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A CATALOG OF WORKS FOR MARIMBA SOLOIST WITH PERCUSSION ENSEMBLE COMPOSED BETWEEN 1959 AND 2008 WITH ANALYSIS OF SELECTED WORKS

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A CATALOG OF WORKS FOR MARIMBA SOLOIST WITH PERCUSSION ENSEMBLE COMPOSED BETWEEN 1959 AND 2008 WITH ANALYSIS OF SELECTED WORKS

A DOCUMENT APPROVED FOR THE
SCHOOL OF MUSIC

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Abstract

This document provides a chronological catalog of works for marimba soloist and percussion ensemble composed between 1959 and 2008. More than 100 works have been composed over the forty-nine year history of the genre. Those that have a record of success were considered for analysis of structure and performance problems. That record of success was determined by two factors. First, the work needed three or more submissions to the Percussive Arts Society's program archive. Those works were then examined for the second factor, a performance at the Percussive Arts Society International Conference. Four compositions were chosen for analysis from the twelve that attained both factors: Minoru Miki's *Marimba Spiritual*, Lynn Glassock's *Off Axis*, Gordon Stout's *Diptych No. 2* and David Gillingham's *Concerto No. 1, Gate To Heaven*. These compositions represented large and small ensemble categories. In addition, three of the works were written by commissioned composers, and two were written by performers as composers. The four works were examined using Ralph Turek's analytical categories: formal structure, harmonic/tonal structure, melodic/rhythmic structure and aspects of texture/dynamics and articulation. Performance problems found in the solo part and the ensemble were examined.

A CATALOG OF WORKS FOR MARIMBA SOLOIST AND PERCUSSION ENSEMBLE COMPOSED BETWEEN 1959 AND 2008 WITH ANALYSIS OF SELECTED WORKS

CHAPTER ONE

The Problem, Purpose and Design of the Study

Introduction

The purpose of this study is to create a catalog of works that make up the genre of marimba soloist with percussion ensemble and to analyze selected works that have a record of success. That record of success will be determined by the number of times the work has been submitted to the program archive of the Percussive Arts Society and if the work has been presented in performance at a Percussive Arts Society International Conference. Works with three or more program submissions to the archive coupled with at least one performance at the Percussive Arts Society International Convention will warrant analysis. The analysis of each work will examine musical elements and performance problems. The analysis of musical elements will survey the techniques used by the composer. Four broad categories that follow Ralph Turek's analytical model will serve as a template for analysis: Melodic/Rhythmic Structure, Harmonic/Tonal Structure, Texture/Articulation/Dynamics and Formal Structure.[1] The analysis of performance problems will address unique and challenging performance techniques necessary for a successful performance.

The marimba concerto with orchestra or wind ensemble accompaniment has a history that began in 1940 with the composition of Paul Creston's *Concertino for*

[1] Ralph Turek, *The Elements of Music: Concepts and Applications,* 2nd ed. (New York: McGraw-Hill, 1996), 1:xiv.

Marimba. According to William Moersch, a leading marimba concerto performer, the next sixty-four years saw composers contribute about 125 works to that genre.[2] They are considered to be some of the most significant compositions in the repertoire for marimba.

Christine Conklin, in her doctoral document, surveyed the marimba concerto with orchestra or wind ensemble genre and established three periods of activity.[3] An initial period of twenty-eight years (1940 to 1968) saw the composition of eight works including those by such notable composers as Creston, Kurka and Milhaud. A second period of seventeen years (1969 to 1986) saw the contribution of eighteen works that included many Japanese and European composers such as Minoru Miki, Akira Miyoshi, Nebojša Jovan Zivkovic, and Marta Ptaszynska. A third period of thirteen years (1987 to 2000) saw works dominated by American composers and performers.[4] Representative composers included David Maslanka, John Serry, Richard Bennett and Eric Ewazen.[5] Dr. Conklin (now Dr. Christine Souza) examined the works and drew conclusions concerning trends such as changes in technical difficulty, instrument size, kinds of ensembles and the lengths of compositions.

Concurrently, Nathan Daughtrey examined the record of performances of concertos with professional orchestras. His University of North Carolina dissertation, showed the results of surveys sent to 720 professional orchestras, as well as various

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[2] M. Christine Conklin, "An Annotated Catalog of Published Marimba Concertos in the United States from 1940-2000" (D.M.A. document, University of Oklahoma, 2004), 98.

[3] Ibid., 17.

[4] Ibid., 61.

[5] Ibid., 96.

publishers, and performers.[6] This data-driven study recorded the works which were performed most frequently, the orchestras which performed marimba concertos most frequently and who was performing the solo part (soloist, student competition winners, or percussion section players). His study showed about two hundred professional marimba concerto performances over a sixty-two year period. However, only 150 of the 720 orchestras surveyed responded.[7] He concluded that performances with professional orchestras have historically been obtained by commissioning new works that include orchestras in the commissioning process, involvement with performance competitions, using professional management, being a member of the percussion section of an orchestra and playing a composition that is attractive to audiences.[8]

The genesis of the classical western percussion ensemble is marked by Edgard Varèse's composition of *Ionisation* in 1931. This work was followed by much activity in the 1930s and 1940s. Larry Vanlandingham's research into these decades traces the early development of the genre by examining works by Roldán, Varèse, Harrison, Cage, Chávez, and Hovhaness.[9] He discusses compositional procedures and instrumentation and draws conclusions regarding the development of the genre in these early years. The percussion ensemble genre blossomed in the 1950s when it became part of the

[6] Nathan Daughtrey, "Marimba Concerto Performances in United States Orchestras: 1940-2002" (D.M.A. document, University of North Carolina at Greensboro, 2004).

[7] Ibid., 29.

[8] Ibid., 74.

[9] Larry Vanlandingham, "The Percussion Ensemble: 1930-1945" (Ph.D. diss., Florida State University, 1971).

curriculum of the University of Illinois under Paul Price.[10] Other universities followed and integrated percussion ensembles into their curricula.

The marimba as a solo instrument has gained much notoriety over its short history. Significant contributors to marimba performance include Clair Musser, who organized large marimba ensembles in the 1930s and 1940s and performed in the United States and Europe.[11] Vida Chenoweth, who had been a member of one of Musser's orchestras, had an important solo career performing and commissioning works. Her career included performances with major orchestras as well as solo recitals.[12] Keiko Abe's career is one of the most significant and prolonged in the instrument's history. Rebecca Kite's study of Abe's life chronicles the many significant achievements composing, commissioning and performing works as well as working with the Yamaha Corporation to improve the construction and design of the marimba.[13] The first Percussive Arts Society International Convention held at the Eastman School of Music in 1976 showcased early performances of Leigh Howard Stevens and Gordon Stout. These two performers have had great significance in marimba performance and pedagogy as well as commissioning, composing and recording works for marimba. Leigh Stevens was recently inducted into the Percussive Arts Society's Hall of Fame and Gordon Stout is Professor of Music at Ithaca College in New York. Since the

[10] Bruce E. Roberts, "The Emergence and Development of Mallet Ensemble Literature in the United States" (D.M.A. document, University of Oklahoma, 2001).

[11] Ibid., 92.

[12] Laura LeAnn Phillips, "Vida Chenoweth and Her Contributions to Marimba Performance, Linguistics, and Ethnomusicology" (D.M.A. document, University of North Carolina at Greensboro, 2000).

[13] Rebecca Kite, *Keiko Abe: A Virtuosic Life* (Leesburg, VA: GP Percussion, 2007).

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1980s, numerous soloists and teachers of marimba performance have emerged in the United States as well as in Europe and elsewhere. This can be documented by the number of international contests, summer seminars, recordings and the amount of literature available for the instrument.

The first work to bring together aspects of concerto, percussion ensemble and solo marimba playing was *Toccata for Marimba and Percussion Ensemble* composed by Robert Kelly in 1959 and performed at the University of Illinois in 1960.[14] Over the following forty-nine years more than one hundred works have been composed in this genre. That number of compositions rivals the 125 concertos composed for marimba and orchestra or wind ensemble over its sixty-eight year history. Many of these marimba solo with percussion ensemble works have been commissioned, composed and/or performed by the instrument's most important players. The works form an important sub-genre within the percussion ensemble movement and serve as a valuable performance medium for the professional and student marimba soloist.

Statement of the Problem

Christine Souza and Nathan Daughtrey have conducted research on the history of the marimba concerto with wind ensemble or orchestral accompaniment. Larry Vanlandingham documented the early percussion ensemble of the 1930's and 1940's. Others have researched specific activity within the percussion ensemble's history. David Eyler's Louisiana State University document, "The History and Development of the Marimba Ensemble in the United States and its Current Status in College and University Percussion Programs" researched the development of the Marimba

[14] Thomas Siwe, "Siwe Guide to Solo and Percussion Ensemble Literature," Percussive Arts Society, http://pas.org/Members/PRD/Siwe/index.cfm (accessed October 12, 2008).

Orchestra. Bruce Roberts focused on the literature of the keyboard percussion ensemble in his University of Oklahoma document, "The Emergence and Development of Mallet Ensemble Literature in the United States." Lance Drege documented the important contributions of the University of Oklahoma Percussion Ensemble Commissioning Series and the OU Percussion Press in his research document. Yet no study has been undertaken on the genre of marimba soloist with percussion ensemble. Moreover, there is no single source for reference by conductors, composers or performers. The current list of works supplied in chapter three of this document rivals the number of works for marimba concerto and large ensemble. In addition, not many of the works have available analytical studies.

The large amount of activity in this genre is shown in the number of works composed in recent years, the number of performances documented in the Programs portion of Percussive Arts Society web site and the number of works chosen as part of concert programs presented at the Percussive Arts Society International Conventions.[15] As well, the genre, listed as soloist with percussion ensemble, has been chosen as an official category for the International Percussive Arts Society Composition Contest in 1976, 1986 and 2008.[16]

[15] "Programs," Percussive Arts Society, http://pas.org/Members/PRD/programs/SearchPrograms.cfm (accessed October 12, 2008).

[16] "Contests," Percussive Arts Society, http://www.pas.org/About/CompContest.cfm (accessed October 9, 2008).

Need for the Study

The degree of activity in the genre warrants investigation. The marimba has become one of the most important instruments in the classical percussion studio. The percussion ensemble continues to generate an enormous amount of compositional activity. Therefore, literature that promotes the marimba soloist with percussion ensemble is important. A sampling of significant universities and conservatories conveys the importance of marimba performance and pedagogy. The following list of percussionists displays an impressive academy of musicians dedicated to the art of marimba performance, pedagogy and research either as soloists or as percussion teachers who use the marimba as a significant part of their percussion curriculum: Oberlin, Michael Rosen; Eastman School of Music, Michael Burritt; Ithaca College, Gordon Stout; University of Illinois, William Moersch; Boston Conservatory, Nancy Zeltsman; University of Colorado, Douglas Walter; Northwestern University, She-e Wu; Yale University, Robert Van Sice and University of Texas, Thomas Burritt.

Some of the works in the genre are frequently performed. By example, *Marimba Spiritual* by Minoru Miki has a documented 158 performances listed on the PAS web site.[17] In addition numerous recordings are available. Works that have received many performances reflect success and have been influential in the genre. Analysis of works that have a record of success as indicated by program submissions to the PAS archives will be helpful to performers, conductors and composers. There are also works that are less performed because they are not as well known. This study will shed light on such works, thus offering alternatives for performance.

[17] "Programs," Percussive Arts Society, http://pas.org/Members/PRD/programs/SearchPrograms.cfm (accessed October 12, 2008).

The marimba soloist uses the genre as a part of residences or workshops with university student ensembles. Many performers are composing their own works to perform in these situations. Since percussion ensembles exist in many universities, this study will expand the knowledge base of works in this genre. Conductors will then have access to information about the works to aid in programming works in the genre to benefit student performances.

Purpose of the Study

The purpose of the study is to provide a chronological catalog of works for the use of performers, conductors and composers. Further, selected works that have a record of success will have an available analysis of both musical elements and performance problems. It is hoped that this information will prove helpful for the musician interested in the genre.

Limitations of the Study

This study is limited to compositions for solo marimba and a percussion ensemble of at least two players. Duets for marimba and a single percussionist are not included. Works included feature marimba as the primary solo instrument, but works that include the performance of other percussion instruments by the marimba soloist are included as long as the marimba is the primary or solo instrument. Works that feature two marimba soloists with percussion ensemble are not included. Pedagogy pieces are not included.[18] Works that feature primarily xylophone or vibraphone as soloist are not included. Transcriptions of concertos for marimba and orchestra or wind ensemble accompaniment to the percussion ensemble genre are included. Transcriptions of works

[18] The designation "pedagogy piece" refers to a piece that is written for the developing percussionist. The performance requirements are geared to middle school or early high school levels.

for solo marimba and electronic accompaniment to percussion ensemble genre are included.

Design of the Study

The catalog of works has been compiled by investigating publishers' catalogs and web sites. In addition performer repertoire lists, web sites and recordings have been examined. The Percussive Arts Society has an online data base of percussion literature initially compiled by Thomas Siwe, Professor Emeritus at the University of Illinois. It served as a source for works complied for this study. Composers also have information available at publishers' sites as well as personal web locations. The new literature review column of *Percussive Notes,* the journal of the Percussive Arts Society introduces the membership to new works, and it served as a literature source.

The catalog provides composer, title, date (of composition, premier or publication), publisher (provided the work is published), and number of players. This catalog has been cross-referenced with the program archive at the Percussive Arts Society's web site to determine how frequently each of the works has been programmed and subsequently submitted to the archive by the membership. Sub-list one has been created to provide a numerical ordering of those works with three or more program submissions. Those works with three or more performances have been coupled with PASIC performances. Sub-list two compiles those works with three or more performances and at least one PASIC performance. Sub-list two forms the pool of works that warrant further analysis based on their record of success.

Those works selected for further analysis have been analyzed in two areas: the musical elements that make up the analytical method contained in Turek's text, *The*

Elements of Music (melodic/rhythmic structure, harmonic/tonal structure, texture/articulation/dynamics, and formal structure), and performance problems unique to the composition.

Definition of Terms

The designation of the genre, marimba soloist with percussion ensemble, was chosen rather than concerto for marimba and percussion ensemble to avoid confusion with the concerto for marimba with large ensemble such as orchestra or band. The term concerto is a defined historical formal design that few of the percussion ensemble works have followed. The spirit of the percussion ensemble genre and large ensemble concerto is related, but the ensemble accompaniment will be specifically limited to only the instruments used in the contemporary percussion ensemble. These instruments can be pitched or unpitched. The size of the ensemble will typically range from three, soloist and at least two percussionists to as many as twelve total players. Some works may call for more players.

Terms related to the techniques of four-mallet marimba playing, as defined by Leigh Howard Stevens in his *Method of Movement for Marimba* are as follows.[19]

Single Independent Stroke: a stroke made independently of the other mallet in the same hand. This is accomplished by rotating the wrist around the unused mallet to generate the stroke. **Double Vertical Stroke**: a stroke that moves vertically towards the keyboard by moving both mallets in one hand down and up and is generated by a single wrist motion. Both mallets in the hand strike the bars simultaneously. **Single**

[19] Leigh Howard Stevens, *Method of Movement for Marimba* (New York: Marimba Productions, 1979), 1.

Alternating Stroke: a stroke that links the motion of the two mallets in one hand. The downward motion of one mallet is the upward motion of the partner mallet. One motion helps to generate the succeeding motion. **Double Lateral Stroke**: a stroke that also links the motion of the two mallets in one hand. The mallets proceed toward the bars with one slightly ahead of the other. At the time of contact with the bar the wrist turns to propel the second mallet towards its bar. One downward motion with a final wrist turn generates two pitches, one followed by the other.

Rolls can be generated through any of the stroke types in succession. One other particular type of roll is the one handed roll. A roll can be activated by stroking with both mallets in one hand in alternating succession. This type of roll tends to be less strong than the others, but it can be very effective in creating sustain in one hand and moving lines in the other. Rolls can also have various speeds and contribute to expressive nuance. The term roll speed with qualifiers like fast or slow will refer to how fast or slow the mallets oscillate when sustaining a pitch or pitches.

Mallet numbering in this document will also follow Stevens' designation.[20] His system indicates the pattern 1, 2, 3, 4 for mallets in the two hands from left to right and low to high. The sticking for a C major chord in root position in close structure and ascending in pitch from a low to high would be 1, 2, 3, 4.

Issues of octave designation will follow Ralph Turek's designations in his theory text, *The Elements of Music*.[21] Thus, the typical range of the modern marimba is five octaves and extends upwards from Great C, two ledger lines below bass clef.

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[20] Ibid., 5.

[21] Ralph Turek, *The Elements of Music: Concepts and Applications,* 2nd ed. (New York: McGraw-Hill, 1996), 1:6.

Middle c is designated c1. The octaves are then Great C, Small c, c1, c2, c3 and c4.

Chord symbols will used to describe harmonic structures and keys. Lower case letters signify minor keys or triads and upper case letters will signify major keys or triads. When referring to scale degrees, moveable Do and Do based minor will be used: Do Re Mi for Major and Do Re Me for minor.

Organization of the Study

Chapter One provides an introduction to the study. This is followed by a statement of the problem related to the genre, why a study is needed, and the limitations of the study. Terms unique to the study, the design, organization and outline of the study are also included in this chapter.

Chapter Two examines related literature organized by theses and dissertations, articles in journals, books and data bases, and other resources.

Chapter Three presents the catalog and sub-lists one and two. The sub-lists indicate performance information compiled to show the number of times the work has been performed and submitted to the program archive at the PAS web site. They also indicate if the work has been presented in performance at the Percussive Arts Society International Convention.

Chapter Four provides the analyses of the works that are found to be frequently performed by the society and at PASIC. The works are examined for melodic/rhythmic structure, harmonic/tonal structure, texture/articulation/dynamics and formal structure. Performance problems unique to each work are addressed.

Chapter Five draws conclusions and suggests avenues for further research.

Outline of Proposed Study

Annotation of Chapter Three

Chapter Three presents the catalog of works that make up the genre marimba soloist with percussion ensemble. This catalog has been constructed by comprehensive inquiry into web sites of publishers, composers, marimba performers, professional percussion ensembles and university percussion ensembles. Information gathered includes composer, title, publisher, date of composition, premier or publication (if published), and number of performers. These works have been cross-referenced with the Percussive Arts Society's program archive portion of the web site. This site allows the membership to post programs from performances that includes date, title, composer, and location of performance. As such it provides a sampling of the amount of performance activity for a particular work. A numerical ranking of each work occurred creating sub-list one. It lists works in order of most performed to those less performed as reported by the membership. Works with three or more performances were investigated further to determine if they had a performance at the Percussive Arts Society International Convention. Those works with a PASIC performance coupled with three or more performances by the membership generated sub-list two and were considered for analysis.

Annotation of Chapter Four

Chapter Four presents the analysis of selected works that display a record of success. These works will be examined for compositional techniques, and performance problems unique to the work. The analysis of musical elements will survey the techniques used by the composer. Four broad categories that follow Ralph Turek's

analytical model will serve as a template for analysis: Melodic/Rhythmic Structure, Harmonic/Tonal Structure, Texture/Articulation/ Dynamics and Formal Structure.[22] Instrumentation will be investigated in regards to its effect on texture, dynamics and articulation. Form will be addressed by giving a chart synopsis with measure numbers and indications of form defining elements such as key, theme, instrumentation and texture as the context dictates. In addition each work will be examined to determine the specific kinds of performance challenges.

Annotation of Chapter Five

Chapter Five will draw conclusions concerning the activity within the genre, compare the works analyzed and suggest avenues for further research.

[22] Ralph Turek, *The Elements of Music: Concepts and Applications,* 2nd ed. (New York: McGraw-Hill, 1996), 1:xiv.

CHAPTER TWO

Survey of Related Literature

Related Literature: Theses and Dissertations

Studies on the history of the percussion ensemble and the marimba concerto have been addressed in the introduction to this document. Several other studies have been undertaken that are related to this document. Some of those studies focus on the works included in this study.

