

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Student Research, Creative Activity, and
Performance - School of Music

Music, School of

8-2018

A Musical Analysis and Performance Guide to Alejandro Viñao's Burritt Variations for Solo Marimba

Michael Gordon Roe

University of Nebraska-Lincoln, roemikeroe@gmail.com

Follow this and additional works at: <http://digitalcommons.unl.edu/musicstudent>



Part of the [Music Commons](#)

Roe, Michael Gordon, "A Musical Analysis and Performance Guide to Alejandro Viñao's Burritt Variations for Solo Marimba" (2018).
Student Research, Creative Activity, and Performance - School of Music. 121.

<http://digitalcommons.unl.edu/musicstudent/121>

This Article is brought to you for free and open access by the Music, School of at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Student Research, Creative Activity, and Performance - School of Music by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

A MUSICAL ANALYSIS AND PERFORMANCE GUIDE TO
ALEJANDRO VIÑAO'S *BURRITT VARIATIONS* FOR SOLO MARIMBA

Michael Gordon Roe. B.A., M.M.

Dissertation Prepared for the Degree of
DOCTOR OF MUSICAL ARTS

UNIVERSITY OF NEBRASKA

Lincoln, Nebraska

August, 2018

ADVISOR:

Dave Hall

SUPERVISORY COMMITTEE:

Paul Haar

Alan Mattingly

Walker Pickering

Roe, Michael Gordon. A Musical Analysis and Performance Guide to Alejandro Viñao 's *Burritt Variations* for Solo Marimba. Doctor of Musical Arts (Performance).

August 2018, 82 pages, 10 tables, 4 figures, 44 musical examples, bibliography, 42 titles.

This dissertation and accompanying lecture recital examine musical aspects and performance considerations for Alejandro Viñao's *Burritt Variations* (2012).

An exhaustive examination of the formal, melodic, motivic, and rhythmic aspects of the piece will highlight the complex compositional processes and thematic transformations found throughout the work. The discussion will also briefly examine the composer's background and the genesis of the work, as well as key influences found in *Burritt Variations*. These influences include the multi-temporal music of Conlon Nancarrow, and many Latin-American musical styles, especially Salsa music. The discussion will then focus on considerations for those wishing to perform the work.

By illuminating Viñao's compositional processes and shedding light on performance considerations, this document will serve as a valuable resource for those wishing to study or perform Alejandro Viñao's *Burritt Variations* for solo marimba.

Copyright 2018

by

Michael Gordon Roe

ACKNOWLEDGEMENTS

I would first like to thank my committee members Dave Hall, Paul Haar, Alan Mattingly, and Walker Pickering. I am eternally indebted for the generous giving of their time, expertise, support, and guidance. I am forever grateful to my parents, Bob and Charlotte Roe, who instilled in me a love of music at an early age, and have supported me immeasurably at every stage of my career. Finally, I wish to thank Molly Chapple for her unending love, support, patience, and kindness.

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS.....	iii
LIST OF TABLES AND FIGURES.....	v
LIST OF MUSICAL EXAMPLES.....	vi
Chapter	
I. INTRODUCTION.....	1
II. COMPOSER BIOGRAPHY.....	4
III. THE GENESIS OF <i>BURRITT VARIATIONS</i>	7
IV. INFLUENCES IN <i>BURRITT VARIATIONS</i>	10
CONLON NANCARROW	
LATIN AMERICAN INFLUENCES	
V. ANALYSIS OF <i>BURRITT VARIATIONS</i>	27
MACRO-ANALYSIS	
MICRO-ANALYSIS	
VI. PERFORMANCE CONSIDERATIONS.....	74
VII. CONCLUSION.....	79
BIBLIOGRAPHY.....	80

LIST OF TABLES AND FIGURES

Page

Tables

1. Percussion Works of Alejandro Viñao.....	5
2. Form and length of sections in <i>Burritt Variations</i>	29
3. Large-Scale Structures in <i>Burritt Variations</i>	30
4. Form of Variation I.....	38
5. Form of Variation II.....	42
6. Form of Variation III.....	47
7. Thematic cells in Variation IV.....	53
8. Form for Meta-Variation 2.....	60
9. Form of Variation VI.....	67
10. Form of Variation VII.....	73
11. Polyphonic segments in <i>Burritt Variations</i>	77

Figures

1. Excerpt from Cowell's <i>New Musical Resources</i> , pg. 47.....	12
2. Four types of tempo canon.....	16
3. Theme and Variations as percentage of total composition.....	29
4. Large-Scale Structures in <i>Burritt Variations</i>	30

LIST OF MUSICAL EXAMPLES

	Page
1. Alejandro Viñao, <i>Khan Variations</i> , m. 86.....	15
2. African Clave.....	20
3. First five notes of the theme from <i>Burritt Variations</i> as it relates to the African clave pattern.....	20
4. 3:2 Son Clave.....	21
5. 2:3 Son Clave.....	21
6. 3:2 and 2:3 Rhumba Clave.....	22
7. 3:2 and 2:3 Bossa Clave.....	22
8. Alejandro Viñao's <i>Estudios de Frontera</i> , Movement 1 - “Homage to Nancarrow,” mm. 19-20.....	23
9. Viñao, <i>Burritt Variations</i> theme, mm. 1-5.....	32
10. Octatonic framework implied by the theme to <i>Burritt Variations</i>	32
11. Rhythmic palindrome in the theme for <i>Burritt Variations</i>	34
12. Theme as it relates to a quarter-note pulse.....	34
13. Three four-note sets introduced in the introductory section of Variation I.....	36
14. Theme in A, mm. 20-4.....	36
15. Theme in C, mm. 24-9.....	37
16. Theme in Eb, mm. 29-33.....	37
17. Variation II, mm. 61-2.....	39
18. Variation II, mm. 63-4.....	40
19. Lower voice, mm. 74-7.....	41
20. Variation II, mm. 80-2.....	42
21. Variation III, mm. 96-8.....	44

22. Variation III, mm. 111-7.....	45
-----------------------------------	----

LIST OF MUSICAL EXAMPLES (CONT.)

	Page
23. Variation III, mm. 120-4.....	46
24. 4 over 15 ostinato from Variation IV.....	48
25. Variation IV, mm. 160-2.....	49
26. Variation IV, mm. 164-5.....	50
27. Variation IV, mm. 176-81.....	52
28. Whole-step Bass Groove, Variation IV, mm. 188-9.....	53
29. Morse Code Motif.....	55
30. Variation V, mm. 206-12.....	56
31. Variation V, mm. 218-20.....	57
32. Variation V, mm. 234-6.....	58
33. Variation V, mm. 246-50.....	59
34. Variation VI, mm. 272-5.....	61
35. Variation VI, mm. 279-88.....	63
36. Variation VI, mm. 297-8.....	64
37. Variation VI, mm. 300-6.....	65
38. Variation VI, mm. 316-25.....	66
39. Variation VII, mm. 340-7.....	69
40. Variation VII, mm. 364-6.....	70
41. Variation VII. Mm/ 370-5.....	71
42. Coda, pickups to mm. 380-7.....	72

43. Variation II. Mm 66-70.....	76
44. Lower voice metrical structure, mm. 66-70.....	76

CHAPTER I

INTRODUCTION

Burritt Variations is only the second composition for solo marimba by Argentinean composer Alejandro Viñao (b. 1951). Published in 2012, *Burritt Variations*, much like its predecessor *Khan Variations* (2001), has quickly become a staple in the modern solo marimba repertoire. Commissioned by Michael Burritt, Professor of Percussion at the Eastman School of Music in Rochester, New York, *Burritt Variations* received its premiere at the 2012 Percussive Arts Society International Convention (PASIC) in Austin, Texas. Burritt has also been involved in several other consortiums to commission new works from Viñao, including the consortium for *Khan Variations*, the first such joint-commissioning project of its kind. Other consortiums to commission Viñao involving Burritt have produced works such as *Riff* (2006), *Book of Grooves* (2011), *Water* (2013), and the second movement of *Estudios de Frontera*, “Of Melody & Pulse” (2016).

Alejandro Viñao was born in Buenos Aires, Argentina in 1951. He studied with Russian composer Jacabo Ficher before moving to England in 1975 where he continued his studies at the Royal College of Music, and in 1988, completed his PhD in composition at the City University of London. Viñao has had an acclaimed career, taking first prizes at The International Competition for Electro-Acoustic Music in Bourges, France (1981), the

International Rostrum of the Unesco World Music Council (1984), Prix Ars Electronica in Austria (1992) and a Guggenheim fellowship in composition (1994). Viñao's work spans several genres, including opera, music-theatre, choral, instrumental, and electroacoustic compositions.

Viñao's music has been so well-received by the percussion community perhaps due to its rhythmic vitality and polyrhythmic constructions. Rhythm is central to the development of *Burritt Variations*, a trait that Viñao's music shares with the music of Mexican-American composer Conlon Nancarrow (1912-1997). Nancarrow wrote over 50 pieces for player piano in which he explored complex multi-temporal relationships, and his work has influenced the rhythmic constructs of countless composers, including György Ligeti (1923-2006), who, according to Viñao, was one of the first composers to take the rhythmic ideas of Nancarrow and attempt to make them performable by human players.

Growing up in Argentina, Viñao was exposed to all manner of Latin-American musical styles from a very early age, so his rhythmic sensibilities also draw from many of those traditions. *Burritt Variations* is heavily influenced by Latin-American music in general, and Salsa music in particular. Concepts such as clave and *guajeo* find their way into the work in interesting and unique ways. Being a blend of Afro-Latino rhythmic properties and Iberian melodic and harmonic constructs, Salsa music draws on the rich musical tradition of the Iberian peninsula, which has been heavily influenced by the religious music of Islam.

The purpose of this document is to present an in-depth musical analysis and

performance guide to *Burritt Variations* by Alejandro Viñao. Chapters two and three will highlight the life and accomplishments of Viñao, and present a discussion on how the piece came to be. Chapter four discusses the main influences on the writing of *Burritt Variations*: the music of Conlon Nancarrow and Latin-American musical influences. Chapter five presents an in-depth musical analysis of the work. First, the piece is viewed on a macro-scale to determine the properties of the overall structure of the piece and its constituent variations. This understanding of the large-scale nature of the work provides a frame of reference to the micro-analysis, in which the individual variations will be carefully examined and discussed. Chapter six will then discuss some of the challenges in performing the work. The arguments and discussions presented in this document will exhaustively examine Alejandro Viñao's *Burritt Variations*, thus filling the void of information available on this extraordinary work.

CHAPTER II

COMPOSER BIOGRAPHY

Alejandro Viñao was born on April 4th, 1951 in Buenos Aires, Argentina. In Buenos Aires, Viñao studied with Russian composer Jacabo Ficher. In 1975, he moved to England where he continued his studies at the Royal College of Music, and in 1988, Viñao completed a doctorate in composition at the City University of London. Viñao currently resides in London, England.

Viñao has had an illustrious career, and has received numerous awards and honors. Among these awards are the 'Golden Nica' Prix Ars Electronica (1992), first prize at The International Rostrum at the Unesco World Music Council (1984), first prize at the International Competition for Electroacoustic Music Bourges, France (1981), and many others. Viñao has received commissions from several world-class performing groups, including the Institut de Recherche et Coordination Acoustique/Musique (I.R.C.A.M.) and Groupe de Recherches Musicales (G.R.M), and was the composer in residence at the Massachusetts Institute of Technology (M.I.T.) in 1987. One of Viñao's greatest distinctions occurred in 1995 when he was awarded the Guggenheim Fellowship in Composition for his work *Apocryphal Dances*, which was premiered by the BBC Symphony Orchestra in London in 1997.

The character of Viñao's music can almost always be described as rhythmically

vibrant, but he came to percussion writing later in his career. *Tumblers* was commissioned by marimba and violin duet Marimolin¹ in 1989, and his *Marimba Concerto* was written in 1993, but 2001's *Khan Variations* was Viñao's first piece for solo percussion.

Table 1 lists the percussion works of Alejandro Viñao, but it should be noted that Viñao has a vast output of compositions outside the realm of percussion, including opera, musical theatre, film scores, symphony and chamber orchestra, small chamber ensemble, solo, as well as electroacoustic and multimedia.

Title	Year	Description
<i>Tumblers</i>	1989/90	Violin, Marimba, and computer
<i>Marimba Concerto</i>	1993	Solo marimba and Chamber Orchestra
<i>Khan Variations</i>	2001	Solo Marimba
<i>Estudios de Frontera</i>	2004	For 5 or 6 percussion players 2 marimbas (5 octaves, C1 to C6), 1 marimba (A1 to C6), xylophone, vibraphone, glockenspiel, tubular bells (2 octaves), bongos, congas, 4 tom-toms, gran cassa, 2 whistles, claves, guiro, vibra-slap, medium size cymbal, large cymbal)
<i>Arabesco Infinito</i>	2006	vibraphone and marimba
<i>Riff</i>	2006	marimba and piano
<i>Formas del Viento</i> (version 1)	2008	For flute and 1 percussion player (vibraphone and marimba played by one player)
<i>Formas del Viento</i> (version 2)	2009	For flute and 2 percussion players
<i>Book of Grooves</i>	2011	Two marimbas
<i>Burritt Variation</i>	2012	Solo Marimba
<i>Water</i>	2013	Percussion sextet with piano
<i>Relative Riffs</i>	2015	Percussion trio
<i>Madera Viento y Metal</i>	2016	Marimba and electronics

Table 1: Percussion Works of Alejandro Viñao

Viñao's percussion writing can be characterized by an intricate and in-depth understanding of rhythm and rhythmic processes. Drawing heavily on his knowledge and

¹ Marimolin is a marimba/violin duet consisting of marimbist Nancy Zeltsman and violinist Sharan Leventhal.

understanding of Latin-American musical styles, as well as the influence of Mexican-American composer Conlon Nancarrow, Viñao's music is driven primarily by rhythmic development and manipulation. Eschewing complex melodic or harmonic constructions, Viñao, much like Nancarrow, concentrates on simpler melodic/harmonic elements to bring the rhythmic aspects of his writing to the foreground. This focus on rhythm produces music that is both accessible and challenging to the listener, as maintaining a sense of groove often requires a listener to adjust his or her understanding of rhythmic frameworks and relationships throughout a work.²

2 All information in this chapter taken from Vinao.com/Biography.html or John Francis Roberts, "The *Khan Variations* for Solo Marimba by Alejandro Viñao: Musical Analysis and Performance Practice," D.M. Diss., University of North Texas, 2010.

