NORTHWESTERN UNIVERSITY

Spectralism in the Saxophone Repertoire: An Overview and Performance Guide

A PROJECT DOCUMENT

SUBMITTED TO THE BIENEN SCHOOL OF MUSIC
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

for the degree

DOCTOR OF MUSICAL ARTS

Program of Saxophone Performance

By

Thomas Michael Snydacker

EVANSTON, ILLINOIS

JUNE 2019

ABSTRACT

Spectralism in the Saxophone Repertoire: An Overview and Performance Guide

Thomas Snydacker

The saxophone has long been an instrument at the forefront of new music. Since its invention, supporters of the saxophone have tirelessly pushed to create a repertoire, which has resulted today in an impressive body of work for the yet relatively new instrument. The saxophone has found itself on the cutting edge of new concert music for practically its entire existence, with composers attracted both to its vast array of tonal colors and technical capabilities, as well as the surplus of performers eager to adopt new repertoire.

Since the 1970s, one of the most eminent and consequential styles of contemporary music composition has been spectralism. The saxophone, predictably, has benefited tremendously, with repertoire from Gérard Grisey and other founders of the spectral movement, as well as their students and successors. Spectral music has continued to evolve and to influence many compositions into the early stages of the twenty-first century, and the saxophone, ever riding the crest of the wave of new music, has continued to expand its body of repertoire thanks in part to the influence of the spectralists.

The current study is a guide for modern saxophonists and pedagogues interested in acquainting themselves with the saxophone music of the spectralists. An examination of the historical background of spectralism and its proponents, from proto-spectral composers through the current generation of spectralists, is included to help to properly equip the saxophonist interested in performing or studying this music. Discussion of major spectral works involving saxophone as well as pieces in the instrument's repertoire that may be seen as precursors to the

spectralist movement will illuminate what is currently available and serve as a valuable point of departure for the uninitiated saxophonist. Finally, a more in-depth examination of works by Gérard Grisey, Philippe Hurel, and Philippe Leroux through the lens of a performer allows us to trace an evolution of spectralism through three generations of composers and provides insight for the preparation and performance of these challenging pieces.

ACKNOWLEDGEMENTS

As I sit here contemplating the final section of this project that I have yet to write, I am afforded an important opportunity for reflection. This paper represents the culmination of nearly seven years spent working on my DMA at Northwestern University, plus another six at the University of Minnesota and Arizona State University for my undergraduate and masters degrees. Along the way, I have been fortunate to have been aided by many caring teachers, mentors, colleagues, and friends without whom, none of this would be possible.

I first want to thank Timothy McAllister who was my saxophone teacher during my masters and doctoral degrees and who served as the chair of my committee at the outset of this project before pursuing a new career opportunity in Michigan. Without his guidance, mentorship, and endless support even after moving on to his new job, I would not be the artist and teacher that I am today. His influence is deeply embedded in this work.

A special mention must be made of Scott Paulin, who has challenged me to be a better scholar and teacher and has supported me from my very first year at Northwestern, and Taimur Sullivan who stepped in so seamlessly in the midst of my degree. They have both provided fantastic insight into making this the best project that it could be; both have left an indelible imprint on my education. I would be remiss if I did not mention, too, Rex Martin, who served briefly on my committee before his retirement from Northwestern. His mentorship during my coursework and valuable feedback during the beginning stages of this project were invaluable.

Finally, I must acknowledge my parents, whose support and encouragement throughout my years as a student in higher education have made possible my academic and professional success. I truly would not be where I am today without them, literally or figuratively.

LIST OF ABBREVIATIONS

CNSM	Conservatory National Superior of Music and Dance
IRCAM	Institute for Research and Coordination Acoustic / Music
ISCM	International Society for Contemporary Music
SACEM	Society of Authors, Composers, and Editors of Music
SIMC	Société Internationale pour la Musique Contemporaine

CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER ONE

INTRODUCTION

Purpose of the Study

The saxophone has long been an instrument at the forefront of new music. Since its invention, supporters of the saxophone have tirelessly pushed to create a repertoire, which has resulted today in an impressive body of work for the yet relatively new instrument. The saxophone has found itself on the cutting edge of modern concert music for practically its entire existence, with composers attracted both to its vast array of tonal colors and technical capabilities, as well as the surplus of performers eager to adopt new repertoire. As a performer, teacher, or student of the saxophone, it is imperative to have a knowledge of the various compositional trends influencing the available music for the instrument.

Since the 1970s, one of the most eminent and consequential styles of contemporary music composition has been spectralism. The saxophone, predictably, has benefited tremendously, with repertoire from Gérard Grisey and other founders of the spectral movement, as well as many of their students and successors. Spectral music has continued to evolve and to influence many compositions into the early stages of the twenty-first century, and the saxophone, ever riding the crest of the wave of new music, has continued to expand its body of repertoire thanks in part to the influence of the spectralists.

The current study is a guide for modern saxophonists and pedagogues interested in acquainting themselves with the saxophone music of the spectralists. An examination of the historical background of spectralism and its proponents, from proto-spectral composers through the current generation of spectralists, is included to help properly equip the saxophonist interested in performing or studying this music. Discussion of major spectral works involving saxophone, as well as pieces in the instrument's repertoire that may be seen as precursors to the spectralist movement, will illuminate what is currently available and serve as a valuable point of departure for the uninitiated saxophonist. Finally, a more in-depth examination of solo works by Gérard Grisey, Philippe Hurel, and Philippe Leroux through the lens of a performer allows us to trace an evolution of spectralism through three generations of composers and provides insight for the preparation and performance of these challenging pieces.

Scope and Limitations

This project focuses on spectralism as it relates to the saxophone repertoire. A knowledge of the origins and evolution of this compositional movement from proto-spectral composers through the current generation of spectralists is crucial to the saxophonist interested in programming or studying this music, and such historical background is included to this end. However, this project is not meant to serve as a comprehensive guide to the music of the spectralists. Instead, all information is geared towards the inquiring saxophonist.

A brief discussion of major works involving saxophone by spectral and proto-spectral composers is included; however, individual pieces by three generations of spectralist composers are discussed in more detail with the aim of illuminating and proposing possible solutions to challenges facing the performer preparing these works. *Anubis et Nout* by Gérard Grisey, *Opcit*

by Philippe Hurel, and *SPP* by Philippe Leroux serve as representative examples of three generations of the saxophone's spectral repertoire, valuable especially as a starting point for the curious saxophonist. These three pieces highlight the saxophone as a solo instrument and provide an accessible means of entry for the performer into the spectral style due to their limited performing forces: *Anubis et Nout* and *Opcit* are both for solo saxophone, while *SPP* is scored for saxophone and piano. Brief biographical information for each of these composers, as well as an overview of their output for saxophone are included. Detailed harmonic and formal analyses of these pieces are included only as relevant towards placing works within the compositional style of spectralism but largely remain outside of the scope of this project, which is intended as a point of departure for the uninitiated saxophonist.

Organization

This project is divided into seven chapters. A chapter providing background on the music of the spectralists follows this introduction. Historical information as well as a brief discussion of the evolution of this compositional movement is included. Next, a general discussion of the saxophone's role in spectral music follows in chapter 3. Historical background and a discussion of the importance of spectralism to the saxophone repertoire is included here. Said discussion involves a brief overview of major spectral or spectral-influenced works involving saxophone and a list of 86 works by spectralist composers involving the instrument. One chapter each on Gérard Grisey's *Anubis et Nout*, Philippe Hurel's *Opcit*, and Philippe Leroux's *SPP* follow chapter 3. Each of these chapters include biographical information on the composer, historical background and a discussion of the spectral qualities of the piece in question, and an examination of the specific challenges that each work presents to the performer. These challenges, while not

necessarily unique to spectral music, include issues of breathing, articulation, multiphonics, vocalization, fingering choices for varying timbral colors, alternating clefs, and myriad unusual notations. Charts with my suggested solutions for multiphonics and timbre changes in *Anubis et Nout* and *Opcit* are included. All multiphonics were referenced first with Marcus Weiss's invaluable resource, *The Techniques of Saxophone Playing*.[1] A translated list of corrections and revisions from Philippe Leroux for *SPP* can be found in chapter 6. Finally, chapter 7 concludes the project with a summary and general observations on spectralism in the saxophone repertoire.

Equipment

It may be helpful for saxophonists preparing the pieces in question by Grisey, Hurel, and Leroux to know the specific model of saxophones, mouthpieces, and reeds that I have used while studying these works. As we discuss the specific challenges within these works, it is important to understand that a solution on one particular model of saxophone and mouthpiece may differ from the best solution on another. As an example, my proposed solutions for multiphonic fingerings may not be applicable to saxophonists using different equipment. For the body of the saxophone, everything from the materials used to create the instrument to the varying key layouts and mechanical properties or tone hole heights can have drastic effects on such varied properties as tone, intonation, response, control, and possible fingering solutions. Mouthpiece and reed selection likewise play a tremendous role in how a saxophone responds and sounds.

[1] Marcus Weiss and Giorgio Netti, *The Techniques of Saxophone Playing* (New York: Bärenreiter, 2010).

With these issues in mind, I will briefly note the specific equipment that I have used here. My baritone saxophone is a Yanagisawa model 991, which I use in combination with a Selmer S90 180 mouthpiece and Légère Signature Series size 3.5 reeds. My tenor saxophone is a Yamaha model 62, which I use with a Yamaha Custom neck, a Selmer S90 180 mouthpiece, and Légère Signature Series size 3 reeds. Finally, the soprano saxophone that I used for this project is a Yamaha Custom EXHG, which I use with a Selmer Concept mouthpiece and traditional Vandoren size 3.5 reeds.

As a whole, the equipment that I use is likely considered fairly standard for a concert saxophonist. Saxophones from Yanagisawa and Yamaha are widely popular, well-known for their warm tone and even, fluid response. The mouthpieces that I use in combination with these instruments feature medium sized chambers and facings, prioritizing a middle ground between projection and control. The square chambers of the S90 mouthpieces lend to enhanced projection and emphasize the high partials of the sound enough to aid in the production of the altissimo register. This stands in contrast to likewise popular mouthpieces from a manufacturer like Vandoren, whose round chambers prioritize a darker tone quality. The round chamber of my Selmer Concept mitigates some of my Yamaha soprano's comparatively brighter qualities by cutting down on the higher partials within the sound.

The strength of my reeds is also fairly standard, considering the facings of my chosen mouthpieces. The reed must close off against the tip of the mouthpiece while it vibrates, so mouthpieces with a longer facing and larger tip opening are typically used with a softer reed and vice versa. My chosen reed strengths balance my embouchure strength against the facing lengths of my mouthpieces.

My choice of the plastic Légère reeds for tenor and baritone saxophone was made primarily in consideration of the reeds' consistent playing qualities. Unlike cane reeds, the plastic material on the Légères does not warp considerably as they are used or as atmospheric conditions change. In my experience, the larger reeds for tenor and baritone saxophone are more vulnerable to these changes than the smaller soprano saxophone reeds. I place additional value on the Légères while playing the spectral pieces by Grisey and Hurel discussed below due to the ease with which I can produce effective slap tongue effects on them in contrast to traditional cane reeds. I do find that I sacrifice some control in the altissimo register for these qualities, as well, perhaps, as some amount of projection.

Equipment selection is a highly personal subject. The setup for one saxophonist may not work at all for another as so much is dependent on personal preference, as well as physiological differences in each person. I urge saxophonists who are interested in spectral music to keep an open mind to alternative equipment choices and to consider that their equipment preferences for this repertoire may differ from their selections for other, more traditional, repertoire due to the vast amount of extended techniques that are required. Some experimentation with equipment may lead one to a new approach to this music in terms of fingering solutions, sound production, breathing, or other factors.

CHAPTER TWO

AN OVERVIEW OF SPECTRAL MUSIC

What is spectral music? This is a simple question about which much has been written and whose answer is, at best, convoluted. Categorizing and labeling compositional styles is universally problematic, particularly within a historical context. Beethoven, for instance, is often categorized as a Classical composer, in the same compositional camp as Mozart or Haydn; however, said categorization ignores his late period works, which defy many of the standard conventions typically associated with the Classical period.[2] Such labels carry nearly as much capacity to constrict our understanding of a composer's output as they have potential to foster an extrication of a body of work from the tangled mass that is Western art music. For better or worse, the spectral label has stuck, though the music that may fall under its purview has evolved and morphed as any living art form invariably does.

---

[2] Jonathan Cross, "On Spectralism," Partials, February 27, 2016, https://partialsblog.wordpress.com/2016/02/27/on-spectralism. Of course, Beethoven serves here as just one of many possible examples of composers whose works do not neatly fit within our modern stylistic or historical divisions.

It is generally accepted that spectralism was first developed in France during the 1970s by *Ensemble L'Itinéraire*, a group dedicated to the performance of contemporary music, founded in 1973 by Gérard Grisey, Tristan Murail, Hugues Dufourt, Michaël Lévinas, and Roger Tessier. Dufourt coined the phrase *musique spectrale* in a 1979 article, yet other composers closely linked to the movement soon rejected the label.[3] Dufourt's intentions in coining the term were simply to define this new aesthetic and to differentiate it from other compositional styles of the time, yet as this music continued to develop and evolve, many composers, including Grisey, came to regard the label as reductive and simplistic. Composers associated with spectral music were not writing with the intention of creating a new school of composition; rather, a variety of outside factors influenced numerous artists from a relatively diverse array of backgrounds to adopt a similar aesthetic philosophy.

While *Ensemble L'Itineraire* is the group most frequently associated with spectral music, other groups of composers at the time shared similar values and concerns and have likewise made a significant imprint on the later generations of composers. Chief among these is the German Feedback group, made up primarily of former students of Karlheinz Stockhausen, including Johannes Fritsch, Clarence Barlow, Péter Eötvös, Claude Vivier, and Mesías Maiguashca. A group of spectralist composers also emerged in Romania, led by Stefan Niculescu and Horatiu Radulescu.

In the recollection of Tristan Murail, two compositional factions dominated the contemporary music landscape of Paris during the late 1960s and early 1970s. In one corner, composers influenced by the principles of serialism and the theories of Pierre Boulez

[3] Hugues Dufourt, "Musique spectrale: pour une pratique des formes de l'énergie," *Bicéphale* vol. 3 (1981): 85–89.

represented, in the words of Murail, "the establishment."[4] The compositional influence of the serialists and those composers who may generally be termed structuralists was widespread at this time; however, political turmoil and student protests in Paris in 1968 precipitated aesthetic experimentation.[5] As students and young workers in France pushed for a restructuring of society as a whole, some artists pushed for an aesthetic revolution. The result of this backlash against the music of the so-called structuralist establishment was, according to Murail, a "deconstructionist" movement lead by composers such as Americans John Cage and Earle Brown and the French-Romanian André Boucourechliev.[6]

Members of *Ensemble L'Itinéraire* were comfortable with neither the approach of the structuralists nor the aleatoric approach of the so-called deconstructionists. While the group did program some music by Boulez, they were intent on finding a new approach to music. In a 1999 interview, Murail asserted that the group "tried to play everything that would not be considered establishment."[7] The group performed works by Giacinto Scelsi, Salvatore Sciarrino, and George Crumb, although it was performances of music by the members of the group itself for which *L'Itinéraire* maintains historical significance.

Members of *L'Itinéraire* and other composers who would come to be labeled spectralists were primarily interested in timbre. In the simplest terms, timbre is what makes sounds produced by different objects or instruments unique from one another. Timbre, for instance, is the

---

[4] Bruce Ronald Smith and Tristan Murail, "An Interview with Tristan Murail," *Computer Music Journal* vol. 24, no. 1 (Spring 2000): 11.

[5] While an extensive discussion of spectral music within a socio-political context ultimately falls beyond the scope of the current study, much has been written on this important subject. Of particular interest are two writings by Eric Drott, "Spectralism, Politics and the Post-Industrial Imagination" in *The Modernist Legacy: Essays on New Music* and "Timbre and the Cultural Politics of French Spectralism."

[6] Smith and Murail, "An Interview with Tristan Murail," 11.

[7] Ibid.

difference in sound between a saxophone and a clarinet playing the same pitch at the same dynamic level. Timbre is closely tied to the listener's perception of sound; however, this perception is shaped by the sound's physical properties, including its spectrum and the ways in which its partials evolve in time.

The interest in timbre, or indeed in sound itself, as the basis of composition, led to the development of what Dufourt termed spectral music. Murail, Grisey, and the other members of *L'Itinéraire* came to define music as the evolution of sound in time. This concept led to an effort to refine and expand the available knowledge on acoustics and psychoacoustics in order to better understand the physical properties of sound, how it could be controlled, and how it could be perceived by an audience. With these tools, a new school of composition was formed.

This shift in focus to timbre as a fundamental priority of composition had been occurring at least since the turn of the 20th century, which was due, in part, to the development of new technologies to produce, record, process, and analyze sounds.[8] *L'Itinéraire* was likewise increasingly interested in electroacoustic music, and there was a focus on building their own equipment, necessitated at least in part by a lack of available technology to meet their needs. At the time, analog equipment such as ring modulators, harmonizers, reverb units, and the Ondes Martenot were used, though as the resources became available, synthesizers and computers were added to the group's arsenal.[9]

Ensemble L'Itinéraire was invited to IRCAM (Institute for Research and Coordination Acoustic / Music) in 1980. Despite some perceived political tension due to the group's open opposition to music of the so-called establishment composers such as Pierre Boulez, who

---

[8] Viviana Moscovich, "French Spectral Music: An Introduction," *Tempo* no. 200 (Apr. 1997): 21.

[9] Smith and Murail, "An Interview with Tristan Murail," 12.

founded the institute on the direction of French Prime Minister George Pompidou, the residency was quite beneficial.[10] It was at IRCAM that developing technologies began to help *L'Itinéraire* truly explore the physical properties of sound. Grisey and Murail had done extensive research in the field of acoustics, but the available technology at IRCAM allowed them to more easily implement acoustic data into their compositions. It was here that Murail, for example, first came across the Fourier analyses that would form the basis of his 1983 composition *Désintégrations*.

Murail and Grisey thought of spectralism as an attitude towards composition rather than a specific technique or style.[11] Each of the early spectralists brought his own approach to the spectral attitude, and each continued to evolve in a unique direction. Murail and Grisey's definition of spectral music combined with the diverse array of compositional approaches used by its various proponents created a huge, thriving compositional school both widely influential and difficult to place within a tidy, easily defined label.

Spectral composers, while each unique in their own right, share some important similarities, and their music fits within the continuum of the course of the Western art music canon. Fundamental to the spectral school is a belief in music as the sculpture of sound in time. For much of the course of written Western music, the sound of music itself has been a representation of abstract notations on a page. To the spectralists, the score merely serves as a means of delivering the intended sonic result to the performers.[12] Murail advocated for sound to be distinguished from its representations; the spectralist composer and theorist Philippe Hurel stated that the sonorous object itself should serve as a model, rather than the gesture of the artist

---

[10] Ibid.

[11] Gérard Grisey, "Did You Say Spectral?," trans. Joshua Fineberg, *Contemporary Music Review*, vol. 19, part 3 (2000): 3.

[12] Joshua Fineberg, "Spectral Music," *Contemporary Music Review*, vol. 19, part 2 (2000): 3.

in a studio.[13] Spectralism fixates on timbre rather than preconceived structures or forms, thus liberating the music from any representational constraints.[14] While the serialists may have started a composition by working out a 12-tone matrix, spectral music begins and ends as a study on sound itself. This brings us back to the assertions by Grisey and Murail that this music is more an attitude than it is a specific technique or style.

Works written in the spirit of the spectral attitude contain a myriad of similarities stemming from their basis as anti-representational sonic sculptures. Timbre and color is often the main building block of these compositions. Many of these works highlight a texture of orchestral fusion, blending individual voices into a complex whole. Spectral works often feature slowly developing or decaying textures and rhythms, including rhythmically notated *accellerandi* and *rallentandi*. As a counter to the well-established serial technique of parametric composition, in which specific charts or algorithms are established to govern the deployment of such musical parameters as duration, pitch, dynamics, or articulation, the spectralists were typically interested in eliding all these elements, particularly the distinction between harmony and timbre.[15] Most spectral works are written with a degree of consciousness regarding predictability in the music, as well as how the music will be perceived by the listener. The result of all these traits is a compositional style that generally has a very unique sound.

Since the beginnings of the spectral aesthetic, younger generations of composers have continued to develop and evolve the compositional process. Later chapters of this document explore music by three generations of spectral composers, ending with music by so-called post-

---

[13] Brian Michael Kane, "The Music of Skepticism: Intentionality, Materiality, Forms of Life" (PhD diss., University of California at Berkley, 2006), 73-74.

[14] Ibid, 74.

[15] Julian Anderson, "A Provisional History of Spectral Music," *Contemporary Music Review* vol. 19, no. 2 (2000): 8.

spectralists. These composers all share many of the same ideals of music as the study of anti-representational sonic sculptures; however, each has put his or her own stamp on the aesthetic. Philippe Hurel blends traditional spectral techniques with counterpoint and polyphony. Philippe Leroux incorporates highly repetitive material into his exploration of motion and timbre. Steve Lehman explores spectralism through the lens of jazz and even hip-hop. While each generation of spectralists has drawn on new, often unexpected influences, the original spectral attitude has remained intact.

Pre-History of the Spectral Movement

No aesthetic, musical or otherwise, exists in a vacuum. Spectral music was the result of numerous interrelated outside factors, including the socio-political climate in France during the 1960s, the polarized compositional landscape of the time, the expanding knowledge in the fields of acoustics and psychoacoustics, evolving musical preferences, and the work of many important composers prior to those we now know as the spectralists. Much has been written on the origins of spectral music, though as of this writing, no single work can claim to present a comprehensive overview. Nor does this paper aim to present an exhaustive survey of the origins of the music; instead, we will examine some important predecessors of the spectral movement with the intention of presenting the interested saxophonist a solid foundation on which to base performances of or further research into spectralist pieces.