Christina Faye Wilkes' document written at the University of Arizona, "A Performer's Guide to the Marimba Music of Daniel McCarthy," discusses four compositions composed between 1990 and 1995 that were either premiered or commissioned by Michael Burritt, currently the professor of percussion at the Eastman School of Music. Works discussed include *Rimbasly for Marimba and Tape* (1990), *Concerto for Marimba, Percussion and Synthesizers* (1992), *Chamber Symphony for Marimba and Winds* (1993) and *Song of the Middle Earth* (1995). All of these compositions are in the genre of marimba solo with percussion ensemble accompaniment except for the *Chamber Symphony*. *Rimbasly*, originally for marimba and synthesized sounds was transcribed for marimba and percussion ensemble by the composer. In her document Dr. Wilkes describes McCarthy's compositional style by examining melodic, harmonic and rhythmic features common to the compositions. A general outline of the form of each work is presented. Notational practices unique to McCarthy are discussed. She then provides a discussion of each work by examining issues that relate to performance. Performance factors discussed include stickings, usually with a rationale for sticking choices and how they affect phrasing and dynamics,

roll types and roll speed and their effect on interpretation. Other issues include difficult ensemble passages and cues to aid precision between the players, interpretation of trills and choreograph of body movements to enhance performance. She also suggests where performer use of peripheral vision, snapshot glances and kinesthetic awareness might be a useful aid in especially difficult passages. The document serves as an excellent starting point when performing or conducting any of these works.

Michael Varner's University of North Texas document, written in 1999, discusses the marimba concertos of David Maslanka.[23] Of interest to this study is his discussion of *Arcadia II for Marimba and Percussion Ensemble.* Varner examines compositional techniques, formal structure, tonality, melodic content and marimba techniques found in the work. Varner suggests that Maslanka is unique as a composer in that he has written over eighteen works for marimba. These are either solo marimba works or works that make use of marimba as a significant voice within a percussion ensemble, band or wind ensemble.[24] Because of Maslanka's association with the instrument and his close work with marimbist Leigh Howard Stevens, he has gained insights into idiomatic composition for the instrument. Varner contends that some of the original works for marimba, those composed in the 1940s-1960s, made use of sound compositional techniques but did not exploit the performance techniques unique to the marimba. On the other hand, marimbists who have composed works for marimba

[23] Michael L. Varner, "An Examination of David Maslanka's Marimba Concerti: Arcadia II for Marimba and Percussion Ensemble and Concerto for Marimba and Band" (D.M.A. document, University of North Texas, 1999).

[24] Ibid., 7.

frequently showcased its potential but were not as compositionally attractive.[25] Maslanka's compositions, composed since the 1970s, have been able to blend sound compositional approaches with idiomatic writing for the instrument.

Wan-Chun Liao's doctoral essay written at the University of Miami is titled, "Ney Rosauro's Two Concerti for Marimba and Orchestra: Analyses, Pedagogy and Artistic Considerations."[26] Both of these works have been transcribed for marimba soloist with percussion ensemble by the composer. Ney Rosauro was Liao's advisor. This work is an excellent source for interpretive information as well as issues concerning sticking, body position and other performance problems. The study provides background on the pieces, as well as analysis of form, style, melodic and rhythmic motives and harmonic material. It includes thirty-two excerpts with a discussion of performance options.

Other studies have not limited their focus on one composer, but focused on aspects of the percussion ensemble genre. Bruce Robert's University of Oklahoma document traced the emergence and development of mallet ensemble literature in the United States from 1894-2001.[27] Through comprehensive historical inquiry and interviews he was able to trace the evolution of the genre. He developed four periods of activity. The first, 1894 to 1929 saw the early development of the marimba and the marimba ensembles' use of indigenous styles from Central America. During this period touring groups introduced the instrument into America. Also during this period the

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[25] Ibid., 7.

[26] Wan-Chun Liao, "Ney Rosauro's Two Concerti for Marimba and Orchestra: Analysis, Pedagogy and Artistic Considerations" (D.M.A. document, University of Miami, 2005).

[27] Roberts, "The Emergence and Development of Mallet Ensemble Literature in the United States."

important contributions of marimba designer and manufacturer J. C. Deagan began. A second period from 1930 -1953 saw the important association of Clair Musser with the marimba and his formation of the large marimba orchestras. These groups exposed the instrument to many audiences in the United States and Europe. Period three, from 1954-1977 saw the genre enter the universities and conservatories. Roberts notes the influence of Gordon Peters at the Eastman School of Music and his development of the Marimba Masters ensemble. The fourth period of activity, from1978-2001, is marked by numerous commissions and performance activities. Especially noteworthy are those performances at the Percussive Arts Society International Conventions. Roberts cites the University of Oklahoma's involvement in commissioning works and subsequent performances by the University of Oklahoma percussion ensemble at PASIC. The study also provides an analysis of works that are exemplary as well as a chronological listing of literature in the genre.

Scott Cameron's University of Oklahoma document, "Trends and Developments in Percussion Ensemble Literature, 1976-1992: An examination of selected works Premiered at the Percussive Arts Society International Convention," provides an analysis of twenty-two works that were premiered at PASIC. He observed that works during this time were written for larger performing forces than in earlier periods. As well there has been an increase in the number of collegiate ensembles that perform at PASIC. Works during this time became less dissonant harmonically. And importantly, Cameron noted that PASIC premieres and performances influenced subsequent performance by the membership as evidenced in the program listing section of the Percussive Arts Society web site.

Related Literature: Articles, Books and Data Bases

Numerous articles have been written that provide insight into commissions, performances, recordings and publication of works directly related to this study. For example Brian Zator at the University of North Texas wrote an article concerning Minoru Miki, the composer of *Marimba Spiritual* for marimba and percussion ensemble.[28] Zator conveys information concerning Miki's life and works. Another representative article appears in the journal *Percussive Notes* titled, "A Marimba Journey with Janis Potter." She provides performance information concerning two works in this genre, *Dreamquake* by Jonathan Leshnoff and *Alabados Song* by Paul Bissell.[29] Other articles are geared towards analysis or reviews by noted experts.

Rebecca Kite's book is titled *Keiko Abe: A Virtuosic Life*. This work, published in 2007 provides tremendous insights into one of the marimba's most important performers. The work chronicles her life as performer and composer. It provides chronological lists of her compositions as well as works that she premiered. Many important compositions in the genre of marimba soloist and percussion ensemble were composed for or by Keiko Abe.

Thomas Siwe's book, *Percussion Ensemble Literature*, was originally published 1998. He donated the book to the Percussive Arts Society and its content is now searchable online and is being updated under the leadership of Michael Bump.[30] This

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[28] Brian Zator, "Time for more than Marimba Spiritual," *Percussive Notes* 44, no. 5 (October 2006): 66-67.

[29] I-Jen Fang, "A Marimba Journey with Janis Potter," *Percussive Notes* 42, no. 5 (October 2004): 38-41.

[30] Steve Houghton, "PAS Committee Reports," *Percussion News*, (March 2006): 1-6.

data base is a tremendous source of literature and provides the date of composition, premier information and number of players as well as length of composition and publisher.

Gary Cook's book, *Teaching Percussion* is an excellent source on contemporary techniques for marimba performance as well as providing literature lists.[31] This comprehensive work lists many web links to performers, publishers and other useful information.

[31] Gary D. Cook, *Teaching Percussion* (Belmont, CA: Thomson Schirmer, 2006).

CHAPTER THREE

The Catalog in Chronological Order

Order	Composer	Title (First Performer, Ensemble or Occasion)	Publisher	Date Published, Unless Indicated.	Other Players
1.	Kelly, Robert	Toccata (for University of Illinois Percussion Ensemble)	ACA (American Composers Alliance)	1959	6-12, plus piano.[32] Also a version for mba., pno. and bongos.
2.	Ishii, Maki	Marimbastück Op. 16 (for Abe) (in America, Rosen and 2 of his students.)	Ongaku no Tomo	1969	2
3.	Udow, Michael	Two Transparent Structures	Equilibrium	1969	4
4.	Jenny, Jack	Pursuit	Permus	1970	5
5.	Whettstein, Eric	Alchemies I	Unpublished. In author's possession.	1970, composed	3
6.	Elias, Shelly	Sixty Five Years From Tomorrow: A Percussion Trio Featuring Solo Marimba.	Opus Music Publisher	1973	2
7.	Loeb, David	Concerto da Camera No. 5	Lang	1976	4
8.	Barber, Clarence	Triptych	MFP	1978, composed	3
9.	Kessner,	Chamber	North/South	1978,	9

[32] The "other players" column lists the number of percussionists in the ensemble, not including the soloist. All non-percussion performers will be indicated and are in addition to the number of ensemble percussionists.

Order	Composer	Title (First Performer, Ensemble or Occasion)	Publisher	Date Published, Unless Indicated.	Other Players
	Daniel	Concerto No. 2	Editions, New York	composed	
10.	Levitan, Daniel	Concerto for Marimba and Percussion Orchestra (2nd place in 1978 PAS Composi-tion Contest.)	Manuscript, Forthcoming from KPP	1978	10
11.	Matsunaga, Michiharu	Frame for Marimba and Percussion Ens.	Manuscript	1978, composed	6
12.	Yoshioka, Takayoshi	Paradox III	Zen-on	1978	2
13.	Kastuck, Steve	DCB, A Crusaders Hymn	Manuscript	1979	4
14.	Stout, Gordon	Diptych No. 2	OUPP	1979	7, plus piano with celeste
15.	Yoshioka, Takayoshi	Reflection for Marimba and Percussion Ensemble	Manuscript	1981, composed. 1990, premiered.	2
16.	Maslanka, David	Arcadia II (for L. Stevens)	Rental through Carl Fischer	1982, composed	6
17.	Danforth, Francis	Rain Forest	KPP	1983, composed. 1993, published.	5
18.	Miki, Minoru	Marimba Spiritual (for Abe)	Ongaku No Tomo	1983, composed. 1984, premiered. 1989, published.	3
19.	Bright, Colin	Tulpi-Stick Talk (for Synergy)	Australian Music Center	1984	2
20.	Helble, Raymond	Concerto for Marimba and Percussion	Manuscript	1984	?

Order	Composer	Title (First Performer, Ensemble or Occasion)	Publisher	Date Published, Unless Indicated.	Other Players
		Ensemble, Op. 21. (for L. Stevens)			
21.	Mather, Bruce	Clos d'audignac (for Becker and Nexus)	Canadian Music Center	1984	3
22.	Komori, Akihiro	Lyra Davidis	JFC	1985	6
23.	Nishimura, Akira	Hoshi-Mandala	Manuscript, (Tokyo College of Music)	1985	2
24.	Sueyoshi, Yasuo	Concertino (for Abe)	Manuscript	1985, composed	5
25.	Chung, Yiu-kwong	Chariots Ballad (1986 PAS Competition Winner)	China D C	1986	7
26.	Miyoshi, Akira	Rin-Sai	Manuscript, recording available	1986	6
27.	Hendze, Jesper	Marduk	Manuscript, Siwe Guide	1987, composed	?
28.	Howden, Mark	Consonance for Marimba and Percussion Ens.	Manuscript, teaches at Bonaventure U.	1987, premiered	7
29.	Nuyts, Frank	Woodnotes	Pmeurope	c. 1987	6
30.	Rosauro, Ney	Concerto for Marimba and Percussion Ensemble. (Note multiple versions.)	Pro Percussao, available through MalletWorks	1987, orchestra. 1989, PE version.	6
31.	Abe, Keiko	Conversation in the Forest I.	Xebec	1988, composed. 1999, published.	3
32.	Ishii, Maki	Concertante Op. 79 (for Abe and	Moeck	1988	6

Order	Composer	Title (First Performer, Ensemble or Occasion)	Publisher	Date Published, Unless Indicated.	Other Players
		Strasbourg)			
33.	Udow, Michael	Shadow Songs IV (for Abe)	Equilibrium	1988	3-8
34.	Astrand, Anders	Three Seconds to D	Innovative	1989, composed. 2001, re-composed.	2 in 1989. 3 in 2001.
35.	McCarthy, Daniel	Rimbasly	C. Alan	1989	6, plus piano
36.	Nishimura, Akira	Kala (for Abe and Kroumata)	Zen-On	1989, composed	6
37.	Udow, Michael	Lightning for Solo Marimba and Percussion	Equilibrium	1991	
38.	Yoshioka, Takayoshi	Three Dances	Ongaku no Tomo	1991	4
39.	McCarthy, Daniel	Concerto for Marimba, Percussion and Synthesizer	C. Alan	1992	6, plus cd
40.	Wood, James	Spirit Festival with Lamentations (for Van Sice)	James Wood Edition	1992	4, uses ampli-fied piano and quarter tone marim-ba
41.	Zivkovic, Nebojsa	Uneven Souls	Musica Europea	1992, composed.	3, plus voices
42.	Gronemeier, Dean	Creation	Woodbar Music Press	1993	6, plus narrator
43.	Hasenpflug, Thom	Flatiron Wolf (for Thomas Burritt)	Go Fish Music	1993	4
44.	Ishii, Maki	Kaleidophon for Japanese Drum,	Maki@ishii.de	1993	3

Order	Composer	Title (First Performer, Ensemble or Occasion)	Publisher	Date Published, Unless Indicated.	Other Players
		Marimba and 2 Percussionists			
45.	Tanabe, Tsuneya	Concertino for Marimba and 2 Percussionists	Studio 4	1993	2
46.	Wada, Kaoru	Shi-za Kyoh-en for Marimba, Japanese Drum and 2 Percussionists	Atelier Tokyo Co. Ltd (rental)	1993	3
47.	Abe, Keiko	Ban-ka (Abe and Nexus)	Unpublished[33]	1994, composed	5
48.	Burritt, Michael	Shadow Chasers	C. Alan	1994	4
49.	McCarthy, Daniel	Song of the Middle Earth	C. Alan	1994	8, plus piano
50.	Wada, Kaoru	Nana-za Kyoh-en for Solo Marimba and 6 Percussion	Atelier Tokyo Co. Ltd (rental)	1994	6
51.	Glassock, Lynn	Off Axis	C. Alan	1995	4
52.	Binder, John A.	Concerto for Marimba and Percussion Ensemble	American Music Center	1996	11
53.	Burritt, Michael	Timeless	C. Alan	1996	3
54.	Martyska, Barbara	Four Short Pieces for Marimba and Percussion Ensemble	American Music Center	1996	2
55.	Nilsson, Anders	Rounds (for Abe and Kroumata)	Swedish Music Information Center	1996	6
56.	Abe, Keiko	Wind Sketch III (Abe, Udow and	Unpublished	1997	2

[33] Keiko Abe's web site, http://www.keiko-abe.com/englishindex.html, lists all of her works, but some are listed as "unpublished." These may or may not be available.

Order	Composer	Title (First Performer, Ensemble or Occasion)	Publisher	Date Published, Unless Indicated.	Other Players
		DiSanza)			
57.	Thrower, John	Aurora Borealis	Norsk	1997	3
58.	Udow, Michael	Coyote Dreams (for Katarzyna Mycka)	Equilibrium	1997	3
59.	Gillingham, David	Concerto No. 1, Gate to Heaven	C. Alan	1998	8
60.	Harnsberger, Andy	Vertigo	Innovative	1998, composed	3
61.	Ovalle, Jonathan	Dreamscape	JW3	1998	4
62.	Cahn, William	Rosewood Dreaming	KPP	1999	5
63.	Ewazen, Eric	Concerto (Note multiple versions, PE arr. by Richard Gipson)	KPP	1999 (String Orch.). 2002 (PE). 2003 (Wind E.).	8
64.	Gaetano, Mario	Circles	Innovative	1999 (PAS review)	2
65.	Abe, Keiko	Marimba Concertino, The Wave (Keiko Abe/Amsterdam Percussion Group)	Xebec	2000, composed. 2002, published.	4 (note perc. parts by Kaoru Wada)
66.	Burritt, Michael	Waking Dreams (for Tempus Fugit)	KPP	2000	5
67.	Cahn, William	Time Traveler (for M. Yoshida and the U. of Toronto)	William L. Cahn Publishing	2000	4
68.	Etezady, Roshanne	Feast or Famine	Available from the composer	2000	4
69.	Miki, Minoru	Marim Dan-Dan	Go Fish Music	2000	2
70.	Rossi, Mick	Periphery	C. Alan	2001	10

Order	Composer	Title (First Performer, Ensemble or Occasion)	Publisher	Date Published, Unless Indicated.	Other Players
71.	Leshnoff, Jonathan	Without a Chance	Go Fish Music	2002	2
72.	Monkman, Jesse	Rite of Passage	Tapspace Productions	2002	3
73.	Rosauro, Ney	Marimba Concerto No. 2	Pro Percussao, available through MalletWorks	2002	7, plus piano and double bass
74.	Zivkovic, Nebojsa	Lamento and Dance Barbaro	Gretel	2002	3
75.	Burritt, Michael	Willow (for Paris International Marimba Competition)	KPP	2003	3
76.	Ferreyra, Marcello	Answers	Honey Rock	c. 2003	4
77.	Houllif, Murray	Paragons	C. Alan	2003	5
78.	Ponchione, Cayenna	The Creation (Winner 2003 PAS Composition Contest)	Connecticut Hill Publishing	2003	?
79.	Wu, She-e	Blue Identity	Composer	c. 2003	4
80.	Beall, Andrew	Seduction for Marimba and Percussion Ensemble	Bachovich Music Publications	2004	5
81.	Bissell, Paul	The Alabados Song	Go Fish Music	2004	8 in PE version
82.	Calissi, Jeff	Lacuna	C. Alan	2004	3
83.	Dietz, Brett William	Panic	MMB Publications	2004	4
84.	Kaiser, Leander	Bayou Pearnik	KPP/Studio 4	c. 2004 Reviewed in PAS by John Beck	3 or 4 (opt)
85.	Kopetzki, Eckhard	Night of the Moon Dances	Beurskens.com	2004, composed	4

Order	Composer	Title (First Performer, Ensemble or Occasion)	Publisher	Date Published, Unless Indicated.	Other Players
86.	Leshnoff, Jonathan	Dreamquake	Available from the composer at Towson Univ.	c. 2004	3
87.	Sternfeld-Dunn, Aleks	Tableaus	American Music Center	2004	4
88.	Stout, Gordon	Route 666 (for L. Stevens)	KPP	2004	4, some instru-menta-tion open
89.	Blasco, Scott	Concerto: For Marimba and Chamber Orchestra / Version For Marimba, 2 Pianos and 3 Percussionists.	Honey Rock	2005	3, plus 2 pianists
90.	Brostrom, Tobias	Faces	KPP	2005	4, plus piano
91.	Burritt, Michael	Blue Flame (for Lassiter H.S., Atlanta)	KPP	2005	4
92.	Kopetzki, Eckhard	Marimba Music for Percussion Trio or Duo	Honey Rock	c. 2005	2 or 1
93.	Taylor, Noah	The Hunt	C. Alan	2005	8
94.	Tyson, Blake	Cloud Forest	Available from the composer at University of Central Arkansas	2005, Rev. 2008	2005 for 3. 2008 for 4.
95.	Adams, Daniel	Concerto for Marimba and Percussion Ensemble	Available from the composer	2006	7
96.	Dietz, Brett William	Samsara	Manuscript, (Louisiana State University)	2006	6
97.	Ford, Barry	Essay No. 4	Go Fish Music	c. 2006	3

Order	Composer	Title (First Performer, Ensemble or Occasion)	Publisher	Date Published, Unless Indicated.	Other Players
98.	Harchanko, Joseph	Pulse (for T. Burritt)	KPP	c. 2006	4
99.	Ho, Alice	Kami (for Beverly Johnston)	Canadian Music Center	2006	3
100.	Lee, Chichun Chi-sun	Concerto for Marimba and Percussion Ensemble	Available from composer at University of South Florida	2006	4
101.	McCarthy, Daniel	Xyprexia	C. Alan	2006	6
102.	Reller, Paul	Concerto for Marimba and Percussion Ensemble	Available from the composer	2006	5, plus piano
103.	Rice, Dwayne	Concertino	Innovative	2006	7 mallet players
104.	Froelich, Kenneth	Accidental Migration (for PAS Composition Contest, 1st place)	C. Alan	2007	6
105.	Gillingham, David	Concerto for Marimba and Percussion Ensemble (Concerto No. 2)	C. Alan (Arr. N. Daughtrey)	2007	11, plus piano
106.	Nozny, Brian	…folded…	Innovative	2007	4
107.	Schmitt, Matthias	Ghanaia (arr. Peter Sadlo)	Norsk Musikforlag	2007 (PAS review)	3
108.	Sejourne, Emmanuel	Suite	forthcoming http://www.norsk-percussion.no/	2007	4
109.	Abe, Keiko	The WAVE Impressions	Xebec	2008 Arr. of Marimba Concertino	2

Order	Composer	Title (First Performer, Ensemble or Occasion)	Publisher	Date Published, Unless Indicated.	Other Players
				(see 65 above)	
110.	Bobo, Kevin	Boboland	KPP	2008	4
111.	Coley, Matthew	Journey for Marimba, Piano and Percussion	Self Published	2008	8, plus piano
112.	Glassock, Lynn	Reconcilable Differences	C. Alan	2008	3

Sub-list One: Works with Three or More Program Submissions

In this list the works are ordered by the number of program submissions to the Percussive Arts Society Program Archives. Three submissions were required to be included in the list. The program submission data was accessed at the PAS web site in the fall of 2008.

