

Space and Spatialization in Contemporary Music: History and Analysis Ideas and Implementations

Maria Anna Harley



Ph. D. Dissertation

McGill University, School of Music
1994, Montreal, Quebec, Canada

*Space and Spatialization in Contemporary Music:
History and Analysis, Ideas and Implementations*

by

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PDF Reprint by Moonrise Press, Los Angeles. The file contains 465 pp. with: xvii pp. of preliminary matters + 391 pp. of text + 52 pp. of music examples, with 5 pp. of additional information; as well as charts, diagrams, bibliography and index.

Moonrise Press - www.moonrisepress.com - P.O. Box. 4288. Sunland, CA 91041-4288.

References and Citations

Maria Anna Harley's Ph.D. Dissertation

*Space and Spatialization in Contemporary Music:
History and Analysis, Ideas and Implementations*

Bibliographical Citation Format:

Harley, Maria Anna (Maja Trochimczyk). 1994. *Space and Spatialization in Contemporary Music: History and Analysis, Ideas and Implementations*. Ph. D. Dissertation. Montreal, Quebec, Canada: McGill University, Faculty of Music. PDF Reprint. Los Angeles, California: Moonrise Press, 2011.

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**SPACE AND SPATIALIZATION
IN CONTEMPORARY MUSIC:
HISTORY AND ANALYSIS,
IDEAS AND IMPLEMENTATIONS**

Maria Anna Harley

Faculty of Music

McGill University, Montreal

June 1994

**A Thesis submitted to
the Faculty of Graduate Studies and Research
in partial fulfillment of the requirements
for the degree of Ph.D. in musicology**

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ABSTRACT

This dissertation presents the history of *space* in the musical thought of the 20th-century (from Kurth to Clifton, from Varèse to Xenakis) and outlines the development of *spatialization* in the theory and practice of contemporary music (after 1950). The text emphasizes perceptual and temporal aspects of musical spatiality, thus reflecting the close connection of space and time in human experience. A new definition of spatialization draws from Ingarden's notion of *the musical work*; a new typology of spatial designs embraces music for different acoustic environments, movements of performers and audiences, various positions of musicians in space, etc. The study of spatialization includes a survey of the writings of many composers (e.g. Ives, Boulez, Stockhausen, Cage) and an examination of their compositions. The final part of the dissertation presents three approaches to spatialization: Brant's simultaneity of sound layers, Xenakis's movement of sound, and Schafer's music of ritual and soundscape.

RÉSUMÉ

Cette thèse présente l'histoire de l'*espace* dans la pensée musicale du vingtième siècle (de Kurth à Clifton, de Varèse à Xenakis) et retrace le développement de la *spatialisation* dans la théorie et la pratique de la musique contemporaine (après 1950). Le texte souligne les aspects perceptuels et temporels de la spatialisation musicale, reflétant ainsi le lien étroit entre temps et espace dans l'expérience humaine. Une nouvelle définition de la spatialisation tire son origine de la notion de l'*oeuvre musicale* d'Ingarden; une nouvelle typologie des plans spatiaux prend en considération des musiques pour différents environnements acoustiques, diverses positions des musiciens dans l'espace de même que le mouvement de ceux-ci et des auditeurs, etc. L'étude de la spatialisation inclut un survol des écrits de plusieurs compositeurs (Ives, Stockhausen, Boulez et Cage, par exemple) de même qu'un examen de leurs oeuvres. La dernière partie de la thèse présente trois approches compositionnelles de la spatialisation: la simultanéité de strates sonores chez Brant, le mouvement du son chez Xenakis et la musique du rituel et l'écologie sonore chez Schafer.