An interest in harmonic and inharmonic spectra is a fundamental, if superficial, element of spectral music, though its use is far from novel. Artists and scholars have been concerned with the nature of acoustics since the time of the ancient Greeks, and the ability to relate pitch to vibrational frequency dates to the early 17th century. A renewed interest in the overtone series

began in the waning years of the 19th century, as so-called impressionist composers took an interest in the acoustic work of German physicist Hermann Helmholtz, who showed how timbre is influenced by a sound's overtone structure.[16] In the 20th century, numerous treatises on the harmonic spectrum backed unique works by composers such as Harry Partch, Henry Cowell, Olivier Messiaen, and others.[17]

At this point, it is necessary to include a brief overview of the basics of the harmonic series for the uninitiated reader, as these concepts were central to the development of spectral music and its predecessors. Any tone produced on a pitched musical instrument contains a set of harmonics due to the oscillation of the air or string at multiple simultaneous frequencies. This harmonic or overtone series is a set of vibrations whose frequencies are all integral multiples of the lowest frequency, or fundamental (f_1). While any frequency may be used as the fundamental, the members of its harmonic series are called the second partial (f_2), the third partial (f_3), and so on. The frequency of any partial is determined by the equation *rank x fundamental = frequency*. The second partial of E_1, whose frequency is 41.2 Hz, where Hz (Hertz) is a measure of the rarefaction and compression of a sound wave through the air per second, is equal to 2 x 41.2 Hz. The second partial, sounding in this case at 82.4 Hz, is one octave higher than the fundamental.

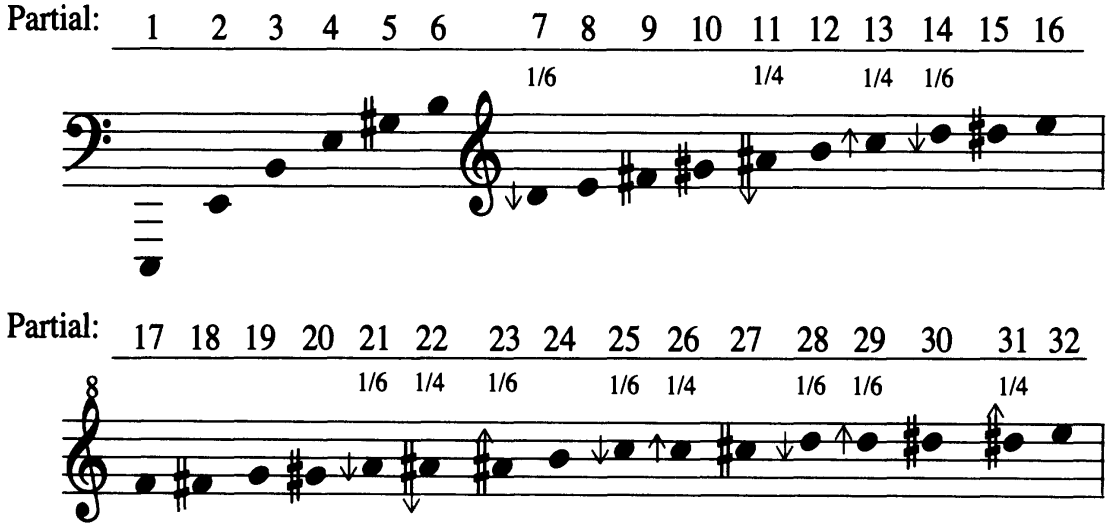
Figure 2.1 shows an example of the overtone series. Here, a low E_1 (41.2 Hz) is the fundamental, followed by its first 32 partials. The equation *rank x fundamental = frequency* does not produce a set of tones which fit perfectly within the confines of equal temperament; therefore, microtones have been rounded to the nearest quarter- or sixth-tone.

---

[16] François Rose, "Introduction to the Pitch Organization of French Spectral Music." *Perspectives of New Music*, vol. 34, no. 2 (Summer 1996): 7.

[17] Anderson, "A Provisional History of Spectral Music," 8.

Figure 2.1. The First 32 Partials of a Series Based on E_1



Rose, "Introduction to the Pitch Organization of French Spectral Music," 7.

The music of Claude Debussy (1862 – 1918), the most prominent figurehead of so-called impressionist music, can be viewed as an important predecessor to spectral music.[18] His compositions are particularly notable for their progressive use of harmony, an advancement that was due in no small part to the acoustic work of Helmholtz. Musicologist Jann Pasler contends that these advancements in the spectral analysis of sound resulted in an increased attention to musical resonance by composers from the later decades of the nineteenth century forward.[19]

[18] Like the spectralists after them, Debussy, Ravel, and others rejected the impressionist label.

[19] Jann Pasler, "Resituating the Spectral Revolution: French Antecedents and the Dialectic of Discontinuity and Continuity in Debussy's *Jeux*." *Musicae Scientiae*, vol. 8, no. 1 (September 2004): 128.

Debussy and other impressionist composers often ended phrases with unresolved ninth or other added note chords. Such chords were traditionally viewed as dissonant and would have been employed with the intention of creating some degree of tension. However, Debussy's goal was not to create tension, but rather to "make multiple resonances vibrate," according to Paul Dukas.[20] Debussy created novel soundscapes, typically more airy and dreamlike than tense, through this new attention to distant overtones.

An interest in perception directly influenced the impressionist aesthetic, which spanned the visual, literary, and musical arts. While perception and an important connection between art and the body had permeated the French artistic psyche for centuries, a reinvigorated interest in these issues mounted in the nineteenth century, according to Pasler.[21] She argues that the impressionist aesthetic was inspired, at least in part, by artists who looked to the research of Hippolyte Taine, Émile Littré, and others whose research focused on sensations and the interactions between subjects and objects.[22] Impressionist painters such as Monet, Renoir, Pissaro, Degas, and others sought to unify subject and object through art based on impression and a belief that the process of creation directly influences perception. Initially shunned by critics and the public, the impressionists were the *avant-garde* artists of their time, dispensing with traditional techniques and settings in favor of those idiomatic to motion and immediacy, as a well as what they considered a candid take on the human experience.

The impressionist movement in the visual arts was indirectly influenced by the harmonic theory of Helmholtz. In 1888, the French physicist Charles Henry, inspired by the harmonic theory of Helmholtz, published what he called a "chromatic circle" along with an aesthetic

---

[20] Ibid, 128.
[21] Ibid, 125.
[22] Ibid, 126.

protractor, creating a scientific system by which artists could carefully evaluate colors and systematically employ such chromatic juxtapositions as to intensify the sensory perception of the audience.[23] Henry's work had a substantial impact on the post-impressionists of the late 19th and early 20th century. Works by George Seurat and Paul Signac, in particular, are notable for their application of Henry's theories, as evidenced by their aesthetic unity achieved by contrasting color elements.[24]

The theories of Henry and Helmholtz in combination with a persistent concern for perception likewise shaped the output of those composers whose works would be characterized as impressionistic. Debussy's output, like the impressionist painters, cast off the shackles of the traditional conventions of melody and counterpoint in favor of a music evocative of specific scenes, moods, or atmospheres. Debussy was certainly not the first composer to evoke such imagery through his compositions. Excerpts from Wagner's *Siegfried*, *Parsifal*, and *Tristan und Isolde* all hint at the impressionist movement at times, and early in the 19th century, Beethoven's *Pastoral Symphony* was praised for its endeavor to create a sonic landscape. All of these composers, of course, followed in a long tradition of programmatic music. Debussy, however, aimed to create music not just evocative of nature, but representational of the link between the environment and human perception.[25]

---

[23] Ibid, 126. Charles Henry should not be confused with the notable 20th century American physicist of the same name, whose work dealt primarily with semiconductor optical devices.

[24] Ibid, 127.

[25] Jann Pasler, "Impressionism." *Grove Music Online. Oxford Music Online.* Oxford University Press. http://www.oxfordmusiconline.com.turing.library.northwestern.edu/subscriber/article/grove/music/50026.

The use of contrasts was an important link between impressionist painters and composers and was central to their goal of synthesizing subject and object. As Henry's chromatic circle provided neo-impressionist painters such as Seurat a formal process by which to create novel contrasts of colors, Debussy painted unique textures in his music by allowing distinct instrumental timbres to periodically emerge from his orchestrations. *Rapsodie for Alto Saxophone and Orchestra* exemplifies Debussy's progressive treatment of instrumental timbre as it frequently emphasizes the individual voice of the saxophone over a cohesive orchestral soundscape, although the work was not intended as a traditional concerto.[26] Debussy's music often features short, fragmented themes and repetitive figures juxtaposed against hypnotic, seemingly timeless uses of whole-tone or pentatonic scales and parallel motion, just as impressionist painters likewise contrasted sketch-like images with stark lines, as in Monet's 1908 *Grand Canal, Venice*. Just as Hurel later advocated for the sonorous object itself to serve as the model for the spectralists rather than preconceived structures or forms, the impressionists and particularly neo-impressionists based their works on the human perception of an object and the assembly of its individual, contrasting parts.

Timbre was also a key element in the music of both the impressionists and the spectralists. Brian Kane describes music based on timbre as "a music that is no longer invested in the representation of structure, but rather in the sheer vibrancy of texture; an anti-representational music, that liberates what musical convention, history, and education have repressed."[27]

---

[26] Later arrangements of *Rapsodie*, including those by saxophonists Eugene Rousseau and Vincent David, greatly augment the role of the saxophone. The original score utilized the saxophone in a much more understated manner. Saxophonists may regard *Rapsodie* as being among the most important in the repertoire for their instrument if for no other reason than the name of the composer on the piece.

[27] Kane, "The Music of Skepticism: Intentionality, Materiality, Forms of Life," 74-75.

Certainly the impressionists departed from the musical conventions dictated by history and education through their use of contrasting instrumental timbres, so-called exotic scales, and non-traditional voice-leading practices and propensity for leaving unresolved added-note chords hanging in the air as previously described. For the impressionists, these techniques were employed with a degree of intuitiveness and spontaneity which correlated with their desire to create an aesthetic based on motion and immediacy.[28] The spectralists, at least initially, would take a more systematic approach to timbre in their anti-representational music. We will delve into the spectralist approach in the following chapters.

The music of Edgard Varèse (1883 – 1965) can be considered another important predecessor to the spectral movement. Although he did not write any music for our instrument, saxophonists should nevertheless be aware of his important contributions to the development of compositional practices towards those we today consider spectral. Timbre was of critical importance to Varése; however, he took this a step further than Debussy, as sound and timbre became a structural element in Varèse's music. According to the composer, combinations of timbre, "instead of being incidental, become part of the form, coloring and making discernable the different planes and sound-masses, and so creating the sensation of non-blending."[29]

Varèse was progressive in his use of free atonality and nontraditional motivic development. Rather than relying on the thematic variation and development techniques that composers from Bach to Wagner had employed before him, Varèse often developed his pieces through changes in timbre.[30] Harmonies in his works are notoriously static as he instead explores

---

[28] Jann Pasler, "Resituating the Spectral Revolution: French Antecedents and the Dialectic of Discontinuity and Continuity in Debussy's *Jeux*," 132.

[29] Anthony Cornicello, "Timbral Organization in Tristan Murail's *Désintégrations* and *Rituals*," (PhD diss., Brandeis University, 2000), 16.

[30] Ibid., 20.

various timbral combinations and juxtapositions. This was particularly unique in comparison to works written contemporaneously by the composers of the Second Viennese School, which featured very rapid harmonic progressions. The approach of Varèse is similar to that of the spectralists, who focused on a sound in a particular moment in time, slowly turning it in all directions to fully explore its every dimension.

Varèse was a predecessor to composers of electronic music. He viewed music, or as he called it, "organized sound," as an "art science" that should stand next to mathematics.[31] He frequently advocated for the benefits that advances in technology could have on music, including new timbres and expanded dynamic ranges. Spectral music developed as Varèse's envisioned technologies emerged and matured. As the tools necessary to produce, record, process, and analyze sounds became available, the spectralists in many ways realized Varèse's vision for organized sound. Spectral music is very closely linked with electroacoustic music; therefore, Varèse can be considered a proto-spectral composer.

The Italian composer Giacinto Scelsi (1905 – 1988) was also an important predecessor of the spectral movement. Julian Anderson described Scelsi's music as "radically static…focusing on narrow pitch bands (often single notes or octaves), [with an] emphasis on timbre for its own sake, [and a] frequent use of microtones…"[32] Scelsi's early works were written with the 12-tone system, however he tired of this method by the mid-1950s. He instead began a process of composition stemming from improvisations at the piano, later an ondiola, which frequently

---

[31] Paul Griffiths, "Varèse, Edgard," *Grove Music Online*. *Oxford Music Online.* Oxford University Press. http://www.oxfordmusiconline.com.turing.library.northwestern.edu/subscriber/article/grove/music/29042.

[32] Cornicello, "Timbral Organization in Tristan Murail's *Désintégrations* and *Rituals*," 25.

involved the repeated playing of just one note. The result was a unique music that focused on the developing timbres of one or two notes or chords. Timbre is the principal musical feature in the mature works of Scelsi.

The early spectralists were very familiar with Scelsi's music. Tristan Murail met Scelsi while studying in Rome, and the two kept in touch for years afterwards. *Ensemble L'Itinéraire* was particularly interested in Scelsi's works and programmed them with some frequency, although (and, to an extent, because) he was a relatively obscure figure until several of his works were programmed by the 1987 ISCM festival in Cologne.[33] Spectral music, which focuses on the the gradual transformation of sound, owes much to Scelsi's compositions that deal directly with timbral evolution.

Scelsi's music is of particular interest to saxophonists, as he wrote at least nine works involving saxophone, two of which are performed on the instrument with some frequency. The first and most frequently programmed piece by Scelsi on saxophone is his 1956 *Tre Pezzi*. After abandoning the 12-tone style, his first group of works using his unique new compositional method of improvising at the ondiola were scored for solo wind instruments. *Tre Pezzi* comes from this group of pieces and is typically played on soprano saxophone. The second, *Maknongan*, was written in 1976 for any bass instrument or voice and is named for the god of the indigenous Ifugao people of the Philippines. *Maknongan* is frequently heard on baritone or bass saxophone. Typical of Scelsi's works, *Maknongan* focuses on pitch, timbre, register, and dynamics as the primary expressive tools. The piece concentrates on the evolution of concert pitches A and G through varying timbres, dynamics, and registers. *Maknongan* was Scelsi's last original work.

---

[33] Ibid.

Two other composers were of central importance to the development of spectral music: György Ligeti (1923 – 2006) and Olivier Messiaen (1908 – 1992). The only use of saxophone among these two composers was in Ligeti's 1977 opera *Le Grand Macabre*, in which the second clarinet doubles on E-flat clarinet and alto saxophone. Upon fleeing Budapest for Cologne by way of Vienna in 1956, Ligeti began exploring new compositional techniques that would make a significant impact on the musical landscape of the 1960s. He was fascinated with the works of Webern, as well as Stockhausen, and he experimented with serialism, though he was concerned with the limitations of this compositional practice. Instead, Ligeti proceeded to explore writing with extreme rhythmic and harmonic complexity, which is evidenced in his 1959 orchestral work, *Apparitions*. It was in this work that he introduced chromatic orchestral clusters, which he developed independently of such composers as Xenakis, Penderecki, and Stockhausen who also dealt with clusters. Ligeti's chromatic clusters treated melody, harmony, and rhythm as indistinct features of the music.[34]

Ligeti continued to use these clusters in his works throughout the 1960s and developed a technique which he would term "micropolyphony." This is a mass of sound that is the result of a dense web of canons at the unison which move at independent tempos and rhythms and form chromatic clusters vertically. The independent micropolyphonic lines are not discernable to the audience, however; instead, the combination of numerous instrumental timbres moving against one another create an impenetrably thick composite texture that slowly morphs over the course of time. While pitch selection played an important role in this process, this music was ultimately

---

[34] Paul Griffiths, "Ligeti, György," *Grove Music Online*. *Oxford Music Online*. Oxford University Press. http://www.oxfordmusiconline.com.turing.library.northwestern.edu/subscriber/article/grove/music/16642.

Cornicello, "Timbral Organization in Tristan Murail's *Désintégrations* and *Rituals*," 21.

about the relationships and development of instrumental timbres. This technique may be heard in numerous works by the composer, including his 1961 piece for orchestra, *Atmosphères*, or his 1962 piece for 100 mechanical metronomes, *Poème symphonique*. Ligeti's processes and treatment of instrumental timbre were quite novel, and the future spectralists took note.

Olivier Messiaen had a direct impact on the spectralists, in no small part due to his teaching position at the Paris Conservatory. Grisey, Murail, and Michaël Lévinas were all students of Messiaen in Paris. So, too, was Pierre Boulez, who also had an impact on the spectralists through his work in electronic music and role in founding IRCAM, and Karlheinz Stockhausen, whose 1968 *Stimmung* for six vocalists is considered by some to be the first true spectral piece as its central organizing force is the overtone series of a B-flat.

The spectralists expanded on Messiaen's work in the field of acoustics. Messiaen focused on acoustics or the "resonance chord" as a primary parameter in his later works.[35] With a well-known interest in ornithology, he set about transcribing bird songs, including pitch, rhythm, and timbre. Advances in technology that allowed for computerized analyses of sound and the production of new timbres and the reproduction of preexisting sounds aided Messiaen in the process of recreating the bird songs with which he was so fascinated.[36] This combination of harmony and timbre was a key step towards the advent of spectralism.

Spectralism, like any other compositional aesthetic, was born from the evolution of musical preferences, an increased awareness and understanding of acoustics and human perception, technological advancements, and countless other factors. Debussy, Varèse, Scelsi, Ligeti, and Messiaen are detailed here as the primary composers whose works could be

---

[35] Moscovich, "French Spectral Music: An Introduction," *Tempo* no. 200 (Apr. 1997): 22.
[36] Ibid.

described, in retrospect, as precursors to spectralism. Each was interested in the human perception of sound; each made an innovative use of timbre as a primary compositional element. Other composers certainly dealt with timbre in unique ways. Other composers certainly influenced the spectralists. The five described above, however, allow us to trace a timeline in which timbre becomes an increasingly vital compositional device, leading to the language of the spectralists.

CHAPTER THREE

SPECTRAL MUSIC FOR THE SAXOPHONE

The saxophone has held an important status in spectral music throughout the history of this compositional style. Composers from each generation of spectralists have entrusted saxophonists with roles in their music ranging from concerto soloist, to chamber musician, to orchestra member. Many of the founding members of the spectral school such as Grisey, Dufourt, and Fritsch all wrote for our instrument. So too have members of the younger generation, including Fabien Lévy, a student of Grisey, and Philippe Hurel, a student of Murail.

The saxophone repertoire has enjoyed significant growth thanks to spectral music. Eighty-six pieces that include saxophone by composers closely associated with spectralism are listed in the table beginning on page 40. This list is not meant to be a comprehensive guide to spectral music for saxophone; rather, my hope is that this will provide a starting point for the interested saxophonist. An attempt at a truly comprehensive listing of spectral works for our instrument would be a fool's errand as any such compilation would have to be updated regularly due to the high volume of music consistently being written for saxophone. Furthermore, the question of what should actually be categorized as a spectral composition continues to be a sticking point, and as this music evolves and composers draw from an increasingly large pool of influences, this matter only becomes more complicated.

The music of James Tenney, who wrote several works for saxophone, provides an interesting case study in this regard. Tenney drew from many influences in creating his catalogue of works; however, his research in acoustics and psychoacoustics and music cognition informed most of his compositions and gave him a strong connection to the spectral aesthetic. Like the spectralists, Tenney's music was deeply rooted in a concern for the phenomenology of music perception.

Despite this analog and his work in electronic music that led to some music that sounds subjectively similar to that of the spectralists (including his 1978 piece for saxophone and live electronics, *Saxony*), Tenney is not typically considered a spectral composer. His early works are heavily influenced by the likes of Charles Ives and Henry Cowell, and he would later come to be closely associated with minimalism through his work with the ensembles of Steve Reich and Philip Glass. Though, like the spectralists, he did work in electronic music, Tenney often used stochastic algorithms to govern many of the elements of his compositions, particularly in his later work. He did not use sound itself as the basis of his compositional process as spectralists did. Nor did he ever specifically align himself with the spectral aesthetic through any writings or interviews. With all of these factors considered, Tenney's music for saxophone will not be included here. Instead, the current list is made up of works including saxophone by prominent figures who have been previously tied to spectralism by the musicological community, or through their own writings or statements in which they associate themselves with spectral music.

Much information about the saxophone's role in spectral music can be gleaned from the below listing. The saxophone played an important role in spectral music from the very earliest stages of its evolution. Gérard Grisey's 1974 *Dérives*, which is written for two orchestras and utilizes the bass saxophone, doubling tenor saxophone, is the earliest piece listed. *Dérives* is

often considered Grisey's first mature work written in the spirit of spectralism. Roger Tessier finished *Avaz*, a concerto for saxophone and orchestra written for Jean-Yves Formeau, just five years later in 1979, further helping to cement our instrument's role in spectralism. Some of the composers listed did include saxophone in compositions prior to Grisey's 1974 *Dérives*, including a 1969 sextet involving alto saxophone by Stefan Niculescu. These pieces, including Niculescu's *Sextet*, that were written prior to the development and maturation of the spectral aesthetic are also not included in our listing.