Number	Composer	Title	Number of PAS Program Submissions
1.	Miki, Minoru	Marimba Spiritual	158
2.	Rosauro, Ney	Concerto for Marimba and Percussion Ensemble.	93 (This is PE version only).
3.	Burritt, Michael	Shadow Chasers	17, PE and 10 solo
4.	Glassock, Lynn	Off Axis	24
5.	Zivkovic, Nebojsa	Uneven Souls	20
6.	Kelly, Robert	Toccata	18
7.	Jenny, Jack	Pursuit	18
8.	Bissell, Paul	The Alabados Song	17, but solo with electronics too
9.	Gillingham, David	Concerto No. 1, Gate to Heaven	15
10.	McCarthy, Daniel	Rimbasly	14, most likely with tape version.[34]
11.	McCarthy,	Concerto for	10

[34] Daniel McCarthy, "Music for Marimba/ Percussion," http://dmccarthycomposer.com/id15.html (accessed November 1, 2009). Daniel McCarthy's web site indicates that *Rimbasly* is available in five versions, but that the version with percussion ensemble has not had a premier.

Number	Composer	Title	Number of PAS Program Submissions
	Daniel	Marimba, Percussion and Synthesizer	
12.	Stout, Gordon	Diptych No. 2	9
13.	Chung, Yiu-kwong	Chariots Ballad	8
14.	Maslanka, David	Arcadia II	7
15.	Burritt, Michael	Timeless	7
16.	McCarthy, Daniel	Song of the Middle Earth	6
17.	Ishii, Maki	Marimbastück Op. 16	5
18.	Ishii, Maki	Concertante Op. 79	4
19.	Thrower, John	Aurora Borealis	4
20.	Monkman, Jesse	Rite of Passage	4
21.	Kessner, Daniel	Chamber Concerto No. 2	3
22.	Danforth, Francis	Rain Forest	3
23.	Abe, Keiko	Conversation in the Forest I	3
24.	Nishimura, Akira	Kala	3
25.	Gronemeier, Dean	Creation	3
26.	Udow, Michael	Coyote Dreams	3
27.	Cahn, William	Time Traveler	3
28.	Rossi, Mick	Periphery	3

Sub-list Two: Works with Three Program Submissions and at Least One PASIC Performance

The final listing of works includes those with three or more program submissions and at least one PASIC performance in any version (soloist with percussion ensemble or other ensemble). These works may have more than one PASIC performance in their history. For purposes of this study, only one performance was used to bring the work forward to this final category. Four works will be selected from this list for analysis in Chapter Four. Several of the works in Sub-list Two have had studies conducted regarding aspects of performance and analysis including the previously mentioned doctoral research projects concerning compositions by Maslanka, Rosauro and McCarthy. Those compositions will be excluded from consideration. Finally, a work that has only been performed at PASIC in a non-percussion ensemble format will be excluded. Paul Bissell's *Alabados Song* has this distinction.

Number	Composer	Title	PASIC, Minimum of ONE Performance
1.	Ishii, Maki	Marimbastück Op. 16	1974, December, Chicago. Called the National Conference of Percussive Arts Society.

2.	Miki, Minoru	Marimba Spiritual	1984, Abe in Ann Arbor. 1988, Abe and Kroumata in San Antonio.
3.	Stout, Gordon	Diptych No. 2	1990, Philadelphia. Stout and U. of Oklahoma
4.	Maslanka, David	Arcadia II	1991, Annaheim. U. of Utah
5.	Zivkovic, Nebojsa	Uneven Souls	1993, Columbus.
6.	McCarthy, Daniel	Concerto for Marimba, Percussion and Synthesizer	1994, Atlanta. M. Burritt with U. of North Carolina at Greensboro.
7.	Glassock, Lynn	Off Axis	1996, Nashville. U. of Kentucky.
8.	Udow, Michael	Coyote Dreams	1997, Annaheim.
9.	Burritt, Michael	Shadow Chasers	1998, Orlando.
10.	Rosauro, Ney	Concerto for Marimba and Percussion Ensemble.	1999, Columbus. Version for wind ensemble, arr. by Thomas McCutchen.
11.	Gillingham, David	Concerto No. 1, Gate to Heaven	2003, Louisville. Potter with Marcus HS.

12.	Bissell, Paul	The Alabados Song	2006, Austin. With Wind Ensemble. (T. Burritt with U. of Texas).

CHAPTER FOUR

Analysis of Musical Structure and Performance Problems of Selected Works

Introduction

Four works have been chosen for analysis from Sub-list Two that have not had previous doctoral studies. Two works were selected to represent compositions from the small ensemble category (three to five or six players) and two for the large ensemble category (more than six or seven players). These two categories represent the kinds of works that would likely be unconducted or conducted. Works selected for analysis include:

Small Ensemble:

1983, Minoru Miki, *Marimba Spiritual*

1995, Lynn Glassock, *Off Axis*

Large Ensemble:

1979, Gordon Stout, *Diptych No. 2*

1998, David Gillingham, *Concerto No. 1, Gate to Heaven*

Overview of Structural and Performance Analysis

Each work will be given a brief review of the data from the catalog. Specific instrumentation will be examined. A summary of key elements corresponding to harmonic/tonal structures, melodic/rhythmic structures and, when important, matters of texture, articulation and dynamics will be presented. References to excerpts illustrating important structural material will be provided. Then a detailed formal structural analysis will be given. The performance analysis will explore issues of instrumentation,

mallet-beater selection, technical aspects of the marimba part, and performance problems associated with the percussion ensemble.

Marimba Spiritual

Marimba Spiritual, by Minoru Miki had 158 PAS program submissions and an initial PASIC performance in 1984 at Ann Arbor, Michigan. The work was premiered in 1984 by Keiko Abe and the Amsterdam Percussion Group.[35] Jan Pustjens, principal percussionist with the Royal Concertgebouw Orchestra in Amsterdam asked Abe to perform on a chamber music series associated with the orchestra's season. Wanting a new work for that performance, Abe secured funding for the commissioning of Miki from Nippon Hōsō Kyōkai, a Japanese government-sponsored broadcasting company. Abe's request was for a work that would appeal to a wide audience but also be of high quality. [36]

Unique features of the instrumentation of this work are the use of either traditional Japanese instruments or western instruments, the lack of specification of some instruments except by register and construction material and the absence of any other keyboard instruments in the ensemble. Western instrument substitutions are given by Miki in the score for those ensembles that do not have access to the traditional instruments. Miki does provide general guidelines for the unspecified instruments. The instrumentation is as follows:

> Marimba Soloists: Five octave instrument from *Great C*.
> Percussion 1: metallic percussion in high register (four notes), wooden percussion in high register (four notes), two cow bells or *atarigane=changiri*, two timbales or *daibyoshi*.
> Percussion 2: metallic percussion in middle register (four notes), wooden percussion in middle register (three notes), two tom toms in high pitch or *shime-daiko*, (a snare drum may be used for the higher of the two pitches).

[35] Kite, 250.

[36] Kite, 89.

Percussion 3: metallic percussion in low register (three notes), wooden percussion in low register (three notes), skin sounds (which can be either drums in low and middle register or timpani with wooden sticks or *ō-daiko*) and a snare drum or *sasara*.[37]

Conveniently Minoru Miki has authored a book on composing for Japanese instruments. He discusses the sizes, construction materials, typical beaters and playing techniques for many Japanese percussion instruments, including those required in *Marimba Spiritual*. Generally, the *ō-daiko* is a large drum with a barrel shaped shell and cow skin heads that are tacked directly onto the shell.[38] It can be played with a variety of wooden mallets ranging from thick to thin in diameter. It is also customary to play at times on the shell of the drum. The *shime-daiko* is smaller in diameter and shallower in depth with two heads that are laced to each other. A second rope is attached around the drum head lacing and tensions the heads further. It is also played with a variety of mallets.[39] The *daibyoshi* is a similarly constructed instrument to the *shime-daiko*, except it is longer in depth and higher in pitch.[40] The *sasara* is a wooden scraper. One stick has saw tooth notches scraped by a thin bamboo stick.[41] *Atarigane=changiri* are synonymous terms for a small, metallic hand instrument (like a small gong). It is usually played with a small metal or deer horn beater.[42]

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[37] The performer can pick the kind of instrument to realize the part from the suggested list.

[38] Minoru Miki, *Composing for Japanese Instruments* (Rochester, NY: University of Rochester Press, 2008).

[39] Ibid., 176.

[40] Ibid., 180.

[41] Ibid., 182.

[42] Ibid., 194.

The formal structure of the composition is in two parts and corresponds to the work's programmatic requirements. Miki states:

> The piece was composed from 1983 to the beginning of 1984, keeping in mind the acute period of starvation and famine in Africa which was occurring at that time. The piece is composed in an organic fashion, with the first half of the piece as a static requiem and the last part a lively resurrection. The title is an expression of the total process.[43]

The Requiem follows an AA′BA″ pattern and tonally centers on the pitch A, while the Resurrection, tonally on D, is sectional: A, B, C, Percussion Episode, A, Coda. In the Resurrection a percussion refrain precedes all the lettered sections, and the refrain's motives return in the coda. Repetition of pitch through ostinato or pedal point creates tonal centers. Primary structural material includes five motives, a to e that contain pitch and rhythmic attributes. These motives are provided in the figures beginning on page 59: motives a and b are in figure 1, motive c is in figure 5, motive d is in figure 7, and motive e is in figure 8. Their specific locations in the work are given in the structural diagram. Motive a presents melodic and rhythmic structures of significance. These include the half-step oscillation between the pitches A and Bb and the rhythmic figure using a short-long-short pattern of sixteenth-eighth-sixteenth. Motive b uses paired perfect fifths in half-step proximity: A-E and Bb-F. This half-step pairing of perfect fifths is one of the most significant harmonic/tonal structures in the work and will serve as a unifying device.[44] Motive c has rhythmic and melodic qualities. The rhythmic pattern uses a 3+3+2 grouping that will occur at several later

[43] Notes from score, page 2.

[44] By example, see R3where fifths surround C-G (fig. 2). A less obvious pairing occurs at R18 (see fig.9), where the perfect fifth A-E is paired with the perfect fifth Bb-F. The rhythmic/melodic structure clouds the reference, but the pitch inventory reveals the structure. Similar structures appear at rehearsal 19 (G-D with Ab-Eb), rehearsal 22 (D-A with Eb-Bb) and rehearsal 23 (A-E with Bb-F).

sections. Motive c's melodic shape of a descending major third and minor second will be exploited in the B Section of the Requiem. In the Resurrection, motive d and e are presented. Motive d is made up of a perfect fourth ascending by a whole step to a neighboring perfect fourth in eighth-note rhythm. Motive e uses the intervals of a minor third and a major second. Many other melodic, rhythmic and harmonic structures will be used over the course of the work. Some will have only momentary significance while others will have as their source the preceding motives a to e. In both cases their appearances and influences will be documented in the structural diagram.

Texture in the Requiem follows formal divisions. The A Section begins with solo marimba. This material is then restated with ringing metallic percussion as section A′. The contrasting section (B), which follows, is accompanied by dry wooden sounds in canon. The opening A material is then recalled and varied. Variety of texture in the Requiem is aided through large scale instrumentation changes. Ensemble texture in the Resurrection's pervasive four-four meter is essentially a perpetual motion accompaniment to the solo marimba. Eight eighth-notes (at times the eighths are nested in sixteenth-notes) are present in all but a few measures of the entire movement. All three players play most of the time except for Section C where the texture thins to compliment the lower register, slower rhythmic activity and softer dynamic level of the marimba. In the Resurrection the pervasive timbre of the accompaniment, except for Section C, is a mixture of drums with two cow bells. Drums are used primarily by percussion two and three and cow bells by percussion one. The timbres change only occasionally over the course of the movement. Examples of these changes include twice playing momentarily on the wood of the *ō-daiko* (at R20+3 and the ending),

striking a drum with a brush instead of a stick (in Section C at R33), and changing to a fresh drum timbre (from cow bells to a timbale in Section C at R35). The timpani or *ō-daiko* are entirely absent in Section C. Ensemble variety in the Resurrection is achieved by rhythmic interaction with the marimba rather than frequent or rich timbral and textural change.

Texture in the marimba part makes use of traditional types: chordal textures, oscillating dyads between the hands, arpeggiated figures and small scalar figures. These are all common marimba techniques. One texture type is employed that creates implied polyphony between the hands. Alternating sticking with each hand in a separate register creates registral segmentation that is perceived as a low voice and high voice. This texture type is referred to by Valerie Naranjo as meta-dependent.[45] The term implies a transcending or more highly developed interdependence that produces a complex texture achieved through alternation of stickings. Examples occur at three measures before rehearsal 14 and rehearsal 22 (see figures 8 and 11 as well as the structural analysis for further discussion).

[45] Valerie Naranjo is an expert performer on the gyil, a single row, gourd resonator marimba indigenous to Africa. In discussing the idiomatic techniques of that instrument she uses the term meta-dependence, where two or more interdependent lines interlock in dialogue between the right and left hand. See her article at her web site: http://mandaramusic.com/writings/introtogyil4.html Something dependent is not self reliant. Interdependent implies mutual reliance. Meta-dependence is transcending or more highly developed interdependence. In essence, a more complex texture (multiple voices) emerges from simple stickings in alternation. Other compositions that exhibit this texture include Stout's *Mexican Dance Number 1* and Abe's *Memories of the Sea Shore*.

Structural Analysis of *Marimba Spiritual*

Requiem

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
A	1	Q=42	Hexachord pitch content: A, Bb, C, Eb, E, F. E used more than Eb, giving the flavor of A Phrygian. Repeated perfect 5th, A-E, in left hand centers the music on A.	Measures use both specified and unspecified durations, giving a lingering, improvisational, unregimented rhythmic feeling. **Motive a** is presented in ms. 1, beat 1 and 2. Especially important are the rhythmic content (short-long-short) and melodic motion from A-Bb -C-A-Bb. Similar material in soprano (see fig. 1). Divisions are sixteenth-note based.	Solo marimba in low register. Low pitch is great A. Mixes struck dyads between the hands and rolled four-note texture.
	R1 [46]		**Motive b**, harmonic/tonal structure segmented into two perfect 5ths in half-step proximity: A-E and Bb-F (see fig. 1).	Ornamental sextuplet divisions added in bass register.	
	R2	*Poco piu mosso*	At R2+3 the pitch G is added to the original hexachord. Tonally the music still centers on A.	Return to sixteenth-note divisions.	
	R3		Pitch center	New sextuplet figure in	Same, struck

[46] Measure numbers are not given in the score. Rehearsal numbers are given and will be abbreviated R1, R2 for Rehearsal 1 and 2. R1+3, b3 will refer to rehearsal 1, fourth measure, beat three. R1-3, b3 will refer to beat three of the third measure before rehearsal 1.

			moves to C with open fifths struck in lowest and middle registers, great C and at c′. These fifths are eventually colored with 5ths a half step above and below. Large-scale step progressions in the bass and a dominant motion lead back to A material and A pitch centricity.	upper register. Melodic structural tones are the fifths (see fig. 2).	dyads, rolled chords and melodic passages. Now uses lower register: Great C.
	R4-4		Return of A pitch center by pairing A-E in left hand and fourths and sevenths in right hand.	Soprano voice melodic activity uses half step ascent and descent E-F-E or A-Bb-A (see the last four measures of fig. 2).	Dyadic oscillation between hands. *Ritardando* leads to next section.
A′	R4	Tempo 1 And Q=102.	Same as mm. 1-4.	Marimba part is same as mm. 1-4. Now two tempos: original for marimba and Q=102 for ensemble. Quicker tempos are coordinated graphically and last only momentarily. Use of **metallic motive** (see fig. 3).	First appearance of ensemble. Texture overlays metallic instruments that are allowed to ring. Simultaneous metallic dynamics are tiered from *FF* to *F* to *MF* matching high, middle and low registers.
	R4 +3		Similar harmonic/tonal material, still on A hexachord.	Metallic sounds are realized graphically *senza* tempo.	
	R5		A-E fifths continue to	**Thirty-second-note motive** appears	R5+1 and following,

			center tonality.	emphasizing minor third, minor second and major second. Pitch content is C, D, Eb and F#, G# and A (see fig. 4). Return of metallic motive at R6-2.	texture is full ensemble: Marimba emphasizes struck or broken dyads using rolled chords or sextuplet figuration over improvised soft ringing metallic sounds.
B	R6	Q=60	Begins on E-B open fifth. Uses fragment of e Phrygian mode (E, F, A, B).	**Motive c** using descending major third and minor second and rhythmic figure 3+3+2 (see fig. 5).	Texture begins with solo marimba.
	R6 +3		Tritone structures prevail in left hand. Harmonic motion oscillates between Db-G and C-Gb in left hand until R7.	Motive c transposed at R6+3. Right hand uses various tritone and perfect fourth dyads (see fig. 6).	Texture is full ensemble: Marimba in four-pitch rolled texture while the ensemble uses exclusively wooden sounds in bursts of rhythmically unison sextuplet based figures.
	R7		Harmonic pattern in left hand begins at R7+1 and is expanded to four half-notes. Each left hand dyad is a tritone (see fig.6).	Motive c also occurs at R7, R7+1 (in augmentation), R7+2 (varied: m2, m2, M3) and at R8-1, b4 (varied: m2, m2, m3). Continuation of dyads in right hand using tritones, octaves, and occasionally fifths and sixths. Wooden percussion begins a three voiced canon at R7+1. The time interval of imitation is four beats. Percussion 3 always leads and is	Four note rolled texture in marimba over three voiced canon in wooden percussion. Permutation of Motive c disrupts the continuity of the canon (see fig. 6). Canon continues after disruption for completion of each canon

				followed by 2 and 1. The first three-voiced canon is 15 quarters long. The second is 13 quarters and the third is 11 quarters long. The second and third canons begin with the third beat of the original canon motive. A resultant point of imitation occurs at R7+3 at the time interval of a triplet eighth-note (see fig. 6).	statement. At R10-3 the texture thins as each canon voice completes its turn. Fermata prepares for A″.
A″	R10	Tempo Free	Tonal center on A returns with A-E fifths and Bb. Moves to F at R10+3.	Return of thirty-second-note motive (m3, m2) at R10+1, but it is now transposed.	Wooden sextuplets return in short bursts over long tones in marimba.
Ca-denza	R11	Very Slowly, acceler-ate.	Four measures of melodic tritones. The 2nd and 4th measures use the same tritone pairs as the 1st and 3rd measures, but are reordered. Pitch content of the cadenza includes C, D, Eb, and F#, G#, A. This is the same pitch material as the 32nd note motive at R5.	No rhythmic values are given for the note heads.	Solo marimba, struck and rolled, always single notes.

