http://www.scu.edu.au/ausweb95/papers/sociology/chua/>. Accessed March 6, 1996; Lawley, Elizabeth Jane. "Computers and the Communication of Gender." 1995.
<http://www.itcs.com/elawley/gender.html>. Accessed March 6, 1996.

[home](#) [introduction](#) [in the studio](#) [moments of laughter](#) [soundwalking](#) [dissertation](#)