Music for the saxophone was not limited to the French school of spectral composers. German Feedback group composers Clarence Barlow, Péter Eötvös, and Johannes Fritsch have all written multiple works including saxophone. Romanians Stefan Niculescu, Iancu Dumitrescu, and Ana-Maria Avram have all likewise contributed to our instrument's spectral repertoire, and Ecuadorian composer Mesías Maiguashca has written several pieces including saxophone. Over time, more recent generations of composers associated with spectralism from a variety of nationalities have also included saxophone in their oeuvre. Also evident from the below listing is the fact that the vast majority of these composers wrote numerous works including saxophone if any at all. The Austrian Georg Friedrich Haas's twelve works including saxophone are the most of any composer in our listing.

Perhaps nearly as notable as the composers who have included saxophone in their compositions are those who have not. Many of the prominent figureheads of the spectral aesthetic have not included saxophone in their catalogue to date. Tristan Murail ranks among the pioneers of spectral music who have not written for saxophone; Joshua Fineberg and Julian Anderson are prominent spectralists from the younger generation absent from our listing. One could speculate as to the reasons why some of these composers have not included saxophone in

their work; however, the efforts and resources of saxophonists would surely be better spent commissioning works from these important composers.

While the saxophone was at the forefront of some very early spectral compositions, it has also played a key role in the evolution of this aesthetic. We will look in more detail at works for saxophone by Gérard Grisey, Philippe Hurel, and Philippe Leroux that exemplify this evolutionary trend in the proceeding chapters of this paper. However, it is necessary to further examine the saxophone's role in the evolution of the spectral aesthetic here. Perhaps no figure has been more consequential to this trend than the saxophonist and composer Steve Lehman.

Steve Lehman has forged a unique musical voice by combining his seemingly disparate influences. Lehman holds degrees in composition from Wesleyan University and Columbia University where he studied with George Lewis and spectralists Tristan Murail and Fabien Lévy. He also studied jazz saxophone with Jackie McLean and has performed with ensembles led by a range of artists including Vijay Iyer, Jason Moran, Anthony Braxton, and George Lewis. Lehman's present scholarship deals with the overlapping histories of spectral music and jazz improvisation, and his recent music has involved computer models for improvisation in the Max/MSP and Ableton Live environments.

The work of Steve Lehman to bridge the gap between spectralism and jazz utilizes meticulously controlled compositional elements while simultaneously leaving room for improvisation.[37] Like the earlier spectralists, Lehman is interested in timbre, and he lays harmonic foundations for his music based on the overtone series of a tonic pitch, resulting in both notated and improvised quarter-tones throughout. In his 2009 album *Travail,*

---

[37] George Grella. "Steve Lehman Makes History." *The Brooklyn Rail: Critical Perspectives on Arts, Politics, and Culture*. http://brooklynrail.org/2014/06/music/steve-lehman-makes-history.

Transformation and Flow, these spectral harmonies are set against the equal temperament of the vibraphone; for his 2014 album *Mise en Abîme*, he constructed a vibraphone tuned to allow for microtonal harmonies. Lehman often brings additional influences, including hip-hop and electronica, to his unique brand of spectral jazz as evidenced in his 2017 album *Sélébéyone*.

Lehman's spectral harmonies lead to a unique, shimmering sound world, particularly in the context of jazz music, and similar to other works from the spectralist aesthetic, there is a constant sense of momentum present in the music. The rhythmic structures of his music are laid out for the rhythm section to expand upon; these often include perpetually shifting time signatures intended to create a perception of either slowing or hastening pulse.[38] This treatment of rhythm is a hallmark of spectral composers, who are interested in the perception of sound in time, as discussed above.

Lehman's innovations are unique in the fields of jazz and spectral music. He has managed to pair the traditions and historicism of jazz with the modern sounds of spectralism, which are themselves rooted in the history of Western art music. While the spectral aesthetic was born in the 1970s, its principles have continued to provide unique sonic possibilities for composers into the 21st century. Lehman's innovative blend of jazz, improvisation, hip-hop, and other elements with the spectral aesthetic are on the cutting edge of music's continual evolution. The saxophone continues to have a central role in this process.

The French saxophonist Claude Delangle has also been prominent in the instrument's use in spectral music. Delangle received his formal education at the conservatories in Lyon, with Serge Bichon, and Paris, with Daniel Deffayet. Delangle succeeded Deffayet as the saxophone instructor at the CNSM in 1988, where he continues to teach as of this writing. In addition to this

---

[38] Ibid.

post, Delangle serves as the saxophonist for the Ensemble Intercontemporain, which was founded by Boulez in 1976 with the goal of commissioning and performing contemporary music.

Delangle is a central figure among the many saxophonists clamoring for new music for the instrument. Such enthusiasm among saxophonists has led to the creation by spectralists of new works and the transcription of spectral pieces originally set for other wind instruments. Delangle's positions at the CNSM and with Ensemble Intercontemporain have helped to facilitate his access to many prominent composers. In addition to his reputation as an interpreter of contemporary music, Delangle's extensive knowledge of and research on the acoustic properties of the saxophone at the Musical Acoustic Laboratories of the University of Paris have likewise made him an attractive collaborator for composers. He worked closely with Grisey, who also taught at CNSM, to reconfigure *Anubis et Nout*, originally for contrabass clarinet, for the saxophone. He has also premiered pieces by spectralists Ana Maria Avram, Iancu Dumitrescu, Philippe Hurel, and Philippe Leroux. Delangle's position at one of the world's top conservatories for saxophone gives these works a boost in stature, as saxophonists have long looked to the CNSM for repertoire.

The 86 pieces listed below range from the very early stages of the spectral aesthetic to the current decade, demonstrating the saxophone's continued importance in this compositional trend. Though the list of spectral works for saxophone will no doubt grow well beyond the 86 listed here, these pieces are all worthy of attention from saxophonists and non-saxophonists alike in the meantime.

Table 3.1 – List of works including saxophone by spectral composers

Composer	Title	Year	Premiere	Instrumentation
Avram, Ana-Maria	Archae I	1992	1992	Voice / Asx (+Tsx)/Vla/ Perc/Synth
Avram, Ana-Maria	Archae II	1992	1992	Sop voice /Asx/Fl/Cl/Perc/Vln/ Vla/Vcl/Bass
Avram, Ana-Maria	Archae IV	1993	1993	Asx (+Bsx, Ssx)/ Pno / Perc
Avram, Ana-Maria	Irmos	1992	-	Sx solo/12 Sx: 3sn, AAATTTBBB
Avram, Ana-Maria	Assonant II	1993	-	Sx ensemble / Perc
Avram, Ana-Maria	Arcana Magna	1997	1998	Str Quartet / Cl/Sx/Prepared pno
Avram, Ana-Maria	Ananda Asur Ely I	1997	1997	Tsx / Str
Avram, Ana-Maria	Penumbra I	2003	2003	Tsx solo
Avram, Ana-Maria	Noumena	2004	2004	BsFl/Cl/Tsx/Orch
Avram, Ana-Maria	Textures I	2006	2006	Bcl/Tsx/Hr/Perc/ Orch
Avram, Ana-Maria	Lux Anime IV	2006	2006	Snsx, ensemble, computer sounds
Barlow, Clarence	Im Januar Am Nil	1984	-	2Ssx /Cl/Bcl/4vln/ 2Vcl/Bass/Pno/Perc
Barlow, Clarence	Le Ciseaux de Tom Johnson	1998	-	Elec guit /Ssx/Bass
Dufourt, Hugues	Quatour de Saxophones	1993	1993	4Sx: SATB
Dumitrescu, Iancu	Nadir	1990	-	Bsx solo
Dumitrescu, Iancu	Astrée Lointaine	1992	1992	BsSx/Winds/Perc/ Pno
Dumitrescu, Iancu	L'anneau Magique	1993	1997	Prepared pno / amplified cymbal / Sx/Bcl/3Vla/2Vcl/ 2Bass/Perc/Tape
Dumitrescu, Iancu	Orbite d'Uranus Concerto	1993	-	Prepared pno / Harps/BsCl/BsSx/Voice/ Perc/Tape
Dumitrescu, Iancu	Mnemosyne	1994	1995	BsFl/BsSx/5 Perc/ Prepared pno / Tape

Dumitrescu, Iancu	Abysses Latents	2002	2002	Voice/Tsx/Perc
Dumitrescu, Iancu	Nadir Latent II	2004	2004	Bsx/BsCl/Orch
Eötvös, Péter	Snatches of a Conversation	2001	2001	Tpt solo /Fl/Sx/Trb/ Perc/Synth/2Vln/Vla/ Vcl/Bass
Eötvös, Péter	Lectures Differentes	2014	2015	4Sx: SATB
Fritsch, Johannes	Trio	1993	1993	Sx/Guit/Bass/ Electronics
Fritsch, Johannes	Modulay für Ugly Culture	1996	1996	Sx/Guit/Bass
Fritsch, Johannes	Fremdes Lied	1997	1998	BsCl (+Ssx)/hurdy-gurdy
Grisey, Gérard	Dérives	1974	1974	Orch including BsSx (+Tsx)
Grisey, Gérard	Anubis et Nout	1983 / 1990	1990	Sx solo: Bsx or BsSx
Grisey, Gérard	Épilogue	1985	1985	Orch including Tsx/Bsx
Grisey, Gérard	L'Icône paradoxale	1994	1996	Sop Voice and Mezzo-sop Voice solo / Orch including Tsx / Bsx
Grisey, Gérard	Quatre chants pour franchir le seuil	1998	1999	Fl/2BsCl/Tsx (+Asx, Ssx)/ Bsx (+Tsx)/Tpt/ 2Tba/3Perc/Harp/Vln/ Vcl/Bass
Haas, Georg Friedrich	Descendiendo	1993	1993	Orch including 2Asx (+2Tsx)
Haas, Georg Friedrich	Wer wenn ich schriee, hörte mich	1999	1999	Perc solo / Fl/Ob/Cl/ BsCl/Ssx (+Tsx)/Bsn/ Hrn/2Tpt/2Trb/Tba/ Perc/Accord/3Vln/2Vla/ 2Vcl/Bass
Haas, Georg Friedrich	In Vain	2000	2000	2Fl/Ob/2Cl/Ssx (+Tsx)/ Bsn/2Hrn/2Trb/2Perc/ Harp/Accord/Pno/3Vln/ 2Vla/2Vcl/Bass
Haas, Georg Friedrich	Torso	2001	2000	Orch including 2Ssx (+2Tsx)
Haas, Georg Friedrich	Für Hans Landesmann	2002	2002	2Cl/Ssx(+Tsx)/Hrn/Tpt/ Trb/Perc/Harp/Accord/ Vln/Vla/Vcl
Haas, Georg Friedrich	Hyperion	2006	2006	Mechanical instruments and synth solo / Orch including Tsx(+Bsx)

Haas, Georg Friedrich	Concerto	2008	2008	Bsx solo / Orch
Haas, Georg Friedrich	La profondeur	2009	2010	BsCl/Cbcl/Bsx/Cbsn/Hrn/ Trb/2Perc/Accord/Pno/ 2Vcl/Bass
Haas, Georg Friedrich	„…damit…die Geister der Menschen erhellt und ihr Verstand erleuchtet werden	2010	2010	Ssx/Asx/Tsx/Bsx/3Hrn/ 2Tpt/2Trb/Tba/Accord/ Org/6Vln/3Vla/3Vcl/ 2Bass
Haas, Georg Friedrich	Introduktion und Transsonation	2012	2013	Afl/Cl/BsCl/Tsx (+Ssx)/ 2Hrn/Tpt/2Trb/2Vln/ 2Vla/2Vcl/2Bass
Haas, Georg Friedrich	Saxophone Quartet	2014	2015	4Sx: SATB
Haas, Georg Friedrich	das kleine ICH BIN ICH	2016	2016	Nar/Fl/Ob/2Cl/2Ssx (+Bsx, Tsx)/Bsn/Hrn/Tpt/ Trb/Tba/Perc/Accord/ Harp/3Vln/2Vla/4Vcl/ 2Bass
Harvey, Jonathan	Valley of Aosta	1988	1989	Fl/Ob/Ssx/Tpt/2Synth/ 2Harp/Pno/2Vln/Vla/Vcl/ Perc
Hurel, Philippe	Opcit	1984	1984	Tsx solo
Hurel, Philippe	Pour l'image	1986	1987	Fl/Ob/Cl/Asx/Hrn/Tpt/ Trb/2Perc/2Vln/Vla/Vcl/ Bass
Hurel, Philippe	Fragment de lune	1986	1986	2Fl/Ob/2Cl/Bsn/Asx/ 2Hrn/Tpt/Trb/2Perc/ 4Synth
Hurel, Philippe	Diamants imaginaires, Diamant lunaire	1986	1986	2Fl/Ob/3Cl/Bsn/Asx (+Bsx)/2Hrn/Tpt/Trb/2 Perc/Harp/2Synth/2Vln/ Vla/Vcl/Bass
Hurel, Philippe	Bacasax	1990	1990	Asx/Pno
Hurel, Philippe	Rémanences	1992	1992	BCl/Tsx/Hrn/Tba/2Synth
Hurel, Philippe	Phasis	2008	2008	Tsx solo / Fl/Cl/Bsn/Hrn/ Tpt/Trb/Perc/Pno/2Vln/ Vlc/Bass
Hurel, Philippe	À bâtons rompus	2008	2008	Asx/Perc

Hurel, Philippe	Localised Corrosion	2009	2010	Asx/Elec guit/Perc/Pno
Hurel, Philippe	Global Corrosion	2016	2016	Asx/Elec guit/Perc/Pno
Leroux, Philippe	Phonie Douce	1991	1992	Asx/Ob/Vcl
Leroux, Philippe	On a Crié	1991	1992	Ch/2Fl/2Cl/Asx/Hrn/Tpt/ 2Trb/2Perc/Harp/Pno/ Vla/2Vcl/Bass
Leroux, Philippe	Un Lieu Verdoyant – Hommage À Gérard Grisey	1999	1999	Voice/Ssx
Leroux, Philippe	3 Bis, Rue d'Insister	2000	2003	Ssx (+Asx)/Vln/Vla/Vcl/ Pno
Leroux, Philippe	SPP	2000	2007	Ssx/Pno
Leroux, Philippe	Airs	2003	2004	Ssx/Perc
Leroux, Philippe	Du Souffle	2003	2003	4Sx: SATB
Leroux, Philippe	L'Unique Trait de Pinceau	2008	2009	Bsx (+Ssx) solo / Orch
Leroux, Philippe	De L'Imitation	2015	2016	4Sx: SATB / Electronics
Levinas, Michaël	3 Pensees pour coma	1999	1999	Fl/Ob/Cl/Tsx/Hrn/Tpt/ Trb/Pno/Strings
Levinas, Michaël	Incurver	2006	2006	3Sx: SAB solo / 3Fl/2Cl/ BCl/2Hrn/2Tpt/3Trb/Tba/ Perc
Lévy, Fabien	L'air d'ailleurs-Bicinium	1997	1997	Asx / Electronics
Lévy, Fabien	Durch, in memoriam G. Grisey	1998	1999	4Sx: SATB
Lévy, Fabien	Où niche l'hibou?	1999	2000	2Sx: AA
Lèvy, Fabien	Risala fî-l-hob wa fi'lm al handasa	2003	2003	Fl/Cl/Tsx/Vln/Vcl
Lévy, Fabien	Towards the door we never opened	2013	2013	4Sx: SATB

Maiguashca, Mesias	Lindgren	1985	-	Bsx / Tape
Maiguashca, Mesias	Vorwort zu solaris	1989	1989	Vcl/Tpt/Perc/Ssx (+Bsx)/ Tape
Maiguashca, Mesias	Aus "Deutsches Requiem"	1998	1998	Pno/Sx/Perc/Electronics
Niculescu, Stefan	Cantos	1985	1985	Snsx (+Asx,Tsx,Bsx) / Orch
Niculescu, Stefan	Octoplum	1985	1985	Ssx (+Asx) / Fl/Cl/Perc/ Mand/Guit/Vla/Vcl
Niculescu, Stefan	Chant-son	1989	1989	Ssx (+Asx) solo
Niculescu, Stefan	Axion	1992	1992	Snsx (+Asx, Tsx)/Fch
Radulescu, Horatiu	Capricorn's nostalgic cruckets	1983	1983	Asx / Electronics
Radulescu, Horatiu	Astray	1985	1985	Snsx (+Asx, Ssx, Tsx, Bsx, Bssx) / Prepared pno
Radulescu, Horatiu	Sensual sky	1985	1985	Asx/Trb/Vcl/Bass/Tape
Radulescu, Horatiu	Sky	1985	-	Sx/Fl/Cl/2Bsn/2Bass/Perc
Radulescu, Horatiu	X	1985	-	Sx/Cl/2Bsn/2Bass/Perc
Tessier, Roger	Avaz - Concerto, op. 42	1979	1978	Asx / Orch
Tessier, Roger	Trisztan Kommentarok, op. 83	2006	2006	Sop voice / Sx
Vivier, Claude	Palau Dewata	1977	-	4Sx: SATB
Vivier, Claude	Pulau Dewata	1977	-	12Sx: SnSSAAATTTBBBs

CHAPTER FOUR

GÉRARD GRISEY – *ANUBIS ET NOUT*

Gérard Grisey was one of the pioneers of spectral music and is considered by some to be the father of this compositional style. While no individual truly invented spectralism, Grisey nevertheless forged a distinctive voice on the musical landscape of his time that has proven widely influential into the 21st century. Grisey's impact was fueled by his desire to create innovative music and supported by his world-class education, access to state-of-the-art acoustic technology at IRCAM, and involvement with a group of artists in *Ensemble L'Itineraire* who were committed to presenting the new music of the anti-establishment. Grisey wrote the first spectral works involving saxophone, thus paving the way for later pieces for our instrument that have built on his concepts and innovations.

Grisey was born on June 17, 1946, in Belfort, France. After his initial musical training at the Trossingen Conservatory in Germany from 1963 to 1965, he attended the CNSM in Paris, where he studied with Olivier Messiaen. In the ensuing years, Grisey studied composition with Henri Dutilleux at the Ecole Normale and Iannis Xenakis and György Ligeti at the Darmstadt Summer Courses. He later studied electro-acoustics with Jean-Etienne Marie and acoustics with Emile Leipp at the Faculté des Sciences. Grisey met Tristan Murail and founded *Ensemble L'Itineraire* in the midst of his 1972-1974 residency at Villa Médicis, Rome after winning the Rome Prize. Grisey died of an aneurism in 1998 at the age of 52.

Grisey arrived at a pivotal juncture in his career in 1972. This was the year in which he first heard Karlheinz Stockhausen's 1968 work for six a capella voices, *Stimmung*, while attending the Darmstadt Summer Courses. This piece was also the primary topic of Stockhausen's lectures in Darmstadt that year, which Grisey attended. The experience was critical towards the development of Grisey's spectral concepts.[39] As mentioned in chapter 2, *Stimmung* is often seen as an important precursor to the music of the spectralists due to its use of the harmonic structure of a B-flat as an organizing principle. While Grisey had previously experimented with chords mimicking the spectral structure of sounds in pieces such as *D'eau et de pierre*, he shifted his focus for spectral harmonies from serving as natural resonance to a central organizing element following his introduction to *Stimmung*.[40]

It was during Grisey's residency at the Villa Médicis after winning the 1972 Rome Prize that he first met Tristan Murail and began to conceive the music later termed spectral. He began work on what are now considered his first mature pieces during this residency, *Dérives* and *Périodes*, laying the groundwork for the spectral aesthetic.[41] After hearing and studying Stockhausen's *Stimmung*, Grisey vowed to "give all sound phenomena purpose," and the harmonic spectrum, as a representation of said sound phenomena, became the structural foundation of his compositional process.[42] In *Dérives*, scored for two orchestral groups including saxophone, the recurring harmonic spectrum of an E-flat underpins the development and

---

[39] François-Xavier Féron. "The Emergence of Spectra in Gérard Grisey's Compositional Process: From *Dérives* (1973-74) to *Les espaces acoustiques* (1974-85)," *Contemporary Music Review*, vol. 30, no. 5 (October 2011): 347.

[40] Ibid, 348. Grisey's initial use of spectral chords prior to 1972 was undoubtedly influenced by Messiaen's similar interest in composed resonance and experimentation in the restructuring of harmonics in pieces like the 1950 *Quatre études de rhythme*.

[41] Ibid, 344.

[42] Ibid, 349.

transformation of the work. *Périodes*, the first in the cycle of spectral works entitled *Les espaces acoustiques*, is organized around the harmonic spectrum of an E and the respiratory cycle of inhale, exhale, and rest.[43]

Written in 1985, the final work from *Les espaces acoustiques*, *Épilogue*, was Grisey's second use of saxophone. Tenor and baritone saxophones are included in this work for a large orchestra that also involves both electric guitar and electric organ as well as four solo horns. Of the six works in *Les espaces acoustiques, Épilogue* is the only work that is intended not to be performed in isolation. Instead, it is only meant to be heard as a conclusion to *Transitoires*. His next work for saxophone, *Anubis et Nout*, would become an essential element of the saxophone repertoire.