Resurrection

Percussion Refrain and Section A

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Perc. Re-frain	R12	Q=180 acceler-ate to 200		Perpetual eighth-notes upon entry except for percussion three, who presents rhythmic motives that will be referential at each subsequent refrain. Fragments of the motives will appear as accompaniment figures within body of work. Four-four meter is used for the entire Resurrection.	Ensemble enters at two measure intervals: percussion two, then three, then one. Instruments used by percussion two and three are drums. Percussion one uses metallic cow bells.
A	R13	Q=200	Tonal center is D, achieved through pedal. All pitches derived from d dorian, but the emphasized pitches are d minor pentatonic.	Two primary motives presented. **Motive d** is made up of two perfect fourths a whole step apart in eighth-note rhythm. **Motive e** is a melodic figure that uses a minor third coupled with a major second (see fig.7 and 8).	Texture is perpetual eighth-notes in all parts. Dynamics begin *piano* except for motive d, which is *forte*. Meta-dependent marimba texture at R14-3.
	R14		D dorian continues until R14+2. There, Bb and B natural are used. At R15-2 Eb and E are used.	Motive d descending. Beats 3 and 4 are broken motive e using octave displacement to project D, F, G, A, (minor third and major seconds). (See fig. 8, last measure.)	Perpetual eighth-note texture continues in percussion one and two, but varied by percussion three. At R14+4, Percussion three begins to fill in missing eight-notes in marimba part.

	R15		D minor pentatonic marimba material returns, but with G-D in timpani. Total pitch content is D, F, G, A, C.	Return of motive e (minor third, major second).	Percussion two uses fragment from drum refrain motive. Ensemble then begins two measure ostinato under marimba at R15+2.
	R16		G Dorian is used at R16+1. Timpani emphasizes G from R16+1.	Marimba uses rhythm of motive a (short-long-short) now augmented to the eighth-note level. Continued development of Motive e.	Ensemble rhythm same as measure R15, then repeats a new two measure ostinato.
	R17		At R17+3 harmonic structure is two perfect fifths: A-E and Bb-F, derived from Requiem motive b, (see fig. 9).	At R17 marimba uses rhythm of motive a (short-long-short) augmented to eighth-quarter-eighth level.	Percussion three fills missing beats in marimba part and acts to propel the marimba's off-beat entrances. At R17+2 percussion two adds high pitch snare drum or *shime-daiko*. This corresponds to the marimba's use of its highest register in the right hand.
	R18		Pitch material same as R17 (perfect fifths in half-step proximity).	Melodic material outlines the two perfect fifths, A-E and Bb-F, plus the pitch C. This figure is motive f. Its relationship to the harmonic content of motive b is masked by the new melodic contour (see fig. 9). The first two	Marimba texture is melodic.

				statements of motive f begin on beat two. The next two are shifted to begin on beat four.	
	R19		Pitch material is derived from motive b transposed to G-D and Ab-Eb.	Much use of two eighth-note rhythmic groupings (always four pitches based on re-voicing of pitch content: G-D and Ab-Eb) in marimba. The grouping of two eighth notes together is similar to the rhythmic content of motive d (see fig. 10).	The marimba texture is chordal. Percussion three fills many of the missing eighth-note rhythms in the marimba part. Ensemble continues perpetual motion with some variations.
	R20		Pitch material now two P5ths D-A and Eb-Bb, derived from motive b.	Motive f transposed, melodic material outlines the two P5ths plus the pitch F (see last measure of fig. 10).	Marimba Texture is melodic. R20+3 *ō-daiko* plays on edge of drum (wood sound). Brings Section A to a conclusion.

Percussion Refrain and Section B

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Perc. Re-frain	R21	Same		Use of Percussion Refrain Motives from R12.	Perpetual eighth-notes with motivic activity in percussion three. Dynamics: *F*, *FF*, decrescendo.
B	R22	Same	D Phrygian, still related to harmonic structure of motive b (D-A	Motive g appears in the marimba. It is rhythmically simpler through the use of gapped eighth-notes	Marimba texture is meta-dependent with implied polyphony

			and Eb-Bb).	(see fig. 11). Half-step oscillations in soprano and bass are reminiscent of motive a from Requiem.	between soprano and alto lines. This is conveyed by right hand upper register and left hand lower register. Hands alternate R, L, R. L, R, L. Ensemble continues perpetual eighths with some rhythmic variety.
	R23		D minor (see last measure of fig. 11). Harmonic structure based on motive b (A-E and Bb-F) resolves to open D-A. Transposed up a half-step at R23+2 and 3. At R23+4 begins exploration of various modal areas.	Use of triplets and dotted quarter in Marimba. At R23+4 the marimba uses a fragment of motive a: half- step melodic activity similar to R22. At R24 motive g returns now transposed.	At R23+4, the marimba texture uses right hand octaves and left hand single independent strokes in two note groups.
	R25		Tonal areas vacillate between one sharp and one to two flats.	Melodic use of motive a's m2, M2, m3. Varied at times to include other small intervals.	Marimba texture uses octaves in right hand and dyadic perfect fifths and augmented fourths in the left hand.
	R26		Repetition of R17, (eight measures). Same pitch material.	Same melodic/rhythmic material in solo and ensemble.	
	R27		Pitch inventory is one flat. Marimba resolves towards	Use of Motive h. This motive is derived from motive b, but now uses duplicate perfect fifths	Marimba uses planing texture of parallel perfect fifths

			A while timpani projects Bb pedal. Harmonic structure of motive b present in the linear motion between Bb-F and A-E. R27 resolves in R27+2 (see fig. 12). Harmonic structure is entirely perfect fifths.	rather than 5ths in half step proximity. Motive e's influence is evident in the minor third and major second intervallic content of the melodic motion (see fig. 12).	(one perfect fifth is duplicated in the other hand and both move in the same direction).
	R28		Pitch content is enriched by shifting note collections. Perfect fifth dyads in each hand are maintained but not duplicated in the other hand.	Two measure marimba rhythmic pattern is repeated for the next two measures then a new two measure pattern is repeated. Pitch content is new. Motive h is twice repeated in this section at R29-1 and -3 (see fig. 13).	Non-planing marimba texture.
	R29		Pitch content returns to one flat.	Two measure rhythmic pattern in marimba is played four times. Left hand pattern uses a variation of motive c rhythmic content: 3+3+3 eighth-notes (see fig. 13). Ensemble uses busier rhythmic activity to push to the conclusion of Section B.	Same texture in marimba.

Percussion Refrain and Section C

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Perc. Re-frain	R30	Same		Same as R21 except for the timpani pitch which now moves from E to Eb to D.	Perpetual eighths with rhythmic motives. Dynamics loud with decrescendo to soft.
C	R31	Same	D is tonal center until R31+6 where material is transposed to G, both use one flat.	Uses motive e's pedal D and minor third. D is now a long note on Great D. Rhythmic content of marimba now much slower (compositely between the two hands, three quarters and two eighths). At R31+4 Motive d reappears as ascending or descending perfect fourths in step proximity. Continuous eighths split between the hands return in marimba (see fig. 14).	Texture thins to one drum of perpetual eighths and two bell notes per measure as accompaniment to marimba. Quiet dynamic.
	R32		Bass line sequences melodic figure through G, Ab, A and Bb. It uses Motive c's rhythmic content: 3+3+2 (see fig. 15).	Melodic material in the marimba bass register uses minor thirds and major seconds of motive e as well as the perfect fourths. Motive d continues in soprano and alto voices.	Texture is similar.
	R33		Harmonically stable with D as the tonal center with one flat.	Two measure, two voiced ensemble ostinato. Continued exploration of motive d and e by marimba. Perfect fourths in step	New timbre, snare drum with wire brush. Still two players as accompaniment with one in

				proximity are accented.	perpetual eighths.
	R35		At R35+1, new pitch collection: three sharps. Pitches accumulate with groupings that emphasis the major second. (see fig. 16).	Introduces motive i. Material interplays melodic and harmonic seconds between the two hands and metrically groups the pitches into groups of two eighth-notes (like motive d).	New timbre, timbale in perpetual eighths joins the snare drum played with wire brush. Still two players as accompaniment. Marimba uses seconds in right hand and single notes in left.
	R36		Still three sharps. Harmonic structure emphasizes perfect fourths (motive d).	Implied polyphony in marimba using metadependent texture. Many melodic 4ths, 3rds and 2nds.	Timbale disappears and toms return. Ensemble uses two measure ostinato repeated three and a half times. Still two voiced.
	R37		Still three sharps.	Similar to R35. At R38-5, the dyadic seconds alternating with single notes in the left hand use triplet rhythm intermixed with the previous rhythmic grouping of notes into two eighth-notes.	Ensemble still two voices.
	R38 +4		Chromatic pitch collection contributes to climax of section. The major seconds now have the half-step between the major second played an octave beneath (see fig. 17).	Material is sequenced to climax. Final statement reverses direction and changes pitch configuration, but is related by rhythmic content.	Ensemble still two voices.

Percussion Episode

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Part 1	R39	Same		Each player in turn is instructed to "Solo ad lib." for eight measures while others provide perpetual eighth note accompaniment (see fig. 17).	Three part texture. Two voices *piano* and lead voice *forte*. Three eight measure phrases.
Part 2	R42			The primary material, the *forte* sixteenth-notes, is passed from player to player at one beat intervals creating spatial motion across the ensemble. The sixteenth-notes are on each player's higher pitched drum while the eighth notes are on the lower drum (see fig. 18).	Two strata texture: perpetual eighths at piano dynamic and sixteenth-notes at *forte*. One four measure phrase.
	R42 +4			Repeat of the same spatial idea except now the moving material is an accented eighth note on the higher pitched drums.	Same. One four measure phrase.
Part 3	R43			All players use perpetual sixteenth-notes.	Three part texture. Each player plays on one drum. Sixteen measures are divided into 4+4+8 measure segments. Four measures of *ppp*. Four measures of overlapping crescendo/de-crescendo. Each player's

					dynamic change lasts two to three measures. Eight measures of overlapping crescendo/de-crescendo. Now each dynamic swell is two to three beats in length. The final crescendo is two measures long.
Part 4	R45			Begins with an unison shout on "ha." All accented drum strokes are accompanied by a vocalization (ya, ho or ha). Drum crescendos are usually accompanied by vocal glissandos. At R45+2 the accents on beat two and the after-beat of three are echoed by each player in the following measures. At R45+3 the accents on beats one and four are echoed in the following measure.	Texture now includes vocalizations from the players in addition to the drum sounds (see fig. 19).

Percussion Refrain and Section A

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Perc. Re-frain	R46	Same	Timpani moves in pitch from Eb to D in R46+2.	Similar to before. Player one has two measure silence to move back to cow bells.	
A	R47		Repeat of sixty-five measures.		Structurally returns to

			R47 to R55-1 corresponds to R13 to R21-1		ensemble texture of A section: metallic upper voice and drums each for lower two voices.

Coda

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Part 1	R55	Same	Various tonal centers: R55, no sharps or flats, R55+2 four sharps, R55+4 no sharps or flats, R55+6, mixed sharps and flats. Harmonic structure is consistently pairs of P5ths between the hands. Bass line for each two measure segment contains a half-step motion reminiscent of motive a (E-F, G#-A, E-F, Bb-B). At R56-4, marimba changes to major second in right hand with a perfect fifth in the left. Figure repeats sequentially in the following measures with half-step motion	Uses motive h from Section B, (based on pairs of P5ths between the hands). Rhythmically Motive c is recalled (3+3+2 in left hand) at R55. The rhythm of the marimbist's hands exchange every two measures (rhythm of the left becomes the rhythm of the right). At R56-4 percussion three fills in the missing marimba beats with a forte stroke. Percussion one and two create rhythmic dissonance with a three eighth-note pattern against the marimba and percussion three.	Alternating perfect fifth dyads in Marimba. Perpetual eights in player one. Mixed eighth and sixteenths in player two. Player three uses after-beat eighths with quarters. At R55-4, Marimba and percussion three are paired against player two and three.

			(see first three measures of fig. 20).		
Part 2	R56		Vertical harmonic structure is paired P4ths separated by a M2 (Eb-Ab and Bb-Eb). Structure derived from P4 of motive d and voicing at R14. Horizontal motion is achieved by half-step drop in alto voice that leads to next P4th structure. This continues for seven measures (see fig. 20).	Marimba rhythm uses quarter and dotted half in each measure. This contributes a slowing of motion from previous momentum.	Texture uses rolled marimba and single line of perpetual eighths played by percussion two. Dynamic soft.
Part 3	R57		Each measure plus two sixteenths projects the half-step harmonic /tonal structure of motive b. For the first statement with D as the center, the pitch content is A, C, **D, Eb**, F, G. Sequences progress by perfect fourths from D as follows: G, C, F, Bb, Eb, Ab and Db (see fig. 20 and 21).	Marimba figure recalls motive e (D, F, G in upper voice played by right hand). There are eight sequential statements of this figure.	Marimba plus one percussion. Adds a second percussion at R57+4 to support crescendo.
Part 4	R58		Pairs of perfect fifths separated	Pairs of perfect fifths reference motive b.	Texture is two percussion plus

			by a minor third (A-E and G-D). This structure glissandos from Great A to a′. Figure changes at R58+4 to D-A and C-G but glissandos to original structure of R58 (see fig. 21).	The minor thirds between the fifths reference motive e. At R58+8 quicker oscillations between low and high occur. The rate of change had been a half-note but now is only an eighth-note.	marimba. Adds third at R58+4 to aid crescendo.
End	R58 +11		Frozen pairs of perfect fifths (G-D and E-B) played in sixteenth-note alternations for one measure followed by a left-handed descent in oblique motion.	Perpetual sixteenths in all parts. Marimba left hand descends in perfect fifths outlining melodic minor thirds, major seconds and perfect fourths.	Marimba plus two percussionists. Third percussion added for last cadential eighth-note figure. Percussion three plays on wooden edge for conclusion.

Figures for Marimba Spiritual

Figure 1. *Marimba Spiritual*, ms. 1.

Motive a (short-long-short rhythmic figure and A, Bb, C, A, Bb melodic motion) appears in the first measure and motive b (perfect fifths in half-step proximity) is stated at R1.

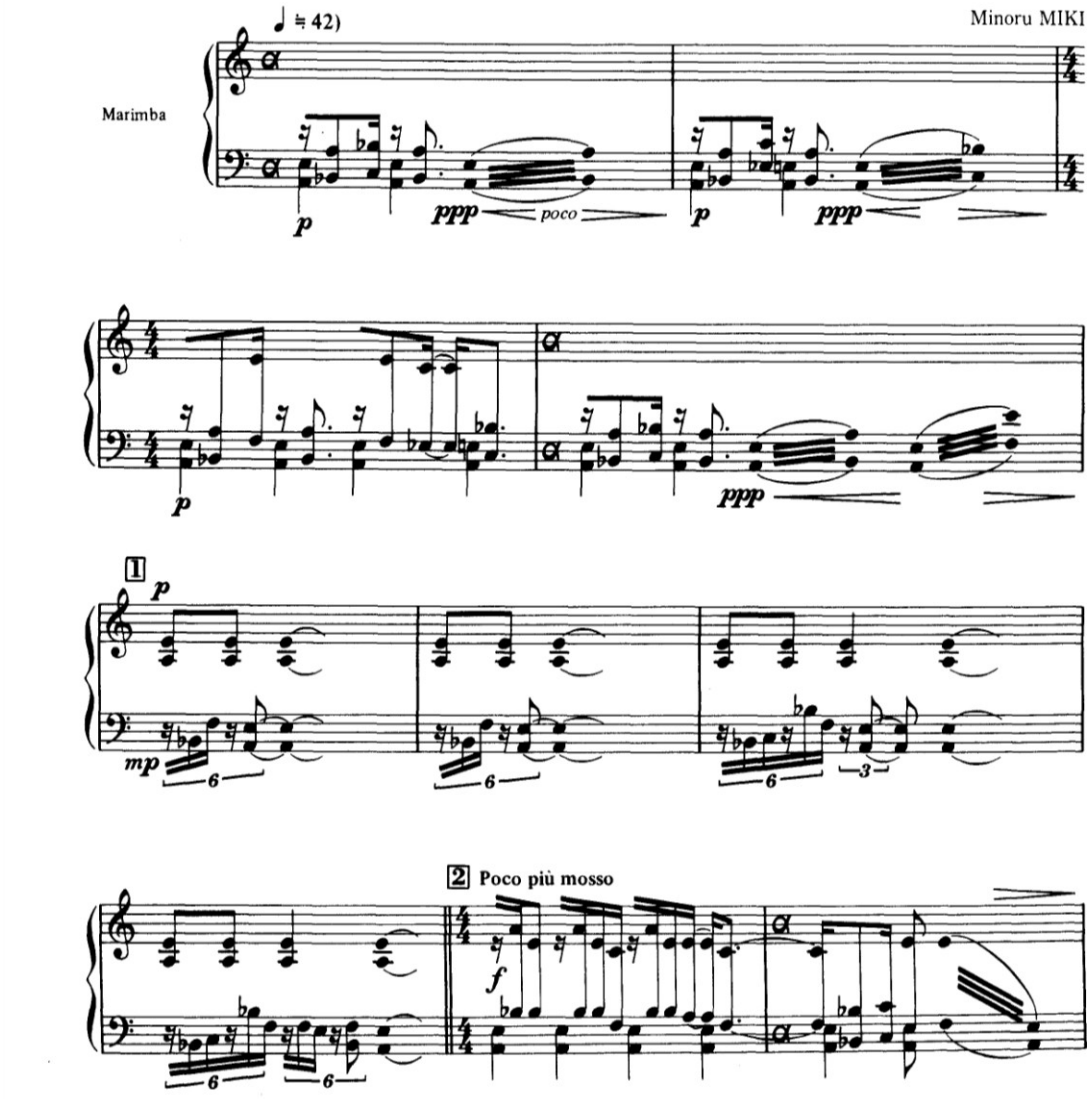


Figure 2. *Marimba Spiritual*, R3.

Pairs of fifths continue with sextuplet figure. Tonal center is C.

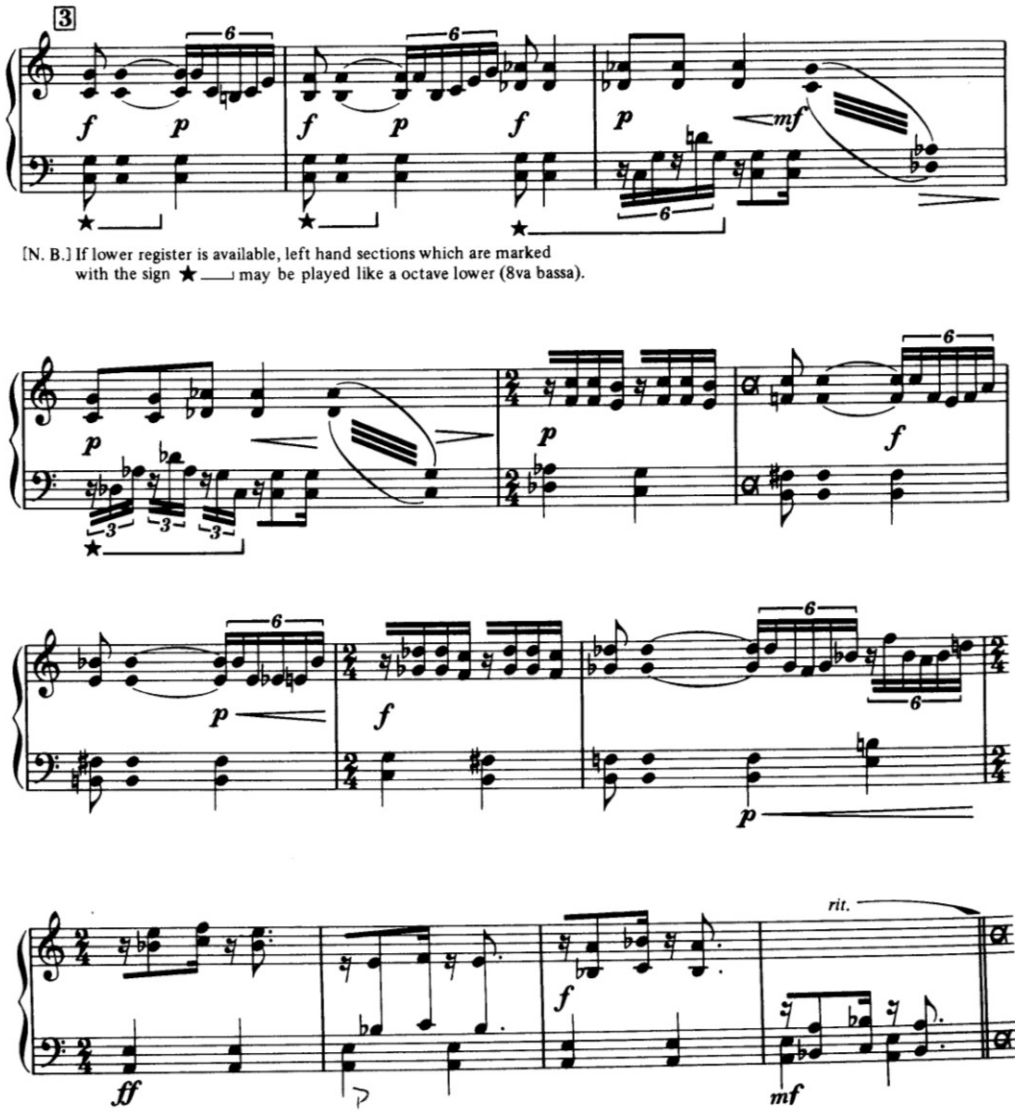


Figure 3. *Marimba Spiritual*, R4.