CHAPTER III

THE GENESIS OF *BURRITT VARIATIONS*

Burritt Variations was commissioned by Michael Burritt and premiered on November, 2nd, 2012 at the Percussive Arts Society International Convention (PASIC) in Austin, Texas.³ Michael Burritt had previously been involved in several consortiums to commission music from Viñao, including the consortium for *Khan Variations* in 1999 organized by American marimbist Nancy Zeltsman. Burritt has stated that he fell in love with *Khan Variations* after learning it in 2004 or 2005.⁴ Perhaps it was Burritt's affinity for Viñao's writing that inspired him to commission *Riff* in 2006 along with Alan Chow, Professor of Piano at Northwestern University where Burritt was the Professor of Percussion from 1995-2008. Since 2008, Burritt has served as the Professor of Percussion at the Eastman School of Music in Rochester, New York. Other consortiums involving Michael Burritt include *Book of Grooves* (2011), *Water* (2013), and the second movement of *Estudios de Frontera*, "Of Melody & Pulse" (2016).

After being involved in several consortiums, Burritt decided to commission another piece for solo marimba, and contacted Viñao about a commission to coincide with an upcoming showcase concert at the 2012 Percussive Arts Society International Convention that would feature Burritt as a solo artist. Burritt has stated that at one point

3 Alejandro Viñao, *Burritt Variations* Program Notes <Viñao.com/Burritt%20Variations.html>

4 Michael Burritt, "Michael Burritt Talks Viñao Pt. 1," YouTube video <<https://www.youtube.com/watch?v=a-ON9x5gKfU>>. 2014.

while writing the piece, Viñao sent him an email to discuss the name of the work. Viñao suggested titling the piece *Burrirt Variations*, but Burrirt wasn't entirely comfortable attaching his name to the work at that point, as he felt it might seem a little self-serving. Viñao suggested some other ideas, including *Salsa Variations*, but decided against them. After some time and discussion Viñao settled on the title of *Burrirt Variations* with Burrirt's blessing.⁵

Being commissioned solely by Michael Burrirt, Viñao was able to craft a piece with a specific performer in mind. Burrirt is known for his dynamic and engaging performances, as well as a well-rounded rhythmic understanding. As Burrirt has stated,

My foundation as a musician, as a percussionist, is as a drummer – snare drum, drumset . . . I think that comes out when I play Viñao's music because there's a lot of rhythmic animation and coordination rhythmically, and polyrhythmic things going on, and that sort of funky style to his music that sort of sits or resonates with me as a musician I think partly because of my roots as a drummer.⁶

Viñao was certainly aware of Burrirt's performance style and personality as he was writing *Burrirt Variations*, and the funky style and elements of rhythmic coordination really shine through in the piece.

Burrirt Variations follows in the footsteps of Viñao's previous work for solo marimba, *Khan Variations*. However, *Burrirt Variations* focusses more on Viñao's concepts of groove, in some sections setting conflicting grooves against one another to create a rich temporal experience. *Burrirt Variations* is also about a minute longer than *Khan Variations*, and contains more polyphonic writing. Burrirt believes that *Khan Variations* is perhaps more rhythmically sophisticated than *Burrirt Variations*, partly due

⁵ Ibid.

⁶ Ibid.

to the heavier influence of the multi-temporal music of Conlon Nancarrow, which will be discussed in the next chapter. While *Burritt Variations* does contain rhythmic and compositional devices derived from Nancarrow's music, Viñao's main focus is on the polyphony of conflicting grooves found throughout the work.

CHAPTER IV

INFLUENCES IN *BURRITT VARIATIONS*

CONLON NANCARROW

“Largely because of their striking rhythmic vitality - several very clearly defined musical lines moving with inexorable temporal independence - they make an entirely novel impact on the ear. They stimulate the musical imagination strongly, in part, I believe, because of the very matter-of-factness with which they go about their business. Nothing is extraneous in Nancarrow's music. Nothing distracts one from confronting his primary intentions.”⁷

The above quote by American composer Roger Reynolds describes the rich temporal experience of hearing Nancarrow's music, but it could also quite easily apply to many of Viñao's compositions, especially his percussion writing. Nancarrow's explorations into the rhythmic frontier of Western Music have had vast and far-reaching effects. In 1981, Györgi Ligeti famously described Nancarrow's music as “the best of any composer living today.”⁸ Nancarrow also maintained a long time friendship with composer Elliott Carter, who staunchly supported his work.⁹ The multi-temporality that Nancarrow systematically pursued through his player piano studies would come to have an enormous impact on the compositional output of Alejandro Viñao.

Conlon Nancarrow was born on October 27th, 1912 in Texarkana, Arkansas. He played trumpet in the town band, and his family owned a player piano. The young

7 Roger Reynolds, “Conlon Nancarrow: Interviews in Mexico City and San Francisco,” *American Music*, Vol. 2, No. 2 (Summer, 1984): 1

8 David Bruce, “The Manic Mechanic,” *The Musical Times*, Vol. 138, No. 1850 (April, 1997): 9.

9 Dragana Stojanović-Novičić, “The Carter-Nancarrow Correspondence,” *American Music*, Vol. 29, No. 1 (Spring, 2011): 64-84.

Nancarrow could not have known that his interest in the player piano would catalyze his monumental rhythmic studies and cement his name alongside the likes of Charles Ives, John Cage, Elliott Carter, and other boundary-pushing American composers of the twentieth century. In 1929, Nancarrow enrolled in the Cincinnati Conservatory of Music, where he stayed until 1932, when he left before earning a degree. In 1934, Nancarrow moved to Boston and studied privately with Roger Sessions, Walter Piston, and Nicolas Slonimsky. While in Boston, he joined the communist party, and when the Spanish Civil War broke out in 1936, Nancarrow traveled to Spain to join the Abraham Lincoln Brigade.¹⁰ At the end of the Spanish Civil War in 1939, Nancarrow returned to the United States, briefly spending time in New York City before his radical views made it difficult to renew his passport. Due to growing anti-communist sentiment in America, he moved to Mexico City in 1940, where he became a Mexican citizen in 1956, and lived until his death in August of 1997.

Nancarrow derived inspiration from many sources. The player piano in his family home growing up undeniably spurred his mechanical views on rhythm and time. His fondness for jazz also contributed to Nancarrow's particular musical dialect, from jaunty, driving rhythms to harmonic and melodic influences as well. "There are many explicit jazz references [in Nancarrow's music], ranging from subtle uses of blues notes to the driving boogie-woogie of Study No. 3."¹¹ Henry Cowell's 1930 treatise entitled *New Musical Resources* also had a profound impact on the young Nancarrow. "All of Cowell's

10 The Abraham Lincoln Brigade was a mixed brigade that fought for the Spanish Republic in the Spanish Civil War as part of the International Brigades. It comprised many English-speaking volunteers.

11 Phillip Carlsen, *The Player Piano Music of Conlon Nancarrow: An Analysis of Selected Studies*, Institute for Studies in American Music, New York: Conservatory of Music, Brooklyn College of the City University of New York, 1988, 2.

ideas in that book were fascinating,” said Nancarrow in a 1975 interview.¹² Cowell posited that rhythms could be consonant or dissonant in much the same way as harmony. By comparing the wavelengths of common consonant intervals and chords, Cowell stumbled on several relationships, for instance, a major chord has a vibrational relationship of 3:4:5, as seen in Figure 1:

Figure 1:

<i>Partial Series</i>	<i>Intervals</i>	<i>Tones</i>	<i>Relative Period of Vibration Time</i>
5	Third	E	16 16 16 16 16 == 80
4	Fourth	C	16 16 16 16 == 64
3	Fifth	G	16 16 16 == 48

Figure 1: Excerpt from Cowell's *New Musical Resources*, pg 47.

The reason that certain intervals and chords were considered consonant, according to Cowell, was due to the relationships of the wavelengths of the individual tones. As Cowell states:

The reason why the simultaneous tones result in harmony instead of a chaos of sounds is that at regular intervals the vibrations coincide; and in tones forming a musical interval, the smaller the number of units that must be passed over before that coincidence is re-established, the more consonant is the interval.¹³

Cowell then expanded this idea to the frontier of rhythm, suggesting that rhythms could be both consonant and dissonant based on the same metric: how often the rhythms coincide. Thus, in Cowell's mind, a polyrhythm of 2:3 is more consonant than a polyrhythm of 7:8. This notion of degrees of temporal dissonance would fuel many of Nancarrow's studies for player piano.

Viñao has discussed another possible influence on Nancarrow: that of Stravinsky.

¹² Roger Reynolds, “Conlon Nancarrow: Interviews,” p.3.

¹³ Henry Cowell, *New Musical Resources*, Cambridge: Cambridge University Press, 1930, pg 47.

Viñao elaborated on the @percussion podcast that perhaps Nancarrow was *more* influenced by Stravinsky than any other source. He states that Nancarrow was deeply moved the first time he heard Stravinsky's *Rite of Spring*, and points to a specific section of the piece, "The Procession of the Sage," as a potential foreshadowing of Nancarrow's multi-temporality.¹⁴ In his radio program entitled "Children of Nancarrow," Viñao further discusses "The Procession of the Sage:"

So in this passage of the Rite of Spring, Stravinsky made different instruments play conflicting rhythms that become almost independent in time, but not quite so. They just come to the edge without ever crossing it. And Nancarrow noticed how close the Rite of Spring had come to the edge, and he decided to cross it himself.¹⁵

When Nancarrow finally crossed that edge into multi-temporality and began thinking of how to create temporally dissonant music with multiple simultaneous times, he knew that he would not be able to rely on human performers to execute such precise rhythmic subtleties. He turned to the player piano, for which he wrote approximately 50 studies that explore a vast network of rhythmic complexity and multi-temporality. His earlier studies were influenced by blues and jazz styles, and tended to set ostinati against each other at different tempos. In studies 13-19, Nancarrow discovers the tempo canon, in which a melody or cell is superimposed upon itself at different levels of transposition and at varying tempo ratios.¹⁶ Nancarrow would begin with more simple tempo relationships such as 4:5 or 12:15:20, but would eventually work his way towards totally irrational relationships such as $\sqrt{2}:2$ in his Study No. 33. It is important to note that these are *tempo*

14 @percussion podcast, "Episode 33 with Alejandro Viñao," Published March 24, 2016
<<https://www.youtube.com/watch?v=CC0G7719TgA>>

15 Alejandro Viñao, "Children of Nancarrow," Radio program <<http://www.vinao.com/SOUND/Children%20of%20Nancarrow%20mix.mp3>>

16 Kyle Gann, *The Music of Conlon Nancarrow*, New York, Cambridge University Press, 1995, 20.

relationships and not simply rhythmic relationships. A tempo canon with the ratios of 12:15:20 would contain voices moving at tempos that share the same ratios, for example – 120, 150, and 200 beats per minute.

Nancarrow was very careful to distinguish the difference between polyrhythm and polytempo (or multi-temporality). In a polyrhythm, “the rhythms of the two voices differ, but they can be reconciled to the same underlying meter and tempo.”¹⁷ a true multi-temporal relationship, however, shares no underlying pulse. As Nancarrow has said:

I don't think, say, the polyrhythm of 4 against 5, where after every 4 and every 5 it comes together on the block, but I do think that a tempo of 4 [against] a tempo of 5 is dissonant because you have a line going against another line. The former situation is coinciding on, let's say, the measure, and the latter isn't. That's what I call temporal dissonance.¹⁸

However, within a polyrhythmic framework, one may *perceive* polytempo if the concurrence of pulses is relatively rare, as is the case in much of Viñao's music, perhaps most notably in the first movement of his 2004 work for percussion ensemble *Estudios de Frontera* entitled “Homage a Nancarrow.”

Nancarrow not only explored relationships between rates of speed, but relationships between *changes* in the rates of speed in what are known as his acceleration canons. Nancarrow would construct these mathematical accelerations/decelerations in two distinct ways: arithmetical and geometric. In arithmetical acceleration, Nancarrow simply subtracts from (or adds to, in the case of deceleration) each consecutive note the same durational unit. Viñao has utilized similar techniques in several of his compositions. Example 1 is an excerpt from his 2001 composition for solo marimba, *Kahn Variations*,

17 Margaret Thomas, “Nancarrow's “Temporal Dissonance:” Issues of Tempo Proportions, Metric Synchrony, and Rhythmic Strategies.” *Intégral*, Vol. 14/15 (2000/2001): 139.

18 Roger Reynolds, “Conlon Nancarrow: Interviews”: 23.

in which the rhythm in the right hand simulates an acceleration against the steady left hand pulse.



Example 1: Alejandro Viñao, *Khan Variations*, m. 86

“The other type, geometric acceleration, involves decreasing each successive duration by the same proportion, and is virtually impossible to notate conventionally.”¹⁹ Nancarrow often uses percentages to indicate the change of rate, for example, the changes of 5%/6%/8%/11% in his Study No. 27.²⁰ Within both the tempo canons and the acceleration canons, the various voices come together in what are known as *convergence points*. Depending on the temporal relationships between canonic voices, convergence points may occur in any number of locations throughout a piece. “Convergence points often serve as a structural climax, whether occurring at the beginning, ending, in the middle, or at numerous moments in between.”²¹ Kyle Gann states that “the temporal gap between an event in one voice and its corresponding recurrence in another” is known as *echo distance*.²² By examining the changes in echo distance throughout a particular canon, one will find, as Thomas has argued, that four different types of canon are found in Nancarrow's music: *converging*, *diverging*, *converging-diverging*, and *diverging-*

19 Kyle Gann, *The Music of Conlon Nancarrow*, 146.

20 See Clifton Callender, “Formalized Accelerando: An Extension of Rhythmic Techniques in Nancarrow's Acceleration Canon,” *Perspectives of New Music*, Vol. 39, No. 1 (Winter, 2001), 188-210 and Kyle Gann, *The Music of Conlon Nancarrow*, 19-28 & 146-172.

21 Clifton Callender, “Formalized Accelerando,” 189.

22 Kyle Gann, *The Music of Conlon Nancarrow*, 21.

converging.²³

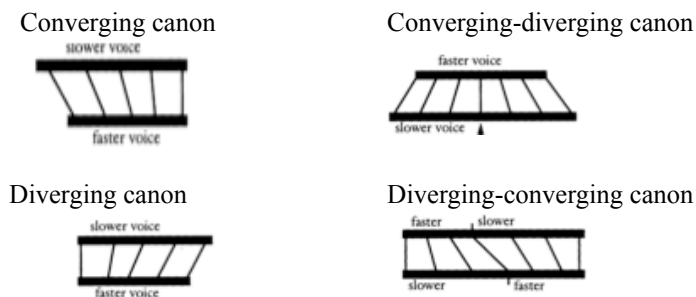


Figure 2: Four types of tempo canon

While Nancarrow often utilized canonic processes in his composition, the canon was simply a means to an end. “His concern is explicit: “temporal dissonance.” All other aspects of musical control, pitch selection, gestural and articulative design, rhythmic detail, timbre and dynamics, are thought of as being in the service of tempo clarification.”²⁴ Nancarrow has stated that it is, in fact, the clashes of tempo that carry his music more than any other aspect.²⁵

When you use canon, you are repeating the same thing melodically, so you don't have to think about it, and you can concern yourself more with the temporal aspects. You simplify the melodic elements, and you can follow more the temporal material.²⁶

The use of canon was paramount to Nancarrow's rhythmic explorations. By utilizing a simpler melodic and harmonic framework, Nancarrow was better able to draw the listener's ear to the temporal aspects of his compositions, a technique we see in several of Viñao's works, especially *Burritt Variations*.