Grisey wrote two more important works involving saxophone after *Anubis et Nout.* Both works exemplified Gisey's new interest in language and composition for voice. The first, *L'Icône paradoxale*, was written in 1994 for the Los Angeles Philharmonic and Orchestre de la Scala de Milan. It received its premiere by the Los Angeles Philharmonic in 1996 under the direction of Esa-Pekka Salonen. *L'Icône paradoxale* is scored for a large orchestra split into two groups with soprano and mezzo-soprano soloists. Both tenor and baritone saxophone are included in the piece, which was written as a tribute to the Italian Rennaisance painter Piero della Francesca's work *La Madonna del Parto*. Writings on perspective by Piero della Francesca make up the text in *L'Icône paradoxale.*

Quatre chants pour franchir le seuil (1998) was the final piece composed by Gérard Grisey. It is scored for a soprano soloist and fifteen instrumentalists, including two saxophonists. One part includes soprano, alto, and tenor saxophone, the other doubles baritone and tenor

[43] Ibid, 345.

saxophone. *Quatre chants* is a meditation on human mortality and utilizes novel harmonic compression and filtering techniques that Grisey may have continued to explore had he not died suddenly in November of 1998.[44]

Anubis et Nout Overview

Anubis et Nout was originally written for contrabass clarinet in 1983 and is one of only two mature works by Grisey for a solo instrument.[45] Grisey wrote this piece for the Dutch clarinetist Harry Sparnaay at the performer's request for a work for solo contrabass clarinet.[46] Sparnaay earned degrees in clarinet performance from the Conservatory of Amersterdam under the tutelage of Ru Otto, where he also played saxophone before specializing in bass clarinet. He has since established himself as one of the world's premiere performers and advocates for new music on his instrument. In addition to *Anubis et Nout*, over 500 compositions have been written for him by composers including Luciano Berio, Franco Donatoni, Morton Feldman, Brian Ferneyhough, Jonathan Harvey, Helmut Lachenmann, and Iannis Xenakis.[47]

Anubis et Nout was dedicated to the memory of Claude Vivier, who was murdered in Paris in 1983. Vivier, born in 1948, was a Québécois composer who had studied with Gilles

---

[44] Julian Anderson. "Grisey, Gérard," in *Grove Music Online*. *Oxford Music Online* (Oxford University Press), accessed July 3, 2017. http://www.oxfordmusiconline.com.turing.library.northwestern.edu/subscriber/article/grove/music/45479.

[45] Grisey's other solo work is *Prologue* (1976) for viola, which is the first piece from *Les espaces acoustiques*.

[46] Rhonda Janette Taylor. "Gérard Grisey's *Anubis et Nout*: A Historical and Analytical Perspective" (DMA diss., University of Arizona, 2005), 24. At the time, there were no other works for solo contrabass clarinet.

[47] Harry Sparnaay, "Harry Sparnaay: Biography," *Harry Sparnaay*. Accessed July 31, 2017. http://www.harrysparnaay.info/biography.htm.

Tremblay, Paul Méfano, Karlheinz Stockhausen, Hans Ulrich Humpert, and Gottfried Michael Koenig. Grisey was a close friend of Vivier and wrote fondly of Vivier's authenticity and sense of melodicism following the young composer's death.[48] Sparnaay was not personally acquainted with Vivier, although he has since been featured as an instrumental soloist in the composer's 1980 opera, *Kopernikus*.

While Grisey was by no means an advocate of program music, some of his works, including *Anubis et Nout*, draw from extra-musical sources. *Anubis et Nout* is entitled with reference to the ancient Egyptian deities from the *Book of the Dead*. Anubis, typically depicted as a man with the head of a jackal, is the god of the underworld, responsible for ushering the dead to the afterlife and guarding gravesites. Nout (more typically spelled *Nut* in English) is the lithe goddess of the sky.[49] Often portrayed as a nude woman arching over the earth with her hands and feet representing the four cardinal directions, Nout was believed to be the mother of all celestial bodies. As a symbol of protection for the deceased, her image was typically painted on the inside of sarcophaguses.

Grisey consulted extensively with Sparnaay as well as the French bass clarinetist Jean-Noël Crocq prior to and during the composition of *Anubis et Nout*. These performers discussed multiphonics and timbral fingerings with the composer at length, resulting in the fingering chart that is included in the published contrabass clarinet version of the piece.[50] This experimentation

---

[48] Taylor, "Gérard Grisey's *Anubis et Nout*: A Historical and Analytical Perspective," 24.

[49] Gérard Grisey, "*Anubis et Nout*: Deux pièces pour saxophone basse ou saxophone baryton," *IRCAM Centre Pompidou*. Accessed June 28, 2017. http://brahms.ircam.fr/works/work/8947/.

[50] Taylor, "Gérard Grisey's *Anubis et Nout*: A Historical and Analytical Perspective," 27. There is no such chart included in the published version for bass or baritone saxophone.

with alternative fingering combinations to achieve varying timbres was essential to the construction of *Anubis*. Grisey and Crocq's experimentation with a succession of third partials (interval of a twelfth above the fundamental), which sound with relative ease on the contrabass clarinet, resulted in the source material for *Nout*.[51]

Grisey approached the French saxophonist Claude Delangle about creating a version of *Anubis et Nout* for saxophone in 1989. Grisey and Delangle were well acquainted as both held teaching posts at the CNSM. The original plan was for Grisey to use this adaptation of *Anubis et Nout* as a preparatory exercise for the composition of another piece for saxophone; however, his untimely death in 1998 precluded the completion of this new project.[52] Instead, *Anubis et Nout* remained Grisey's only work for solo saxophone and has since become embedded in the standard repertoire of concert baritone and bass saxophonists.

While numerous similarities exist between the saxophone and clarinet, the difference in bore shape between the two instruments is quite significant, particularly in the case of *Nout*. The adaptation of *Anubis* for baritone or bass saxophone worked immediately, and according to Delangle, Grisey preferred this version to the original contrabass clarinet.[53] However, the acoustic differences between the saxophone and clarinet became problematic for *Nout*. The cylindrical bore of the clarinet results in an instrument that overblows at the twelfth. Grisey knew this and experimented with twelfths with Croq and Sparnaay prior to composing *Nout*, which seamlessly paints lines based on this partial.

The saxophone's bore, however, is cylindrical, resulting in a first overtone at the interval of an octave. This is why the saxophone includes an octave key as opposed to the register key on

---

[51] Ibid, 27.
[52] Ibid, 32.
[53] Ibid, 33.

clarinet, which will produce a tone one twelfth higher than the fundamental. While it is of course possible to overblow a twelfth on saxophone, it is not accomplished with the same ease as on clarinet; therefore, this important acoustic difference necessitated a slight reworking of *Nout* for the saxophone version.

The differences between the saxophone and clarinet versions of *Nout* are otherwise relatively minor. First, and most obviously, the saxophone version has been transposed down a minor seventh. Second, to account for the differing acoustic properties of the instruments, the written multiphonics have been adjusted, though the transposed fundamental remains the same. Finally, one interval has been changed from a 12th to an octave near the end of the third line in the saxophone version for ease of execution on the cylindrical instrument.[54]

Numerous elements of *Anubis et Nout*'s compositional structure place it within the context of the spectral aesthetic. Perhaps the most obvious spectral quality is the piece's continual exploration of evolving timbres. *Anubis* contains long swaths of material in which the pitch content remains static, while an additional staff instructs the performer to alter timbres via fluctuating fingering choices. The evolving timbre of these pitches is the primary material of the piece. *Anubis* ends with a rhythmically notated *rallentando*, itself a hallmark of spectral music, and is coupled with specific tempo reductions from quarter-note equals 120 to 60 (and briefly back to 90), to 45 beats per minute. This significant reduction of momentum, combined with a reduction in dynamic to *pianississimo* allows the music to fade out into the ether.

Like *Anubis*, *Nout* contains a number of characteristically spectral qualities, including a special emphasis on evolving timbres. Grisey again includes the additional staff to indicate shifting timbres; this movement additionally necessitates the sounding of overtones, in particular

[54] Ibid, 88.

the third partial (one twelfth above the fundamental). Multiphonics that break from the fundamental and oscillate to various partials are also mixed in throughout *Nout*. At a glance, *Nout* appears to be significantly shorter in length than *Anubis*, yet its specific tempo indication of sixteenth-note equals 87 beats per minute was calculated so that the two movements would occupy the same amount of time.

The overtones, timbral shifts, and rhythmically notated adjustments of time included in *Anubis et Nout* are all hallmarks of spectral music. However, none of these elements taken alone would place this piece within the spectral aesthetic. The pitch content of both *Anubis* and *Nout* are built on the harmonic spectra of various fundamentals. A detailed analysis of the spectra that Grisey used, as well as rhythm and other parameters, can be found in Rhonda Taylor's dissertation.[55] For our purposes, it will suffice to say that these elements, combined with Grisey's standing as the father of this compositional aesthetic, place *Anubis et Nout* squarely within the context of spectral music. Instead, we will focus on how saxophonists may best confront the challenges presented by this music.

Performance Guide

Gérard Grisey's lone piece for solo saxophone presents many unique challenges to the saxophonist, regardless of one's experience with music of its kind. Even those with relatively extensive backgrounds in contemporary music will likely encounter some new hurdles to overcome in order to present an accurate, compelling presentation of this work. These issues are compounded by the lack of any extensive performance instructions included in the published

[55] Taylor, "Gérard Grisey's *Anubis et Nout*: A Historical and Analytical Perspective."

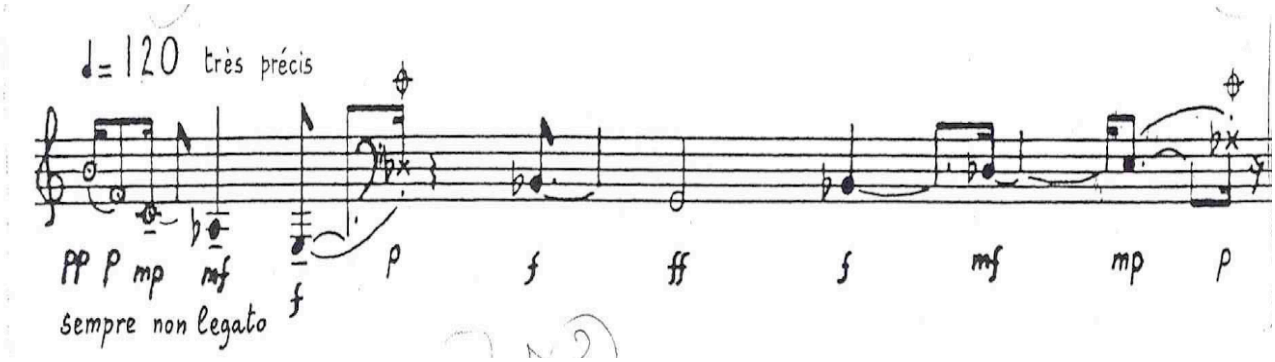
score. Taken alone, none of the challenges associated with *Anubis et Nout* are, in and of themselves, specific to spectralism; however, they all contribute to its place within this compositional style. We will discuss some of the difficulties associated with *Anubis et Nout* and offer some practical solutions.

Anubis et Nout can be a confusing score to look at for the uninitiated saxophonist. Perhaps the first oddity I noticed when initially perusing the music was that almost the entire piece is written in bass clef. Saxophone music is generally always written in treble clef.[56] Further complicating matters in *Anubis* are the sporadic changes to treble clef, some of which include pitch content that appears to extend below the range of the saxophone. The fourth and fifth notes of *Anubis*, for instance, are written A-flat and F below the staff in treble clef before proceeding to a written D-flat on the staff in bass clef. A saxophonist new to this music would be forgiven for wondering just what notes they should play.

The solution to this issue is relatively straightforward, if not immediately obvious. To account for necessary changes in register and preservation of the musical line, music notated in treble clef should be played two octaves above where it appears in the score. For the bass clef material, saxophonists may think of reading in treble clef but playing pitches a minor third above where they are written. This solution prevents pitches from extending below the range of the saxophone. Figures 4.1 and 4.2 display material excerpted from the opening of *Anubis* as written in the published score followed by how this may be notated in a manner more familiar to saxophonists below.

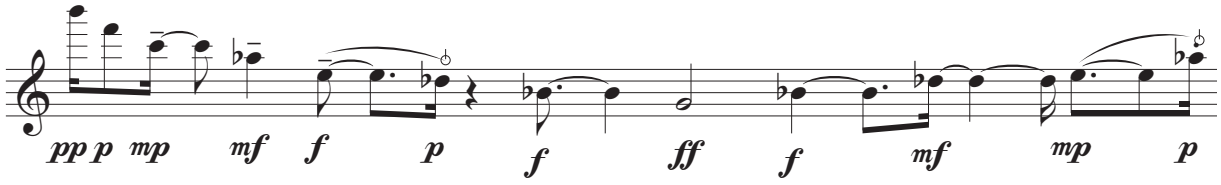
[56] I am unaware of any other published music for saxophone notated in anything other than treble clef.

Figure 4.1 – Opening material of *Anubis* as originally notated



Gérard Grisey, *Anubis et Nout: Deux Pièces pour Saxophone Basse ou Saxophone Baryton*, Milan: Ricordi, 1990.

Figure 4.2 – Opening material of *Anubis* as traditional saxophone notation



In addition to changing the notation of pitch content to reflect a more familiar clef to saxophonists, three additional minor adjustments have been made. The first was simply the addition of a few noteheads that are omitted from the original score, such as on the eighth-note C at the beginning. The second was the adjustment of the slap-tongue notation. Grisey uses a cross inside of a circle marked above an X notehead, which is not explained in any performance note in the published score. Instead, the above notation has been adjusted to use the more standard pitched slap-tongue marking for saxophone, which consists of a Bartók pizzicato symbol above a traditional notehead. On the final page of *Anubis*, Grisey indicates notes that should be slap

tongued with these X noteheads, while other notes have normal noteheads and "slap tongue" written in text above them. The slap tongues with the X noteheads in this case always follow those with normal noteheads and should be played softer and with less pitch, as if they are an echo of the preceding sounds.

Finally, one may notice that the first three pitches in the original score are written with circular noteheads containing a dot in their center. This is an unusual notation that is left unexplained by any performance notes. Noteheads of this variety are encountered periodically throughout *Anubis* when the pitch reaches any higher than a written D-flat above the staff in bass clef, with a few exceptions on the third page of the published score. This notation applies to saxophonists who opt to perform the work on bass saxophone. Grisey's intention was for these notes to be sung by the bass saxophonist in order to ease the difficulty of producing these high tones, and in the words of Claude Delangle, "to reinforce the idea of changing harmonic spectra."[57] The performer may alternatively choose to play these notes on the instrument if they can be produced with a convincing tone; likewise, the baritone saxophonist may opt to sing these pitches. Either option is admissible by the composer.[58]

The third note on the fourth line of *Anubis* exemplifies yet another notational ambiguity found throughout the entire piece that is unexplained by any performance note in the published score. Here we find a half-note written with a slash through its notehead. Grisey uses the slash to indicate a "broken sound." This is achieved by fingering the indicated pitch and voicing the note or manipulating the embouchure in such a way that renders the resulting sound rough.[59] The

---

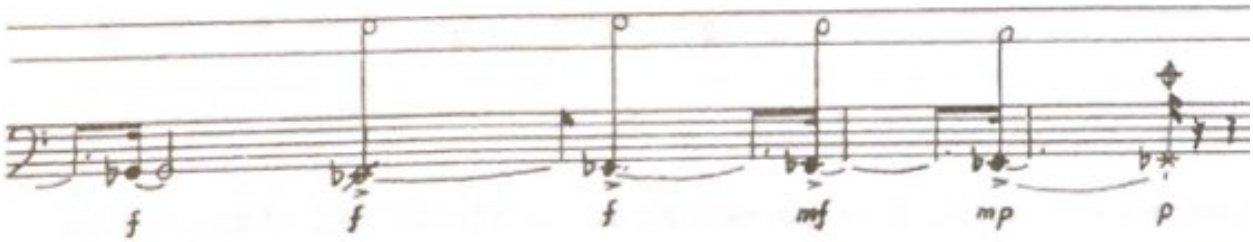
[57] Taylor, "Gérard Grisey's *Anubis et Nout*: A Historical and Analytical Perspective," 34.

[58] Ibid, 34.

[59] The term "voicing" is applied here to indicate any motion of the oral cavity for the purpose of redirecting the flow of air.

fundamental E-flat must still sound during this process and the higher partials should be avoided; this “broken sound” is not synonymous with multiphonic.

Figure 4.3 – Fourth line of *Anubis*



Gérard Grisey, *Anubis et Nout: Deux Pièces pour Saxophone Basse ou Saxophone Baryton*, Milan: Ricordi, 1990.

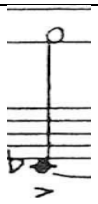
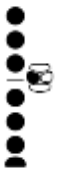
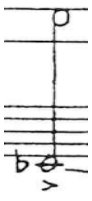
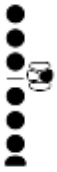
In addition to the slash notehead on the first written E-flat seen above, one will also notice the open noteheads placed in various positions between two lines above the staff. The placement of these open noteheads serves to denote the intended timbre for each pitch. An open notehead placed closer to the top line indicates that a pitch should have a timbre that emphasizes more of the higher partials, while an open notehead placed closer to the bottom line should have a darker timbre, emphasizing lower partials. When a pitch includes multiple indications for timbral quality, these shifts must be made without rearticulating the note. This timbral staff is used throughout the majority of *Anubis* and the entirety of *Nout*.

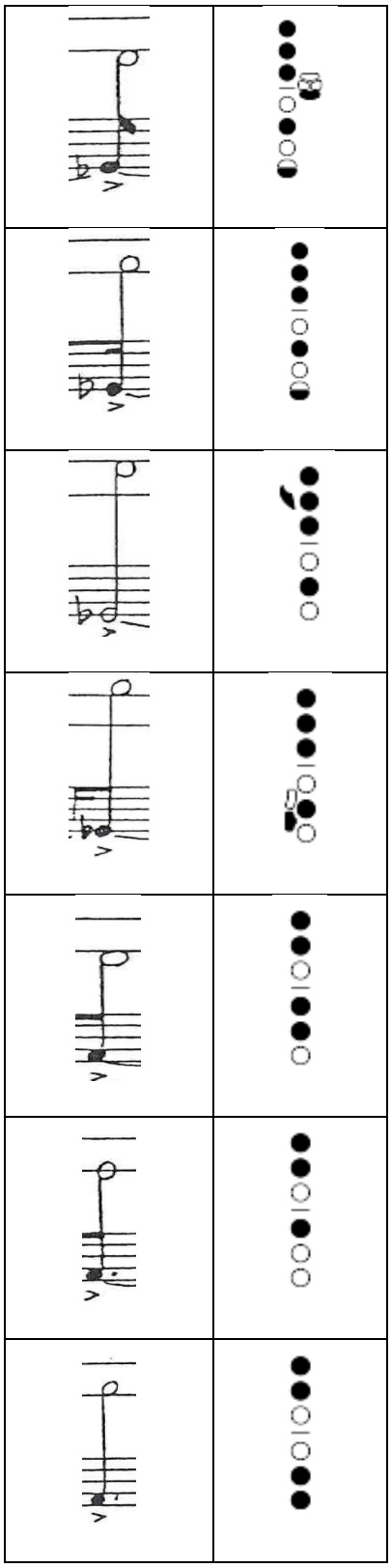
A saxophonist’s most reliable tool to accomplish these timbral changes is the use of alternate fingerings. For instance, on the first two E-flats written above, the saxophonist may opt to vent these notes with their low C-sharp key in order to achieve the indicated higher timbre. The third E-flat, with an open notehead directly in between the two lines, may be played using a standard fingering. Finally, the fourth E-flat could be covered with the low B-flat key to darken the timbre of the pitch. When choosing alternate fingerings, one must keep in mind that only the

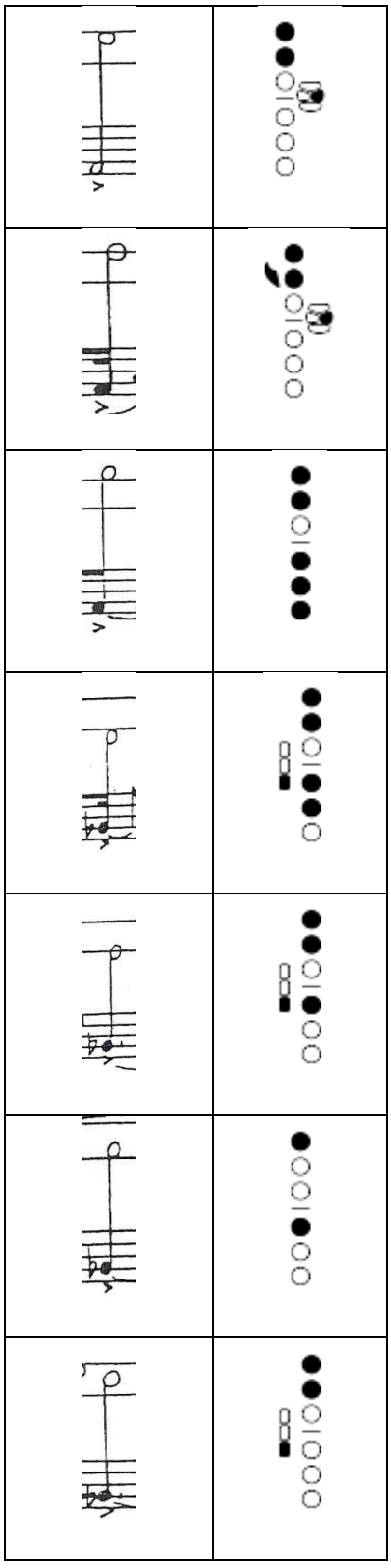
timbre of the note should shift; the pitch must remain true. This can be a difficult task while changing timbres, especially coupled with the sudden fluctuations in dynamics, but the sonic structure of *Anubis et Nout* relies on accurate representation of pitch.