Return of motive a in marimba. Ensemble now accompanies with metallic motive. Two tempos are used.

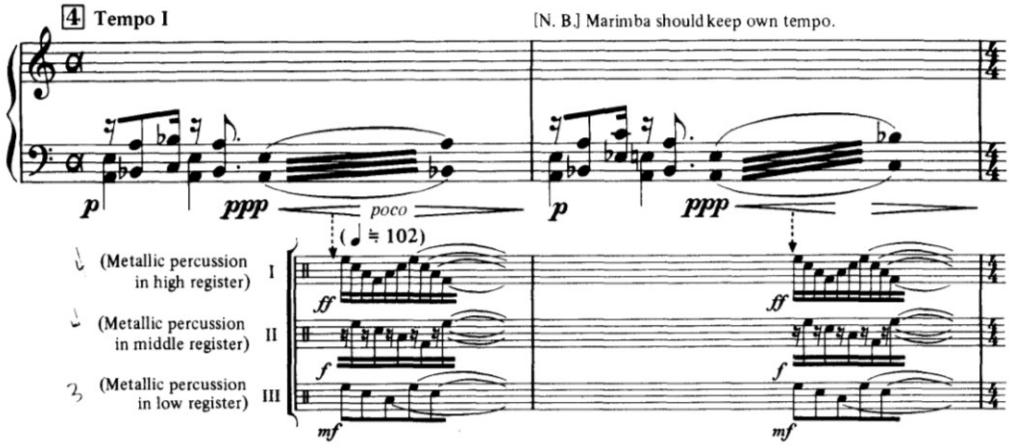


Figure 4. *Marimba Spiritual*, R5.

Thirty-second note motive in marimba. Rhythm in metallic instruments is indicated graphically.

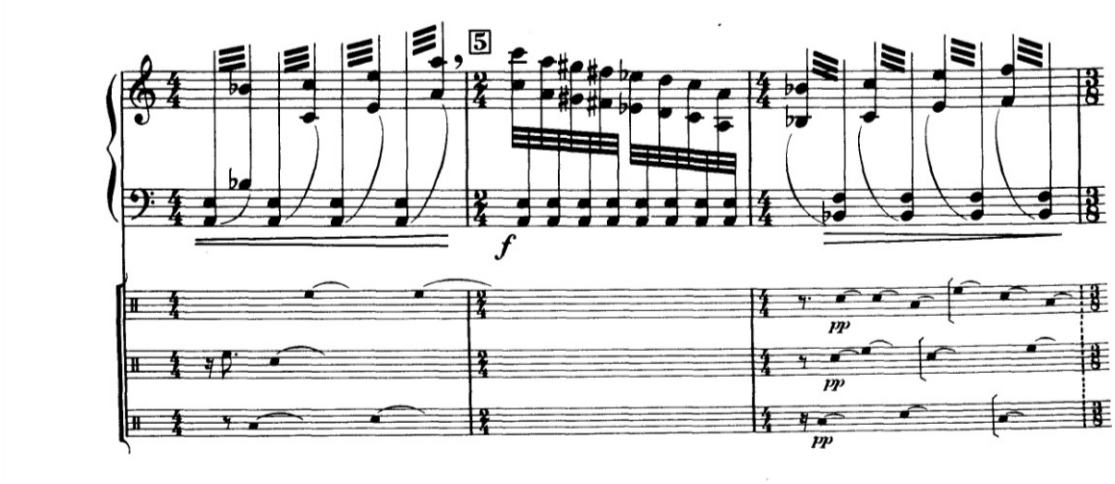


Figure 5. *Marimba Spiritual*, R6.

Motive c is presented in the marimba. Important content includes the melodic major third and minor second in the right hand and the rhythmic durations of 3+3+2 sixteenth notes occurring in the first three dyads: E-B, E-B in the left hand and E-A in the right hand. A fragment of E Phrygian mode is suggested in the first measure and a half (E, F, A, B).

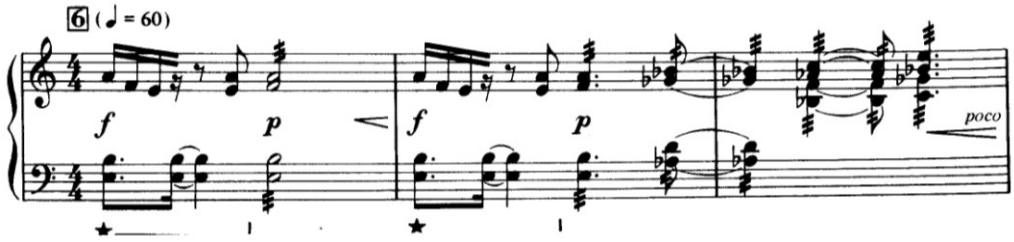


Figure 6. *Marimba Spiritual*, R7.

Next page: Motive c is transposed and varied in the marimba. Wooden instruments in canon accompany the marimba beginning at R7+1. A resultant point of imitation begins in R7+3, b3. Percussion one is followed by percussion two and three at the time interval of one triplet-eighth note. This resultant point of imitation continues to R10. Motive c, transposed and varied, disrupts the canon in the last measure of the figure, (R8-1, b4).

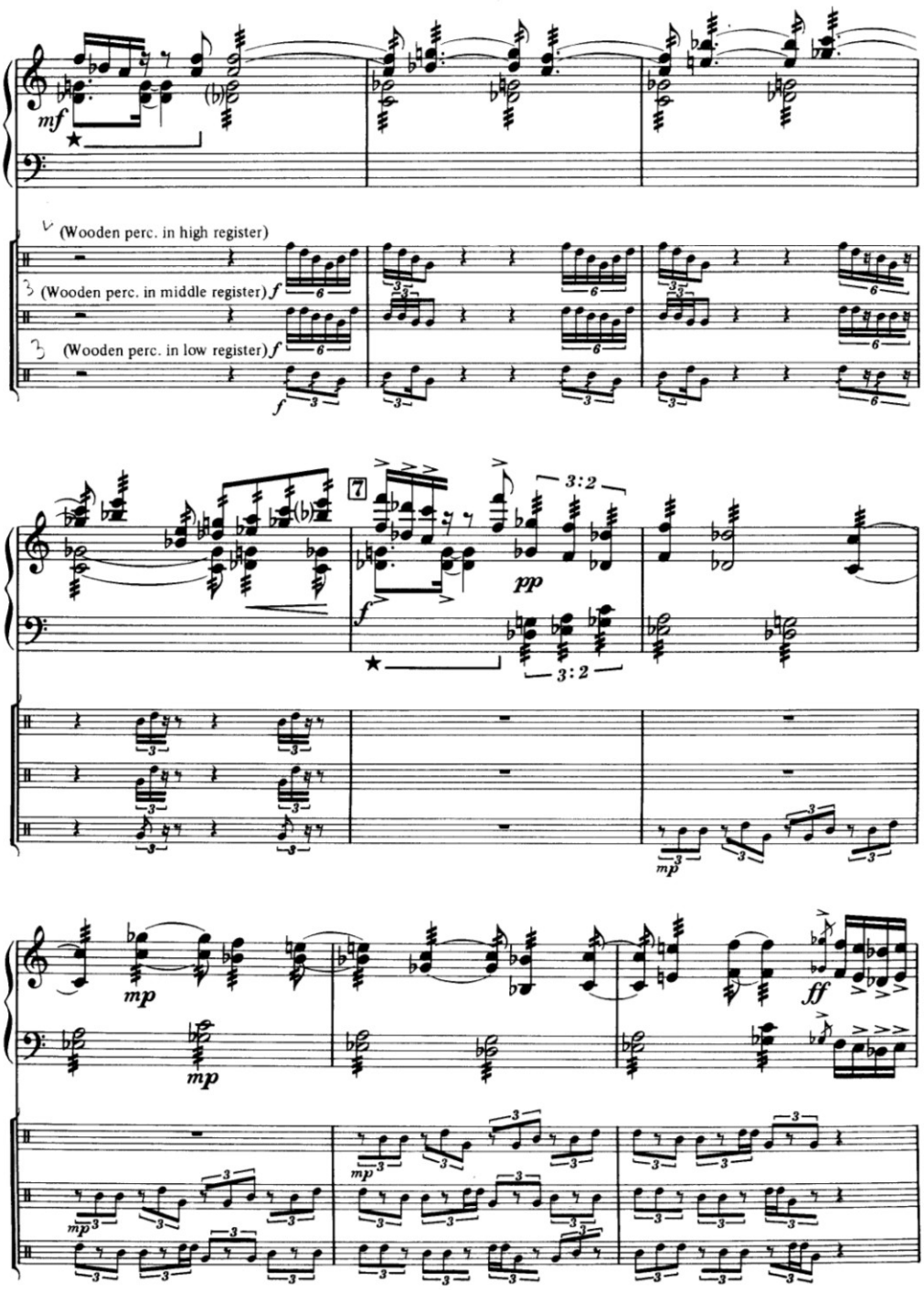


Figure 7. *Marimba Spiritual*, R13-4.

Percussion Refrain and Section A. This figure shows the fifth to eighth measures of the first Percussion Refrain. Rhythmic motives that will be used as accompaniment figures are presented here. These include the perpetual eighth notes and fragments of percussion three's figures. In the marimba part, D as the tonal center is presented and motive d, made up of stepwise perfect fourths, occurs at R13, the beginning of Section A. All of the Resurrection is in four-four meter.

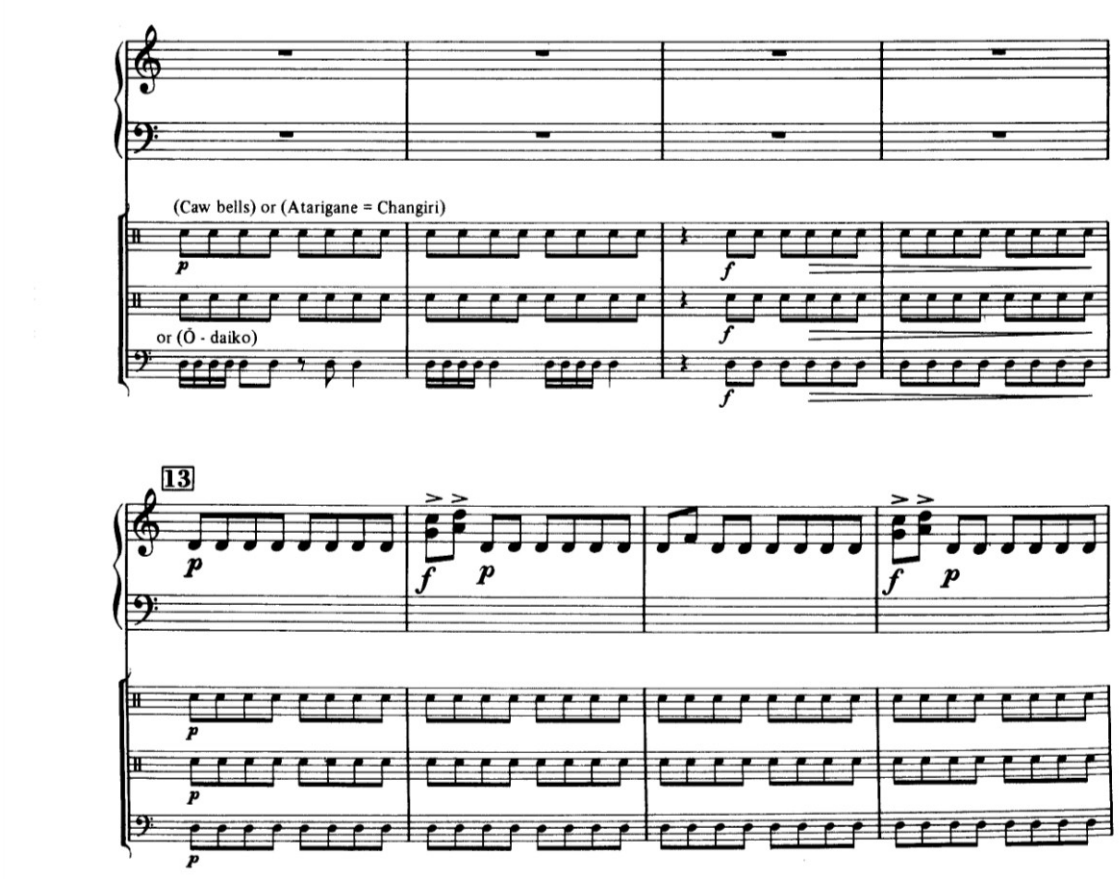


Figure 8. *Marimba Spiritual*, R14-6.

Motive e is presented in the marimba (minor third and major second). Meta-dependent marimba texture (multiple melodic lines in alternating sticking) is used at R14-3 and the following measures. The soprano melody is C-A-G-C-A-G-F-D and is followed by the bass melody in the next measure E-G-A-C-D. Both melodies make use of intervals from motive e. The soprano melody is a mirror inversion of motive e.

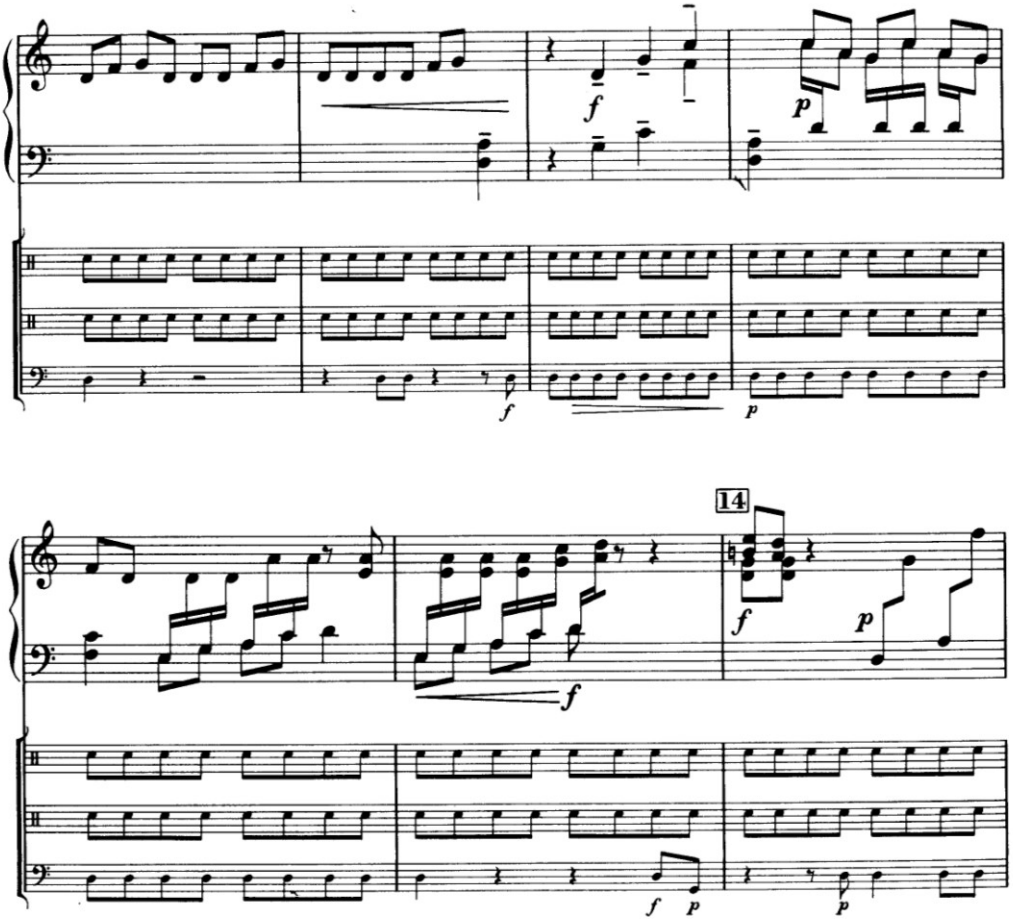


Figure 9. *Marimba Spiritual*, R18-5.

Rhythm of motive a (short-long-short) augmented to the eighth-quarter-eighth level. Harmonic structure based on a pair of perfect fifths in half-step proximity. At R18 melodic and rhythmic motive f is used, but it is still comprised of the A-E and Bb-F pitch material.

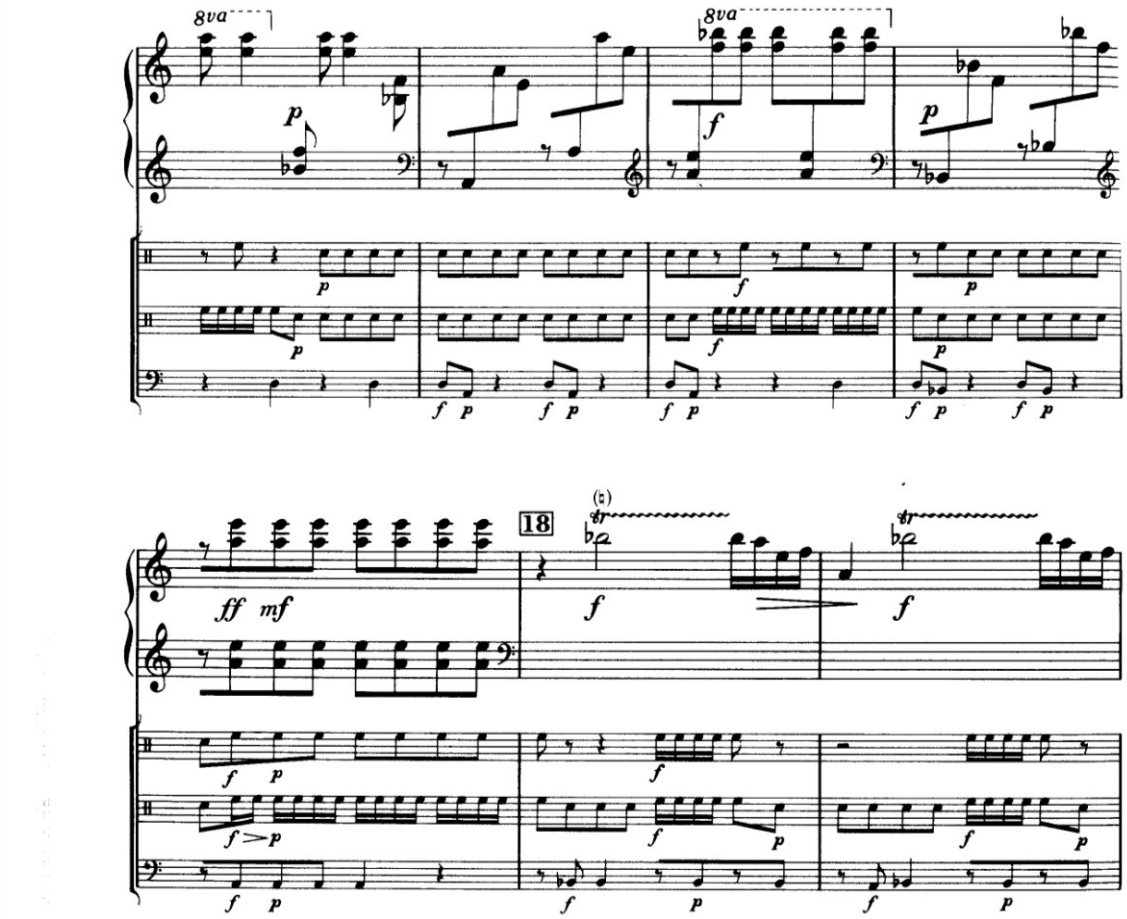


Figure 10. *Marimba Spiritual*, R19+1.