23 Margaret Thomas, “Nancarrow's Canons: Projections of Temporal and Formal Structures.” *Perspectives of New Music*, Vol. 38, No. 2 (Summer, 2000): 108-9.

24 Roger Reynolds, “Conlon Nancarrow: Interviews,” 1.

25 Ibid. 6.

26 Ibid. 5.

Nancarrow once claimed that “time is the last frontier of music.”²⁷ By systematically and nearly exhaustively exploring this final frontier, Nancarrow bestowed upon the Western musical world a vibrant collection of rhythmic inspiration. However, Nancarrow would need the help of others to make his name known in the world. Elliott Carter maintained a friendship with the composer through much of his life.²⁸ Carter mentioned Nancarrow in his 1955 article entitled “The Rhythmic Basis of American Music,”²⁹ and even sent the score of Nancarrow's *Rhythmic Study No. 1* to be published without the composer's knowledge.³⁰ Along with Carter's support, Nancarrow also gained the attention of György Ligeti. Viñao has stated that Bouléz described Ligeti's work in the 1970s as having become “Nancarrow-ized.”³¹ Ligeti's later works can perhaps be perceived as the bridge between Nancarrow and Viñao. In an interview, Viñao has discussed “transferring ideas of Nancarrow into a polyrhythmic world, because in Nancarrow you don't have polyrhythms. . . each strand, each layer is irrational with regards to the other strand, so they do not share any note value between them.”³² When asked about how to 'simplify' Nancarrow in order to convey multi-temporality through human performers, Viñao responded:

The “simplification” of Nancarrow in a way is not necessarily a simplification. It's transforming what is irrational in terms of relationships between layers into something that is now rational, but actually extremely hard to play all the same, because if you're going to conceal this common

27 Peter Garland, “Conlon Nancarrow: Chronicle of a Friendship,” in *Americas: Essays on American Music and Culture, 1973-80*, Santa Fe: Soundings Press (1982): 185.

28 See Dragana Stojanović-Novičić, “The Carter-Nancarrow Correspondence.”

29 Elliott Carter, “The Rhythmic Basis of American Music,” *The Score and IMA Magazine*. (June, 1955): 27-32.

30 James Greeson and Gretchen B. Gearhart, “Conlon Nancarrow: An Arkansas Original,” *The Arkansas Historical Quarterly*, Vol. 54, No. 4 (Winter, 1995): 461.

31 Alejandro Viñao, “Children of Nancarrow.”

32 @percussion podcast.

unit, you still have to hear it. At least the players have to hear it so they can stay in sync, but conceal it from the audience so that the audience thinks that this music is completely irrational or the layers are completely decoupled from each other, and I think that's Ligeti's contribution.

He is the one who said, 'okay, I want to write using the ideas of Nancarrow. I want music with multiple simultaneous times, but I want them played by performers, by human performers.'³³

Upon listening to Nancarrow's studies for player piano in the 1980s, Viñao was fascinated by the rhythmic ideas he found, and excited about the possibility of taking them somewhere else. However, he wanted the multiple layers to develop in a more organic way.

I felt that the processes that Nancarrow developed in his estudes[sic] where[sic] not very dramatic, since once the ratios between different polyphonic lines were established, these lines continued their trajectory towards a pivotal point in a more or less mechanical way, too deterministic for me, not dramatic enough. I wanted to see if it was possible to work with multiple simultaneous times but with shorter cycles so that the pivotal points were arrived at more quickly, not just towards the end of a piece or section, and more importantly, I wanted to control how these line[sic] converged to these points on a bar to bar bases. I wanted to hear the hand of the composer making choices as the process unfolded.³⁴

Viñao's adaptation of Nancarrow's rhythmic ideas has given rise to some remarkably exciting compositions, but his use of tempo canon is rarely as stringent on maintaining temporal relationships as Nancarrow's. By establishing and then manipulating these relationships, Viñao is able to create exciting metrical moments in his works, and by treating these relationships more fluidly, he allows canonic processes to unfold in a much more organic manner, as opposed to the often mechanical development in the music of Nancarrow.

33 Ibid.

34 Christopher L. Butler, "Understanding the Percussion Works of Alejandro Viñao: An Analysis and Performer's Guide of *Water* for Percussion Ensemble," D.M. Diss., University of Kentucky, 2016, 88-9.

LATIN-AMERICAN INFLUENCES

Viñao states in the performance notes to *Burritt Variations*:

The theme came to me as a familiar tune or groove belonging to music I have always known. I grew up listening to all kinds of Latin-American music. At that time, Tango, Bossa Nova, or Salsa were just as popular in the country of origin as in the rest of the continent. The popularity of a musical style was rarely restricted to its place of birth. As a young musician I played more Brazilian music than music from my native Argentina. This was not unusual or exceptional. Looking back, I feel that these variations pay homage to the many Latin-American musical traditions I grew up with that so strongly remain with us today.³⁵

Burritt Variations is a composition that owes much of its identity to the composer's exposure to Latin-American music, and Viñao even subtitles the sixth variation as the "Salsa Variation." What is it about *Burritt Variations* that could be considered "Latin?" To answer this question, some general stylistic idioms of Latin-American music must be understood, and a few specific elements of Salsa music will also be examined.

Perhaps the most important rhythmic element of any Latin-American style is the concept of clave. The word clave translates to "keystone," and at its most basic level, clave is simply a way of organizing larger metrical structures into smaller segments, often with syncopation using groups of twos and threes. The Grove Dictionary of American Music states that "The clave is the main rhythmic organizing principle in much sacred, folkloric, and popular music throughout the Americas and the Caribbean, similar in function to a sub-Saharan rhythmic timeline, from which it originated."³⁶

³⁵ Alejandro Viñao, Performance notes for *Burritt Variations*, 2012.

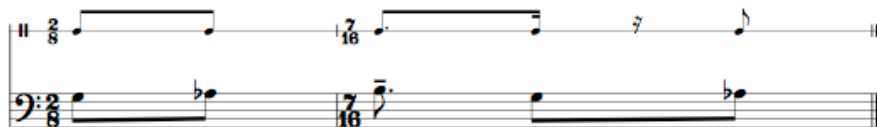
³⁶ Katherine Hagedorn, "Clave" in *The Grove Dictionary of American Music* (New York: Oxford University Press, 2013).

The sub-Saharan rhythmic timeline refers to a rhythmic pattern that is commonly known as the African clave. Due to the fluid nature of meter and rhythm in much West African music, the African clave pattern can be notated in either compound or simple meter, as seen in Example 2.



Example 2: African Clave

The African clave is comprised of five notes spaced over twelve rhythmic units. In the examples above, the rhythmic unit for the compound meter is an eighth-note, and the rhythmic unit for the simple meter is a sixteenth-note. In both cases the notes of the clave pattern consist of the following groupings of rhythmic units: 2-2-3-2-3. It is interesting to note that the first five notes of *Burritt Variations* rhythmically align exactly with the African clave pattern.



Example 3: First five notes of the theme from *Burritt Variations* as it relates to the African clave pattern

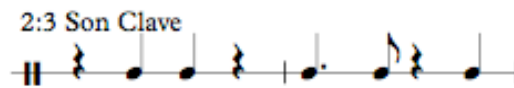
Brought to the Caribbean and Latin America via the slave trade, the African clave was then introduced to indigenous styles. The merging of these two diasporas (African, and Latin-American) gave rise to the musical styles commonly referred to as Afro-Caribbean, Afro-Latino or Afro-Cuban. The most basic form of clave pattern found in

these musics is the Son Clave, seen in Example 4.



Example 4: 3:2 Son Clave

The Son Clave also consists of five notes, but here they are spread out over sixteen rhythmic units, as opposed to twelve in the African Clave. Here the rhythmic unit is represented by eighth-notes, and the notes are played in groupings of 3-3-4-2-4. The five notes are also unevenly divided amongst the two measure cycle. Here there are three notes in the first bar, and two in the second. This is known as 3:2 clave.³⁷ The relationship of groupings can also be reversed to create a 2:3 Son Clave.



Example 5: 2:3 Son Clave

While the Son Clave is perhaps the most common clave pattern found in Salsa music, there does exist another variant that is often heard, the Rhumba Clave. The Rhumba Clave is very closely related to the Son, but is slightly more syncopated. This syncopation is due to the delaying of the last note of the first bar (in 3:2 clave) by one rhythmic unit. Thus, the ordering of rhythmic groupings in a 3:2 Rhumba Clave is 3-4-3-2-4. Of course, the 3:2 relationship of the Rhumba Clave can also be reversed to form the 2:3 Rhumba Clave. Both variations of the Rhumba Clave can be seen in Example 6.

³⁷ While often used to denote polyrhythmic relationships (as in the analysis portion of this document), here the label of '3:2' simply refers to the order of rhythmic groupings in a particular clave pattern. "3:2 clave" would simply read "three two clave" as opposed to "three over two" or "three against two" when discussing polyrhythms and/or hemiola.



Example 6: 3:2 and 2:3 Rhumba Clave

Another Latino musical style that bears mentioning due to its vast popularity in the middle of the twentieth century is Bossa Nova. Bossa Nova is a Brazilian style that fuses elements of Samba and Jazz. The typical clave pattern for Bossa Nova is similar to that of the Son Clave, but the second note on the two-side is delayed by one rhythmic unit. Iterations of 3:2 and 2:3 Bossa Clave can be seen in Example 7.



Example 7: 3:2 and 2:3 Bossa Clave

An interesting phenomenon that arises out of the Bossa Clave is the three-over-two hemiola that occurs starting on the second beat of the two-side. Examining the 2:3 Bossa Clave, the grouping of rhythmic units is 3-3-3-3-4. The repetition of groups of three rhythmic units creates this hemiola, and a certain rhythmic 'rub' common in Latin-American styles, and much of Viñao's music.

Viñao will often use polyrhythmic effects to create rhythmic tension or simulate an echoic sense of sustain. One such example comes from Viñao's *Estudios de Frontera*. In the first movement, entitled "Homage to Nancarrow," Viñao outlines a 3:2 Rhumba Clave pattern in the Marimba 1 part in measure 19. In the following measure, the Marimba 2 part utilizes a three-over-four hemiola that decrescendos to create a sense of

sustain. These measures can be seen in Example 8.

The image shows a musical score for Example 8. At the top, it is labeled "3:2 Rhumba Clave" and shows a single staff with a rhythmic pattern. Below this are two parts for maracas, labeled "Mar. 1" and "Mar. 2". Each part has a treble and bass staff. Mar. 1 starts with a *mp* dynamic. Mar. 2 starts with a *mp* dynamic and includes a phrase marked "like an echo" with a *pp* dynamic. The time signature is 4/4.

Example 8: Alejandro Viñao, *Estudios de Frontera*, Movement I – “Homage to Nancarrow,” mm. 19-20

Michael Burritt, in discussing the genesis of commissioning *Burritt Variations*, states that at one point Viñao actually suggested titling the piece *Salsa Variations*.³⁸ This suggestion alone implies a strong Latin-American influence on the compositional process, especially as it relates to Salsa music specifically. Salsa music is described as an

Urban popular dance genre developed in New York City and Puerto Rico during the 1960s and 70s, based on Cuban dance styles and incorporating Puerto Rican elements and influences from jazz and rock. . . In general stylistic terms, salsa closely resembles its Cuban antecedents, fusing West African rhythmic and textural principles with Iberian melodic and harmonic structures.³⁹

West African rhythmic principles, as they relate to Afro-Latino styles, have already been briefly examined in the discussion on clave. What remains to be discussed in order to understand Salsa music and its influence in *Burritt Variations* are the Iberian melodic and harmonic structures.

The Iberian Peninsula is located in Southwestern Europe, consisting of all the

38 “Michael Burritt Talks Viñao Pt. 1,” <https://www.youtube.com/watch?v=a-ON9x5gKfU>, 2014.

39 Lisa Waxer, “Salsa,” in *The Grove Dictionary of Music Online*, Published 2001

land South and West of the Pyrenees Mountains; present day Spain and Portugal. The music of this area is unique to Europe partly due to the heavy Muslim influence on culture during a long period of Islamic rule. The Iberian Peninsula was ruled by various Islamic Caliphates from the year 711 until 1249, with the small Moorish kingdom of Granada continuing in the South of Spain until 1492. Nearly 800 years of Islamic rule certainly left its mark on the culture and music of the Iberian Peninsula, even after the Spanish Inquisition attempted to clear away any traces of non-Christian culture in the late 15th century.⁴⁰

For instance, similarities can be drawn between the concept of the Arabic *maqâm*⁴¹ and the modal constructs of early liturgical music in the Christian church. Perhaps it was the blending of these ideas that led to the mode commonly referred to as “Spanish Phrygian,” A Phrygian scale with a raised third scale degree, or the fifth mode of the harmonic minor scale. In fact, this mode is known as *Bayati maqâm* in Arabic music.⁴² Viñao is no stranger to Arabic modes in his compositions. For example, the theme to *Khan Variations* is derived from the *hijâz maqâm*, and the piece is largely based on the Qawwali singing of Pakistani singer Nusrat Fateh Ali Khan.⁴³ In Viñao's 2011 suite of marimba duets entitled *Book of Grooves*, the first piece is entitled *Spanish Groove*. In the performance notes to the piece, Viñao refers to “the chromatic nature of the 'Spanish'

40 Information taken from Richard Fletcher, *Moorish Spain*, (New York: H. Holt, 1992) and Salma Khadra Jayyusi and Manuela Marín, *The Legacy of Muslim Spain* (New York: E.J. Brill, 1992).

41 Maqam is a system of melodic modes used in traditional Arabic music, of which there are seventy two heptatonic variants.

42 Peter Manuel, Michael Tenzer, ed., *Analytical Studies in World Music*, (New York: Oxford University Press, 2006) p. 96.

43 See John Roberts, *The Khan Variations for Solo Marimba by Alejandro Viñao: Musical Analysis and Performance Practice*, D.M. Diss., University of North Texas, 2010.

harmonies,⁴⁴ suggesting further use of these Arabic-inspired Iberian harmonic constructs. Interestingly, the theme for *Burritt Variations* can also be derived from the *Bayati maqam*, or Spanish Phrygian mode, although for the purposes of the analysis, perceiving the theme in terms of its relationship to octatonic frameworks provides more concise and complete discussion.

The octatonic scale was developed in seventh century Persian traditional music, where it was called *Zar ef Kend*, meaning “string of pearls.”⁴⁵ If the octatonic scale was being used in Islamic music as early as the seventh century, octatonic frameworks would have certainly permeated the Muslim world and influenced the music of the Iberian Peninsula, and thus, Afro-Latino styles in general, and Salsa music in particular.