ACKNOWLEDGMENTS

This dissertation presents the results of doctoral research conducted at the Faculty of Music, McGill University (1988-1994; under the supervision of Prof. Bo Alphonse and Prof. Susan McClary). The research was begun at the Institute of Musicology, University of Warsaw, Poland (1986-1988; with Prof. Zofia Helman). This project, spanning two continents and lasting for eight years, has involved interactions with many people to whom I owe debts of gratitude. First and foremost, I would like to thank the composers whose music is the subject of my study and with whom I have discussed various issues of musical spatiality: Pierre Boulez, Henry Brant, Andrzej Dobrowolski, James Harley, Zygmunt Krauze, Cort Lippe, R. Murray Schafer, Marco Stroppa, Judith Weir, Iannis Xenakis. I am particularly grateful for the permission to use unpublished sketches and other material given by Pierre Boulez, Andrzej Dobrowolski, Zygmunt Krauze and Iannis Xenakis.

Since in the word "musicology," *music* is followed by *logos*, I would like to follow my expression of gratefulness to the composers with thanks for those who have assisted me in finding words for my thoughts and who have helped me to think in the first place: my advisers. My interest in spatial topics took shape under the guidance of Prof. Zofia Helman (my M.A. adviser, the director of the Institute of Musicology, University of Warsaw) whose wide knowledge of musicological literature (e.g. Kurth, Zuckerkandl) and friendly encouragement influenced my early efforts. However, most of the research has been conducted and the dissertation written in Montreal, under the supervision of two distinguished scholars. Prof. Bo Alphonse agreed to share in my explorations of vast realms of "space" and music; he allowed me to set up my own objectives and follow an individual schedule. Yet, he made sure that the scope of the project remained comprehensive and that I would not bypass important figures (e.g. Clifton, Varèse). As the Chair of the Department of Theory, he

supported my grant applications without which my work (including travels to Paris, Toronto, and New York) would not have been possible. Finally, Prof. Alphonse discovered many factual and logical mistakes in the first draft of the text and suggested ways of correcting them. For all this, but especially for his wisdom and tolerance, I am truly grateful. Prof. Susan McClary entered the project in 1993 and guided me towards its completion with gentleness and efficiency. Her invaluable insights have helped me to produce a readable and balanced text (its weaknesses, though, are mine; advisers are not responsible for what I have missed or misrepresented). The assistance of Prof. McClary enabled me to find a way through the overabundance of the research material, as well as to focus on important issues, and to complete the dissertation on time. She suggested consultations with professors at the Faculty of Philosophy (for Chapter I) and supported my scholarly endeavours with constant encouragement and wise criticism. I hope that all students are as happy with their advisers as I am with mine.

In addition, I would like to thank the professors from outside the Faculty of Music who offered comments on the first chapter of the dissertation: Prof. Philip Buckley and Prof. Alison Laywine at the Faculty of Philosophy, McGill University, as well as Prof. Jeff Mitscherling at the Faculty of Philosophy, Guelph University. I am also grateful for the clarification of various issues offered by other professors at McGill University: Bengt Hambraeus (Faculty of Music, graduate seminar), Bruce Minorgan (Faculty of Music, Doctoral Colloquium), Steven Huebner (Faculty of Music), and Albert Bregman (Faculty of Psychology).

Dr. Martina Homma shared with me her knowledge of the German musicological and philosophical literature (e.g. Gosztonyi, Sacher); in addition, she presented me with copies of material unavailable elsewhere as well as with a package of A4 paper on which this dissertation was to have been written at the time of drastic paper shortages in Poland. Dr. Heimar Lehnert (Bochum, Germany) explained the principles of his virtual environment project while Judith Weir (England) provided me with information about British composers of spatialized music (Ferneyhough, Bryars, Musgrave, Tavener). Lise Viens graciously translated the abstract into French and, as

a fellow doctoral student at McGill, shared my predicaments and preoccupations. Here, I would also like to express my appreciation to the staff of Marvin Duchow Music Library and to the staff at Interlibrary Loans at MacLennan Library, McGill University.