Transposed motive b material is now comprised of G-D and Ab-Eb. The two eighth-note groupings are derived from motive d. Also used is motive a's short-long-short rhythmic content in the third, fifth and seventh measure of the figure.

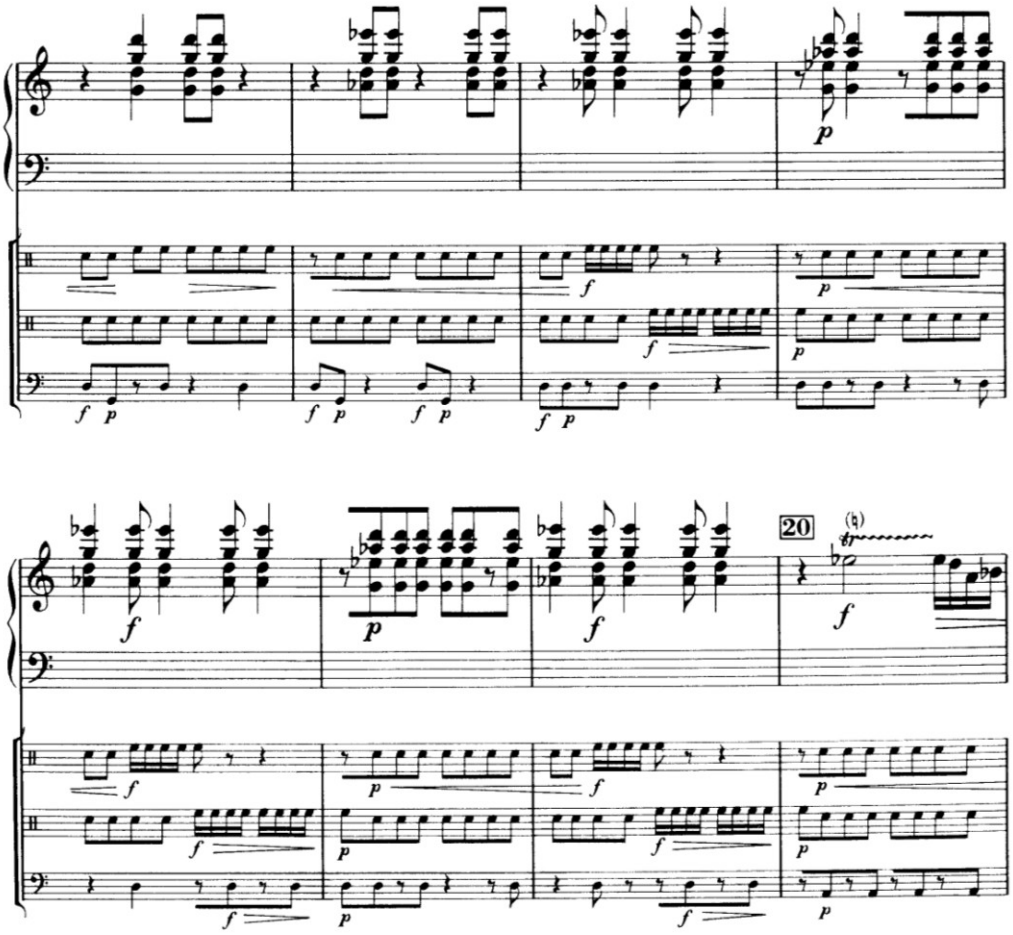


Figure 11. *Marimba Spiritual*, R22.

Next Page: Motive g is presented using meta-dependent texture with soprano voice in right hand and alto voice in left hand. The texture alternates sticking between the hands. Pitch content is based on motive b harmonic-tonal structure (transposed to D-A and Eb-Bb). Each voice (right hand and left hand) makes use of seconds derived from motive a. In the first two measures the soprano line uses the pitch complex D-Eb-G and the alto uses Bb-A. An alternative interpretation of the first measure of R22, might view beats one and two as the upper voice followed by beats three and four as a lower voice. The opposite could be applied to the third measure where the lower voice comes before the upper voice.

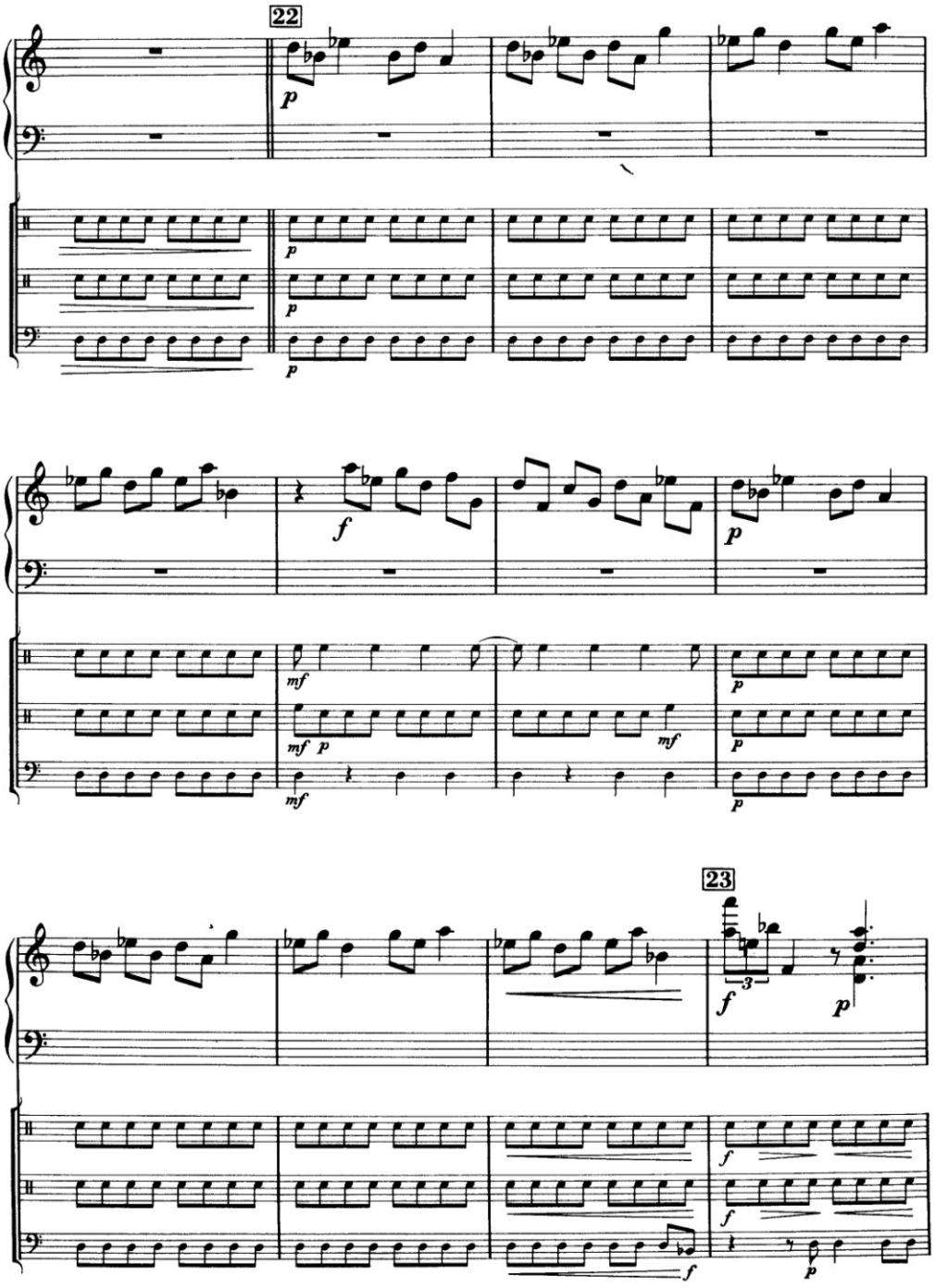


Figure 12. *Marimba Spiritual*, R27.

Motive h in the marimba is presented in planing texture. The pairs of perfect fifths reveal influence of motive b. The Bb-F pulls towards the A-E in R27+2 and maintains the harmonic/tonal structure of motive b. The melodic motion of the consecutive fifths uses motive e's minor thirds and major seconds frequently.

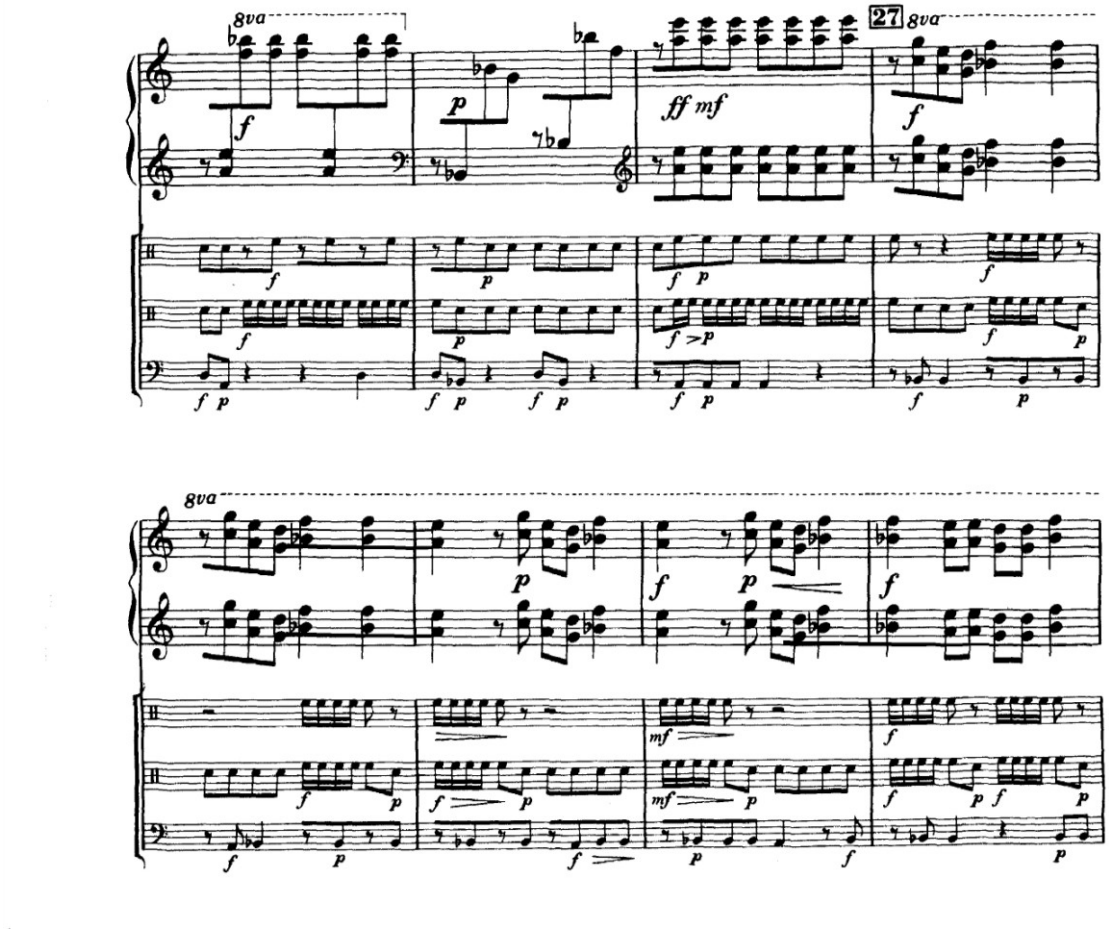


Figure 13. *Marimba Spiritual*, R28.

Parallel motion is discontinued. At R29 the 3+3+3 rhythmic pattern in the left hand is varied from the rhythm of motive c, 3+3+2.

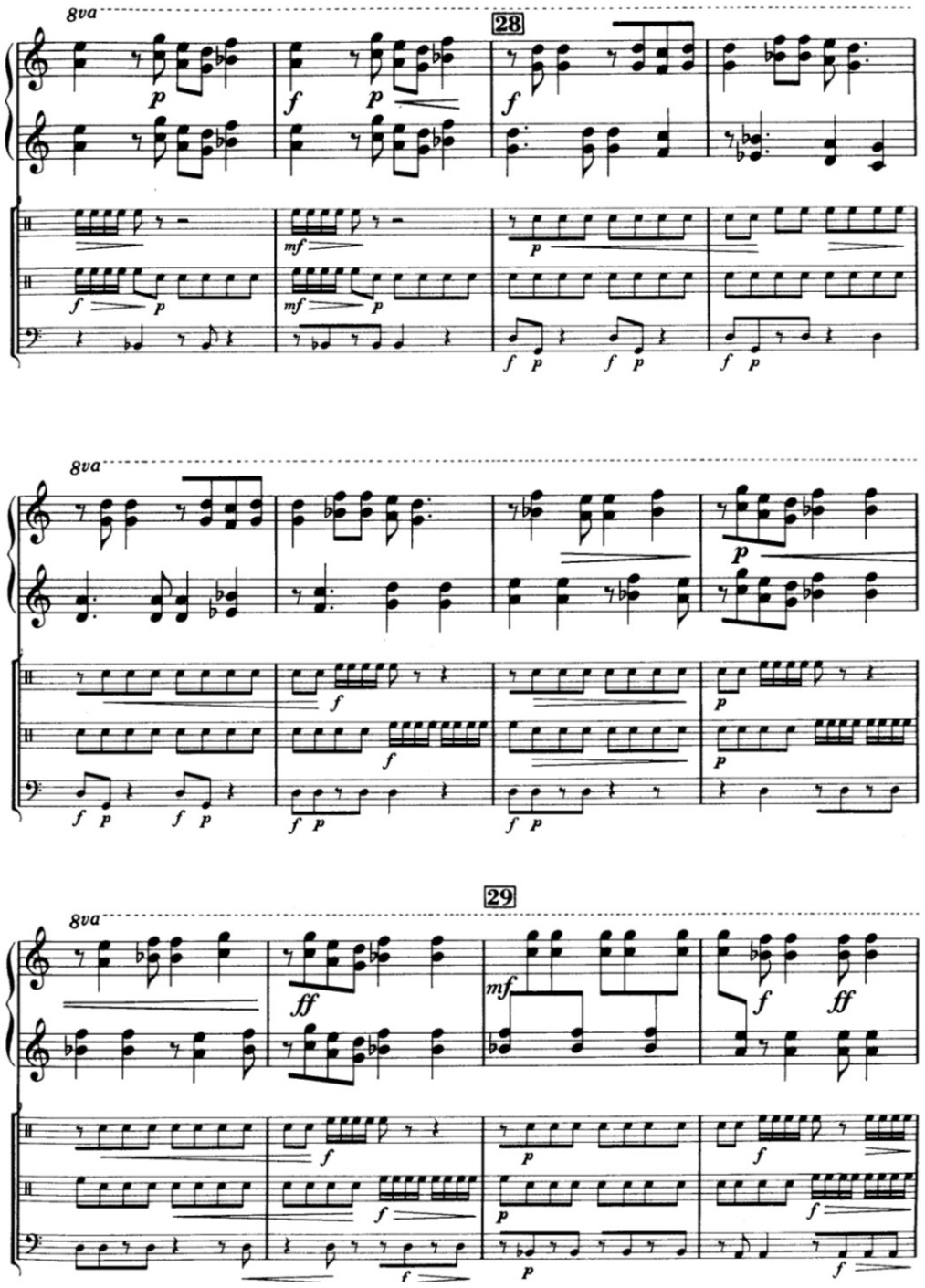


Figure 14. *Marimba Spiritual*, R31+2.

Near the beginning of Section C. Structural contrasts from the previous sections include thinner texture, lower register and less active rhythmic figurations in the marimba part. With a pedal on the pitch D, motive e's minor third is used as well as motive d's ascending and descending perfect fourths.

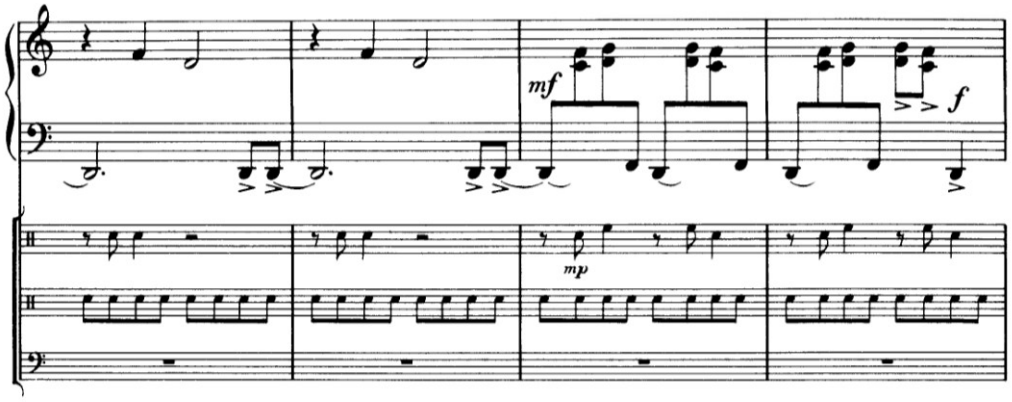


Figure 15. *Marimba Spiritual*, R32.

Rhythmic figure 3+3+2 from motive c appears in left hand. Motive d is used in the right hand.

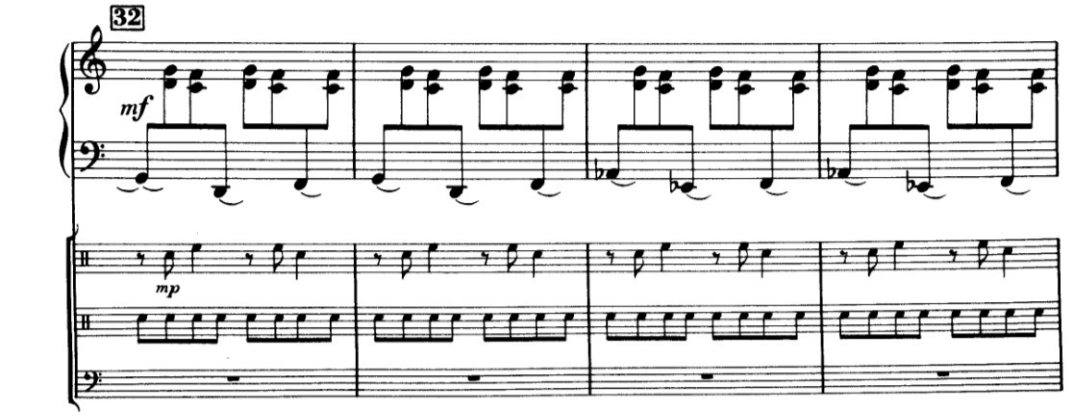


Figure 16. *Marimba Spiritual*, R35.

Harmonic structure based on seconds. Introduces motive i, groups of two eighth notes based on secundal harmony.