One final element of Salsa music that begs examination is instrumentation. Salsa ensembles are typically based on one of two traditional Cuban ensemble formats, either the horn-based son conjunto or the string-based charanga. However, for the purposes of this discussion on how Salsa instrumentation relates to Viñao's *Burritt Variations*, only the conjunto format will be discussed. The conjunto ensemble traditionally consists of congas, bongos, bass, piano, tres (a Cuban string instrument not unlike a guitar), a horn section (traditionally trumpets), and smaller hand-held percussion (claves, guíro, and maracas) played by the singers. Salsa ensembles typically omit the tres and frequently add trombones to the horn section, and timbales are almost always used in the percussion section.

The percussion instruments in Salsa music function much like many African or

44 Alejandro Viñao, *Book of Grooves*, (London: Viñao.com, 2011).

45 Joseph Schillinger, *The Schillinger System of Musical Composition*, Vol 1 (New York: Carl Fischer, 1946)

Latin-American folkloric drum ensembles. The timbales perform a bell pattern, or *cascara*, the congas perform a repetitive pattern in a supportive role, and the bongos improvise much like a lead drum. Also present are the claves, guíro, and maracas, each with their own contribution to a dense amalgam of rhythmic layers. The piano *guajeo* serves both a harmonic and rhythmic function, as the piano player performs arpeggiated chords in syncopated patterns outlining the clave rhythm. Since the *guajeo* often occurs during the *montuno* section of a piece, it is sometimes referred to as a *montuno*. A *moña* is a horn *guajeo*, with the horn section outlining harmonic activity in a fiercely rhythmic manner. The use of the upper-register of the instruments, and a piercing, bright tone quality are hallmarks of the *moña* sound.

CHAPTER V

ANALYSIS OF *BURRITT VARIATIONS*

INTRODUCTION

A short theme presented at the start of *Burritt Variations* gives way to a wonderfully elaborate and diverse set of variations. As in much of Viñao's music, *Burritt Variations* contains a thrilling rhythmic vitality which drives much of the development of the work. In the preface to the score for *Burritt Variations*, Michael Burritt describes “that wonderful 'Viñao groove'” as “a brilliant use of metric modulation, oscillating isorhythms and hemiolas.”⁴⁶ Viñao utilizes older, established compositional devices in new and unique ways to create a sound that is uniquely his own. Devices such as canon, isorhythm, rhythmic displacement, prolongation, and diminution are given new life and new meaning under Viñao's artful hand. As discussed in the previous chapter, the influence of Conlon Nancarrow can be heard throughout the work. While there are occurrences of patent multi-temporality in *Burritt Variations*, there are also instances of Nancarrow-esque tempo canons presented through the lens of Viñao's unique compositional voice.

This discussion will begin with a large-scale macro-analysis of the piece as a whole and its constituent variations. The seven variations are also organized into three large-scale formal structures. A detailed set of metrics will be provided to better understand the relationships between these variations and large-scale structures. Metrics

⁴⁶ Michael Burritt, “Preface by Michael Burritt,” in Alejandro Viñao, *Burritt Variations*. London: Vinao.com, 2012.

include measure numbers, total measures, clock time, duration, and percentage of overall composition.⁴⁷

After an overall understanding of the formal nature of the piece is established, the discussion will then focus on the theme and individual variations, and thus, the compositional techniques, rhythmic devices, and other elements found within them. Due to the limited amount of pitch content provided in the theme, intervallic relationships are important unifying factors within the piece. Pitch-class sets and interval vectors will be utilized to illustrate these unifying principles, and, due to the inherent rhythmic vitality in Viñao's music, temporal properties and relationships will also be thoroughly examined.

⁴⁷ Performance Time metrics taken from the provided mp3 of *Burritt Variations*. Alejandro Viñao, *Burritt Variations: Training Track MP3s*. Vinao.com, 2012.

MACRO-ANALYSIS

Burritt Variations consists of 387 total measures, and the total performance time for the work is just under 11 minutes. Table 2 presents a detailed breakdown of the theme and variations in terms of length (both in measures and performance time), as well as the percentage of the total composition that these sections comprise.

Section	Measure Numbers	Length (in measures)	Performance Time	Length (in seconds)	Percentage of Total Composition
Theme	1-4	4	0:00-0:05	5	0.7788%
Variation I	5-48	44	0:05-1:04	59	9.1900%
Variation II	49-82	34	1:04-1:56	52	8.0997%
Variation III	83-156	74	1:56-3:38	102	15.8879%
Variation IV	157-205	49	3:38-5:54	136	21.1838%
Variation V	206-269	65	5:54-7:22	88	13.7072%
Variation VI	270-330	60	7:22-9:15	113	17.6012%
Variation VII	331-387	57	9:15-10:42	87	13.5514%
		Total = 387	Total = 10:42	Total = 642	Total = 100%

Table 2: Form and length of sections in *Burritt Variations*

The theme for *Burritt Variations*, just four measures (or five seconds) in length, provides the source material for the seven distinct and unique variations. The variations differ greatly in length, ranging from 52 seconds (Variation II) to 136 seconds (Variation IV). Figure 3 presents the seven variations as a percentage of the total composition, as measured by performance time. The theme is found at the top of the circle (at the 12:00 o'clock position) with the variations proceeding clockwise around the chart. By examining Figure 3, the

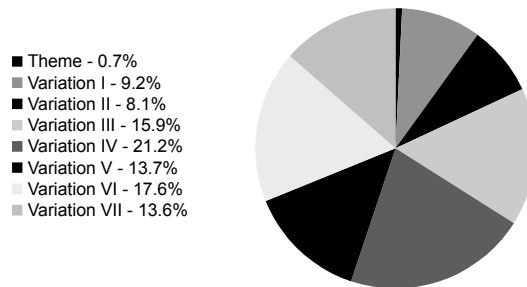


Figure 3: Theme and Variations as percentage of total composition

piece can easily be separated into three large-scale structures of almost-equal length. I chose to call these large-scale structures “Meta-Variations” (abbreviated MV). These divisions can be seen in Figure 4. Table 3 lists the constituent variations of each meta-variation, the length (in measures and seconds) of each section, and the percentage of the total composition allocated to each.

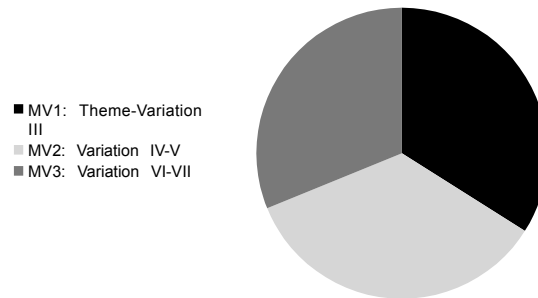


Figure 4: Large-Scale Structures in *Burritt Variations*

Meta-Variation	Constituent Variations	Measure Numbers	Length (in measures)	Performance Time	Length (in seconds)	Percentage of Total Composition
MV1	Theme-Var. III	1-156	82	0:00-3:38	218	33.9564%
MV2	Var. IV-V	157-269	114	3:38-7:22	224	34.8910%
MV3	Var. VI-VII	270-387	117	7:22-10:42	200	31.1526%

Table 3: Large-scale structures in *Burritt Variations*

These meta-variations function much like continuous movements within the work, with a modified fast-slow-fast configuration. Viñao utilizes rhythmic displacements and the polyphony of conflicting grooves to unify the first large-scale structure (MV1), consisting of the theme and Variations I-III . The second meta-variation begins with a 4 against 15 ostinato in the right hand, which is eventually morphed into a “Morse Code” motif; this transformation is central to the development of MV2. The final large-scale

structure (MV3) is unified through the use of canonic effects, the decoupling of polyphonic voices and the “repeated phrases that shift against complex pulses”⁴⁸ common in Salsa music and many other Latin-American styles.

The Micro-Analysis will further illustrate the case for these meta-variations, but by framing the discussion of *Burritt Variations* in a thorough understanding of the overall structure, a hierarchy of organization begins to emerge:

Entire Work – Meta-Variation – Variation – Section – Phrase – Compositional Device – Element

By establishing this hierarchy of organization, the overall formal nature of the work will frame the examination of specific sections, phrases, compositional devices, and elements. The term “element” in this context simply refers to any tonal, harmonic, or temporal aspect of the theme. These elements are organized into phrases via numerous compositional devices, and variations are divided into sections via the combination and juxtaposition of those phrases.

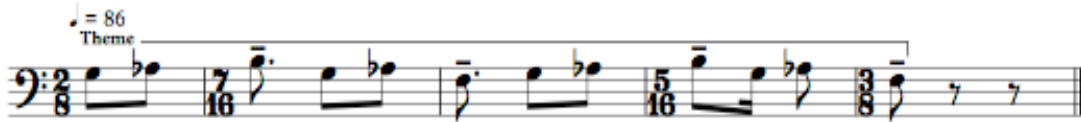
48 Alejandro Viñao, performance notes for *Burritt Variations*.

MICRO-ANALYSIS

THEME

Due to the extremely limited amount of thematic material, Viñao is able to focus his compositional processes on specific elements of the theme. Thus, the processes by which Viñao manipulates the theme only become clear through careful examination and understanding of the theme's tonal, intervallic, and rhythmic properties. Partly due to its rhythmic vitality, the theme is reminiscent of Latin American styles. As Viñao states,

The theme on which these variations is based has a quality reminiscent of some of the music of Latin America. In that sense it is a 'latino' theme, but one that is difficult to pin down to a particular geographic area. . . I am not aware of having chosen a theme belonging to a specific Latin-American tradition.⁴⁹



Example 9: Viñao, *Burritt Variations* theme, mm. 1-5

The notes of the theme are derived from an octatonic scale, and octatonic frameworks are abundant throughout the work. Viñao introduces four pitches – G, Ab, B, F; these notes constitute a [0236] pitch-class set, and half of the octatonic scale seen in Example 10.



Example 10: Octatonic framework implied by the theme to *Burritt Variations*
Notes absent from the theme are marked by parentheses

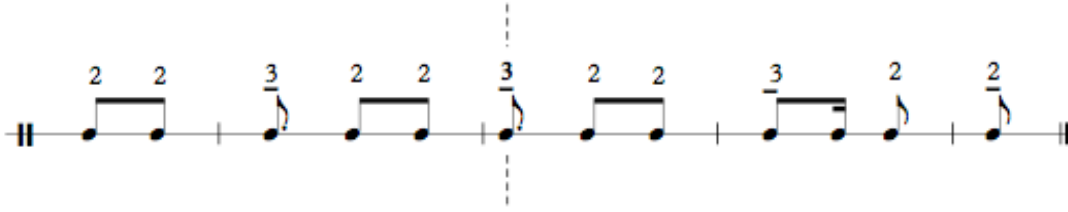
However, the theme can also be divided into two similar but distinct tonal 'cells'. The first

49 Ibid.

of these cells (G, Ab, B) constitutes pitch class set [014]; the second cell (G, Ab, F) constitutes pitch class set [013]. Occurrences of [013] and [014] pitch-class sets unify the tonal language throughout *Burritt Variations*. The notes of the theme also form a diminished triad (F, Ab, B) with an added tone (G). Viñao uses similar constructions throughout the work, but the position of the added tone as it relates to the diminished harmony is often altered.

Tenuto markings are used throughout the piece to indicate stresses within a phrase. These markings signify an addition of weight to a particular note: not quite an accent, but more emphasized than the surrounding notes. In the theme, the notes B and F are both given emphasis. This would suggest an emphasis on the interval of a tritone, or interval class six. Interval vectors for pitch-class sets [0236], [013], and [014] are $\langle 112101 \rangle$, $\langle 111000 \rangle$, and $\langle 101100 \rangle$, respectively. The interval vectors of the two thematic cells ([013] $\langle 111000 \rangle$ and [014] $\langle 101100 \rangle$) share interval classes one and three. This commonality of interval classes, along with the tenuto markings, suggests the importance of interval classes one, three, and six.

Rhythmically, the theme perpetuates itself utilizing a common 16th-note pulse, and the notes of the theme are organized into rhythmic groupings of either two or three. By examining the arrangement of these rhythmic groupings, a palindromic ordering of groupings emerges, the point of symmetry being the F in measure three, marked in Example 11 with a dotted line.



Example 11: Rhythmic palindrome in the theme for *Burritt Variation*

By moving in either direction from the point of symmetry, one will encounter rhythmic groupings of 2, 2, 3, 2, 2, which are extremely similar to the groupings found in the African clave pattern. Heard conservatively,⁵⁰ the theme lasts for a duration of six quarter notes.



Example 12: Theme as it relates to a quarter-note pulse

When the shifting rhythms of *Burritt Variations* are heard against a consistent quarter-note pulse, Variations II and III will both start on strong downbeats - Variation II on the 91st quarter-note and Variation III on the 165th quarter-note. This congruency of the underlying quarter-note pulse is one of the unifying factors of Meta-Variation 1 (Theme-Variation III).

⁵⁰ Imbrie, 1977, Argues two basic types of listener. A “Conservative” listener will hold onto established metrical structures despite conflicting evidence (here, the established metrical structure would be the quarter-note established by the consecutive eighth-notes in the first bar of the piece), while a “Radical” listener is more likely to adapt his or her sense of metrical structure to new evidence.

VARIATION I

The first variation begins with an introductory section that rhythmically embellishes restatements of the theme while introducing new tones. Viñao first introduces the remainder of the octatonic framework established by the theme: D in measure nine, C-sharp in measure 18, B-flat and E in measure 19. Similar to the theme, these tones (D, C#, Bb, E) also constitute a [0236] pitch-class set. In a short transitional statement in measure 19, Viñao begins to include the remaining four tones not yet utilized: A, Eb, and C; the final tone, F-sharp, will not be heard until measure 25. These remaining tones (A, Eb, C, F#) build a fully diminished seventh chord, a structure in which each tone is a minor third from the next successive tone. Interval-class three becomes crucial to the development of the next section, as the theme will be presented in each of these four key centers.⁵¹

One more point of interest about the introductory section to Variation I is the relationship between the sets of newly introduced tones. Viñao introduces three sets of four tones – G-Ab-B-F in the theme, D-C#-Bb-E to complete the octatonic framework, and A-Eb-C-F# to include the remaining tones not found in the octatonic framework. The first note of each successive set is related by an interval-class of five - the only interval class missing from the interval vector of pitch-class set [0236] (<112101 >). These four-note sets can be seen in Example 13.

⁵¹ For the purposes of this discussion, the term “key center,” in reference to the theme or its transpositions, will describe the first note, or the '2' in the [0236] pitch-class set. In the case of the theme, the key center would be G.



Example 13: Three four-note sets introduced in the introductory section of Variation I

The first new tone to be heard outside the original [0236] of the theme is the D in measure nine, which is separated from the first note of the piece, G, by an interval-class of five. After Viñao completes the introduction of tones from the octatonic framework in measure 24, the A is immediately introduced. This A is also separated from the previously heard D by an interval class of 5. In other words, within the first few moments of the piece, every pitch-class and interval-class has been systematically expressed.