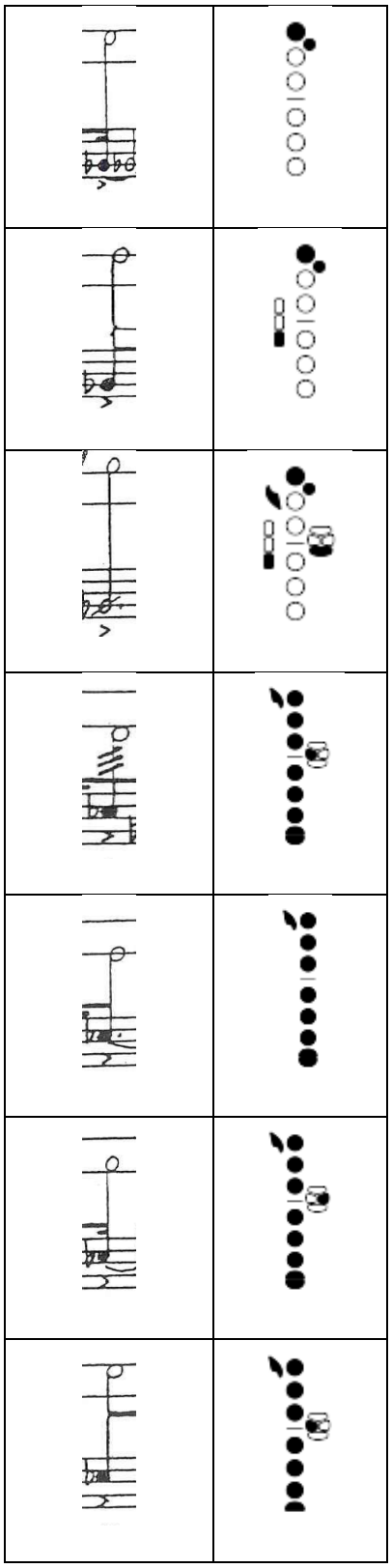
Table 4.1 displays my recommended fingerings for all of the pitches in *Anubis* with varied timbres. It should be noted that these fingerings may not be ideal on every model of saxophone, and several may require some additional manipulation of voicing to further enhance timbral differences, or in some cases, to account for pronounced intonation fluctuations. All pitches shown are written in bass clef. Most pitches with noteheads marked in the middle of the timbral staff have been omitted from this chart; it should be assumed that notes may be played with a standard fingering. The exception is B-flat, which has multiple fingering possibilities that could be considered standard. Pitches are organized in the order in which they appear in the piece, with darkest timbres listed first.

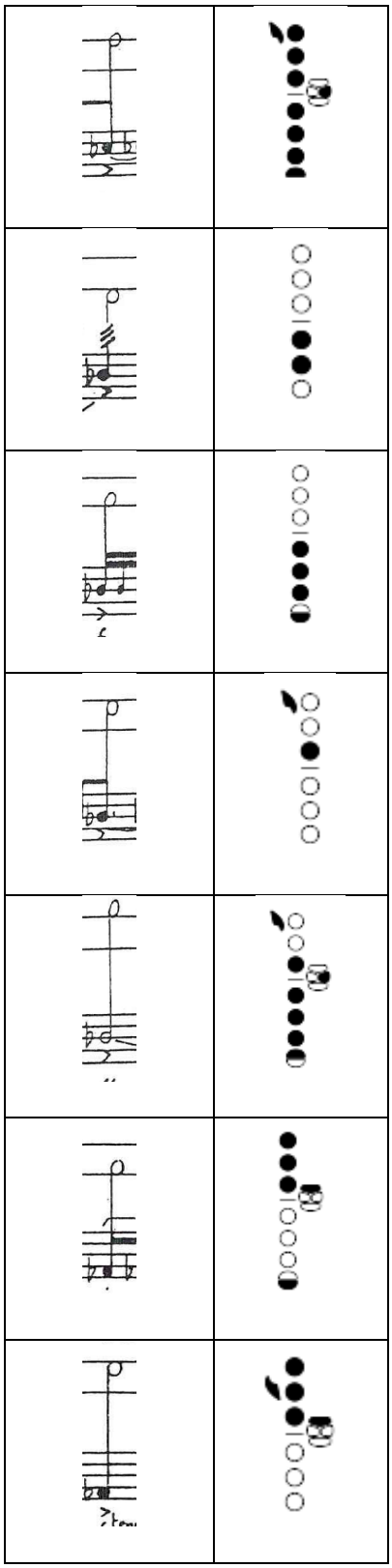
Table 4.1 – Suggested timbral fingerings for *Anubis*

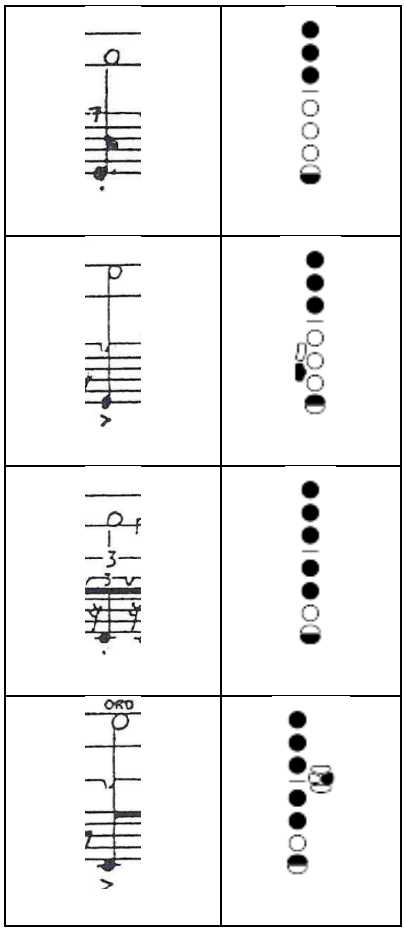
Pitch / Timbre	**Fingering**
	
	







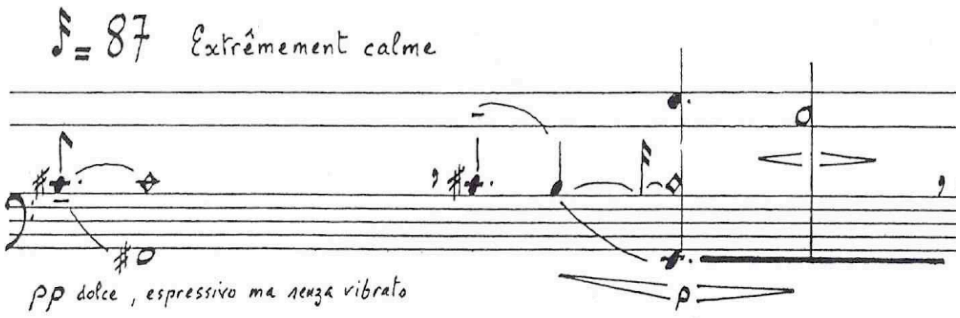




In *Nout*, diamond noteheads are used above normal noteheads to indicate overtones that should sound. In the opening, one must slur between a C-sharp and F-sharp fingering, while maintaining the sounding C-sharp pitch as much as possible before relenting to the fundamental F-sharp, almost imperceptibly. As previously mentioned, this is accomplished more easily on clarinet than saxophone due to the instrument's bore shape and inclusion of a register key; however, this task is by no means impossible on the cylindrical saxophone body. When absolutely necessary for achieving an unbroken line of sound and maintaining *Nout*'s expansive, ethereal quality, alternate fingerings may be used to aid in the production of these twelfths. For

instance, one may leave their third finger slightly open as she puts down the F-sharp fingering for the second pitch, which helps the saxophone to pop up to the requisite third partial.

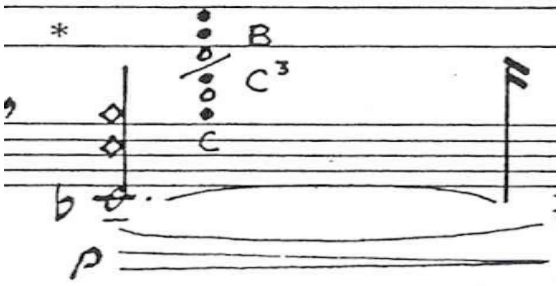
Figure 4.4 – Opening of *Nout*



Gérard Grisey, *Anubis et Nout: Deux Pièces pour Saxophone Basse ou Saxophone Baryton*, Milan: Ricordi, 1990.

Two other issues must be addressed in *Nout*, and thankfully, Grisey does include some written instructions on the bottom of the score. First is the issue of multiphonics. The composer includes fingering indications for the two written multiphonics in *Nout*; however, due to the inherent acoustic differences between various models of saxophones and the mere fact that this piece may be played on either bass or baritone saxophone, these fingerings will not work for everyone. According to the composer's note, the saxophonist is free to apply a solution unique to their setup, providing that the fundamentals F and E-flat are maintained. This was necessary for the second multiphonic (seen below) on my Yanagisawa 991 baritone saxophone, as the fifth finger cannot be lifted independently of the sixth on this particular instrument. My fingering solution is provided below in Figure 4.6.

Figure 4.5 – Second Multiphonic in *Nout*



Gérard Grisey, *Anubis et Nout: Deux Pièces pour Saxophone Basse ou Saxophone Baryton*, Milan: Ricordi, 1990.

Figure 4.6 – Suggested Multiphonic Fingering

The second issue addressed by Grisey on the bottom of the score is that of breath marks. Due to the extremely slow pace of *Nout* and the large body instruments for which it is written, breathing is one of the movement's principle challenges. The preferred solution to this issue is to utilize circular breaths throughout the piece; however, breath marks inside parenthesis are included for cases where circular breathing is not possible or sufficient. Grisey includes nine breath marks that are not enclosed in parenthesis throughout *Nout*; these markings are obligatory, as they contribute to the piece's sprawling, elastic atmosphere.

Gérard Grisey's *Anubis et Nout* for bass or baritone saxophone is a challenging work for any performer. Preparing an accurate, compelling performance of this work is an undertaking which demands meticulous dedication. From the continually evolving timbres and dynamics of

Anubis to the elongated, meditative lines of *Nout*, each detail of the piece requires steadfast poise and control from the performer. Despite its challenges to the performer, *Anubis et Nout* is an indispensable element of the bass and baritone saxophonist's repertoire, important both for its subjective beauty and its lasting impression on future spectral works for saxophone.

CHAPTER FIVE

PHILIPPE HUREL – *OPCIT*

Philippe Hurel is one of the foremost figures among the generation of spectral composers whose work closely followed the aesthetic's originators. These composers built on the research and pioneering efforts of the members of *L'Itinéraire,* the German Feedback group, and others. Like Griséy, Hurel was propelled to success by access to a world-class education, cutting-edge technology, like-minded composers, and capable performers eager to perform his works. In addition to his contributions to the spectral compositional style, Hurel has bolstered the saxophone repertoire with ten works for the instrument to date.

Philippe Hurel was born on July 24, 1955, in Domfront, France. He studied musicology at the University of Toulouse, where his primary instrument was violin, before entering the CNSM Paris. His primary teachers at the CNSM were Ivo Malec and Betsy Jolas. In 1984, Hurel took a course in computer science with the co-founder of *Ensemble L'Itineraire*, Tristan Murail, and he was a member of the research team at IRCAM from 1985 to 1986 and again from 1988 to 1989. During the interim years of 1986 to 1988, he was a resident of the Villa Medici as a winner of the Rome Prize. Hurel founded the new music ensemble Court-Circuit with flutist and conductor Pierre-André Valade in 1990; Hurel remains the group's artistic director as of this

writing. He served as a professor of composition at IRCAM in the computer music curriculum from 1997 to 2001, and since 2013, Hurel has taught composition at CNSM Lyon.

Hurel's music owes much to the pioneering work of Grisey, Murail, and the other founders of the spectral school of composition; however, his works do not necessarily fit neatly into the confines of the aesthetic's typical parameters. Hurel was initially interested in serialism and counterpoint before hearing and studying the works of Grisey and Murail in the late 1970s. These radical new works precipitated a drastic change in how Hurel perceived music and made an indelible mark on his compositional output moving forward.[60] His initial reaction following his discovery of spectral music was to abandon his prior contrapuntal writing style and begin working on orthodox spectral techniques. *Diamants imaginaires, diamond lunaire*, which Hurel wrote between 1984 and 1986, is an early example of his foray into the spectral language.[61]

Hurel's interest in counterpoint failed to completely wane, however, which led to the development of his particularly unique voice. Since the mid-1980s Hurel has sought to combine his interest in polyphony and counterpoint with the seemingly incompatible language of spectralism.[62] Polyphony and counterpoint rely heavily on repetition; the lack of any repetition is a hallmark of spectral music. Hurel's novel solutions to this odd wedding of influences have resulted in very original sounding works. His organization of musical objects typically follows a continuous transformation; however, subsections of his music often reference earlier musical

---

[60] Tom DeCock and Vincent Caers, "Philippe Hurel," *Living Scores*. Accessed October 6, 2018. http://www.living-scores.com/learn/platform/philippehurel .

[61] Guy Lelong, "Philippe Hurel," *IRCAM Centre Pompidou*. Accessed October 6, 2018. http://brahms.ircam.fr/philippe-hurel#parcous . This early spectral piece from Hurel calls for alto and baritone saxophone.

[62] *Pour L'image* and *Fragment de lune*, both written between 1986 and 1987, exemplify Hurel's early combination of contrapuntal and spectral elements. Both works utilize the alto saxophone.

material, creating a kind of contrapuntal structure within the composite musical texture.[63] To achieve this unique result, Hurel creates what he calls "patterns" within his music, an idea influenced by fractal mathematics.[64] Periodically, Hurel includes what he calls "signals," which are more starkly recognizable repetitions that aim to guide the listener back to previous material.[65] The listener can therefore follow both an evolution of timbre and a contrapuntal structure that relies on the memory of previous material.[66] Memory serves a crucial role in the music of Hurel.

Several other factors contribute to Hurel's unique voice within the field of spectral composition. In addition to his combination of globally perceived timbres and perceived polyphony, he frequently uses microtonality to increase the harmonic spectrum.[67] Hurel believes that music is a succession of tension and release, and a clear structure indicating this evolution is important to him.[68] Finally, Hurel has frequently incorporated rhythmic motives indicative of jazz in his music since his 1990 *Six miniatures en trompe l'oeil*.[69]

As of this writing, Philippe Hurel has written ten works including saxophone. His first piece for the instrument was his 1983 work for solo tenor saxophone, *Opcit*, which we will discuss in greater detail below. His next use of saxophone was in his 1985 work for oboe, clarinet, horn, trombone, trumpet, violin, viola, cello, bass, percussion, and alto saxophone

---

[63] DeCock and Caers, "Philippe Hurel."

[64] Ibid.

[65] Kari E. Besharse, "The Role of Texture in French Spectral Music," (DMA diss., University of Illinois – Urbana-Champaign), 194.

[66] DeCock and Caers, "Philippe Hurel."

[67] Lelong, "Hurel, Philippe," in *Grove Music* Online (Oxford University Press), accessed October 7, 2018, http://www.oxfordmusiconline.com/grovemusic/view/10.1093/gmo/9781561592630.001.0001/omo-9781561592630-e-0000045480.

[68] DeCock and Caers, "Philippe Hurel."

[69] Lelong, "Hurel, Philippe."

entitled *Pour l'image*. This piece received its premiere on February 9, 1987, in Bordeaux by the Ensemble Musique Nouvelle under the direction of Michel Fusté-Lambezat.

Hurel's next work involving saxophone was his 1986 *Diamants imaginaires, Diamant lunaire*. This is a pair of pieces meant to be played together without interruption. The score calls for electronics and a mixed instrumental ensemble including alto saxophone doubling baritone saxophone. *Diamants imaginaires, Diamant lunaire* forms a cycle with Hurel's 1986 *Fragment de lune*, which also uses alto saxophone, and begins with material from *Diamant lunaire*.

Hurel's next work involving saxophone was his 1990 *Bacasax*. Written for alto saxophone and piano, *Bacasax* is intended to be used as a pedagogical piece. This is Hurel's only didactic work for saxophone and also his only piece for saxophone and piano to date. *Remanences* (1992 for tenor saxophone), *À batons rompus* (2008 for alto saxophone), *Localized Corrosion* (2009 for alto saxophone), and *Global Corrosion* (2016 for alto saxophone) all place our instrument in various chamber music settings.

Hurel's 2007 *Phasis* is a concerto for tenor or soprano saxophone and chamber orchestra. The piece was premiered on March 12, 2008, by saxophonist Johannes Ernst and conductor Nagy Zsolt in Berlin. *Phasis* is one of a group of four concert pieces that include *Les 4 variations* for percussion and ensemble, *Aura* for piano and orchestra, and *Phonus* for flute and orchestra. In *Phasis,* Hurel repeats material with constant evolution and variation and often offsets material between the ensemble and soloist in order to create an effect of phase delay. He creates an impression of recurring appearances of the same material in slightly altered states, which he describes as being similar to astrological phases.[70] The piece is also marked by nervous,

[70] Philippe Hurel, "*Phasis," IRCAM Center Pompidou*, accessed October 7, 2018. http://brahms.ircam.fr/works/work/20871/ .

rhythmic material, and saxophone multiphonics that have been computer analyzed and reorchestrated by the ensemble.[71]

Opcit Overview

Philippe Hurel composed *Opcit* for tenor saxophone between 1983 and 1984. Like Grisey's *Anubis et Nout*, Hurel's *Opcit* was dedicated to the French saxophonist Claude Delangle. Delangle gave the world premiere of the piece on September 28, 1984. *Opcit* received its United States premiere by Taimur Sullivan in 1998; it has since cemented its significant place in the somewhat under-developed contemporary repertoire of the tenor saxophone. Hurel composed an alternate version of the piece for clarinet in 1993, which received its premiere the following year.

Opcit was a pivotal composition for the composer as it was the first in which he enlisted the aid of computer technology. Using the computer, Hurel specifically "calculated all frequencies, durations, rhythmic structures, and formal proportions."[72] Hurel went on to become a member of the research team at IRCAM shortly after writing *Opcit*, and he later became a faculty member there. He first studied computer-assisted composition with Murail and later with Francis Courtot. His primary research focus at IRCAM was on the organization of rhythmic structures, including the application of expansion and compression on individual voices through rhythmic and tempo modulations.[73] Hurel frequently uses the evolution of duration and rhythm

---

[71] Ibid.

[72] Philippe Hurel, "*Opcit*," *Philippe Hurel*, accessed October 8, 2018. http://www.philippe-hurel.fr/notices/opcit.html.

[73] Besharse, "The Role of Texture in French Spectral Music," 195.

to transition between sections in his music, and he very often utilizes computer software to generate portions of the material.[74] *Opcit* is an outlier among the composer's oeuvre in that all aspects of the piece were calculated with the assistance of the computer.[75]

The title *Opcit* refers to the Latin phrase "opus citatum," meaning "the work cited." *Opcit* does not directly quote from any source; however, it is related to Hurel's *Eolia* for solo flute.[76] *Eolia*, composed between 1981 and 1982, was written for Pierre-André Valade, who co-founded the ensemble Court Circuit with Hurel. The two pieces consist of four movements linked by an increasing degree of complexity.[77]

In addition to *Opcit*'s reference to *Eolia*, Hurel claims the work also "cites" the cello suites of J.S. Bach. Hurel's piece for solo tenor saxophone is similar to Bach's cello suites in that both can be heard and studied as the distillation of several polyphonic lines into one monodic voice. Hurel constructed polyphonic structures on several staves before combining them into one line to be played by the solo tenor saxophone. Within this music, numerous threads, which Hurel calls "paths," unravel from the extreme ranges of the saxophone, particularly the low B-flat. Ultimately, the piece stalls on an altissimo G at the conclusion of the fourth and final movement.[78]

Hurel combines these seemingly traditional compositional methods of counterpoint and polyphony with the ideals of spectralism, resulting in a unique sound world. Like the first generation of spectralists before him, Hurel is deeply concerned with timbre and perception in

---

[74] Ibid.

[75] Timothy McAllister, *Glint*, Timothy McAllister, Innova 764, 2010, CD, Liner notes by Timothy McAllister.

[76] Hurel, "*Opcit*," *Philippe Hurel*.

[77] Ibid.

[78] Ibid.

his music. *Opcit* explores continually shifting timbres through the use of numerous extended techniques, vocalization, and the previously discussed unraveling of pitches from the extreme ends of the tenor saxophone's range. A concern for perception, often central to the music of the spectralists, is evidenced through his non-traditional use of polyphony and signals that call the listener back to various points in the music. Like music by members of the first generation spectralists, *Opcit* additionally explores sound in the context of time through slowly developing and decaying rhythms, including rhythmically notated *accellerandi and rallentandi*. *Opcit* is an excellent marker of Hurel's status as a second-generation spectralist composer.

Performance Guide

Philippe Hurel's *Opcit* for solo tenor saxophone is a uniquely challenging piece. Demanding in its requirements for the use of numerous extended techniques, its juxtaposition of both frenetic and meditative pacing, and its highly detailed, non-standard notation, the preparation of *Opcit* is a monumental undertaking for a musician of any experience level. We will take a movement by movement approach to understanding and overcoming the challenges of this piece, with the hope of making this thorny work more accessible to interested saxophonists.

The opening movement of *Opcit* begins with a tumbling, seemingly chaotic line of sixteenth-notes that should pour out of the saxophone, first from the low register, gradually unraveling into the upper register as the movement progresses. The entire movement is completely unmeasured, which lends to a feeling of endless twirling, like a freefall towards an

unknown abyss. While no tempo is indicated, a total duration of around ten minutes for the entire piece is marked at the top of the page. Each of the next three movements should take approximately eight minutes total if played with strict attention to their measured durations, which will be discussed shortly; therefore, it is understood that the first movement needs to be played briskly in order to adhere to this timeline. Of course, one must choose a pace that can be kept clean and accurate, understanding that there are sections of rhythmically notated *accelerandi*, thirty-second notes, and that the pitches reach up into the altissimo register on the second page.