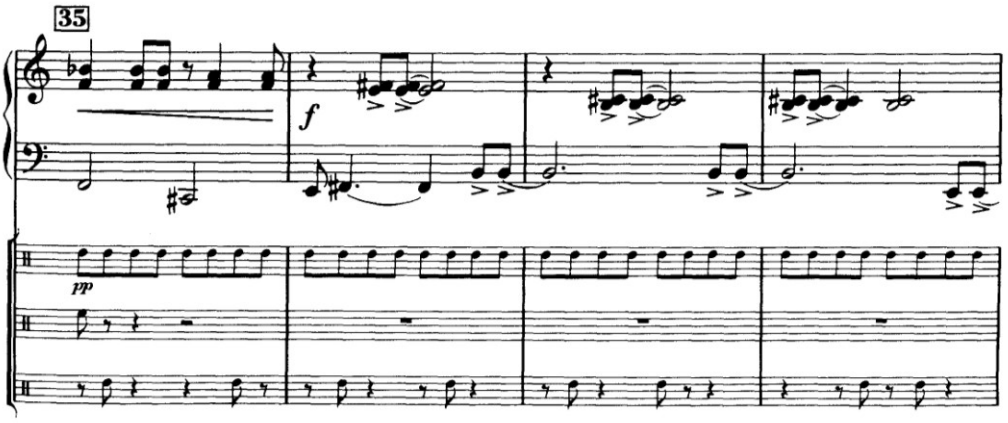


Figure 17. *Marimba Spiritual*, R38+4.

Next Page: Chromatic pitch collection. Secundal harmonic structure intensified by the octave displaced internal half-step below each dyad. Each dyad and single note is sequenced down a perfect fourth until R39-1, where the direction is reversed and the interval content is changed. In that measure perfect fourths still govern the ascent.

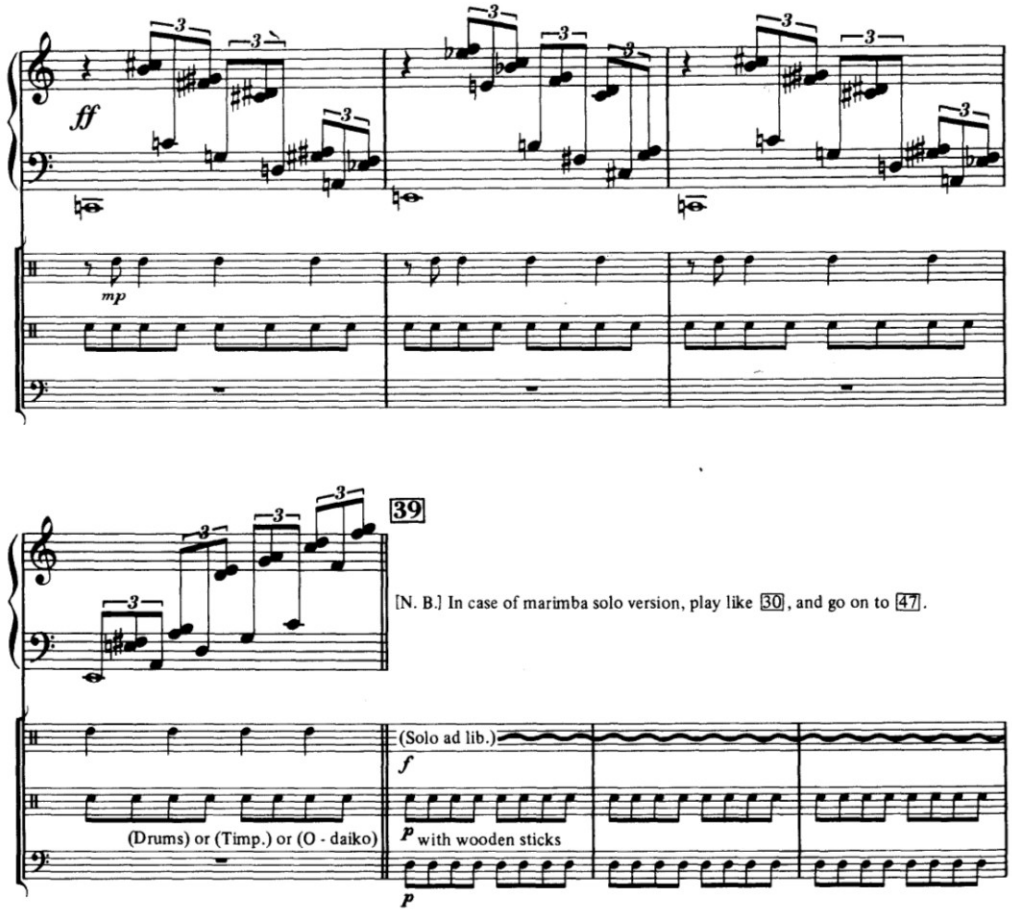


Figure 18. *Marimba Spiritual*, R42.

Drum Episode. Two strata are presented. One is soft and uses eighth-notes, and the other is loud and uses sixteenth-notes. The sixteenth-notes move spatially across the ensemble while each group of four eighth-notes overlaps the succeeding player's eighth-notes.

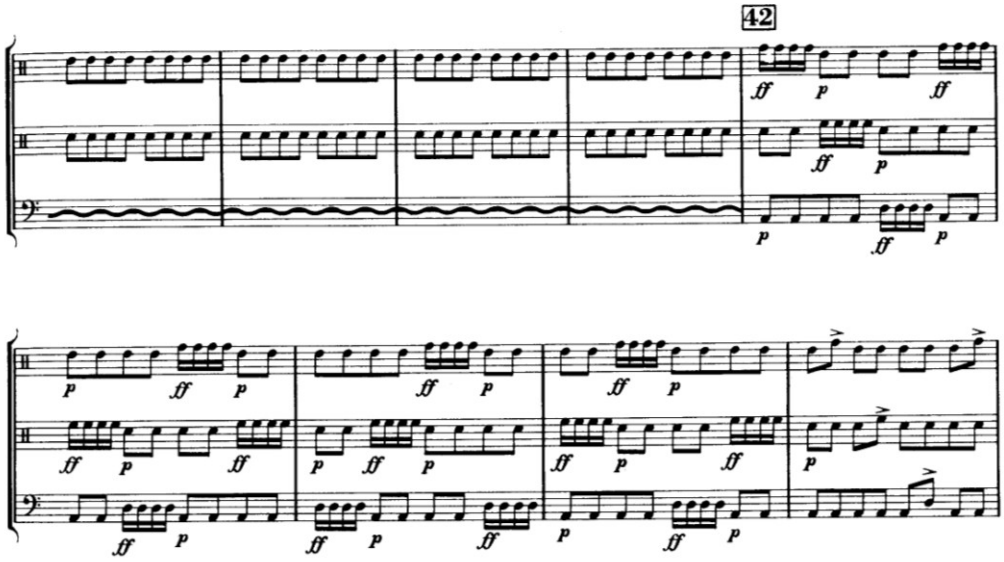


Figure 19. *Marimba Spiritual*, R45.

The conclusion of the drum episode adds vocalizations performed by the percussionists.

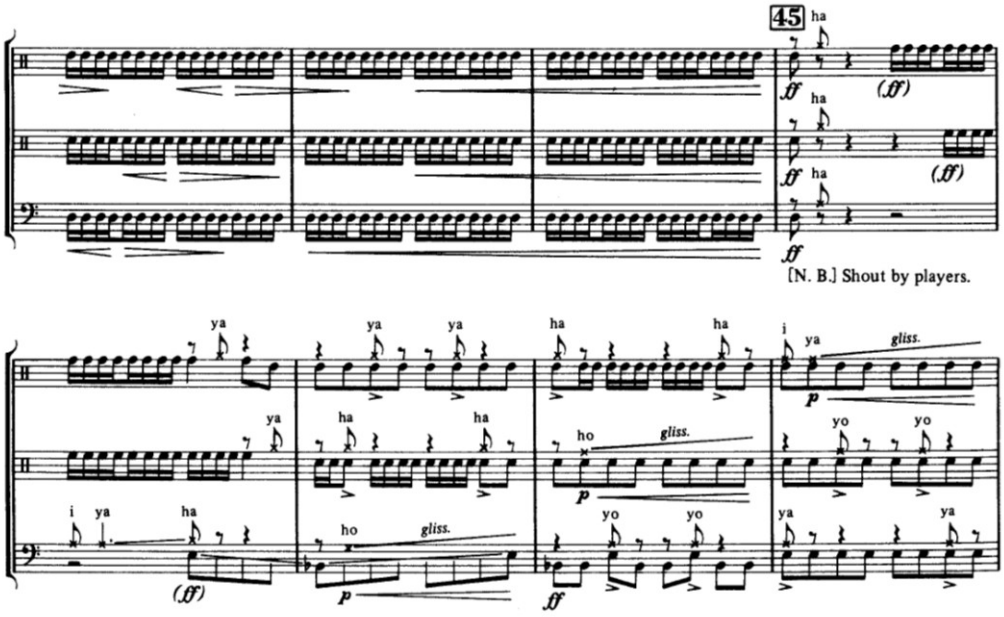


Figure 20. *Marimba Spiritual*, R56.

Paired perfect fourths separated by a whole step constitute the harmonic structure. The alto voice descends, usually by half-step to provide linear connection to the next harmonic structure.

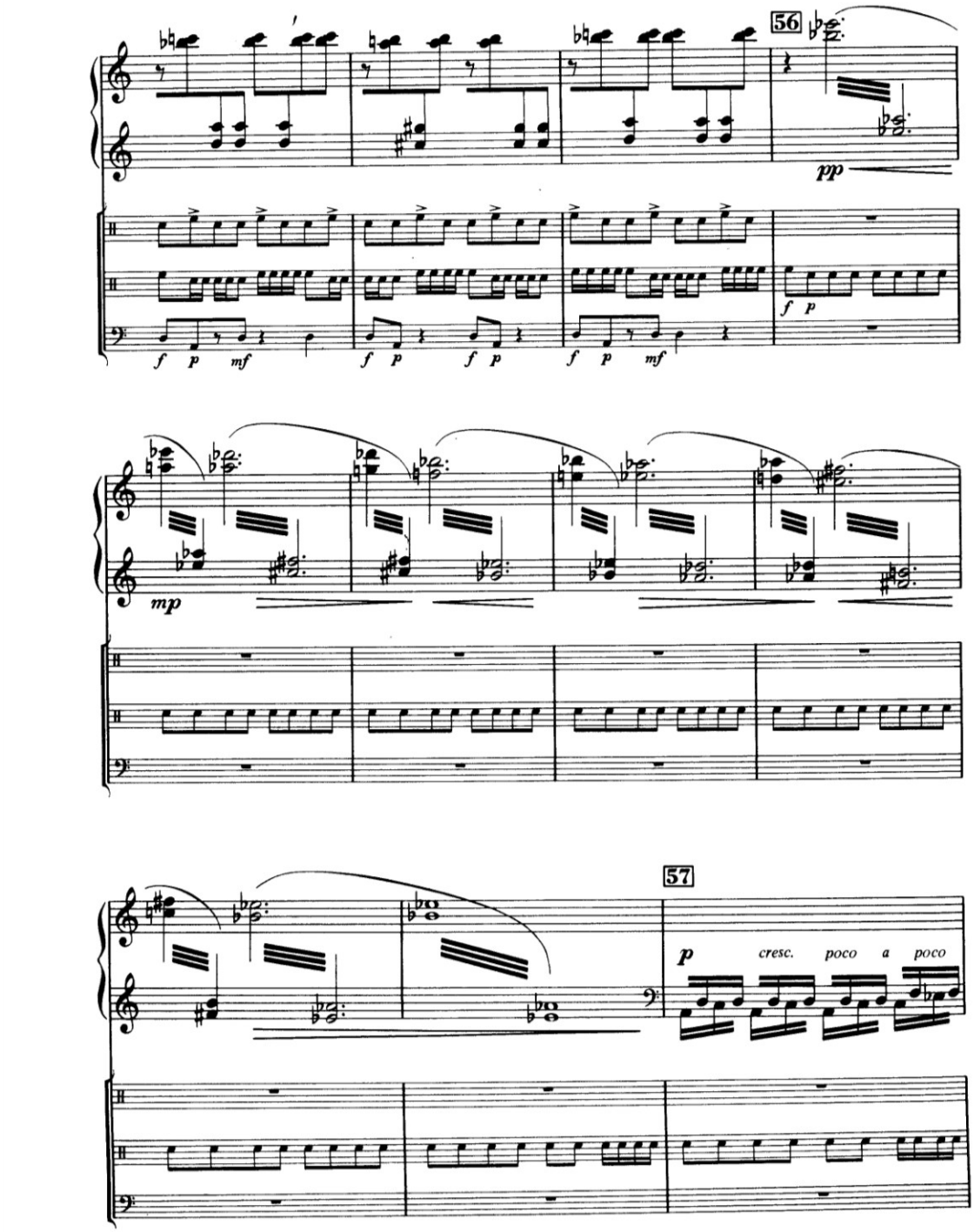
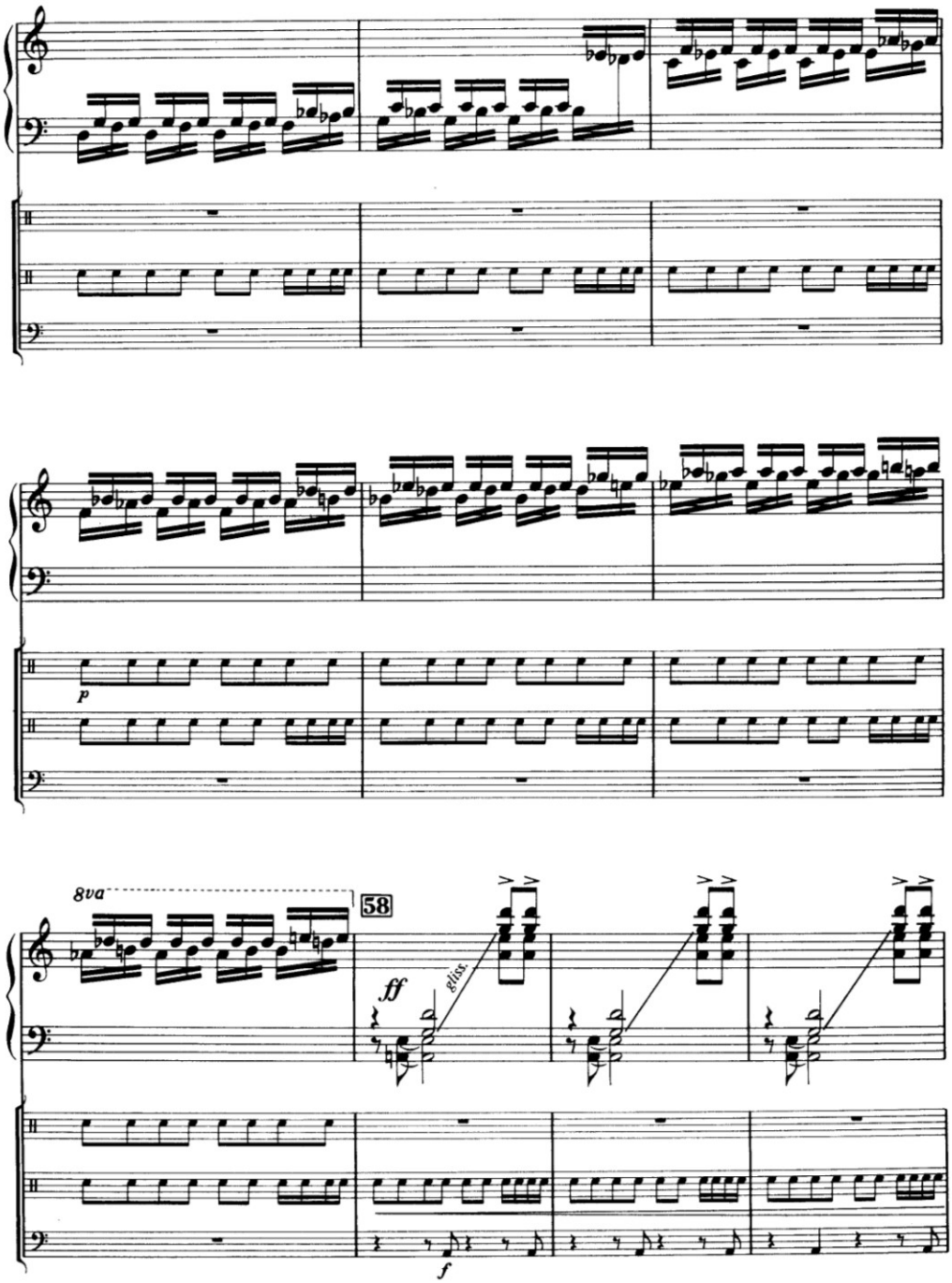


Figure 21. *Marimba Spiritual*, R57+1.

Motive e, minor third and major second, is presented in the right hand (stems up). It is continued from R57 (see fig. 20) and sequenced in the following measures (the beginning of fig. 21).



Performance Problems in *Marimba Spiritual*

Marimba Spiritual is a fifteen minute composition that places the marimba with a percussion ensemble made up of unpitched instruments. This work requires an aggressive and strong sound from the marimbist. In addition, the marimbist performing this work will face a tempo in Part II that will be challenging; it is marked at quarter equals 200 beats per minute. Ensemble sensitivity to balance will help the marimbist by not forcing him or her to overplay dynamically. The player should strive to maintain relaxed and efficient strokes yet energize the sound to match the lively expression of Part II.

At rehearsal 18, in the Resurrection's Section A, the sixteenth-note figure is challenging at the fast tempo (see fig. 9). Two sticking options, of the many possibilities, are suggested. Starting with beat four and moving to beat one of the next measure, the player could employ either 4, 2, 1, 3, 1 or 2, 3, 2, 3, 2. The first sticking uses a double lateral stroke in the middle of the pattern (mallets 2, 1) with mallets 4 and 3 prepositioned over the appropriate pitches. This minimizes shifting along the keyboard.[47] The second sticking uses only single independent strokes and requires more frequent shifting. The first pattern favors reduced shifting, but the second pattern will likely be stronger dynamically because each note is generated from a single wrist motion. The ultimate choice will likely be made by performer skill and preference.

Sticking in the coda at rehearsal 57 (see fig. 20 and 21), will be chosen based on the same kinds of issues. The performer can choose either all single independent stokes (2,3,2,3) to sequence his way through the pattern or combine the single alternating

[47] Shifting refers to movement of the arms along the length of the keyboard. Playing more notes under one arm position or frame can aid accuracy.

strokes of mallets 1 and 2 with the single independent strokes of mallet 3 (1,3,2,3). The latter sticking uses less shifting. A combination of the two might be chosen to facilitate the fourth beat (1,3,2,3/1,3,2,3/1,3,2,3/2,3,2,3).

In Part I being mindful of a roll base is necessary for those rolled passages that coordinate with the rhythmic activity of the ensemble.[48] Specifically in at R7-4 and the measures after R7, the marimba texture is prevailingly rolled while the ensemble plays sextuplet and triplet based figures (see fig. 6 above). The challenge is for the marimbist to maintain the floating, legato, rolled sonority over the metric wooden sounds of the ensemble. Towards that goal, the marimbist needs to have a general awareness of the rhythmic division upon which to base the roll. Typical options for this passage include right hand (or left hand) strokes based on sextuplets, quintuplets or sixteenths with the other hand filling in between the chosen division. The marked tempo is quarter equals sixty, and the ensemble is playing divisions based on the triplet. A roll base of right hand sextuplets could be selected for ease of coordination with the ensemble. The left hand would then fill in between the right hand strokes. The right hand sextuplets could be grouped into two groups of three to coordinate eighth-note chord changes or grouped into three groups of two to coordinate the roll base with the prevailing triplets in the ensemble. However, when right-handed sextuplets are used the overall expression of the marimba part could seem frenetic. Sextuplets work better at a tempo around quarter equals fifty beats per minute. At the marked tempo of quarter equals sixty, right-handed sixteenths or quintuplets are less frenetic in expression but challenge ensemble

[48] Roll base refers to motions used to produce a roll that correspond to divisions of the beat. In marimba performance, the chosen roll base is a division that is fast enough to produce a sustained tone. It is not, however a rigidly adhered to rhythmic division that is unchangeable. In addition to using the roll base to coordinate tempo and rhythm, marimbist use the roll speed, especially changes in roll speed, to affect expression.

coordination. If the marimbist chooses one of these for the roll base, uncoordinated subdivisions of the beat between the soloist and the ensemble will result. Those divisions are less convenient for ensemble coordination but more relaxed in roll speed. A performance speed of slightly under quarter equals sixty would favor the sextuplet base. A performance at the marked tempo would favor the sixteenth or quintuplet base roll. Once a tempo is selected the resulting challenges will need to be addressed. In either case, deviations from the regularity of the roll should be chosen to aid emphasis on certain sonorities, phrasing decisions, articulation nuances, slight tempo variations and the general sense of floating over the sonorities.