The next section of Variation I, beginning in measure 20, is driven by extreme rhythmic manipulation and the transposition of the theme to the key centers of A, C, Eb, and F#. The first transposition (to the key center of A) begins in measure 20 and lasts until the downbeat of measure 24. The [0236] pitch-class set of the A transposition contains the notes A, B-flat, C-sharp, and G. Nestled within this transposition is a high rising line of E, G, B-flat, and C-sharp (mm. 21-22), another fully diminished seventh chord, mirroring the chord represented by the third four-note set discussed earlier. The notes of this rising line are marked in Example 14 with parentheses.



Example 14: Theme in A, mm. 20-4

The transposition to C begins in measure 24, and continues until measure 29. Viñao includes a few notes in this phrase (F#, A, G - marked in Example 15 with parentheses) that are not initially reconcilable with the [0236] framework of the C transposition (C, C#, E, Bb). The F-sharps in measure 25 are simply the completion of the introduction of tones from the introductory section. The A and G in measure 27, along with the low B-flat, form pitch-class set [013].



Example 15: Theme in C, mm. 24-9

Measure 29 brings the transposition of the theme to E-flat (Eb, E, G, Db) which lasts through measure 32. The theme is maintained in the lower voice while the upper voice presents a counter melody. The B-flat, C, and D-flat in measures 30 and 31 are taken from the [013] cell of the theme in C, and the D-flat, C, and E-flat in measure 33 are also a [013] cell created by using the half-step between C and D-flat as a pivot point.



Example 16: Theme in Eb, mm. 29-33

The transposition to F-sharp returns to a simpler texture and lasts from measure 33 through measure 36.

Measures 37 and 38 contain a short transitional gesture as Viñao stitches together two [014] pitch-class sets to propel the music into the next section, which explores tritone relationships. The first occurrence of a tritone is between the first note in measure 39 (G), and the bass note (C#). The last dyad of the bar (Ab and D) is also a tritone. In measure 40, tritones of G-C# and A-D# can be found. In both measures 39 and 40, it seems as though Viñao is trying to start the theme in G due to the repeated G and A-flat, but never gets further than the first two notes. In measure 41, this 'stuck' version of the theme is transposed to E, where we also see a tritone between the second note of the stuck theme (F) and the bass note, B. The B and E heard in measure 41 become an ostinato pattern of offset quarter note pulses in the next measure, and a third voice presents an octatonic framework (Ab, Bb, B, G) leading to the presentation of the theme in B-flat. The high E quarter note pulse continues throughout the theme in B-flat, while the low B pulse begins a dotted eighth-note ostinato before landing in measure 46. This low pulse contains tritones of B-F, Ab-D, and G-Db. In measure 46 the high E pulse continues over a syncopated presentation of the theme in E, signaling the end of the variation.

A retrospective view of the analysis of Variation I presents some very basic formal divisions. The form for the first variation is presented in Table 4.

Measure Numbers	Section Description
5-20	Introduction
20-38	Minor-3rd Transpositions
39-45	Tritone Relationships
46-48	Codetta

Table 4: Form of Variation I

VARIATION II

Variation II is the shortest of the seven variations, with a length of 34 measures, or 52 seconds. Viñao utilizes the original octatonic framework established by the theme for almost the entire variation, with a few exceptions. The variation opens with an almost verbatim restatement of the theme that continues in the left hand while the right hand presents a counter-melody built around a [0236] pitch-class set transposed up a minor third from the original theme (G#, A#, B, D). The right hand counter-melody then explores ascending [013] pitch-class sets derived from the same octatonic framework: C#-D-E in measures 57-60 and D-E-F in measures 61-2. The lower voice attempts to catch up to the ascending upper voice by playing a [014] pitch-class set consisting of A-sharp, B, and D in measures 57-8. This [014] pitch-class set is supplemented by an F, which creates a diminished triad with the B and D from the [014] set. The lower voice then introduces an E, a tritone away from the A-sharp. This ascension then lands in measure 61, where the upper voice rests on a [013] pitch-class set comprised of D, E, and F. The lower voice first presents a diminished triad of D, F, and B before briefly joining the upper voice in a D, E, F [013] pitch-class set. The lower voice then highlights an ascending [013] pitch-class set (Ab, Bb, B), and finishes with yet another [013] of D, E, and F.

Example 17: Variation II, mm. 61-2

Measures 63-5 serve as a transition into the next section of the variation. The lower voice briefly presents a 5/16 ostinato against the quarter-note G's in the upper voice. Here Viñao presents yet another [013] pitch-class set (E, F, G), a minor-third relationship (between the G in the upper voice and the B-flat in the lower), and a tritone relationship (between the B-flat and E in the 5/16 ostinato). The aggregate of these notes constitutes a diminished triad (E, G, Bb) with an added F. Measure 64 introduces a D-flat in the upper voice, creating yet another tritone relationship with the still present G, and completing the fully diminished seventh chord from the triad heard in the previous measure.



Example 18: Variation II, mm. 63-4

Measure 66 signals the beginning of a short section built around what Viñao describes as “a very close canon ... which resembles more an echo than a melodic displacement of the traditional canonic type.”⁵² The upper voice presents another diminished harmony (F, Ab, B) with an added tone (Bb). The lower voice here simply presents a rhythmically displaced version of the original theme.

In measure 74, the lower voice rises to present fragments of the theme in A and the upper voice closely echoes these thematic fragments. In measure 75, the upper voice

⁵² Alejandro Viñao, *Burritt Variations* performance notes.

introduces a high-register C, the first tone in the variation from outside the original octatonic framework. In the very next measure, the upper voice presents a [014] pitch-class set derived from the theme transposed to C (C, Db, E) and an upper-register E-flat. Again the importance of interval-classes three and six can be seen, as this C is a minor-third above the theme in A found in the lower voice, and the E-flat completes a diminished triad with the A and C. The lower voice also contains tones from outside the theme in A, an E in measure 76 and an F in measure 77. Seeing that these tones are the uppermost notes in this left hand passage, it is easy to reconcile them as a [014] pitch-class set with the D-flat in measure 74.



Example 19: Lower voice, mm. 74-7

Measures 78-9 serve as a modified echo of measure 63, signaling the end of this canonic development and beginning the transition into the third variation. The lower voice again presents a 5/16 ostinato of B-flat, E, and F, but this time the upper voice begins with a 6/16 pattern consisting of G, F, and B-flat. This 6/16 pattern only lasts for the duration of three quarter-notes, however, before the upper voice settles on the simple G quarter-notes heard earlier. Again the diminished triad (E, G, Bb) with an added tone (F) construction is present. The downbeat of measure 79 interrupts the 5/16 ostinato, and changes the tonal content to B natural, E and F. The three notes heard on the downbeat (B, Bb, G) also constitute a [014] pitch-class set. The final three bars of Variation II lead

seamlessly into Variation III as the upper voice presents two [013] pitch-class sets (E-F-G, and F-G-Ab) while the lower voice presents a [013] pitch-class set of A-flat, B-flat, and B. Another [013] pitch-class set can be found between the D in the lower voice, and the E and F in the upper voice.



Example 20: Variation II, mm. 80-2

The form for Variation II is as follows: measures 49-53 represent the introduction, which is comprised of a restatement of the theme; measures 54-62 are characterized by the interaction between the theme and the counter theme, as well as the rising transpositions of [013] pitch-class sets; measures 63-64 serve as a transition into the next section, which is marked by the echoic canon in measures 65-77; finally, measures 78-82 mark the end of the canonic section and serve as a transition into Variation III. The form for Variation II is displayed in Table 5.

Measure Numbers	Section Description
49-53	Introduction Restatement of the theme
54-62	Theme/Counter-Melody Rising [013] sets
63-64	Transition
65-77	Echoic Canon
78-82	Transition

Table 5 Form of Variation II

VARIATION III

As Viñao states, “In this variation the theme has been changed both melodically and rhythmically so that it grooves differently from its original version.”⁵³ A [014] pitch class set (F, Gb, A) with an added minor third (C) on top maintains the character of the original due to the use of interval-classes one, three, and six. Again Viñao utilizes a diminished triad (Gb, A, C) with an added tone (F). This altered version of the theme is presented in a 7/16 groove that is often punctuated by changing meters. This 7/16 groove is always presented in a 3+4 rhythmic configuration. During these 7/16 groove sections, Viñao establishes a groove and key center, and then transposes the groove up by one semitone. Perhaps the greatest similarity between this version and the original theme can be found in the [013] pitch-class sets found throughout this 7/16 groove section. For example, the F, G-flat, E-flat found in measures 85-6, again in measures 89-90, and the E-flat, E, C-sharp in measures 94-5. These instances of [013] pitch-class sets are direct quotes from the original theme transposed to match the surrounding altered versions of the theme.

Measures 96-8 provide an apparent detour from the 7/16 groove as Viñao briefly explores [014] pitch-class sets in a canonic fashion. The first [014] pitch-class set is presented in the lower voice (G, G#, B). The lower voice then immediately rises to a [014] pitch-class set consisting of A-sharp, B, and D, a minor third above the previous [014]. The upper voice then presents the G, G-sharp, B [014] set before moving to the A-sharp and B heard an instant before in the lower voice. The upper voice, however, never

53 Ibid.

presents the D to complete the [014] pitch-class set. It is instead transposed up another minor-third to present a [014] pitch-class set consisting of C-sharp, D, and F, where the arrival of the F signals the return to the 7/16 groove heard earlier. A perceptive listener, however, will hear that the lower voice maintains a 7/16 ostinato throughout these bars. Measures 96 through 98 can be seen in Example 21.

Example 21: Variation III, mm. 96-8

Viñao then returns to the more overt 7/16 groove heard at the start of the variation, and again the groove is transposed up a half step. Measure 106 marks the start of the next section of the variation, which is characterized by a stronger rhythmic decoupling of the upper and lower voices, as well as the use of tritones. The first tritone in this section, G and C-sharp in measures 106-110, is presented in a rhythmically disjunct fashion in the upper voice. These tones eventually settle into a 5/16 ostinato that floats above the lower voice's rhythmic ordering of groups of 5/16 and 6/16. Viñao then raises the tritone to A and D-sharp in measures 111 through 117. This tritone (A and D#) along with the tritone in the lower voice (F# and C) form a fully diminished seventh chord, and this diminished harmony is supplemented with an added E. These repeated tones in the upper voice simulate a Nancarrow-esque accelerating pulse against a somewhat steady lower voice, although the lower voice does switch from a rhythmic pattern of six sixteenth-notes to one of four sixteenth-notes, with one rhythmic interruption of five sixteenth-notes. The

rising line of emphasized tones in the lower voice also propels this phrase into the next, as the C, C-sharp, D-sharp, and E found in measures 114-8 create a [0134] pitch-class set that suggest a certain octatonic framework.



Example 22: Variation III, mm. 111-7

However, Viñao thwarts expectations by landing on an F in measure 118, a tone outside of the previously suggested framework. Had Viñao remained dogmatic about the octatonic framework established in the previous phrase, the F in measure 118 would be an F-sharp, and would have created a [014] pitch-class set with the A and B-flat in the lower voice. However, by surprising the listener with an F natural, Viñao creates a brief moment of unexpected major tonality (Fmaj sus). The expected F-sharp is quickly heard in the following bar (m. 119), where the music returns to [013], [014], and diminished triad constructions.

In measure 120, the A that has been heard in the upper voice since measure 111 drops to an A-flat, where it remains until falling another half-step to G in measure 122. This G then creates a diminished triad with the D-flat and E that were already present. The lower voice here presents a rhythmic acceleration out of a [0236] pitch-class set. The metrical structure of this lower voice is as follows: 4/8-7/16-7/16-5/16-5/16. Viñao takes the top note of this [0236] pitch-class set (Bb) and creates another rising line utilizing tenuto markings. The first four notes of this rising line (Bb, B, Db, E) establish another

octatonic framework that is then thwarted by the arrival of the F-sharp in measure 124. Measures 120 through 124 are shown in Example 23.



Example 23: Variation III, mm. 120-4

In measures 125-7, the music falls away in a descending transition. As the passage descends, the music gets softer until it is interrupted by the salsa riff section beginning in measure 128. Much like the altered theme from the start of the variation, this groove relies heavily on interval-classes one and three, and represents another fully diminished seventh chord (Bb, C#, E, G) with an added tone (A). The bass voice here is presenting an alternation between A and B-flat, with a few instances of [013] pitch-class sets (A, Bb, G) reminiscent of the beginning of the movement. The upper voice is centered on the minor third of C-sharp and E, and a high F joins this minor third to create a [014] pitch-class set. In measures 148-50, the bass voice seems to get stuck on a repeated low A while the upper voice creates a rising line of E, F-sharp, G, and A. The two voices release their tension in measure 151 as they both arrive on B-flat. Here the music begins to soften as repeated minor thirds (Bb, G) in the upper voice rise and fall in and out of the texture. The lower voice here continues to present half steps of A and B-flat. The upper voice is joined by an A, creating a [013] pitch-class set, and the lower voice is joined by a D-flat, creating a [014] pitch-class set. The two voices together create

a [0236] pitch-class set. This closing statement to Variation III devolves seamlessly into Variation IV, as the texture gradually thins out and we are left with only the B-flat pulse.

Variation III consists of three main sections. The first is built around the altered version of the theme. The second is denoted by the use of repeated tritones and the decoupling of the upper and lower voices. And the third is populated mainly by the Salsa riff. A short coda or transitional section exists at the end of the movement to tranquilize the music and move it smoothly into the next variation.

Measure Numbers	Section Description
83-106	Altered Theme
107-127	Tritones/ Decoupled Voices
128-150	Salsa Riff
151-156	Codetta/ Transition to Variation IV

Table 6: Form of Variation III

VARIATION IV

The third variation ends with repeated dotted quarter-note B-flats. At the start of Variation IV, those B-flats are respelled as A-sharps, and the tempo is modulated so that the dotted quarter-note becomes the quarter-note. Viñao then presents nearly two full bars of these quarter notes at 56 beats per minute before introducing the first high B. The A-sharp quarter-notes eventually double in speed to become eighth-notes and create a 4:15 ostinato with the high B pulses, where 15 A-sharps occur in the time span of 4 high B's. Viñao indicates in the score that “the top two voices” are to be “played like two independent mechanical pulses.”⁵⁴ These two pulses create the illusion of multi-temporality due to the infrequency of their alignment, but they share a common 32nd-note subdivision. The eighth-note A-sharps last for a duration of four 32nd-notes, and the high B's last for a duration of fifteen 32nd-notes. Thus, these two voices will rhythmically align every 60 32nd-notes, or every fifteen eighth-notes. This ostinato can be seen in Example 24.



Example 24: 4 over 15 ostinato from Variation IV

Viñao then creates a third temporal layer by introducing a low voice that presents thematic cells - [014] and [013] pitch-class sets based on the theme transposed to C-sharp.

⁵⁴ Alejandro Viñao, *Burritt Variations*, pg. 10, m. 157.