When preparing the technical aspects of the first movement and deciding on pacing, one must keep in mind one of its primary challenges: breathing. This movement of *Opcit*, in particular, recalls the cello suites of J.S. Bach in its long, unbroken melismatic line. Given the unbroken nature of the material, there are few, if any, chances to take a traditional breath. Some saxophonists choose to breathe after some of the few held notes in the first movement, although the infrequent nature of these elongated durations and the flowing character of the movement makes traditional breathing less than ideal. Instead, circular breathing throughout the movement is preferable to maintain the continuous, tumbling character and also to ensure the performer gets enough air. Circular breathing can be problematic due to the abrupt interruptions of *staccato* notes that frequently appear, so it is important to plot out each circular breath during slurred sections in advance. One must also plot their pacing with breathing in mind.

As mentioned previously, the first movement of *Opcit* is also similar to Bach's cello suites in that it appears to be a distillation of polyphonic material into one monodic voice. Even in the first line of material, two distinct parts may be heard. The movement opens with sixteenth-notes marked with open noteheads. In the performance notes included in the front of the score,

these are described as "*son détimbré*," meaning roughly, "sound which has lost its timbre."[79] These "detimbred" notes appear throughout the first movement and are always marked either *piano* or *pianissimo*. An effective means of producing the desired sound on these quiet notes is to play them subtone by either manipulating one's embouchure or, my preferred method, dampening the vibration of the reed by gently placing one's tongue on the reed's heart while playing. This method ensures a suitably soft dynamic, coupled with an airy, unfocused sound. This is a much different timbre than those with normal, filled in noteheads, played with a normal full sound, which represent the second line of counterpoint in the opening of the first movement.

Figure 5.1 – Opening of *Opcit*, movement I

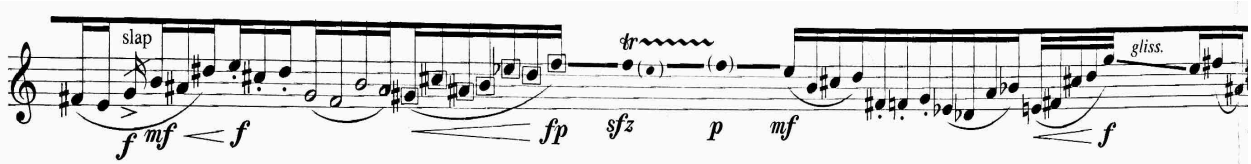
Philippe Hurel, *Opcit pour saxophone tenor*, (Paris: Gérard Billaudot, 1992), 1.

Throughout the first movement, other portions of the polyphony make themselves apparent, particularly through variation in articulation and timbre. *Staccato* notes, typically marked *forte* or *mezzo forte* distinguish themselves easily from the fluid *son détimbré* line. Sudden, violent, slap tongued grace notes also interject throughout the piece. Hurel notates these clearly by writing "slap" underneath them, bypassing the traditional Bartók *pizzicato* symbol or Grisey's plus sign within a circle. He also includes noteheads that are surrounded by a square,

[79] Philippe Hurel, *Opcit pour saxophone tenor*, (Paris: Gérard Billaudot, 1992), 1.

indicating notes that should be sung and played on saxophone simultaneously, resulting in a unique, gruff timbre.

Figure 5.2 – *Opcit*, movement I, line 4



Philippe Hurel, *Opcit pour saxophone tenor*, (Paris: Gérard Billaudot, 1992), 1.

Finally, Hurel includes three multiphonics towards the end of the first movement. Composers typically include both the pitch content as well as a suggested fingering for multiphonics; however, Hurel has omitted any fingerings, leaving the saxophonist to come up with her own solutions. My fingering solutions are displayed below in table 5.1. Of course, the proper voicing is required for these multiphonics, and these were the particular solutions that worked on my individual tenor saxophone setup. Some saxophonists may find that other solutions work better for their instruments. Higher pitches are listed first in the pitch content.

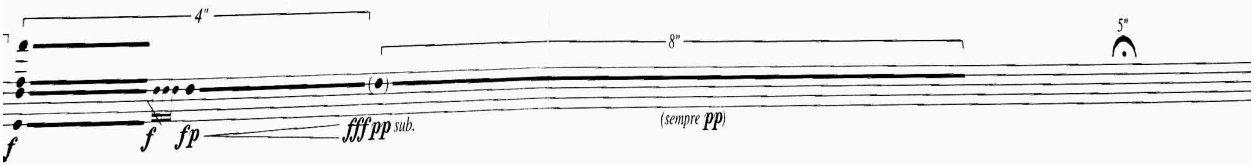
Table 5.1 – Multiphonics in *Opcit*, movement I

Pitch Content	**Fingering**
C, E-flat	

F-sharp, G, C-sharp	
E, D, F, high F	

The first movement concludes with material written beneath brackets that include specific timings. These brackets indicate that the material written under them must be played within those time constraints. The last note, for instance, must be held for eight seconds. While pacing in this movement is generally left up to the performer, the final material is more carefully scripted.

Figure 5.3 – Final line of *Opcit*, movement I



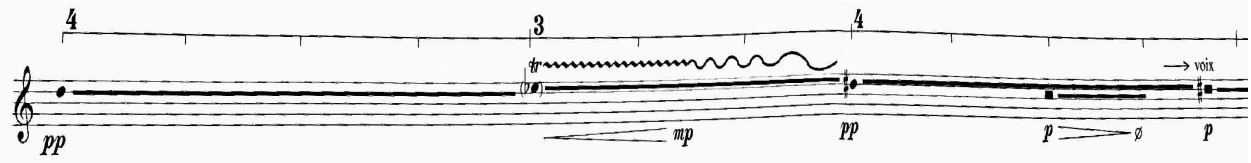
Philippe Hurel, *Opcit pour saxophone tenor*, (Paris: Gérard Billaudot, 1992), 2.

The second movement of *Opcit* should begin only after the five second pause notated at the end of the first. Further delay would interrupt timing and flow of the piece as a whole, so

page turns must be carefully sorted out in advance. The second movement picks up where the first left off: a *pianissimo* middle D, held for four seconds. From here, the second movement is much more meditative and less frenetic than the first, and there are a number of differences in notation and several new extended techniques introduced.

While the first movement was completely unmetered and with no indication of tempo, aside from an understanding that it should be played at a brisk pace, the second does include both an indication of tempo and a sort of meter. The top of the page reads quarter note equals 50. There are no traditional time signatures in the music; instead brackets and numbers listed above the staff indicate intended durations. Material written beneath each bracketed "measure" should be played within the time of one beat at 50 beats per minute. For instance, the first note of the movement should be held for four beats. Numbers are always included along with the brackets, so it is up to the performer to keep track of pacing. This movement should be practiced with a metronome set to 50 beats per minute to ensure proper timings are maintained.

Figure 5.4 – Opening of *Opcit*, movement II



Philippe Hurel, *Opcit pour saxophone tenor*, (Paris: Gérard Billaudot, 1992), 3.

Several unique notations are noticeable almost immediately in the second movement of *Opcit*. Thankfully, some performance notes are included in the front cover of the score to

minimize confusion; however, the cursory nature of these notes, which are written in French, warrant further explanation here. The second note in the second movement is an E-flat in parenthesis with a trill and squiggly line above it. The E-flat is written in parenthesis because the performer is meant to trill from the opening note D up to the E-flat. The squiggly line indicates the pace of the trill, beginning fast and gradually becoming slower until the saxophonist changes notes after three beats.

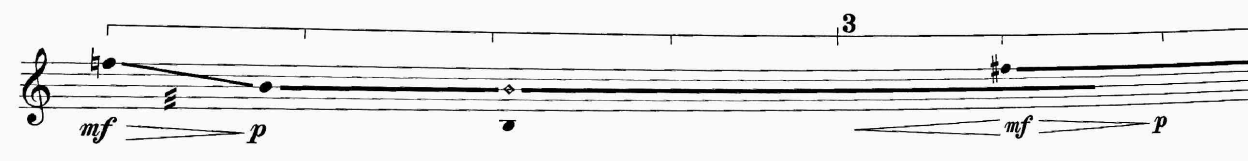
Another irregular notation appears three beats into the third note of the movement. A box notehead followed by a solid line is written on middle C beneath the ongoing D-sharp already sounding. Here, the saxophonist is meant to begin singing this C while holding the D-sharp on saxophone. The box notehead appears again on the next note, alone, beneath the word "*voix*" or "voice."[80] The performer should sing this note without removing the embouchure from the saxophone, creating the effect of yet a new timbre from the instrument. Vocalization is a key component to timbral structure of the second movement. One must study the pitches carefully because the voice often enters on a note before being joined by the saxophone. Any variation in the vocalized pitch will likely be obvious to an audience member and will disrupt Hurel's carefully conceived harmonic structure.

A diamond notehead appears on middle B above a low B with a normal notehead three beats into the second line of the second movement. Here, the saxophonist should produce the second partial while fingering low B. The next indicated pitch is an F-sharp that appears while the previous B should still be sounding. Here, the saxophonist should utilize their voicing in such a way that the third partial from the low B begins to sound in tandem with the second partial.

---

[80] Ibid.

Figure 5.5 – *Opcit*, Movement II, line 2



Philippe Hurel, *Opcit pour saxophone tenor*, (Paris: Gérard Billaudot, 1992), 3.

The second movement includes a variety of multiphonics. They are listed here in the order in which they appear, along with my suggested fingering solution. It should of course be again noted that the fingering solutions work on my particular instrument, but other solutions may work better on other setups.

Table 5.2 – Multiphonics in *Opcit*, movement II

Multiphonic Location	**Pitch Content**	**Suggested Fingering**
Line 3, beat 2	A-flat, B-flat	
Line 3, beat 11	B-1/4 sharp, E-1/4 sharp	
Line 4, beat 12	E, B-flat, A-1/4 flat, A	

Line 5, beat 7	E-flat, F, D	
Line 6, beat 1	D, B-flat, A	
Line 7, beat 2	F-sharp, B, A-1/4 sharp	
Line 8, beat 3	C, F, F-1/4 sharp	
Line 8, beat 9	A-flat, B-flat	
Line 9, beat 5	C-1/4 sharp, A-sharp, A	

The third and fourth movements of *Opcit* introduce no new extended techniques or unusual notations. Like the second movement, they contain bracketed "measures" indicating one beat at 50 beats per minute. The third and fourth movements are played *attaca* and grow continuously more complex, as more and more material is crammed into each 1-beat bracket. Like the second movement, these last two sections make extensive use of the voice, necessitating

a careful study of pitch and a keen ear on the part of the performer. All three of the final movements additionally utilize quarter-tones, enlarging the harmonic spectrum and also requiring another level of technical ability from the saxophonist.

Philippe Hurel's *Opcit* for tenor saxophone is a stunning work. Its evolution over four movements is at once captivating and invigorating. The technical demands on the saxophonist are great, and one must have a keen ear and vocal ability. Endurance to sustain one's momentum, particularly through the first movement with its frenetic line and requisite circular breathing is paramount. The agility to navigate altissimo passages in the first and fourth movements is necessary, as is the ability to seamlessly integrate quarter-tone and multiphonic fingering solutions. Finally, pinpoint control over every aspect of the instrument's response is crucial to providing a nuanced, accurate presentation of this fascinating work.

CHAPTER SIX

PHILIPPE LEROUX - *SPP*

Philippe Leroux is a leading figure from the post-spectral generation of composers, those deeply influenced by spectral techniques but whose music has evolved considerably from the style's early sonic experiments. His output includes over 75 oft-performed works, and he has bolstered the contemporary saxophone repertoire with nine works to date. Leroux's prolific output has helped to cement spectralism's place within the current new music landscape, demonstrating that the compositional style is highly capable of evolving along with modern influences.

Leroux was born on September 24, 1959, in Boulogne sur Seine, France and began studying guitar and piano when he was 11. At 16, his first ensemble piece, *Piége*, was heard on a national radio broadcast. From here, he followed a similar path to Grisey and Hurel. Leroux entered the CNSM Paris in 1978, where he studied with Ivo Malec, Claude Ballif, Pierre Schaeffer, and Guy Reibel. He was also a student of Olivier Messiaen, Franco Donatoni, Betsy Jolas, Jean-Cleaude Eloy, and Iannis Xenakis, further supporting his world-class education as a composer.

Leroux's compositions have earned him numerous awards, and he has been active as a pedagogue throughout his career. He was awarded the Rome Prize and a subsequent two-year

residency at the Villa Medici in Rome in 1993. He also received the 1994 Hervé Dugardin Prize, the 2003 SACEM award, and the 2007 Arthur Honegger Prize for his contributions to French contemporary music. Leroux currently teaches at McGill University and has held additional teaching posts at IRCAM (2001-2006) and the University of Montreal (2009-2011).

The bulk of Leroux's training as a composer occurred in Paris during the formative years of spectralism, yet his wide array of musical influences has resulted in a compositional style that defies any singular category. Leroux stated in a 2006 interview,

> It would be pointless to deny the influence of the spectral school on my music, especially given the time and place of my formative years as a composer. It was almost impossible to not be influenced by the spectralists, because their approach was very fresh and exciting when it came along. I have great admiration for Gérard Grisey and Tristan Murail.[81]

However, Leroux's music is also indelibly influenced by *musique concrète*, as well as Pierre Schaeffer's concept of *l'objet sonore* or "sound objects," which inspired Leroux's individual compositional technique using *les actions sonores* or "sound actions."[82] Leroux describes his use of these sound actions as allowing him to work directly on sound that is already in motion.[83]

Other composers whose music had a profound impact on the output of Leroux include Messiaen, Xenakis, and Ligeti, all of whom are closely related to, though not directly associated with spectralism. Messiaen had much to teach regarding instrumental timbre. Xenakis allowed Leroux an important opportunity to learn about the use of computer technology in composition.

---

[81] Yiorgos Vassilandonakis, "An Interview with Philippe Leroux," *Computer Music Journal* vol. 32, no. 3 (Fall 2008): 12.

[82] Andrew Martin Smith, "Continuity, Motion, and Energy Through the Spectrum: An Analysis of Philippe Leroux's *Un Lieu Verdoyant – Hommage À Gérard Grisey*" (DMA diss., Bowling Green State University, 2014), 30.

[83] Ibid.

Xenakis's work in mathematics, physics, and architecture was also influential on the young composer. Ligeti's large body of work imparted important lessons regarding texture and sonic material. In an entry published in *Grove Music Online*, Dominique Druhen makes the case that Ligeti's music had the single most profound impact on Leroux's output.[84]

Leroux's compositions share much in common with those of the earlier generations of spectralists, as well. Like the earlier spectral composers, Leroux is interested in composing directly with sound, as opposed to sonic representations. Linear evolution and a perpetual morphing of sound is also important in his work. Leroux states that he tries "to make sure that the listener can follow what is going on by creating an evolution of elements in a continuous fashion."[85] In the same way that a sound never remains static, Leroux aims to keep his music in perpetual motion, which is in keeping with the goals of spectral composers.

Leroux's music is closely linked to the roots of spectralism, though it also incorporates elements of structure, rhythm, and texture from other sources.[86] While it is spectral in its philosophy of sound and evolution as the most important elements, its frequent use of repetition, and his later work's playfulness and concern for clarity and elegance make Leroux's music difficult to pin down under the spectalism label. Instead, "post-spectral" more accurately reflects the breadth and complexity of Philippe Leroux's influences.

Leroux has included saxophone in nine of his compositions as of this writing. His first, *Phonie Douce*, came in 1991 for the Concours Europèen de Saxophone de Gap, a highly

---

[84] Dominique Druhen, "Leroux, Philippe," in *Grove Music Online* (Oxford University Press), accessed November 8, 2018, http://www.oxfordmusiconline.com/grovemusic/view/10.1093/gmo/9781561592630.001.0001/omo-9781561592630-e-0000045090.

[85] Vassilandonakis, "An Interview with Philippe Leroux," 13.

[86] Smith, "Continuity, Motion, and Energy Through the Spectrum: An Analysis of Philippe Leroux's *Un Lieu Verdoyant – Hommage À Gérard Grisey*," 27.

regarded saxophone course that occurs annually in Gap, France. This composition, a trio for alto saxophone, oboe, and cello, was premiered by Claude Delangle. Leroux's second piece involving saxophone, *On a crié*, was also written in 1991. *On a crié* calls for a mixed choir of 16 voices, two flutes, two clarinets, horn, trumpet, two trombones, two percussionists, harp, piano, viola, two cellos, bass, and alto saxophone. It was premiered on February 7, 1992, in France under the direction of Denis Gautheyrie.

Leroux's next piece involving saxophone was his 1999, *Un Lieu Verdoyant – Hommage à Gérard Grisey*. This piece was dedicated to the life and legacy of Grisey and is scored for the voice and soprano saxophone. Vocalis Mireille Deguy and the French saxophonist Vincent David premiered the piece on December 4, 1999 at the Auditorium Gérard Grisey de Sarcelles. Leroux's tangled web of ascending and descending lines serve as metaphors for primordial movements, life, and death.[87]

Since 2000, Leroux has written six other works involving saxophone. *3 bis, rue d'insister* was written in 2000 and calls for piano, cello, viola, violin, and clarinet or alto and soprano saxophone. It was premiered on April 25, 2003, in Monaco by Ensemble Traverses. *SPP*, which we will discuss in greater detail shortly, came next in 2000-01. *Airs* for soprano saxophone and percussion was a 2003 reworking of the 1993 *Air* for clarinet and percussion. It was premiered in April 2004 at the CNSM Paris. *Du Souffle* is a saxophone quartet written in 2003 and premiered by the Habanera Quartet at the July 2003 World Saxophone Congress in Minneapolis. *De L'Imitation*, written in 2015, is Leroux's latest work for saxophone to date. It is written for saxophone quartet and electronics. It was premiered on March 31, 2016, by the Quasar Quartet.

---

[87] Philippe Leroux, "*Un Lieu Verdoyant – Hommage à Gérard Grisey*," *IRCAM Centre Pompidou*, accessed November 8, 2018, http://brahms.ircam.fr/philippe-leroux#works_by_genre.

L'unique trait de pinceau is Leroux's only concerto for saxophone and is, in fact, one of only three concertos the composer has produced. The piece, written for baritone saxophone and orchestra, was premiered by saxophonist Claude Delangle and the Orchestre National de Lorraine under the direction of Jacques Mercier on February 14, 2009. The single movement work extrapolates on a single musical gesture, perpetually ascending in a non-linear fashion. The piece additionally explores relationships between soloist, small groups from within the orchestra, and the orchestra as a whole as metaphors for the relationships between individual performers, their environment, and the audience.[88]

SPP **Overview**

Philippe Leroux composed *SPP* for soprano saxophone and piano between 2000 and 2001. The piece, dedicated to saxophone virtuoso Vincent David, is a reworking of the composer's 1993 composition for flute and piano, *PPP*. *PPP* was premiered on November 18, 1993 by Annie Ploquin-Rigniol and François-Michel Rigniol. The saxophone version, nearly identical to the original, had to wait a few years for its premiere on May 15, 2007, by saxophonist Jérôme Laran and pianist Fuminori Tanada.

The published versions of *SPP* and its predecessor for flute and piano, *PPP*, are nearly identical, with only a few minor differences. *SPP* is transposed down a major third for the majority of the piece, save for the closing bars of the piece, which contain the same pitch

[88] Philippe Leroux. "*L'unique trait de pinceau*," *IRCAM Centre Pompidou*, accessed November 8, 2018, http://brahms.ircam.fr/works/work/23546/.

material. The saxophone and flute both begin the measure two bars before rehearsal 43 on a concert C. The saxophone goes up to a concert E-quarter sharp, while the flute moves to a concert E, however. The piano material in both pieces is the same here. By the second half of the bar directly preceding rehearsal 43, both *SPP* and *PPP* are identical in pitch content. Both pieces end on a ringing, repeated concert B.

There are a few other more minor details that differ between the two pieces. The measure three bars after rehearsal 16 is marked *souffle et son*, meaning "breath and sound," in the saxophone version, while *PPP* is marked *son seul* for tone without any air or breath sound. The same holds true in the measure two before rehearsal 18. One measure and one beat before rehearsal 29 is marked *bisbigliando*, along with an indication of alternating fingerings, in *SPP*. The same marking appears in the third and fourth measures after rehearsal 29. No such markings appear in the published version of *PPP*. These details add some timbral interest to *SPP* but do not significantly alter the piece.

Two other very minor differences between *PPP* and *SPP* appear due to acoustic differences between the flute and saxophone. The multiphonic marked in the fourth measure after rehearsal 32 is an interval of a fifth in the flute version. In the saxophone version, however, the interval is that of an octave and a fifth. This was a detail worked out with Vincent David to accommodate the difference in bore shape and subsequent acousmatic property variations between the instruments. Finally, the high tones beginning in the second measure after rehearsal 34 that proceed through the second bar of 35 call for singing and playing in *PPP* but not in *SPP*. Since the soprano saxophone part is in the altissimo register, simultaneous vocalizing would disrupt one's voicing, and render these notes nearly impossible to produce.

The title of *SPP*, as is the case with many of Leroux's works, has no clear meaning at this time, though the composer suggests that it will eventually. Leroux says of his mysterious titles,

> The majority of my seemingly mysterious titles will eventually chain together into a phrase of around thirty works, which I will not unveil until those works are all finished, provided I live long enough to complete it, that is. It is a sort of semantic game on one level, but also, it manifests my interest in leaving a unified body of work, a complete picture of who I am. It will all make sense one day.[89]

There has been speculation as to the meaning of the "P's" in the saxophone work's predecessor, *PPP*, including playful, percussive, or propulsive. The composer Julien Copeaux instead proposes three paradoxes: "a strange stasis that is revealed only through transformation; a taming of potentially disruptive elements by reiterating them rather than dismantling them; and finally an understanding that repetition that holds even greater power over the listener after it has ceased than while it is ongoing."[90]

Long spells of repetition are certainly prominent in *SPP*, though just as a sound never remains static, nor does the sonic material in the piece. Leroux drives home one pitch at a time, often for long spells, exploring every aspect of the sound's timbre, while pushing and pulling on time with rhythmically notated *accelerandi* and *rallentandi*, often resulting in saxophone and piano sounding out of phase. These changes, along with gradual shifts from air sounds to full-throated tones and back, evolving articulations from curt slap tongues to clearly delicate attacks, glistening moments *bisbigliando*, and gradual transformations in pitch using *glissandi* as well as

---

[89] Vassilandonakis, "An Interview with Philippe Leroux," 13-14.