I gathered insights into the psychoacoustic and electroacoustic aspects of spatialization during my studies at the Faculty of Sound Recording, F. Chopin Academy of Music, Warsaw, Poland (with Prof. Krzysztof Szlifirski, my M.A. adviser, and Profs. Andrzej Rakowski, Nikodem Wolk-Laniewski, and Lech Dudzik). My awareness of, and interest in, Ingarden's aesthetics (Chapter IV) dates back to my studies with Prof. Zofia Lissa and Prof. Zofia Helman at the Institute of Musicology of the University of Warsaw (1976-1986), to whom I am thankful for stimulating my intellectual curiosity which led me to become a musicologist rather than a sound recording engineer.

Next, I would like to express my appreciation for the financial support without which this dissertation could not have been written. In 1990-1992 I was the recipient of a Doctoral Fellowship of the Social Sciences and Humanities Research Council of Canada. (Recently, the same Council awarded me a Postdoctoral Fellowship to be carried out at McGill from July 1994 to June 1996). At McGill University, I also received the Sarah Berlind Memorial Scholarship from the Faculty of Music (1988--1990), a Travel Grant from the Faculty of Graduate Studies and Research (1992), and a Travel Grant from McGill Alumni Funds, Faculty of Music (1993). However, my research trip to Paris in August 1992 could not have been possible without the assistance of Cort Lippe who arranged my stay at IRCAM and provided me with lodgings in his own home (Cort and Lena's hospitality is much appreciated).

The greatest debts of gratitude cannot be expressed in words. I owe a lot to my husband, James Harley, who has actively supported my project from the beginning and has participated in its realization through supplying me with research material (scores, recordings, books, computer maintenance), editing and proofreading drafts of the text, and disputing my "half-baked" ideas. I could rely on his love, patience and willingness to help whenever a need arose. I am thankful for Jim's loving presence

by my side through all the "student" years; this text could not have been written without him. However, the dissertation is offered to two people who have witnessed my scholarly efforts from afar: my parents, Henryka and Aleksy Trochimczyk.

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Luciano Berio, *Circles* (© 1961 Universal Edition, London), Karlheinz Stockhausen, *Carré* (© 1964 Universal Edition, London), Pierre Boulez, *Répons* (© 1988 Universal Edition, London).

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Chapter VI

Excerpts from Henry Brant's *Antiphony I* (© 1968), *Millennium II* (© 1978), *Western Springs* (© 1984), *Meteor Farm* (© 1982), *Voyage Four* (© 1964), *Bran(d)t aan de Amstel* (© 1984), *500: Hidden Hemisphere* (© 1992) used by permission of the publisher, Carl Fischer Inc., New York.

Chapter VII

Excerpts from Iannis Xenakis's *Pithoprakta* (© 1967) and *Eonta* (© 1967) used by permission from the publisher, Boosey & Hawkes, London. Sketches for *Pithoprakta*, *Terretektorh*, *Nomos Gamma* reproduced by permission of Iannis Xenakis. Excerpts from Xenakis's *Terretektorh* (© 1969), *Nomos Gamma* (© 1968), *Persephassa* (© 1970), *Alax* (© 1987) used by permission from the publisher, Editions Salabert, Paris. An abridged and revised version of the text of this chapter is forthcoming as "Spatial sound movement in the instrumental music of Iannis Xenakis" in *Interface, Journal of New Music Research* vol. 23 no. 3 (August 1994). The copyright for this material has been transferred to the publisher, Swets and Zeitlinger bv, Lisse (Holland).

Chapter VIII

Excerpts from R. Murray Schafer's *North/White* (© 1980 Universal Edition [Canada], Ltd., Toronto) used by permission. Excerpts from R. Murray Schafer's *Music for Wilderness Lake* (© 1981 Arcana Editions), *Patria. The Prologue: The Princess of the Stars* (© 1986), *Third String Quartet* (© 1983), *Apocalypsis Part One: John's Vision* (© 1981), *Apocalypsis Part Two: Credo* (© 1986) used by permission of Arcana Editions, Bancroft, Ont.

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