These thematic cells are rhythmically offset from both the eighth-note pulse, and the high B pulse, and constitute a slow-but-steady tempo canon against the consistent ostinato.

The first of these cells occurs in measures 160-1. The [014] pitch-class set (C#, D, F) is temporally related to the eighth-note pulse by a ratio of 1:2. However, this relationship is rhythmically offset, beginning on the last sixteenth-note of measure 160, so that the notes of the low thematic cell occur between eighth-note pulses. After the arrival on F, the thematic cell fades beneath the texture, with repeated F's that occur on the last sixteenth note of each beat. Viñao includes the words, “bouncing like a fading echo,” with these repeated F's, which is a common instruction in his percussion writing used to create a sense of echoic sustain.

Example 25: Variation IV, mm. 160-2

The next thematic cell occurs in measures 163-4. The [013] pitch-class set (C#, D, B) is again presented at an offset relationship of 1:2 against the eighth-note pulse. Viñao again repeats the last note of the cell (B) with the instructions of “bouncing like a fading echo.” As seen in Example 25, the F's from the first cell repeat with a regularity of four sixteenth-notes, however, the B's from the second cell repeat with a regularity of six sixteenth-notes, creating yet another temporal layer. The first low B occurs in conjunction with the high B from the ostinato on the last sixteenth-note of measure 163, but due to the

fact that these cells are rhythmically offset from the established ostinato, the repeated B's from the thematic cell never align with either the eighth-note A-sharps, or the high B's. Rhythmic alignment finally occurs at the start of the next thematic cell in measure 165, where the low C-sharps align with the high B on the second sixteenth-note of beat four. This complex temporal relationship can be seen in Example 26.



Example 26: Variation IV, mm. 164-5

Viñao then restates the first thematic cell (C#, D, F) in measures 165-6, again with a 1:2 offset temporal relationship to the eighth-note pulse. However, the repeated F's are rhythmically altered; instead of repeating every four sixteenth-notes, as in measures 161-3, here the F's occur every three sixteenth-notes, creating a 2:3 hemiola against the eighth-note pulse in the ostinato. When Viñao again returns to the second thematic cell (C#, D, B) in measure 167, he begins by placing the C-sharp and D exactly on two consecutive eighth-notes (on the 'and' of three and on beat four). This placement temporarily establishes a 1:1 rhythmic relationship with the A-sharps in the ostinato, but that relationship only lasts for those two eighth-notes, as Viñao delays the arrival of the B until the second sixteenth-note of the next bar. The repeated B's from the thematic cell again occur at a frequency of six sixteenth-notes.

In measures 169-70, Viñao transposes the [014] thematic cell to E, F, and G-sharp. The cell's rhythmic relationship to the eighth-note pulse is also altered. The thematic cell is presented in dotted eighth-notes, creating a 2:3 rhythmic tension against the A-sharps in the ostinato. The last note of the cell (G#) is repeated with a frequency of four sixteenth-notes, but these G-sharps occur on the second sixteenth-note of each beat. The next thematic cell, in measure 172, is again transposed; here the [014] pitch-class set contains the notes G, G-sharp, and B. The rhythmic relationship to the eighth-note ostinato is 1:1, but the two pulses are offset, meaning the notes from the thematic cell occur in the spaces between the A-sharps. Upon arrival on the B, the 4:15 ostinato is transposed up by an interval-class of three to C-sharp and D. This passage of “bouncing like a fading echo” is unique, as rather than simply repeat the B from the thematic cell, Viñao supplements the B with a tritone F. The rhythm of repetition is also irregular, suggesting a breakdown in the stability of this section, and foreshadowing the change in texture to come.

Measure 176 has a meter of 3/16. This short compound meter places the eighth-note pulse on the offbeat in the following measures. A [0236] pitch-class set (G#, A#, B, D) then begins on the downbeat of measure 177, but due to the preceding 3/16 bar and the now offset eighth-note pulse, listeners may have a difficult time hearing the G-sharp as a downbeat. However, measures 178-181 reinforce the 4/8 meter by placing a low D at the start of each measure. These bars also bring a change to the high ostinato. Transposed now to E and C-sharp, the two voices move to a relationship of 1:4, but the high C-sharps are rhythmically offset from the lower E's, so they will never align.

The image shows a musical score for Example 27: Variation IV, mm. 176-81. It consists of two staves, treble and bass clef. The music is in a key of C-sharp (indicated by two sharps). The time signature changes throughout the piece: 3/16, 3/8, 4/8, 2/8, and 3/8. The score includes dynamic markings: *mf*, *f*, *mp*, and *pp*. There are also performance instructions: "The S.H. always rises and" and "The L.H. bouncing and falling out like an echo". The score is a complex rhythmic exercise with many sixteenth and thirty-second notes.

Example 27: Variation IV, mm. 176-81

Measure 182 contains a transposition of a [013] cell to C-sharp (C#, D#, E). The rhythmic relationship to the eighth-note pulse is 4:3, as the cell is presented as dotted sixteenth-notes. The next two measures (183-4) serve as a modified version of the bouncing echoes heard earlier in the section. With a meter of 15/16, measure 183 contains five big beats, with each beat being subdivided into three sixteenth-notes. The offbeat eighth-note pulse continues throughout these bars, set against the compound meter and groove of the lower voices. Measures 185-6 crescendo into a final statement of a [013] pitch-class set in measure 187 before propelling the music into the next section.

Examining the key centers of these [013] and [014] cells, as well as their rhythmic relationships to the eighth-note pulse, it is easy to see a line that is both steadily rising and accelerating. The first cells all occur with a key center of C-sharp, and primarily maintain a 1:2 relationship against the eighth-note pulse. Measures 169-70 contain a thematic cell with a key center of E, and this cell's rhythmic relationship to the eighth-note pulse is 2:3. The cell in measure 172 has a key center of G, and a rhythmic relationship to the eighth-note pulse of 1:1. The next cell, in measure 177, also maintains a 1:1 rhythmic relationship to the ostinato, but its key center is A-sharp. Finally, in measure 182, Viñao returns to a key center of C-sharp, but the rhythmic relationship is now 4:3. The four key

centers explored during this section are C-sharp, E, G, and A-sharp – a fully diminished seventh chord. These tonal and rhythmic relationships are displayed in Table 7.

Measure	Thematic Cell	Key Center	Rhythmic Relationship to 8th-note pulse
160-6	[014] [013]	C#	1:2
169-70	[014]	E	2:3
172	[014]	G	1:1
177	[0236]	A#	1:1
182	[013]	C#	4:3

Table 7: Thematic cells in Variation IV

In measure 188, the long, slow build that has occurred since the beginning of the variation finally releases its tension into a new texture built around a [013] pitch-class set (C, Bb, Db) in which a whole-step bass motive is central. Viñao also doubles the tempo, but this change is not aurally noticeable, as it is more to facilitate cleaner engraving and easier reading. This new section still vaguely clings to the identity of the previous ostinato, however, by maintaining the interval-class 1 relationship between the top two voices (C and Db). The high D-flats occur regularly, on the fourth sixteenth-note of the third beat in each measure, while the C's are more sporadic.



Example 28: Whole-step Bass Groove, Variation IV, mm. 188-9

Viñao periodically interrupts this groove with short interjections, the first of which occurs in measure 192. A descending [013] pitch-class set in the bass (Db, C, Bb) is accompanied by a high E-flat and E in the upper voice. This upper voice seems to hint towards the morse code motif that will characterize Variation V, which will be examined in more detail at the beginning of the next section. Viñao then returns to the whole-step groove for two measures (193-4) before interjecting again in measure 195. This interjection is built around a [013] pitch-class set of G-flat, F, and E-flat. Again the whole-step groove returns for two measures, and another interjection is heard in measure 198. Viñao again utilizes the [013] pitch-class set from the previous interjection (Gb, F, Eb), as well as a diminished triad of C, E-flat, and G.

The whole-step bass line is then moved from C and B-flat to E-flat and D-flat, and the upper voices are no longer separated by a minor ninth, but by an octave. The focus on E-flat during this groove hints even further toward the impending morse code motif, while still maintaining the identity of the whole-step motion in the bass. The final interjection of the movement occurs in measure 201, and is built using the octatonic scale implied by the previously heard [013] pitch-class set (Gb, F, Eb). However, Viñao also includes a B in this measure, which is outside of that octatonic framework, but the B creates a [014] pitch-class set with the C and E-flat that drives the music toward the E-flat, which is the tone on which the morse code motif is based. The whole step groove continues for two measures before finally revealing the morse code motif in the final measures of the variation.

VARIATION V

The morse code motif consists of a regular pattern of short and long E-flats. The pattern of short and long notes is short-long-long-short-long, and can be seen in Example 29.



Example 29: Morse Code Motif

This motif is performed by the right hand, and Viñao includes instructions in the score at the beginning of Variation V of “the RH always like morse code,” and refers to the fifth variation as the “Morse variation” in the performance notes. Accompanying this morse code motif, the left hand performs thematic cells in low octaves, much like at the start of Variation IV. Also similar to Variation IV, these low cells gradually accelerate against the morse code motif.

The first [014] cell is found in the first bar of Variation V, measure 206. The F, G-flat, and A are presented as dotted quarter-notes, consisting of six sixteenth-notes each. The next cell, a [013] of F, G-flat, and E-flat is heard two bars later, in measure 208. The notes in this cell last for a duration of five sixteenth-notes. Viñao then includes a 9/16 bar in measure 210 to flip the morse code motif around in relation to the meter. This 'hiccup' in the groove suggests that the stability of the motif is beginning to break down, which it soon does as it evolves over the course of the variation. Measure 211 brings the next thematic cell, a [014] pitch-class set (F, Gb, A) presented as quarter-notes, lasting for a

duration of four sixteenth-notes each. Thus, the first three thematic cells of Variation V follow a concrete formula of rhythmic diminution, eliminating one sixteenth-note of duration from the notes of each cell.



Example 30: Variation V, mm. 206-12

The modification of the morse code motif begins in measure 210 with the inclusion of the 9/16 bar discussed earlier. The motif is altered rhythmically, but also moves to octave F's, and the top note of the motif then begins to climb the octatonic scale suggested by the thematic cells in the left hand, with the G-flat and A-flat in measures 211-2 creating a [013] pitch-class set with the lingering low F. This climb arrives in measure 213 with octave A's while the lower voice lands on an unexpected B. The notes in measure 213 (A, B, C) form a [013] pitch-class set and push into measure 214, where the music returns to the whole-step bass groove heard in Variation IV.

The whole-step bass groove continues until measure 218, where the left hand presents a descending [013] pitch-class set (Db, C, Bb) of quarter and dotted-quarter notes against a right hand ostinato of 5/16 consisting of D-flat and C.



Example 31: Variation V, mm. 218-20

In measure 221 the right hand is simplified to octave C's, the morse pattern is more steady, performing primarily eighth-notes with the occasional sixteenth-note added for rhythmic color. The left hand here performs a low [014] pitch-class set of A, B-flat, and D-flat.

Measure 227 is marked “*intense*” in the left hand as it performs a descending [013] pitch-class set (A \flat , G, F) against a morse code motif that has been expanded to three octaves. In measures 231-2, the right hand returns to single eighth-note C's while the left hand performs a descending octatonic line of two [014] pitch-class sets (F, E, D \flat) and (E, D \flat , C), eventually landing on B-flat in measure 233. This B-flat forms a [013] pitch-class set with the D-flat and C in the right hand.

Measure 234 combines several thematic elements as Viñao descends into measure 235. The left hand D-flat, C, and A form a [014] pitch-class set and the right hand utilizes a diminished triad (F \sharp , E \flat , C) with an added tone (D \flat). The [014] pitch-class set of D-flat, C, and A is also found in measure 235. Measure 236 includes a similar gesture, as the left hand combines a [013] pitch-class set (C, B \flat , A) and a [014] pitch-class set (B \flat , A, F \sharp) while the top notes in the right hand (E \flat , D \flat , C) form another [013] pitch-class set. The lower notes in the right hand (F \sharp , E \flat , D \flat) are derived from the same octatonic

framework as the rest of the measure.

Example 32: Variation V, mm. 234-6

In measures 237-8, Viñao then utilizes a modified version of the whole-step bass groove heard earlier. The first three notes heard here, F-sharp, A, and C constitute a diminished triad, and the bass voice moves between F-sharp and E to maintain the characteristic of the whole-step groove. Again, the aggregate tones in this bar represent a diminished harmony with an added tone. The last note in measure 238, a low E-flat, forms a [013] pitch-class set with the other bass notes (F# & E). This E-flat also forms a fully diminished seventh chord with the F-sharp, A, and C.

Viñao then changes the character of this groove in measure 239 by utilizing half-step motion in the bass voice (between E-flat and D) instead of whole-step motion. This bass groove is supplemented with a middle-voice A in the right hand that forms a tritone with the E-flats. The added C in measure 240 creates a [013] pitch-class set with the D and E-flat, and a diminished triad with the A and E-flat. Viñao then completes the theme by leading into measure 242 with a [014] pitch-class set of D, E-flat and G-flat.

A long and gradual *rallentando* occurs over measures 245-51. Here, Viñao focusses on [014] pitch class sets of B, C, and E-flat supplemented with added D's. The low voice in this passage descends an octatonic scale of F, E-flat, D, C, and B.



Example 33: Variation V, mm. 246-50

In measure 252, the tempo is marked as quarter-note equals 100, where it was previously marked at quarter-note equals 110 in measure 188. This slowing of the tempo, coupled with the descending bass voice, creates the effect of winding-down and losing energy as Viñao prepares for the final push into Variation VI. Measures 252-60 begin this push by focussing on [014] pitch-class sets of G-sharp, A, and C. This phrase is built around the octatonic scale implied by this [014] set, and short interjecting fills in the groove gradually reach higher and higher in the scale: E-flat in measure 253, E in measure 255, F in 257, F-sharp in 259, and G-sharp in measure 260.

Starting in the latter half of measure 260, Viñao utilizes a similar process as that found in the previous phrase. Focusing on a [014] pitch-class set of D, E-flat, and G-flat, Viñao has transposed this thematic cell up by a tritone (from G#, A, C), and the additional voices add depth and excitement to the build. The lower voice contains a [013] pitch-class set of C, D, and E-flat, and the upper voice again gradually adds notes that climb the octatonic scale. This build reaches its peak as the music slows to a dramatic statement of a [014] pitch-class set of D, E-flat, and F-sharp in the final measure of the variation.

Due to the nature of the compositional techniques used in Meta-Variation 2, the sections in Variations IV and V tend to be much longer than in the earlier variations. Thus, there was no discussion of formal considerations at the end of the section on

Variation IV. Instead, Table 8 illustrates the form for the entirety of Meta-Variation 2.