[90] Beth E. Levy, "Philippe Leroux: *PPP*," Program notes for *Premieres from the Vanguard*, San Francisco Contemporary Music Players, David Milnes, San Francisco: Yerba Buena Center for the Arts Forum, October 8, 2007.

quarter-tones lend themselves to a nearly hypnotic, breath-like quality of expansion and contraction throughout the piece. Any peace enjoyed by the listener is disrupted by periodic violent interruptions of material, although these events always find themselves relenting back into gradually evolving repetitions. These elements all reflect deep connections to the music of Grisey and the founding members of the spectral school of composition. Yet, Leroux's unique treatment of sound, timbre, time, and perception in *SPP* fits more neatly within the post-spectral label.

Performance Guide

Philippe Leroux's *SPP* is a minefield of extended techniques and otherwise fiendishly difficult material for both the soprano saxophone and piano. Leroux has also devised a rather extensive series of revisions to the original score, though an edited version of the piece has not been published. The entire translated list of revisions to both the soprano saxophone and piano parts is provided below. We will also survey the various extended techniques required in this single movement work along with some practical advice on how to approach these and other challenging aspects of the saxophone part.

The original list of revisions to *SPP*, written in French, has circulated among saxophonists for some time and is quite extensive. Alterations have been made to somewhat mundane details including dynamics, as well as to structural elements such as pitches and rhythms. Leroux has also decided to alter some articulations, including the introduction of slap-tongue effects, and timbral qualities by introducing additional sections of growling and flutter-

tonguing. The entire list of revisions is included below. It has been translated to English and edited for clarity; the original, unedited, list is provided in the appendix of this document on page 106.

Table 6.1 – Revisions to *SPP* from Philippe Leroux

Measure / Beat	**Voice**	**Revision**
1	Saxophone	Dynamic: *mp* instead of *mf* Remove non-slap marking
3 after rehearsal 1	Saxophone	Dynamic: *f* instead of *ff*
5 after rehearsal 1	Saxophone	Dynamic: *mp* instead of *mf* Slap sans son (slap tongue without tone)
Rehearsal 2	Saxophone	Gradually more pitch
4 after rehearsal 2	Saxophone	Dynamic: *f* instead of *ff*
4 after rehearsal 2	Piano	Dynamic: *mp* instead of *pp*
1 before rehearsal 3	Piano	Only one pedal
2 after rehearsal 3	Piano	2 pedals
2 before rehearsal 4	Saxophone	Pitch remains an F-sharp
1 before rehearsal 4	Saxophone	Pitch remains an F-sharp
Rehearsal 4	Saxophone	Pitch remains an F-sharp
1 after rehearsal 4	Piano	Dynamic: *mp* instead of *p*
2 before rehearsal 6	Saxophone	Dynamic: *ff* instead of *fff*
2 after rehearsal 6 / beat 4	Piano	Dotted-eighth-note replaces eighth-note
2 after rehearsal 8	Saxophone	Flutter-tongue or sing and play simultaneously
4 after 12	Saxophone / Piano	32nd notes equal 32nd notes within the sextuplet (they do not change)
Rehearsal 13	Saxophone / Piano	32nd notes equal 32nd notes within the sextuplet (they do not change)
1 before rehearsal 14	Saxophone / Piano	32nd notes equal 32nd notes within the sextuplet (they do not change)
2 before rehearsal 15	Piano	Third to last note of the measure should be a C instead of B-natural
Rehearsal 15	Saxophone / Piano	Meter is 2/4

3 after rehearsal 15 / beats 2 and 3	Piano	Right hand should be played an octave higher than written, continuing the line
5 after rehearsal 15	Saxophone / Piano	Sixteenth notes equal the sextuplets in the surrounding measure
Rehearsal 17	Saxophone	Dynamic: *mp* instead of *mf*
1 before rehearsal 18 / beat 2.5	Saxophone	Growl and flutter-tongue
Rehearsal 19 / beat 1	Saxophone	Growl and flutter-tongue
1 before rehearsal 20 / beat 2	Saxophone	Growl and flutter-tongue
4 after rehearsal 20	Piano	Remove ties in the left hand at the end of the measure
1 before rehearsal 21	Saxophone	Dynamic: *subito pp*
1 before rehearsal 21	Piano	Release the pedal
Rehearsal 21	Saxophone	Remove the *decrescendo* until the second note 1 measure after rehearsal 21
3 after rehearsal 22	Saxophone / Piano	Tempo marking should be quarter equals 54
3 after rehearsal 24	Saxophone	Articulations evolve from ordinary to slap-tongue. Continue slap-tongue until 2mm. after rehearsal 25, then evolve back to normal articulations for rehearsal 26
Rehearsal 27 / beat 2	Saxophone	Quasi-slap-tongue
1 after rehearsal 28	Piano	D-natural instead of D-flat
2 and 3 after rehearsal 28	Piano	In left hand, pitches are low D-natural and high D-flat
1 after rehearsal 34	Saxophone	The slur beginning in rehearsal 34 should continue through the first four 32nd notes one measure later
5 after rehearsal 36	Saxophone / Piano	Tempo is quarter equals 63. Saxophone should add extra repeated notes to assist in the recovery of tempo
6 after rehearsal 36 / beat 2	Saxophone	Add a *decrescendo*

6 after rehearsal 36 / beat 3	Saxophone	Quarter-rest on beat 3
1 after rehearsal 37 / beat 2.5, 3	Saxophone	Add a *decrescendo*
1 after rehearsal 37 / beat 4	Saxophone	Quarter-rest on beat 4
3 after rehearsal 37 / beat 1	Saxophone	Replace first eighth-note with an eighth-rest
Rehearsal 38	Saxophone	Add quick repeated notes before removing them in the middle of the line
1 after rehearsal 39	Saxophone	Add a *decrescendo* to the first two beats of the measure. Replace beats 3 and 4 with a half-rest
2 after rehearsal 39	Saxophone	Replace the first two beats of the measure with a half-rest
2 before rehearsal 40	Saxophone	Dynamic: *mp* continues instead of *f*
Rehearsal 40	Saxophone	Replace beat 3 with a quarter-rest
2 after rehearsal 41 / beat 2	Piano	In left hand, pitches on 6th sextuplet are D-natural and B-flat
3 after rehearsal 41	Piano	Last three lowest notes in the left hand should be G, E (descending), E-flat (descending)
4 after rehearsal 41 / beat 1	Piano	The first two notes should be C, B-flat (descending); the 6th note should be C
4 after rehearsal 41 / beat 2	Piano	Last note in left hand should be A-flat instead of A-natural
4 after rehearsal 41 / beat 3	Piano	Replace the third and fourth notes with B-flat and A
4 after rehearsal 43	Saxophone	Dynamic: *p* instead of *fff*
4 after rehearsal 43	Piano	Move to pitch F on the 2nd eighth-note triplet of beat 3

SPP includes a variety of extended techniques not seen in the other pieces covered in this document. Numerous techniques are often combined into novel effects, providing a challenge to

any performer. Leroux kindly includes instructions and notes describing the intended timbres and effects throughout the piece; however, these are written in French, which could be problematic for English-speaking or other non-Francophone individuals. Given these factors, many saxophonists would be forgiven for wondering how to approach much of *SPP*. It is the aim of this section to demystify this music for the interested performer and to provide some practical advice on how to approach the various extended techniques.

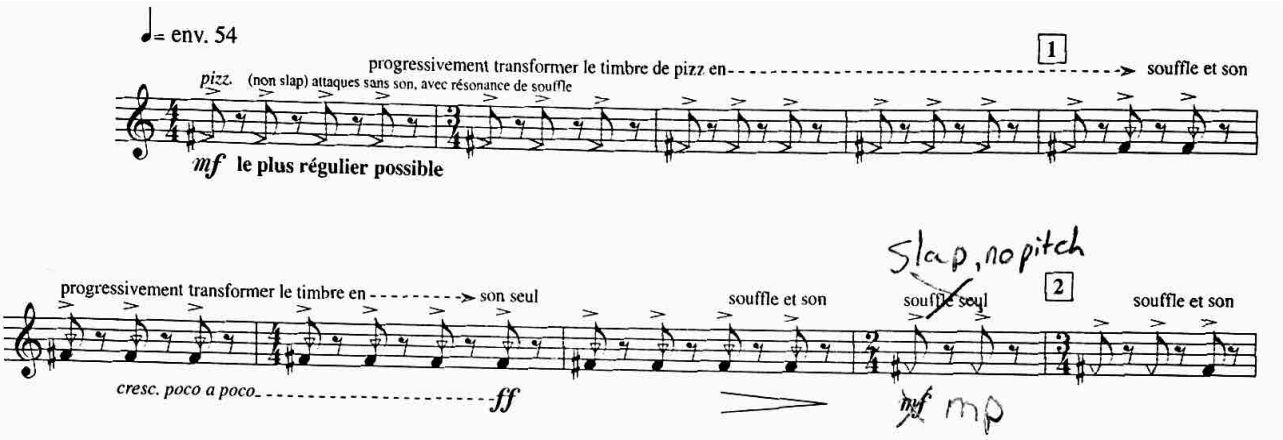
With the realization of Leroux's revisions, *SPP* begins on a slap-tongued F-sharp. These opening measures are marked "*attaques sans son, avec résonance de souffle*," meaning, "attacks without tone, with resonating breath."[91] In practice, this means the saxophonist should produce curt, closed slap-tongue notes with as little pitch as possible, while also allowing air to escape from the corners of the embouchure. This will result in a breathy, slap sound.

Above these markings is yet another instruction to "*progressivement transformer le timbre de pizz en… souffle et son*."[92] This instruction appears in several instances throughout the piece and means to gradually transform one's sound into one of both tone and air noise. Notes to be played with tone and air are marked graphically with a triangle through the middle of the stem. The application of this instruction should result in the saxophonist gradually lessening the effect of the slap tongue into a normal articulation that produces more of the F-sharp tone. Throughout this transformation into rehearsal marking 1, the performer must continue letting air escape the corners of their embouchure. Beginning in the second bar after rehearsal 1, the saxophonist must "*progressivement transformer le timbre en… son seul*," or transform their timbre into sound alone by gradually decreasing the amount of air allowed to escape the

[91] Philippe Leroux, *SPP*, (Paris: Gérard Billaudot, 2001), 2.
[92] Ibid.

embouchure.[93] This is all followed by a sudden air and tone effect two before rehearsal 2 and slap tongues without pitch in the measure directly before 2. One must carefully follow all timbral instructions in order to properly convey the ever-evolving qualities of this repeated F-sharp.

Figure 6.1 – First two lines of *SPP*



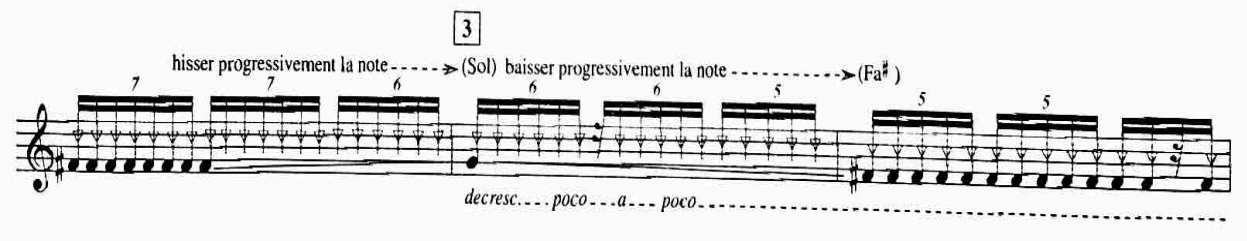
Philippe Leroux, *SPP*, (Paris: Gérard Billaudot, 2001), 2.

The next unusual marking comes at rehearsal 3 and the measure directly preceding it. The saxophonist is instructed to "*hisser progressivement la note… (Sol) …baisser progressivement la note…*" which means that the saxophonist should gradually raise the pitch of the repeated note until the G on the downbeat of rehearsal 3, at which point they should gradually lower the pitch until the F-sharp on the downbeat of the following bar. This effect is notated graphically with a gradually ascending line to the G, followed by a gradually descending line to the F-sharp. This effect is repeated in the measures surrounding rehearsal 5. The saxophonist should continue rearticulating these notes, as this is a separate technique than a true *glissando*, which happens at

[93] Ibid.

rehearsal markings 32, 33, and 34. The saxophonist will likely discover that the easiest way to accomplish this effect is to gradually lift their fifth finger in combination with some amount of alteration to their voicing.

Figure 6.2 – *SPP* rehearsal 3



Philippe Leroux, *SPP*, (Paris: Gérard Billaudot, 2001), 2.

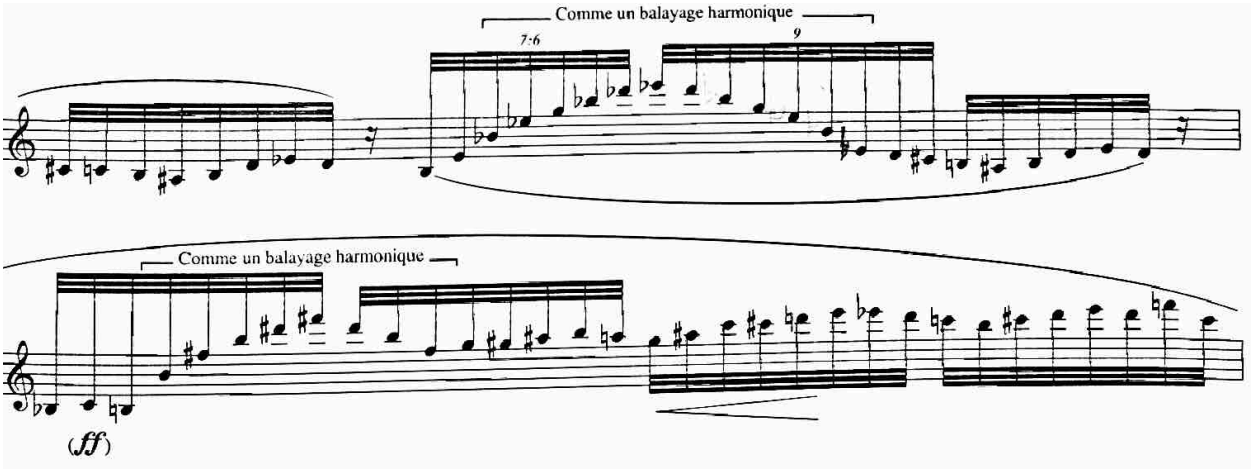
Directly following these alterations in timbre and pitch, is yet another device for timbral fluctuation: *bisbigliando*. At rehearsal 4 this indication is included over more repeated quarter-note F-sharps. The saxophonist should alter the timbres by playing each with an alternating fingering. For example, one may choose to close their low C key on the first, third, and fifth quarter notes and the second and fourth with a normal fingering. This would allow the downbeat of the first measure after 4, which is marked *ord.* to be played with the normal fingering as expected. This effect is repeated in the two bars prior to rehearsal 29 and just before rehearsal 30.

The next unique marking in the *SPP* saxophone part comes in the fourth and fifth measures of rehearsal 7. Here we encounter bracketed sets of notes marked, "*comme un balayage harmonique*," or "like a harmonic scan."[94] This differs very slightly from the flute part in *PPP*,

[94] Ibid, 3.

which is marked "*bayalage*" and is notated with diamond noteheads and circles indicating harmonics.[95] Because the saxophone part is not notated in this way and it is only described as "like a harmonic scan," we can ascertain that Leroux intends only for the performer to give the impression of this effect. In fact, the pitches written in the first occurrence of this marking in *SPP* would not all sound if a true harmonic scan were attempted. Instead, the saxophonist could imply this affect by introducing some roughness to their sound through a light hum or growl.

Figure 6.3 – *Comme un balayage harmonique*



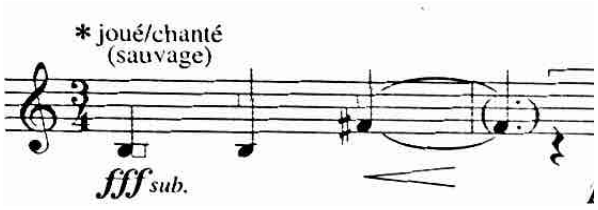
Philippe Leroux, *SPP*, (Paris: Gérard Billaudot, 2001), 3.

The next marking that could benefit from some explanation comes in the fourth bar after rehearsal 17. Here is a technique that was also used in *Opcit*: a normal notehead along with an empty square notehead, accompanied by the instruction, "*joué / chanté (sauvage)*."[96] The saxophonist must play and sing this material, for a "savage" effect. Because the box notehead

[95] Philippe Leroux, *PPP*, (Paris: Gérard Billaudot, 1994), 3.
[96] Ibid, 5.

occupies the same space as the normal, filled-in notehead, the performer should understand to play and sing the same pitch. On page five of the saxophone part, the performer is repeatedly playing and singing a low B.

Figure 6.4 – *Joué / chanté*

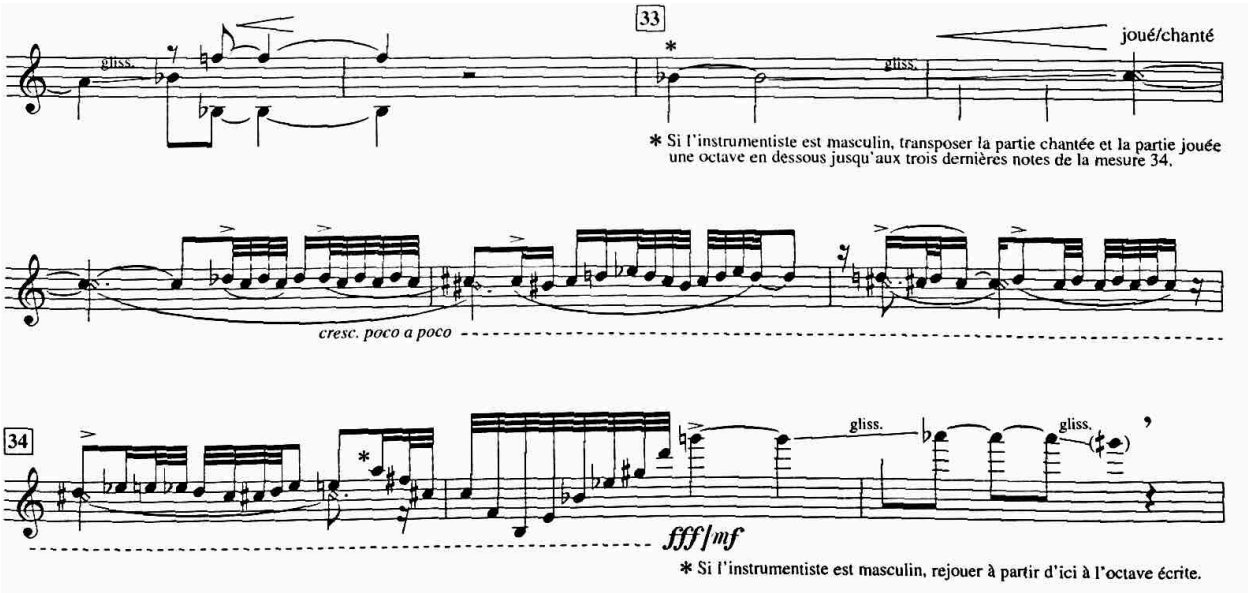


Philippe Leroux, *SPP*, (Paris: Gérard Billaudot, 2001), 3.

The saxophonist is again required to simultaneously sing and play at rehearsal 33; however, the instructions in this instance become somewhat more involved and, perhaps, less intuitive. Rehearsal marking 33 is accompanied by the instruction, "*si l'instrumentiste est masculine, transposer la partie chantée et la partie jouée une octave en dessous jusqu'aux trois dernières notes de la mesure 34*."[97] This means that if the saxophonist is a male, he should transpose both the sung and played parts down an octave until the last three notes of measure 34. This section also differs from previous singing and playing material in that the performer must sing different pitches from what they are playing. In the second through fourth bars of rehearsal 33, the saxophonist sings C-naturals (B-sharp); in the next two measures, the voice raises by a half-step to C-sharp. All the while, the saxophonist must play a more technical line, resulting in a raspy sound.

[97] Ibid, 7.

Figure 6.5 – Rehearsal 33 – 34



Philippe Leroux, *SPP*, (Paris: Gérard Billaudot, 2001), 7.

One other oddity presents itself in the above example. In the two measures prior to rehearsal 33, the saxophonist encounters a written low B-flat below a simultaneous F. This is a multiphonic that should be played using the normal fingering for low B-flat. The saxophonist must direct their air so that the third partial (F) is allowed to sound concurrently with the fundamental. This technique is also found in the second movement of Philippe Hurel's *Opcit*.

SPP includes numerous other technical challenges that all contribute to its place in the post-spectral sphere of compositions. In addition to pushing and pulling on pitch content using *glissandi*, *hisser* and *baisser* techniques, and singing and playing, Leroux uses copious microtones, including in the altissimo register. The piece's extensive altissimo usage, including microtonal passages, necessitates a thorough command of the soprano saxophone and a keen ear. Rhythmically, continuous juxtapositions of rhythmic groups, including fives against sixes and

sixes against fours between the pianist's hands, require meticulous preparation. All of the effects described facilitate an exploration of sound and timbre, motion and transformation. *SPP* owes much to Grisey and the founders of the spectral aesthetic, while establishing itself as a unique work, free from the confines of any exact stylistic definition.