Measure Numbers	Section Description
157-187	4:15 ostinato Rising/accelerating thematic cells
188-203	Whole-step bass groove Forming the Morse Code Motif
204-213	Morse Code Motif Accelerating low voice
214-217	Whole-step bass groove
218-236	Return to morse ideas
237-254	Modified whole-step bass groove Half-step bass groove Rallentando/Descent
250-271	Rising build into Variation VI

Table 8: Form for Meta-Variation 2

VARIATION VI (Salsa Variation)

“Little needs to be said about this variation that the word 'Salsa' does not conjure by itself.” - Alejandro Viñao⁵⁵

Variation VI begins with a brief but exciting introductory statement. The first measure (m. 271) serves as both a release of the building tension at the end of the fifth variation, and an announcement of the arrival of the sixth. Viñao presents a rhythmically altered version of the theme in the key center of F in unison octaves. Low octave A-flats also appear in this bar, which form a diminished triad with the key center of F and the low D octave heard in the previous measure. The E-flat at the end of the measure serves as a pick-up into the next measure, and it also completes the [0236] pitch-class set of the theme in F. In measure 272, the opening tempo of 86 beats per minute returns, signaling the start of Meta-Variation 3 and the final large-scale structure of the piece.



Example 34: Variation VI, mm. 272-5

Viñao continues exploring rhythmically and tonally altered versions of the theme in F. The F and G-flat eighth-notes in the first beat of measure 272 anticipate the arrival of an A to complete the [014] pitch-class set. However, Viñao foils this expectation by

⁵⁵ Alejandro Viñao, *Burrit Variations* performance notes.

presenting a C and B, which create a [013] pitch-class set with the missing A. Viñao also includes two low C's, which both follow G-flats, creating a tritone relationship. This tritone would also form a diminished triad with the missing A from earlier in the measure. The next measure (273) begins with the expected [014] pitch-class set of F, G-flat, and A, followed by a [013] set of A-flat, F, and G. Here Viñao includes 32nd-note flourishes reminiscent of bongo fills commonly heard in Salsa music. Measure 274 returns to the pitch material seen in measure 272, and also includes a 32nd-note flourish. However, Viñao briefly disrupts the established groove of this passage by placing a 7/16 bar (m. 275) that continues a three-note grouping highlighting the C and G-flat tritone found at the end of the previous measure.

Measure 276 brings a transposition of this rhythmically altered theme to G-sharp, a minor third above the previous key-center of F. Viñao includes more 32nd-note flourishes, and a tritone of G-sharp and D. The following measure concludes the introductory section and includes the tritone of E-flat and A.

The section beginning in measure 278 is driven by a *guajeo* effect in the right hand set against the bouncing rhythmic interest in the left hand. The right hand *guajeo* outlines the theme in the key center of A, beginning with a [014] pitch-class set (A, Bb, Db), and also includes a diminished triad of E, G, and B-flat. The left hand is primarily concerned with repeated rhythmic F-sharps, of which Viñao states:

I had some difficulty in choosing dynamics for the left hand in the passage from 279 to 288. The left hand should be upfront and played *forte* with the exception of the unaccented F#2 which should be played almost *piano*. But *forte* and *piano* do not describe the effect I had in mind. I tried writing the correct dynamics under each note, but the score looked clumsy. It is most important that the player think of the repeated notes as a bouncing

pulse where the accented notes must always be heard strongly and the unaccented ones only just enough to make the 'bouncing' evident to the listener.⁵⁶

The left hand also includes brief moments of thematic material in the key center of D-sharp. For instance, the [013] cell leading into measure 280 and the [014] cell leading into 281. The two key centers in this passage, A and D-sharp, along with the repeated F-sharps form a diminished triad. Later (in measures 282-3 and 285-6), the left hand will move the 'bouncing' effect to C's, completing the fully diminished seventh-chord. This section (measures 278-88) consists of two similar but distinct phrases. The first phrase consists of three bars of the right hand outlining the [014] pitch-class set (A, Bb, Db), and two bars outlining the [013] pitch-class set (A, Bb, C), and the second phrase consists of two bars of the [014] cell and three bars of the [013] cell. These metrical relationships (3+2 and 2+3) are reminiscent of the rhythmic structures of many clave patterns. These phrases can be seen in Example 35.

Example 35: Variation VI, mm. 279-88

The next section continues exploring thematic material in the key center of A, but Viñao interrupts these thematic cells with dissonant triads and dyads performed in the

⁵⁶ Ibid.

upper-register. As Viñao states, “the loud accented passages in the upper register (e.g. measure 289 to 299) resemble the traditional stabbing sound of the brass section in Salsa music and should be played in that spirit.”⁵⁷ These 'horn hits' are almost always preceded by two ascending eighth-notes (A and Bb) that harken back to the original theme's first two notes (eighth-note G and Ab). The first of these horn hits (m. 289) is a three-note chord utilizing interval-class 1 (M7) between E and D-sharp, and a tritone between D-sharp and A. Viñao then uses major sevenths and tritones to simulate this stabbing brass sound, withholding the three-note voicing of the chord until near the end of the section (m. 307). The thematic cells in measures 289 to 299 consist almost entirely of [013] pitch-class sets (A, Bb, G) and diminished triads (E, G, Bb). Measures 294-5 contain a few [014] sets; (A, C, Db) in the right hand, and (G, F#, Eb) in the left. Eighth-notes A and B-flat lead into another, slightly extended horn hit phrase in measures 297-9. Here the horn hits rhythmically outline a rumba clave pattern, and Viñao includes a C and F-sharp in measure 298 to create a fully diminished seventh-chord with the D-sharp and A.



Example 36: Variation VI, mm. 297-8

In measures 300 through 306 (seen in Example 37), Viñao includes a steadily rising interlude to build tension before the close of the section. These measures are anchored by an F#-C tritone and explore rising [014] and [013] pitch-class sets. [014]

⁵⁷ Ibid.

pitch-class sets consisting of F-sharp, A, and A-sharp (or Bb) occur in measures 300, 302, and 305. Measures 303 and 304 contain three [013] pitch-class sets; (C, Db, Eb), (A, Bb, C), and (Eb, E, F#). The right hand in measures 305 and 306 presents rising [014] pitch-class sets; (F#, A, Bb), (A, Bb, C#), and (D#, E, G) before a flourishing figure consisting of a [013] pitch-class set (Bb, A, G) finishes the phrase. The left hand in measure 306 presents a rising [013] set in quickly alternating 32nd-notes.



Example 37: Variation VI, mm 300-6

Viñao then returns to the high, piercing horn hits and low thematic cells in the key center of A presented in octaves, and the original three-note voicing of the horn-hits (E, D#, A) is reintroduced to bookend the section. In the final measure of the section (m. 313), Viñao includes a [014] pitch-class set of D-sharp, E, and G to propel the music into the next section.

Measures 314-25 see a return to the polyphony heard in earlier variations. This section seems to hint at the decoupling of voices that will drive the development of Variation VII, but does not pursue this decoupling to the extent seen later in the piece. The left hand in this passage is centered around a descending [013] pitch-class set of C,

B-flat, and A, where measure 316 contains repeated C's, measures 317-8 contain repeated B-flats, and measures 319-24 contain repeated A's. In the right hand, Viñao explores thematic cells and diminished triads derived from the same octatonic scale implied by the descending [013] in the left hand. In measure 318, the right hand mainly focuses on thematic material from a [0236] pitch-class set in D-sharp (C#, D#, E, G), but this material is supplemented with other notes from the octatonic framework that create even more [013] and [014] pitch-class sets.

Example 38: Variation VI, mm. 316-25

Viñao concludes Variation VI with a brief 'codetta' reminiscent of the final statements of Variations I and II. Much like the closing of Variation I, here the right hand is playing quarter note E's while the left hand presents syncopated thematic material against that pulse. The thematic material at the close of Variation VI is built around a [0236] pitch-class set of B-flat, C, D-flat, and E, but other notes from the implied octatonic framework appear, most notably several E-flats, but also G and F-sharp. The variation ends with a fading tritone of G and D-flat. The form for Variation VI can be

seen in Table 9.

Measure Numbers	Section Description
271-277	Introductory Statement
278-288	Right Hand <i>Guajeo</i> Left Hand 'Bouncing' Rhythm
289-313	'Salsa' Horn Hits mm. 300-306 Rising Interlude
314-325	Left Hand Focus on [013] (C, Bb, A) Right Hand [0236] (C#, D#, E, G)
327-330	Codetta/ Transition to Variation VII

Table 9: Form of Variation VI

VARIATION VII

The start of Variation VII suddenly disrupts the fading tritone at the end of Variation VI. Viñao begins the variation relatively simply, with [014] and [013] pitch-class sets from the theme in C-sharp supplemented by 'bouncing' echoic effects. In measure 335, Viñao introduces an upper voice to this thematic material. This right hand voice derives its pitch content from the same pitch-class set as the left hand, but it is rhythmically altered. However, due to its beginning in the same register of the instrument as the left hand, the upper voice doesn't quite take on its own identity until measure 340, when the two voices are separated by an octave. Here the voices continue presenting 'bouncing' thematic material, but the rhythmic intricacy of the passage almost gives the illusion of a multi-temporal relationship. As Viñao states:

This is a variation of canonic processes where the two voices seem at times to be rhythmically decoupled to the extent that they create independent layers. Here, there is perhaps more than a hint of the music of Conlon Nancarrow. Yet, unlike in Nancarrow's music (and in many of my other pieces) the decoupling of the two voices is never pursued in a systematic way.⁵⁸

Due to the organic nature in which Viñao decouples the two voices, there is no single rhythmic process which would explain the intricacies of this section (mm. 335-349). Instead, Viñao creates an elaborate sonic experience by presenting recognizable thematic cells in a pseudo-canonic fashion. These thematic elements occur both on the local level and over the course of the whole section. Example 39 displays measures 340-7 to illustrate small and large-scale thematic elements that rhythmically overlap to create

58 Ibid.

independent musical layers.

Example 39: Variation VII, mm. 340-7

At the local level, Viñao presents various thematic cells in different rhythmic groupings to create these multiple layers, and between these thematic cells are echoic repeated patterns that further obfuscate the pulse. When the thematic cells emerge from the texture, Viñao almost always presents them in close rhythmic proximity, giving the effect of a very close echo canon. The large-scale interest in this passage, however, is on two interconnected rising lines. The first of these lines is a [013] pitch-class set (F, G, Ab) in the left hand – F in measure 341, G in 343, and A-flat in 344. The right hand seems to take the A-flat from the left hand line and build a diminished triad on top of it – A-flat in 343, B in 345, and D in 347. This also creates a fully diminished seventh-chord (F, Ab, B, D) with an added tone (G) between these two lines. The right hand A-flat begins before the left hand reaches its A-flat, creating yet another layer of rhythmic overlap.

After these rising cells reach their respective peaks (the right hand D in measure 347, and the left hand B in measure 348), the music descends into a transitional statement

beginning in measure 350. During this transitional statement, the voices are more rhythmically aligned, and seem to be working toward the same goals, rising in sequence to propel the music toward the next phrase.

The next phrase begins in measure 358 with the return of the salsa riff from Variation III.⁵⁹ In measure 364, the salsa riff continues in the left hand while the right hand presents thematic material from the [0236] pitch-class set in the key center of A. The left hand here also includes [014] (A, Bb, Db) and [013] (G, A, Bb) (A, Bb, C) pitch-class sets. A brief excerpt from this section is shown in Example 40.



Example 40: Variation VII, mm. 364-6

Viñao also includes another long rising line in the upper voice during this passage. The [014] pitch-class set of the theme in A consists of A, B-flat and C-sharp. Viñao includes this thematic cell twice (leading into measures 365 and 366) before altering the third note of the cell. Leading into measure 367, Viñao again presents two eighth-note pickups of A and B-flat, but instead of arriving on C-sharp, he arrives on E-flat. The same pickup leads into measure 369, but here Viñao lands on E to create a long rising [013] pitch-class set (C#, Eb, E). In measure 369, Viñao quickly retraces his steps by immediately descending the same [013] pitch-class set.

Measures 370-5 reveal an interesting rhythmic polyphony between the two

⁵⁹ The salsa riff in Variation III begins in measure 128.

grooves. The right hand here is focused primarily on a [013] pitch-class set of G, A, and B-flat, which is the same [013] cell from the theme heard in the previous phrase. The left hand, however, is anchored on an A, but grooves in a 3/16 pattern that ascends the octatonic scale implied by the theme in A. At the end of measure 371, Viñao includes an F in this rising pattern, which is outside of that octatonic framework. This F also disrupts the 3/16 groove, but it quickly resumes in the next measure. The 3/16 groove continues until the voices finally coalesce in measure 376. Over this constant 3/16 groove, Viñao develops the right hand [013] cell by continuing to ascend the implied octatonic scale in measure 373, and then leaping to a high G and descending the scale again in measure 374. measure 375 includes a 32nd-note flourish that leads into measure 376, where the voices come together on three consecutive eighth-notes. Measures 370 through 375 are shown in Example 41.



Example 41: Variation VII, mm. 370-5

The two conflicting grooves come together in measure 376 for another brief, rising transitional statement. Viñao uses measure 376 to pivot into a new octatonic framework, and 32nd-note flourishes in the right hand in the following measures ascend this framework to drive the music toward the coda. Viñao states:

This variation merges with the ending of the piece which could be considered not unlike a traditional coda. But it was my intention to make uncertain the point where the variation ends and the coda begins, so that

the variation dissolves organically into the ending of the work and the final quotation of the theme.⁶⁰

Since Variation VII is so largely driven by the canonic processes of decoupling voices and conflicting grooves, this discussion argues that the coda begins when the voices return to a monophonic texture in the last two eighth-notes of measure 379. Although the voices coalesce into a mostly homophonic texture earlier (in measure 376), the character of this transitional phrase (mm. 376-80) is so short-lived that these few bars most certainly provide the 'merging' of which Viñao speaks in the previous quotation.

Example 42: Coda, pickups to mm. 380-7

The coda to *Burritt Variations* begins with three short thematic quotations presented in octaves as Viñao moves toward the original octatonic framework. The first of these cells consists of a diminished triad (G, Bb, Db) with an added tone (C) (mm. 380-1). The second cell is a [014] pitch-class set consisting of B, C, and E-flat (m. 381). And the third is a [014] pitch-class set consisting of D, E-flat, and G-flat, with the addition of a B and F to create a diminished triad with the D (mm. 381-2). After this final cell, the music is now centered around the original octatonic framework of the piece, primarily the

⁶⁰ Alejandro Viñao, *Burritt Variations* performance notes.

original [0236] pitch-class set of the theme (F, G, Ab, Bb), but the remaining four notes of the framework (D, E, Bb, C#) are also included. Viñao includes 32nd-note flourishes in measure 282 to provide more rhythmic excitement, and then the music slightly fades away in measure 383 with repeated octave B's marked 'bouncing'. The theme returns as eighth-note pickups (G and Ab) into measure 384. However, the trichord on the downbeat obscures the thematic cell, as both an F and B are included. The B would form a [014] cell with the G and A-flat, and the F would form a [013]. The trichord on the downbeat of measure 384 also contains an E, and C-sharps are included in the measure as well. The E and C-sharp form a diminished triad with the key-center of G, and B-flat is found in the [0236] thematic pitch-class set to complete the fully diminished triad. The final quotation of the theme begins in the final two eighth-notes of measure 385. Although rhythmically embellished, this thematic quotation shares the same rhythmic configuration as the final [013] cell of the original theme. The work ends with this statement of the theme landing on a tetrachord consisting of the notes C-sharp, B, F, and E, with the F completing the final [013] cell of the theme.