CHAPTER 7

SUMMARY AND CONCLUSIONS

The saxophone has played an important role in new music since its invention by the Belgian instrument maker Adolphe Sax. Composers, attracted to its vocal qualities and technical capabilities, were eager to utilize the instrument from the very beginning. The saxophone, capable of the highest levels of artistic expression, has since found a home in nearly every genre of music in the world and has maintained its important role in modern concert music. When the spectral aesthetic surfaced in the 1970s, the saxophone was, predictably, deeply involved. The concert saxophone repertoire has seen tremendous growth due to the contributions of three generations of composers associated with spectralism. An insatiable demand from concert saxophonists for repertoire and the efforts of individuals such as Claude Delangle have also resulted in the reworking for saxophone of numerous pieces originally written for other instruments, including *Anubis et Nout* and *SPP*.

This document has explored the saxophone's role in spectral music. We started with an overview of this compositional style, including its origins in France and association with *Ensemble L'Itineraire*. Other composers in Europe were likewise central towards the development of spectralism, including those with the German Feedback Group and Romanians Stefan Niculescu and Haratiu Radulescu. While the composers associated with early spectral

music were not writing with the intention of creating a new school of composition, a variety of outside factors influenced numerous artists from relatively diverse backgrounds to adopt similar aesthetic philosophies.

While spectral composers have brought their own approach to the music, resulting in a thriving, diverse compositional school, they each share some important similarities. An interest in timbre, or indeed of sound itself, as the basis of composition rather than preconceived structures or forms, led to the development of what Hugues Dufourt termed *musique spectrale*. Fundamental to the spectral school is a belief in music as the sculpture of sound in time, separate from its abstract representations on the written page. Spectral works are often concerned with predictability, as well as the audience perception of the sounds. An interest in harmonic and inharmonic spectra is yet another fundamental, if superficial, element of this compositional aesthetic. Our study has identified three distinct approaches to the spectral aesthetic from Grisey, Hurel, and Leroux.

Spectral music was born of a backlash against the established compositional approaches of the structuralists and deconstructionists, whose works dominated the new music landscape in Paris at the time. Political turmoil and student protests in France likewise precipitated an artistic revolution. The aesthetic goals of the spectralists were made possible by developing technology and advanced research in the field of acoustics and psychoacoustics.

Furthermore, the roots of spectralism can be traced to the work of many important composers, dating back hundreds of years. Composers and scholars have been interested in the nature of acoustics at least since the time of the ancient Greeks, and the ability to relate pitch to vibrational frequency dates to the early 17th century. A renewed interest in timbre and the harmonic series took hold at the turn of the 20th century with the music of Claude Debussy and

the other impressionist composers, who were likewise concerned with perception and immediacy in their works. Timbre became an integral structural element of the music of Edgard Varèse, who was an advocate for the advances in technology that opened the doors to spectralism. Timbre was also critical to the music of Giacinto Scelsi, who had direct contact with early spectralists Gérard Grisey and Tristan Murail. György Ligeti's exploration of relationships between and the development of dense webs of instrumental timbres was highly influential to the spectralists, as was Olivier Messiaen's work in the field of acoustics.

The saxophone has been involved in spectral music from its very origins, just as it was prominent in much of the music that precipitated the compositional aesthetic. Impressionist composer Claude Debussy wrote an important piece, *Rapsodie*, for alto saxophone and orchestra, which hinted at the coming spectral revolution. Giacinto Scelsi wrote at least nine works involving saxophone foreshadowing spectralism, including *Tre Pezzi* and *Maknongan*, which continue to be performed with some frequency. Many of the founding members of the spectral aesthetic included saxophone in the early works, including Grisey, Dufourt, and Johannes Fritsch. The younger generations of spectral composers have continued using saxophone in their works. Among them are second-generation spectralists Philippe Hurel and Fabien Lévy, and post-spectralists including Philippe Leroux and Ana-Maria Avram.

Spectral composers from a diverse array of nationalities, backgrounds, and influences have included saxophone in their works. In total, 86 pieces involving saxophone by 18 composers associated with spectralism have been listed in chapter 3. These works date from the very early stages of the compositional style through the current decade, demonstrating our instrument's indispensable status within spectralism. While this is not necessarily a complete list

of spectral-influenced works utilizing saxophone, it should serve as a valuable starting point for those wishing to do further research on the subject.

We next delved into saxophone works by three generations of spectral composers. First, we looked at *Anubis et Nout* for baritone or bass saxophone by the spectral pioneer Gérard Grisey in chapter 4. We then examined *Opcit* for tenor saxophone by the second generation spectralist Philippe Hurel in chapter 5. Finally, a study of the post-spectralist Philippe Leroux's single-movement work for soprano saxophone and piano, *SPP*, followed in chapter 6. Each chapter provided background on the composer and piece, including elements tying them to the spectral school of composition, before providing specific notes to the interested performer on overcoming the various challenges associated with these unique pieces. Each work represents an evolution of the spectral attitude, from *Opcit*'s ties to the music of J.S. Bach and incorporation of counterpoint to *SPP*'s prominent use of repetition.

These three seemingly disparate works share much in common. Each piece involves the continual exploration of evolving timbres, which is a hallmark of spectral music. *Anubis et Nout* accomplishes this with an additional staff instructing timbral shifts through fluctuating fingerings. Grisey's piece for solo baritone or bass saxophone additionally utilizes singing and gradually emerging harmonics and multiphonics, and periods of rough or distorted tone to progress the evolution of timbre. *Opcit*, likewise utilizes detimbred sounds, singing, simultaneous singing and playing, multiphonics, *bisbigliando*, *glissandi*, and quarter-tones in its timbral study. Leroux uses a variety of articulations including slap-tongue, as well as air sounds, microtones, pitch bends and *glissandi*, growls, fluttertongues, and singing to examine and evolve timbre in *SPP*. Each piece includes swaths of material in which pitch content is relatively stable save for a continuous transformation of timbre. These pieces also explore sound in the context of

time, which is likewise typical of spectral music. *Anubis et Nout*, *Opcit*, and *SPP* all push and pull on time, including periods of rhythmically notated *rallentandi* and *accelerandi*.

While these elements are all trademarks of spectral music, and the concerned composers have all been closely associated with this compositional style, these factors do not alone serve necessarily as qualifiers of spectralism. The myriad extended techniques found in these pieces all lend themselves to the spectral aesthetic, though they may, in some cases, also be found in other types of compositions. Formal analyses of these pieces would help to identify their harmonic building blocks and provide more definitive links to the spectral style. In the case of Grisey's *Anubis et Nout*, this has already been done in Rhonda Taylor's 2005 dissertation for the University of Arizona.[98] More detailed formal analyses of *Opcit* and *SPP* would be of some use in this regard, as well as perhaps providing further insight to performers for an approach to the unique musical material and structure of these works.

These pieces each present unique challenges to the performer. Each has notational peculiarities that are not necessarily clarified by performance notes included in the scores. They all include effects or extended techniques that saxophonists are unlikely to have encountered in their previous experience. In the case of *SPP*, extensive revisions to the piece have gone unpublished, and, in some cases, have been previously misinterpreted by performers. My sincere hope is that by providing specific notes on each of the pieces in this document's preceding chapters, we have shed light on practical solutions to their unique challenges and opened the doors to this music for many new saxophonists.

[98] Taylor, "Gérard Grisey's *Anubis et Nout*: A Historical and Analytical Perspective."

The saxophone remains at the forefront of contemporary music as the 21st century concludes its second decade. Through the countless compositional trends that have occurred since the 1970s, spectralism has established itself and evolved as a vital organ of the new music organism. From these developments, the saxophone repertoire has benefited greatly. Through a keen knowledge and appreciation of spectralism and other modern compositional styles, saxophonists can ensure that their instrument likewise remains indispensable within new music.

APPENDIX

ORIGINAL, UNEDITED LIST OF REVISIONS TO *SPP*

Voici les corrections à apporter à la partition de SPP :

mes1.sax : mp et non mf, et retirer non slap

3 après 1 sax : f et non ff

5 après 1 sax : mp au lieu de mf, et slap sans son

Chiffre 2 sax : progressivement flat discret

4 après 2 sax : f au lieu de ff

4 après 2 piano : mp au lieu de pp

1 avant 3 piano md portée du haut: une seule clef de sol

2 après 3 piano md portée du haut: deux clefs de sol

2 avant 4 sax : pas de bémol

1 avant 4 sax : pas de bécarre

4 sax : pas de bécarre

1 après 4 piano : mp au lieu de p

2 avant 6 sax : ff au lieu de fff

2ème mes. de 6, 4ème temps, piano: la croche pointée et 2 triple croches

2 après 8 sax : flatt ou son chanté

3ème mes. de 12, 13, et 1 avant 14: double-croche en sextolet qui égale la double-croche

2 avant 15: l'antépénultième note au piano md est un Do et non un Si bécarre

15: La mesure est un 2/4

3 après 15 piano : 3ième et 4ième temps, otava alta

5 après 15 4/16, c'est la double-croche en sextolet qui égale la double-croche

17 sax : mp au lieu de mf

1 avant 18 sax : growl (chanté) + flatt

19 sax : idem

1 avant 20 sax : idem

5 après 20 piano : supprimer les liaisons à la fin de la mesure

1 avant 21 sax : pp sub

1 avant 21: Enlever la pédale du piano

21 sax supprimer le decrescendo jusqu'à la 2ième croche de la mesure suivante (1 après 21)

3ème mes. de 22: noire à 54

3 après 24 sax : ordinario vers slap (4 après 24), rester en slap puis à 2 après 25 passer de slap jusqu'à ordinario sur 26

27 sax deuxième temps : demi-slap

1 après 28 piano : ré bécarre au lieu de ré bémol

2 et 3 après 28 piano mg: ré grave et ré bémol haut au lieu de mi et ré

1 après 34 sax : legato jusqu'à la 4ième triple-croche de la mesure suivante (2 après 34)

5 après 36 : noire = 63, pour le sax rajouter quelques notes au début du premier temps pour qu'on sente plus le rallentissement

6 après 36 sax : mettre un silence sur le 3ième temps et un petit diminuendo à la fin du 2ième temps

1 après 37 sax : mettre un silence sur le 4ième temps et un diminuendo sur les trois derniers Fa avant ce silence

3 après 37 sax : silence sur la première croche

28 sax : rejouter des notes dans les moments rapides et en retirer dans le milieu du trait

1 après 39 sax : mettre un silence sur les 2 derniers temps de la mesure avec un diminuendo avant

2 après 39 sax : mettre un silence sur les 2 premiers temps de la mesure

2 avant 40 sax : retirer le f

40 sax : retirer le 3ième temps et mettre un silence

2ème mes. de 41, piano, 2ème temps, main gauche, 6ème note: ré bécarre & si bémol

3 après 41 piano : remplacer les 3 drnières notes graves de la mesure par Sol (1ère ligne clef de Fa), Mi (en descendant), Mib (en descendant)

4 après 41 piano : remplacer les 2 premières notes par Do, Sib (en descendant), la 6ième note par Do, les 3ième et 4ième notes du 3ième temps par Sib et La, et retirer le bécarre du dernier La du 2ième temps

4 après 43 sax : p au lieu de f, et pour le piano jouer les fa sur la 2ième croche en triolet du 3ième temps

WORKS CITED

Anderson, Julian. "A Provisional History of Spectral Music." *Contemporary Music Review*, vol. 19, no. 2 (2000): 7-22.

Anderson, Julian. "Grisey, Gérard." *Grove Music Online. Oxford Music Online*. Oxford University Press. Accessed July 3, 2017. http://www.oxfordmusiconline.com.turing.library.northwestern.edu/subscriber/article/grove/music/45479.

Besharse, Kari E. "The Role of Texture in French Spectral Music." DMA diss., University of Illinois – Urbana-Champaign, 2009.

Cornicello, Anthony. "Timbral Organization in Tristan Murail's *Désintégrations* and *Rituals*." PhD diss., Brandeis University, 2000.

Cross, Jonathan. "On Spectralism." Partials. February 27, 2016. Accessed June 30, 2016. https://partialsblog.wordpress.com/2016/02/27/on-spectralism .

David, Vincent. "Biographie." Vincent David: Saxophoniste, Compositeur, Chef d'orchestre. Accessed November 10, 2018. http://vincentdavid-sax.fr/en/biographie.

Debussy, Claude. *Rapsodie for Saxophone*. Arranged for saxophone and piano by Eugene Rousseau. Saint Louis: MMB Music, 1975.

DeCock, Tom and Vincent Caers. "Philippe Hurel." *Living Scores*. Accessed October 6, 2018. http://www.living-scores.com/learn/platform/philippehurel .

Drott, Eric. "Spectralism, Politics and the Post-Industrial Imagination." In *The Modernist Legacy: Essays on New Music*, edited by Björn Heile, 39-60. Burlington, VT: Ashgate Publishing Company, 2009.

Drott, Eric. "Timbre and the Cultural Politics of French Spectralism." Proceedings of the Conference on Interdisciplinary Musicology. January 10-12, 2005.

Druhen, Dominique. "Leroux, Philippe." *Grove Music Online. Oxford Music* Online. Oxford University Press. Accessed November 8, 2018. http://www.oxfordmusiconline.com/grovemusic/view/10.1093/gmo/9781561592630.001.0001/omo-9781561592630-e-0000045090.

Féron, François-Xavier. "The Emergence of Spectra in Gérard Grisey's Compositional Process: From *Dérives* (1973-74) to *Les espaces acoustiques* (1974-85)." *Contemporary Music Review*, vol. 30, no. 5 (October 2011): 343-375.

Fineberg, Joshua. "Spectral Music." *Contemporary Music Review*, vol. 19, no. 2 (2000): 1-5.

Grella, George. "Steve Lehman Makes History." *The Brooklyn Rail: Critical Perspectives on Arts, Politics, and Culture*. Accessed June 3, 2017. http://brooklynrail.org/2014/06/music/steve-lehman-makes-history.

Griffiths, Paul. "Ligeti, György." *Grove Music Online*. *Oxford Music Online*. Oxford University Press. Accessed July 14, 2016. http://www.oxfordmusiconline.com.turing.library.northwestern.edu/subscriber/article/grove/music/16642.

Griffiths, Paul. "Varèse, Edgard." *Grove Music Online. Oxford Music Online*. Oxford University Press. Accessed July 13, 2016. http://www.oxfordmusiconline.com.turing.library.northwestern.edu/subscriber/article/grove/music/29042.

Grisey, Gérard. *Anubis et Nout: Deux Piéces pour Saxophone Basse ou Saxophone Baryton*. Milan: Ricordi, 1990.

Grisey, Gérard. "*Anubis et Nout:* Deux pièces pour saxophone basse ou saxophone baryton." *IRCAM Centre Pompidou*. Accessed June 28, 2017. http://brahms.ircam.fr/works/work/8947/.

Grisey, Gérard. "Did You Say Spectral?" Trans. Joshua Fineberg. *Contemporary Music Review*, vol. 19, no. 3 (2000): 1-3.

Grisey, Gérard. "*Épilogue* (1985) pour quatre cors solistes et grand orchestre." *IRCAM Centre Pompidou*. Accessed June 28, 2017. http://brahms.ircam.fr/works/work/8953/.

Grisey, Gérard. "*L'Icône paradoxale* (1992-1994): hommage à Piero della Francesca, pour deux voix de femmes et grand orchestre divisé en deux groupes." *IRCAM Centre Pompidou*. Accessed June 28, 2017. http://brahms.ircam.fr/works/work/8959/.

Hurel, Philippe. "*Diamants imaginaires, Diamant lunaire." IRCAM Centre Pompidou*. Accessed October 7, 2018. http://brahms.ircam.fr/works/work/9363/ .

Hurel, Philippe. "*Fragment de Lune*." *IRCAM Centre Pompidou.* Accessed October 7, 2018. http://brahms.ircam.fr/works/work/9366/ .

Hurel, Philippe. *Opcit pour saxophone tenor*. Paris: Gérard Billaudot, 1992.

Hurel, Philippe. "*Opcit*." *Philippe Hurel*. 2010. Accessed October 8, 2018. http://www.philippe-hurel.fr/notices/opcit.html .

Hurel, Philippe. "*Phasis.*" *IRCAM Centre Pompidou*. Accessed October 7, 2018. ¶http://brahms.ircam.fr/works/work/20871/ .

Kane, Brian Michael. "The Music of Skepticism: Intentionality, Materiality, Forms of Life." PhD diss., University of California at Berkley, 2006.

Kuehni, Rolf G. "The Scientific Aesthetics of Charles Henry." *Color Research and Application*, vol. 11, no. 3 (Fall 1986): 181-238.

Laran, Jérôme. "Biography." Jérôme Laran: Saxophonist. Accessed November 10, 2018. http://en.jeromelaran.fr/static/Biography.

Lelong, Guy. "Philippe Hurel." *IRCAM Centre Pompidou*. 1995. Accessed October 6, 2018. http://brahms.ircam.fr/philippe-hurel#parcours .

Lelong, Guy. "Hurel, Philippe." *Grove Music Online. Oxford Music Online*. Oxford University Press. Accessed October 7, 2018. http://www.oxfordmusiconline.com/grovemusic/view/10.1093/gmo/9781561592630.001.0001/omo-9781561592630-e-0000045480.

Leroux, Philippe. "*Un Lieu Verdoyant – Hommage à Gérard Grisey*." *IRCAM Centre Pompidou*. Accessed November 8, 2018. http://brahms.ircam.fr/works/work/14297/ .

Leroux, Philippe. "*L'Unique trait de pinceau*." *IRCAM Centre Pompidou*. Accessed November 8, 2018. http://brahms.ircam.fr/works/work/23546/.

Leroux, Philippe. *PPP*. Paris: Gérard Billaudot, 1994.

Leroux, Philippe. *SPP*. Paris: Gérard Billaudot, 2001.

Levy, Beth E. "Philippe Leroux: *PPP*." Program notes for *Premieres from the Vanguard*. San Francisco Contemporary Music Players. David Milnes. San Francisco: Yerba Buena Center for the Arts Forum, October 8, 2007.

Londeix, Jean-Marie and Bruce Ronkin, ed. *A Comprehensive Guide to the Saxophone Repertoire 1844 – 2003*. Glenmoore, PA: Northeastern Music Publications, 2003.

Londeix, Jean-Marie and Bruce Ronkin, ed. *150 Years of Music for Saxophone: Bibliographic Index of Music and Educational Literature for Saxophone, 1844 – 1994*. Cherry Hill, NJ: Roncorp, 1994.

Mabury, Brett. "An Investigation Into The Spectral Music Idiom and Its Association With Visual Imagery, Particularly That of Film and Video." PhD diss., Edith Cowan University, 2006.

McAllister, Timothy. *Glint*. Timothy McAllister. Innova 764, 2010. CD. Liner notes by Timothy McAllister.

Moscovich, Viviana. "French Spectral Music: An Introduction." *Tempo* no. 200 (Apr. 1997): 21-27.

Pasler, Jann. "Impressionism." *Grove Music Online. Oxford Music Online*. Oxford University Press. Accessed July 2, 2016. http://www.oxfordmusiconline.com.turing.library.northwestern.edu/subscriber/article/grove/music/50026.

Pasler, Jann. "Resituating the Spectral Revolution: French Antecedents and the Dialectic of Discontinuity and Continuity in Debussy's *Jeux*." *Musicae Scientiae*, vol. 8, no. 1 (September 2004): 125-140.

Polansky, Larry, et al. "Tenney, James." *Grove Music Online. Oxford Music Online*. Oxford University Press. Accessed June 19, 2017. http://www.oxfordmusiconline.com.turing.library.northwestern.edu/subscriber/article/grove/music/47504.

Ronkin, Bruce. *Londeix Guide do the Saxophone Repertoire 1844 – 2012*. Glenmore, PA: Roncorp, 2012.

Pugin, Tristan. "Through the Spectrum: The New Intimacy in French Music (II)." *Tempo*, New Series, no. 217 (July 2001): 38-47.

Rose, François. "Introduction to the Pitch Organization of French Spectral Music." *Perspectives of New Music*, vol. 34, no. 2 (Summer 1996): 6-39.

Sargent, Tyler. *Steve Lehman*. Accessed June 21, 2017. http://www.stevelehman.com.

Schuller, Gunther. *Musings: The Musical Worlds of Gunther Schuller*. New York: Da Capo Press, 1999.

Smith, Andrew Martin. "Continuity, Motion, and Energy Through the Spectrum: An Analysis of Philippe Leroux's *Un Lieu Verdoyant – Hommage À Gérard Grisey*." DMA diss., Bowling Green State University, 2014.

Smith, Bruce Ronald and Tristan Murail. “An Interview with Tristan Murail.” *Computer Music Journal* vol. 24, no. 1 (Spring 2000): 11-19.

Sparnaay, Harry. “Harry Sparnaay: Biography.” Harry Sparnaay. Accessed July 31, 2017. http://www.harrysparnaay.info/biography.htm.

Taylor, Rhonda Janette. “Gérard Grisey’s *Anubis et Nout*: A Historical and Analytical Perspective.” DMA diss., University of Arizona, 2005.

Teal, Larry. *The Art of Saxophone Playing*. USA: Summy-Birchard, 1963.

Vassilandonakis, Yiorgos. “An Interview with Philippe Leroux.” *Computer Music Journal* vol. 32, no. 3 (Fall 2008): 11–24.

Weiss, Marcus, and Giorgio Netti. *The Techniques of Saxophone Playing*. New York: Bärenreiter, 2010.