Measure Numbers	Section Description
331-334	'Bouncing' Introduction
335-349	Decoupling Voices
350-357	Rising Sequence Transition
358-375	Salsa Riff vs. [0236] in A
376-379	Voices Coalesce Transition to Coda
380-387	Coda Final Statements of the Theme

Table 10: Form for Variation VII

CHAPTER VI

PERFORMANCE CONSIDERATIONS

Burritt Variations, much like *Khan Variations*, is one of the most difficult and demanding works in the solo marimba repertoire, and learning the piece is a challenge for performers of any skill level. Convincing performances of Viñao's marimba solos require masterful command of four-mallet technique, an in-depth understanding of the rhythmic nature of his writing, and an artful control of polyrhythmic relationships. The polyphony of conflicting grooves in *Burritt Variations* presents yet another added level of difficulty, as performers need to understand the rhythmic and tonal properties of the individual voices in these passages, as well as the aggregate sound of their combined effect.

With the purchase of the score to *Burritt Variations*, performers are also given access to the MP3 training tracks provided by Viñao. These tracks include MIDI (Musical Instrument Digital Interface) recordings of the piece using sampled sounds from a five-octave marimba, as well as click tracks made to coincide with the numerous meter changes within the piece. The MIDI recordings and click tracks contain computer generated performances of the piece at tempo ratios of 80%, 90%, and written tempo, and are useful tools in learning *Burritt Variations*, as the rhythms and tempos are all exactly accurate. However, due to the limits of computer-generated recordings, the MIDI reproduction of *Burritt Variations* lacks the nuance in interpretation present in a human

performance, even though Viñao's MIDI reproductions are meticulously detailed. However, several video performances of *Burritt Variations* exist, and are easily accessible on YouTube. The most notable of these videos are by performers such as Michael Burritt, Sam Um, Andrea Venet, and Cameron Leach, but several others exist. As of the writing of this document, no commercial recordings exist of *Burritt Variations*, according to Viñao's website. It is useful for performers learning *Burritt Variations* to review several performances of the piece in order to gain a wide understanding of the possibilities of interpretation.

Due to the sectional nature of the piece, *Burritt Variations* can be learned in a few different ways. One method is to identify the more difficult variations and begin by learning those. Each of the seven variations contains its own unique character, as well as its own set of musical and technical challenges, so performers are free to pursue the learning of the piece in any order they choose, focusing first on the variations that present more of a challenge to the performer's particular skill-set. This way, the piece becomes less difficult as it is learned. However, the variations also tend to flow naturally into one another, and the later variations sometimes glean certain elements from the previous variations, so learning the piece from start-to-finish is perhaps the preferred method if one is to gain the best possible understanding of Viñao's compositional processes and the overall structure of the piece.

One of the greatest challenges in performing *Burritt Variations* lies in the several areas of polyphonic writing within the piece. One such section is the close canon from Variation II beginning in measure 66. Viñao states that

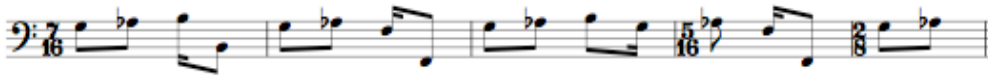
the main focus of interest in this variation, as in much of the piece, is in the relationship between the asynchronous 'grooves' of the two separate voices. The complex time signature changes follow the groove in the upper voice as I had to make a choice between the conflicting grooves of the two voices. Had the lower voice been written out on its own, it would consist of a different time signature sequence. The challenge for the performer is to bring to the forte with clarity these two conflicting grooves, always making sure that each voice is articulated and phrased according to its own rhythmic logic.⁶¹

Measures 66-70 can be seen in Example 43, where the music is presented in a metric framework aligning with the rhythms of the upper voice.



Example 43: Variation II, mm. 66-70

The rhythmic logic of the left hand, as well as the melodic contour of the phrase, simply does not fit with the written metrical structure. If written on its own, this passage would perhaps appear as it does in Example 44. Since the G on the downbeat of measure 66 is tied-over from a previous note, Example 44 begins with the second G in the bar.



Example 44: Lower voice metrical structure, mm. 66-70

It is the duty of the performer to recognize the relatively straight-forward metrical structure of this lower voice, and to perform it as such, even though it is written in relation to the disparate metrical structure of the right hand.

⁶¹ Alejandro Viñao, *Burritt Variations* performance notes.

In the several passages throughout *Burritt Variations* that contain polyphonic writing or conflicting grooves, the performer must understand the constituent voices individually, as well as their aggregate effect. These passages should be learned as written, with all voices present, in order to develop the coordination necessary to perform them. However, once these sections are learned, it is imperative to work the voices individually in order to understand their unique metrical structures, melodic contours, and rhythmic inflections. Table 11 lists all the segments of *Burritt Variations* that contain polyphonic writing.

Measure Numbers	Description
Variation I	
30-32	RH countermelody over LH theme
42-48	Quarter-note pulse, offbeat quarter-note pulse, dotted eighth-note melodies
Variation II	
54-82	RH countermelody/LH theme (54-62) Echoic Canon (66-77)
Variation III	
107-127	Decoupling voices – tritones in RH
Variation IV	
158-187	4:15 ostinato in RH LH accelerating/rising thematic cells
Variation V	
206-213	RH morse code motif LH thematic cells
Variation VI	
279-288	RH <i>guajeo</i> effect LH 'bouncing' rhythms
314-330	Conflicting grooves 'bouncing' echoes
Variation VII	
335-357	Decoupling voices – bouncing echoes and rising thematic cells
364-375	LH salsa riff, RH theme in A

Table 11: Polyphonic segments in *Burritt Variations*

It is the duty of the performer to develop an understanding of the individual voices in these sections and phrase them to their own rhythmic and melodic logic. This is especially important during the sections of implied multi-temporality. For instance, the 4:15 ostinato at the beginning of Variation IV must be performed with rhythmic precision, but also mechanically, with no inflection in either of the voices. The eighth-note A-sharps should be performed at a consistent *piano*, with no variation between them, and the high B's are marked at the same dynamic, but with tenuto markings. These tenuto marks suggest the addition of weight to the stroke, so the notes in the high B pulse should speak just a little clearer than the lower pulse. Since they occur less frequently, the high B's must be played slightly louder to give the feeling of a sustained pulse unrelated to the eighth-note A-sharps.

Learning *Burritt Variations* is a meticulous process. Viñao's writing and engraving are so detail-oriented that simply learning the notes and rhythms of the piece is not enough to produce a convincing performance. One must spend time with the different sections learning how multiple voices work together to create truly astonishing effects. Even the monophonic or homophonic passages of the piece require great care and detail to be played effectively. However, if the finer details of the piece are studied and truly understood, *Burritt Variations* is a richly rewarding experience for both performers and listeners.

CHAPTER VII

CONCLUSION

Alejandro Viñao's *Burritt Variations* is a modern masterpiece in the solo marimba repertoire. In its brief six year life-span, the piece has already been widely performed around the world, including in the United States, Europe, and Japan. Engaging for both performers and audiences, *Burritt Variations* presents a rich sonic experience where rhythmic development is paramount. Viñao's unique compositional voice was brought to the solo marimba with *Khan Variations* (2001), and has been further expanded through *Burritt Variations*. While the two pieces share similarities, they each possess their own unique character and development. Both pieces include Viñao's trademark rhythmic vitality, but the treatment of the thematic material and the overall dramatic arcs of the pieces vary greatly.

Since *Khan Variations* was published in 2001, Alejandro Viñao has written several acclaimed works for the percussion community, each with their own unique rhythmic life and identity, but *Burritt Variations* has been his only other work for solo marimba. Like many great composers throughout history, Viñao has re-imagined an existing frontier of music and introduced a new world of possibilities. In Viñao's case, this frontier has been rhythm, and writing for solo or chamber percussion has provided an excellent outlet to pursue it. *Burritt Variations* is yet another exploration into the depths of rhythmic potential that further pushes the boundaries of possibility.

BIBLIOGRAPHY

- Bernard, Jonathan W. "Elliott Carter and the Modern Meaning of Time." *The Musical Quarterly*, Vol. 79, No. 4 (Winter, 1995): 644-682.
- Bruce, David. "The Manic Mechanic." *The Musical Times*, Vol. 138, No. 1850 (Apr., 1997): 9-12.
- Butler, Christopher L. "Understanding the Percussion works of Alejandro Viñao: An Analysis and Performer's Guide of *Water* for Percussion Ensemble." D.M. Diss., University of Kentucky, 2016.
- Burritt, Michael. "Michael Burritt Talks Viñao Pt. 1." YouTube Video. <<https://www.youtube.com/watch?v=a-ON9x5gKfU>>. 2014. Accessed February 10, 2018.
- _____. "Michael Burritt Talks Viñao Pt 2." YouTube Video. <<https://www.youtube.com/watch?v=xxMjtN7BLLY>>, Accessed February 10, 2018.
- Callender, Clifton. "Formalized Accelerando: An Extension of Rhythmic Techniques in Nancarrow's Acceleration Canons." *Perspectives of New Music*, Vol. 39, No. 1 (Winter, 2001): 188-210.
- Carlsen, Phillip. *The Player Piano Music of Conlon Nancarrow: An Analysis of Selected Studies*. Institute for Studies in American Music. New York: Conservatory of Music, Brooklyn College of the City University of New York, 1988.
- Carter, Elliott. "The Rhythmic Ideas of American Music." *The Score and IMA Magazine*. (June, 1955): 27-32.
- Cowell, Henry. *New Musical Resources*. Cambridge: Cambridge University Press, 1930.
- Gann, Kyle. *The Music of Conlon Nancarrow*. New York: Cambridge University Press, 1995.
- Garland, Peter. *Americas: Essays on American Music and Culture, 1973-80*. Sante Fe: Soundings Press, 1982.
- Gerard, Charley. *Salsa! The Rhythm of Latin Music*. Crown Point, IN: White Cliffs, 1989.
- Greeson, James and Gretchen B. Gearhart. "Conlon Nancarrow: An Arkansas Original."

- The Arkansas Historical Quarterly*, Vol. 54, No. 4 (Winter, 1995): 457-469.
- Fletcher, Richard. *Moorish Spain*. New York: H. Holt, 1992.
- Hagedorn, Catherine. "Clave" in *The Grove Dictionary of American Music*. New York: Oxford University Press, 2013.
- Hasty, Christopher F. *Meter as Rhythm*. New York: Oxford University Press, 1997.
- Imbrie, Andrew. "'Extra' Measures and Rhythmic Ambiguity in Beethoven." In *Beethoven Studies*, A. Tyson, ed. New York: Oxford University Press, 1977.
- Jayyusi, Salma Khadra and Manuela Marín, eds. *The Legacy of Muslim Spain*. New York: E.J. Brill, 1992.
- Kramer, Jonathan D. "Studies of Time and Music: A Bibliography." *Music Theory Spectrum*, Vol. 7, Time and Rhythm in Music (Spring, 1995): 72-106.
- Leong, Daphne. "Time and Pitch Relations in Conlon Nancarrow's Tango?" *Intégral*, Vol. 16/17 (2202/2003): 187-224.
- Lerdahl, Fred and Ray Jackendoff. *A Generative Theory of Tonal Music*. Cambridge: MIT University Press, 1983.
- Manuel, Peter, Michael Tenzer, ed. *Analytical Studies in World Music*. New York: Oxford University Press, 2006.
- Mauléon, Rebeca. *Salsa Guidebook for Piano and Ensemble*. Petaluma, CA, 1993.
- Montague, Stephen. "Viñao, Alejandro." *Grove Music Online*. Accessed February 12, 2018.
- Peñalosa, David. *The Clave Matrix; Afro-Cuban Rhythms: Its Principles and African Origins*. Redway, CA: Bembe Inc., 2010.
- @Percussion Podcast. "Episode 33 with Alejandro Viñao." Published March 24, 2016. <<https://www.youtube.com/watch?v=CC0G77l9TgA>> , Accessed February 9, 2018.
- Reynolds, Roger. "Conlon Nancarrow: Interviews in Mexico City and San Francisco." *American Music*, Vol. 2, No. 2 (Summer, 1984): 1-24.
- Roberts, John Francis. "The *Khan Variations* for Solo Marimba by Alejandro Viñao: Musical Analysis and Performance Practice." D.M. Diss., University of North

Texas, 2010.

- Rosen, Jerome. "Conlon Nancarrow." *The New Grove Dictionary of Music and Musicians*. ed. S. Sadie, London: Macmillan Publishers Limited, 1980.
- Schillinger, Joseph. *The Schillinger System of Musical Composition*, Vol. 1: Books I-VII, edited by Lyle Dowling and Arnold Shaw. New York: Carl Fischer, 1946.
- Steward, Sue. *Salsa: the musical heartbeat of Latin America*. London: Thames & Hudson, 1999.
- Stojanović-Novičić, Dragana. "The Carter-Nancarrow Correspondence." *American Music*, Vol. 29, No. 1 (Spring, 2011): 64-84.
- Stravinsky, Igor. *The Rite of Spring*. New York: Dover, 1989.
- Thomas, Margaret. "Nancarrow's Canons: Projections of Temporal and Formal Structures." *Perspectives of New Music*, Vol. 38, No. 2 (Summer, 2000): 106-113.
- . "Nancarrow's "Temporal Dissonance": Issues of Tempo Proportions, Metric Synchrony, and Rhythmic Strategies." *Intégral*, Vol. 14/15 (2000/2001): 137-180.
- Viñao, Alejandro, composer. *Burritt Variations*. London: Vinao.com, 2012.
- , composer. *Burritt Variations: Training Track MP3s*. Vinao.com, 2012. MP3.
- , composer. *Kahn Variations*. London: Vinao.com, 2001.
- , composer. *Estudios de Frontera*. London: Vinao.com, 2004.
- , composer. *Book of Grooves*. London: Vinao.com, 2011.
- , "Children of Nancarrow." Radio program. <<http://www.vinao.com/SOUND/Children%20of%20Nancarrow%20mix.mp3>>, Accessed February 9, 2018.
- , "Alejandro Viñao." Composer Biography. <<http://www.vinao.com/Biography.html>>, Accessed February 2, 2018.
- Waxer, Lisa. "Salsa," in *The Grove Dictionary of Music Online*. <<https://doi-org.libproxy.unl.edu/10.1093/gmo/9781561592630.article.24410>>, Accessed April 19, 2018.