Another challenge for the marimbist is to voice figures dynamically in such a way as to project melodically significant motives. At rehearsal 13 and following, three primary voices need to be realized. The pedal D serves to anchor the music on the tonal center. Higher melodic material occurs projecting a soprano voice (three before rehearsal 14) and a lower melodic part projects a bass voice in the subsequent measures (see fig. 7 and 8). In both cases the moving lines on the eighth-note divisions should be projected for their melodic significance. Dynamic emphasis of the single independent and single alternating strokes through mallet height and velocity will aid projection. These kinds of figures occur frequently in Section A of the Resurrection.

Pitch accuracy at rehearsal 23 (see the last measure of fig. 11) can be aided by the player using a snap-shot glance to find A4 and then re-focusing his vision to the center of the instrument. Framing the figure will allow all the first group of pitches to be played without any shifting. This is accomplished by having the right hand play the octave and the left hand play the major seventh, E down to F. Mallet three can then

shift a half-step up to Bb. Both arms can then shift to the new position and frame the next four pitches, D-A and D-A. The player should be mindful of the voice leading from the figure on the first two beats moving to the final open fifths to facilitate the larger shift for this final chord. The Bb played by mallet three shifts a half-step back to the A. It is, however now played by mallet four. The bass line moves by small interval motion from F to D. The larger shift to the open fifths can be facilitated by mentally focusing on the small interval voice leading of A-Bb-A played by mallets 3 and 4. The bass line shifts from F down to D, a minor third. Framed stickings, being mindful of stepwise and small interval connections as well as using snap-shot glances and centralized vision should aid accuracy.

Care must be taken that the glissando at rehearsal 58 (see fig. 21) is audible. The volume of the glissando can be enhanced by starting the ascent as late as possible, moving very quickly along the keyboard while pressing with all four mallets.

The composer states that for percussion three, the part can be realized using *ō-daiko*, or timpani or low and medium toms. If timpani are used, the player must decide how many drums should be used to facilitate the tuning changes.[49] The complete inventory of pitches includes the following ascending from Great E: E, F, G, A, Bb, D, Eb and E. The timpani only occur in the Resurrection at Sections A, B, percussion episode, the recapitulation of A and the coda. If only two timpani are used, the player should use the middle two drums (29 inch and 26 inch). The Great E is a very low pitch for the 29 inch drum, but its appearance is fleeting and occurs only once at the conclusion of a glissando (R30-1). Most of the changes are stepwise and would be

[49] Pitch changes are ignored if toms or O-Daiko are used.

manageable on two drums. The problem with using two drums is that some of the fast changes, especially those that occur after a *forte* stroke and are larger than a step will likely produce an audible glissando (F to A in eighth note rhythm on the same drum at R24+4). This does not seem to be the composer's intent. An alternative solution would be to use three or four drums and minimize the need to pedal so frequently or instantaneously. The following table provides a possible tuning scheme that minimizes the number of changes and attempts to avoid unintended glissandos. The pitches indicate the tuning necessary to play the section from the given rehearsal number.

Table 1. Timpani tuning guide for *Marimba Spiritual*

Rehearsal	**32 inch timpani**	**29 inch timpani**	**26 inch timpani**	**23 inch timpani**
R12	G	A	D	Eb
R17+5	A	Bb	D	Eb
R19	G	Bb	D	Eb
R20	G	A	D	Eb
R22	G	Bb	D	Eb
R24	F	A	D	Eb
R26-2	F	Bb	D	Eb
R26	G	Bb	D	Eb
R26+1	A	Bb	D	Eb
R28	G	Bb	D	Eb
R29+1	G	A	D	Eb
R30	G	A	D	E to Eb
R39 (Drum Episode)	G	A	D	Eb
R45	G	Bb	E glissando down to Bb	Eb
R46 to R55-1 same as R12 to R21-1. It begins and ends with this:	G	A	D	Eb
R55	G	A	D	E

This tuning chart illustrates that all changes are by whole or half step. D, the tonal center of the Resurrection stays on the 23 inch drum. The pitches required for the 32 inch drum include F, G and A. The 29 inch drum uses A and Bb. The 26 inch drum uses D and E and several glissandos in the episode. The top drum uses E and Eb.

The multiple percussion set-ups required for each player are relatively small. Being mindful of the way Miki moves through the instruments can aid in grouping the instruments for set-up purposes. The Requiem uses metallic instruments exclusively for a time and then wooden instruments exclusively. By the end of the Requiem, these instruments are no longer required. The metallic and then wooden instruments can be viewed as a separate station for each player. Part II would require a different station of instruments for that section of the work.

Instrument choice for the metallics and woods should be given careful thought as this will greatly influence the interpretation. One could consider tam-tams of all sizes and shapes, cymbals, triangles and bells for the metallics. Temple blocks, wood blocks, wooden drums, log drums, and cajons are representative of the variety of sounds that could be considered for the woods. Miki's directive for both timbres is registral: high, medium and low. The metallic instruments must have a ringing quality as indicated in the notation for these instruments.

Beaters are not specified in the score and leave room for interpretive decisions. Metallic instruments can be played using a variety of beaters. By example, a small bell could be struck with a small metal beater or an unwrapped keyboard mallet selected from various degrees of hardness. A large gong could use a number of beater types (gong mallet, marimba mallet, triangle beater), all of which would have different

coloring results. A mixed approach could maximize the registral spectrum: small and hard beaters for high pitch, medium hardness and weight for middle register and heavy, softer beaters for low register. Triangle beaters for all metallic sounds regardless of register might be an interesting interpretation. The latter solution would maximize the brilliance of all the sounds. Similar explorations can be applied to the beater selection for the wooden sounds (wrapped or unwrapped, various degrees of hardness or weight and materials like wood versus rubber). Beaters in the Resurrection are subject to the fact that most of the sounds are on drums and require driving and articulate sounds over a broad dynamic spectrum. Medium to small sticks, perhaps timbale sticks, will generate characteristic sounds needed and not overpower the marimba soloist. Slightly larger sticks for percussion three's larger drums will be needed to produce a characteristic tone.

The improvised section of the percussion episode is sometimes performed using more instruments than those notated in the Resurrection. One could infer by notation that only the current instruments of the Resurrection be used. Miki's only directive is, "solo ad lib." Strict notation resumes after the improvised section indicating only the skin instruments (timbales or *daibyoshi* for percussion one, toms for percussion two and drum, timpani or *ō-daiko* for percussion three). Later in the percussion episode at rehearsal 42 and 43, the sixteenths and subsequent accented eighth-notes project a composite drum melody that moves spatially among the players and over the softer eighth-notes. Knowledge of the melodic contour of the *ff* sixteenth-notes and the accented pitches can aid accuracy and precision (see fig. 18). At rehearsal 45 (see fig. 19) the ensemble is asked to add vocalizations to the notated drum parts. This requires

a skill set unusual to western percussion practice. It is recommended that the drum parts and then the vocalizations be learned before putting them together. A sense of vocal abandon seems to be in order. Miki's only instruction is "shout by players." Various vocalizations are used: ha, ya, i, ho and u with a vocal glissando upward.

Off Axis

Off Axis, by Lynn Glassock was composed in 1995. The work had twenty-four PAS program submissions and was performed by the University of Kentucky at PASIC 1996 in Nashville.[50] The composition was dedicated to Michael Burritt, currently percussion professor at the Eastman School of Music.

The instrumentation is unique in that the two vibraphones provide a contrasting pitched percussion color to the marimba. The vibraphones and the solo marimba are the only pitched instruments in the work. The unpitched instruments include various drums as well as metallic and wooden instruments. There is a combination of ringing sounds (low bass drums and tam-tams) short sounds (wood blocks and higher pitched drums) and a broad registral collection of high, medium and low sounds. Specific instrument distribution is as follows:

> Marimba Soloist: Four octaves plus a minor sixth (low pitch is *Great E)*.
> Percussion 1: vibraphone, guiro, snare drum, 2 congas, suspended cymbal.
> Percussion 2: vibraphone, 5 temple blocks.
> Percussion 3: 2 bass drums, 2 medium high tom toms, 2 bongos, 2 metal pipes.
> Percussion 4: 2 tam-tams, 3 wood blocks, 4 low tom toms.

The formal structure of the work is a ternary design, designated as Sections A, B and C. These primary sections are preceded by an introduction and accompanied cadenza and are followed by a solo cadenza and coda. Each primary section, beginning with the introduction, uses a faster tempo that culminates in Section C. Vibraphones are absent in the A and B Sections and the final cadenza. The work includes eight motives that are provided in the figures beginning on page 99: the harmonic motive is in figure 24, the rhythmic motive 3+3+2 is in figure 25, motives a, b, c and d are in figures 26-29

[50] "Programs," Percussive Arts Society, http://pas.org/Members/PRD/programs/SearchPrograms.cfm (accessed October 12, 2008).

respectively, motive e is in figure 30 and motive f is in figure 33. Their specific locations in the work are given in the structural diagram. The introduction and first cadenza make use of the tritone as an important structural interval. The A Section presents the harmonic motive also based on a tritone structure, as well as the rhythmic motive based on a 3+3+2 sixteenth-note pattern. The formal structure of Section B resembles a rondo (a,b,c,a′,d,a). Motives a through d correspond to the rondo sections. Section C begins with the unpitched percussion in dialog accompanied by vibraphone ostinatos with the soloist absent. This is followed by further development of the rhythmic, melodic and harmonic motives between the soloist and ensemble as well as the new motives e and f.

Textural variety contributes to sectionalization at large structural levels. The types include homophonic texture (the ensemble accompanies the melodic/lyric marimba), heterophonic texture (where the unpitched percussion tends to mimic the marimba part with rhythmic and accent similarities and in some cases limited melodic similarities) and dialog texture (where the marimba and ensemble alternate segments from a beat to as much as a few measures). Changes in the number of players, from solo to five, contribute to sectionalization at the larger levels but also at smaller structural units.

The harmonic/tonal structure of the work is constructed using modal, octatonic, synthetic, freely chromatic and whole tone pitch bases. Their locations in the formal structure are indicated in the chart below. Tonal centers are established through repetition of sonorities. Reiteration of harmonic structures gives a sense of tonal centrality. One harmonic/tonal structure, designated as C-Gb, serves as the tonal center

for the work. It emerges in Section A as a specific harmonic motive. This motive appears three times at the beginning of Section A (see fig. 24 for the first appearance). Its significance as the C-Gb harmonic/tonal structure and the implications for the rest of the work lies, at this point, in the combination of Gb and Bb with the pitch C. The tritone relationship, C to Gb, and its eventual nesting within the C octatonic and C whole tone pitch complexes, is exploited throughout the work and serves to construct other motives and thematic material.[51] The addition of a major third above C is used as the piece unfolds. A C major triad is coupled later with a Gb major triad. The root and third of these two triads exist in both the C whole-tone and the C octatonic scale. As such it forms a traditional structure, C7-5 but does not retain its traditional function. The complete triads exist in the C octatonic scale:

Whole-tone: **C**, D, **E**, **Gb**, Ab, **Bb**

C Octatonic: **C**, **Db**, Eb, **E**, **Gb**, **G**, A, **Bb**

Figures 24-27, 29, 35 and 37 show the various melodic/rhythmic configurations of the C-Gb harmonic/tonal structure.

The tritone's presence is noted in the C-Gb harmonic/tonal structure, but its use as a melodic structure is also important. It appears first in the introduction. The melodic descent in the marimba in measures four to seven traverses the following: Do, Ti, La, Fi in F Lydian. Do down to Fi forms a tritone. The accompanying vibraphone also uses the same tritone as part of the long tones in these measures (see fig. 22). The tritone appears in part b of the introduction as the first four pitches of the sextuplets in ascending steps Do up to Fi (see figure 23). Other notable appearances include: F-B

[51] The formal chart below will indicate the various motives connected with the C-Gb structure and their specific locations.

pedal in first cadenza, pervasively as part of the C-Gb structure in Sections A and B and as a frequent melodic interval in the whole-tone, octatonic and freely chromatic marimba figures in Section C (see fig. 30, 31 and 36).

Structural Analysis of *Off Axis*

Introduction

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Part a	1	bmp=66	F Lydian to Gb Phrygian (at ms. 13).	Meter is five-four. Vibraphones create a two bar ostinato using mixed sixteenth-note divisions implying modal areas. Lyrical marimba in longer tones over the busier vibraphone ostinato. Melody is rhythmically irregular with pitch changes on weak metric locations. **Tritone** used as a melodic structure (see fig. 22).	Homophonic: Melodic marimba over percussion long tones from bass drums and tam-tams with vibraphone ostinato. Soft dynamic.
Part b	17	bmp=80	F Lydian to Chromatic mixture (at ms. 27) to G Pentatonic (at ms. 33).	Meter is four-four. Vibraphone ostinato now one bar in length. Rhythmic marimba figuration based on sextuplets. Figures begin with a composite range of a tritone and expand to an octave. Rhythmic tension created by marimba sextuplets versus vibraphone sixteenths (see fig. 23). Irregular phrasing within the sextuplets at mm. 29 and 31coupled with the	Homophonic: Marimba sextuplets over vibraphone sixteenths and percussion long tones. Dynamic arc from soft to loud to soft and correspond to Lydian, to chromatic to pentatonic motion.

				chromatic mixture at ms. 27 adds to further intensification. Rhythmic deceleration and harmonic simplification lead to cadence at ms. 37.	

Accompanied Cadenza

	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
	38	Q=60	C-D pedal with various intervals above and below. Pitch collection: Ab, G, Gb, F, E, D, C, Bb	Marimba melody reflects lyric motive from ms. 5-7 (descending seconds and third).	Marimba, four voiced chordal texture. Soft to moderate in dynamic.
	43		Pitch material implies A minor with some chromatic pitches. F-B tritone pedal in vibraphone from ms. 42 to 51. Cadences on A minor with an added ninth in ms. 54 (see fig. 24).	Rubato scale and arpeggiated figures rising and falling. Rhythm uses mixed divisions accelerating and decelerating.	Homophonic texture: Vibraphone sustains B-F pedal tones. Marimba sustains octave Bs in left hand. Melodic interest in marimba right hand (see fig. 39).

Section A

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Section A	55	Q=92	Presents C-Gb structure as part of Section A **harmonic motive** (see fig. 24). Appears again in mm. 57, 61 and is transposed and	Meter is mixed. Presentation of **rhythmic motive** (see fig. 25) that uses the sixteenth-note accent pattern: 3+3+2. Heard first in marimba and then	Dialog texture prevails: Marimba alternates with the percussion. Drum and guiro sounds of players 1 and 3 are paired against the wooden sounds of players 2 and 4.

			varied in 63, 67 and 69. (See the last measure of fig. 25 for a transposition of the harmonic motive on beat one and a transposition that uses varied interval structure on beat three.)	echoed by percussion in ms. 61. Ms. 63 uses a permutation, 3+2+3 between marimba and ensemble on beats 3 and 4 (see fig. 25). 3+3+2 also appears in 64 and 70.	Dynamics increase in intensity. Percussion sounds are dry and high in register and rich in timbral nuance: with brushes the player is instructed to swish, tap, scrape or produce rim shots; with the fingers the player is to tap or produce a hum on drums by rubbing; and players are to use medium and hard yarn mallets on the blocks.

Section B (Rondo: a, b, c, a', d, a)

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Part a	71	Q=112-120	C-Gb structure exclusively within C octatonic pitch collection.	Four-four meter. Uses **Motive a** (see fig. 26). Ms. 71 contains five three- note accent groupings (1+3+3+3+3+3) in marimba part. Rhythmic Motive 3+3+2 appears six times in six measures. Other rhythmic groupings based on 3 and 4 note accent patterns contribute to rhythmic irregularity.	Three voiced heterophonic texture: marimba and two percussion playing drums. The percussion parts support the accent patterns of the marimba. Percussion sounds produced by hands or hard yarn mallets. Use of low toms matches low register of marimba.
Part b	77	Same	C-Gb structure within C octatonic plus D natural.	Mixed meters constructed of 2 and 3 sixteenth note units. Melodic activity	Four voiced heterophonic texture: marimba and three percussion all

				centers around a C-E dyad using **Motive b** (see fig.27).	playing drums. Adds new timbre: brushes on drums. Percussion supports continuous sixteenths and/or accents of marimba.
Part c	86	Same	New synthetic pitch collection that mixes two tetrachords: D major and Ab minor. By ms. 92, the pitch collection includes a *C*. Climaxes at 100 with dyads derived from C and Gb triads within C octatonic.	Mixed meters. Addition of thirty-second note figures in percussion adds intensity to the section. **Motive c** melodically emphasizes G-B dyad at ms. 87 and following. (see fig. 28). By measure 92 a C-E dyad is focal. Climax in ms. 100 is unison accents from all percussion in support of marimba in high register. In ms. 102, solo tom-tom transitions to Part a′ using 3+2+3 accent variation.	Four voiced heterophonic texture, with fifth voice acting to support ensemble intrusions on marimba part in mm. 87, 89, 92, 94 and 97. Each intrusion crescendos or is louder than the surrounding events. New to this section is the addition of temple blocks. Articulations in ensemble are short drum and wood sounds. Dynamics generally build towards climax.
Part a′	103	Same	C-Gb pitch structure returns with addition of Ab and D to the C octatonic collection.	Return of material similar to motive a. Now four-four meter is mixed to include five-four. In ms. 103 accent groupings now varied to 2+3+3 on beats 1 and 2 and again on 4 and 5. In ms. 104 3+3+2	Texture returns to three voices in heterophony like before (marimba and two drums). Dynamically *mp*. Low register toms and marimba correspond to ms. 71.

				pattern shifted to begin on beat 4 and in ms. 105 changes to 3+2+3 beginning on beat 2.	
Part d	109	Same	C octatonic pitch collection plus D natural.	Mixed meter using groups of 2, 3, and 4 sixteenth-notes. Uses **Motive d** (see fig. 29) with melodic emphasis on new dyads Bb-Db and E-G, still members of the Gb and C major triads. By ms. 112 emphasis returns to C-E or C-G dyads.	Four voiced heterophonic texture with fifth voice acting to support ensemble intrusions that become longer and louder and are rhythmically based on sixteenth-notes grouped into threes (mm. 110, 112, 116, 118-120). Climax at ms. 122 changes to solo marimba texture and a three and one-half octave melodic descent. Some reference to 3+3+2 accent pattern.
Transi-tion	124	Same	Section A harmonic motive from ms. 55 returns, C-Gb, same intervals and register.	Rhythmically varied from original.	Solo Marimba only. Dynamically *F*.
Part a	126	Same	C octatonic exclusively. Recapitulation of harmonic and tonal materials. Mm. 126 to 130 correspond to mm. 71 to first two beats of measure 75.	Same as ms. 71. At ms. 131 begins a melodic ascent achieved by repetition each time an octave higher. Three statements of 3+3+2 accent patterns, one for each measure.	Same as ms. 71. Texture is three voiced heterophonic. At ms. 131 a crescendo accompanies marimba's registral ascent and an additional drum voice mimics marimba's beat

					four.
Transi-tion	134	Bmp= 132	C7-5. Harmonic material doubled by marimba and vibraphone. Same pitch, rhythm and register.	Meter is four-four. Continuous sixteenths with beat accents. Sets up harmonic pedal for drum episode.	Marimba decrescendos while vibraphone crescendos. First use of vibraphone since introduction and cadenza.

Section C

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Drum Episode (16 ms.)	138	Bmp= 132	Harmonic rhythm in four measure units: 138: C7-5. 142: E7. 146: B-5. 150: C7-5. These are conveyed through vibraphone ostinatos derived from Section B, motive b.	Meter continues in four-four. Dialog between players 3 and 4. Unpitched percussion instrumentation of the episode follows the four measure harmonic units: metallics, drums, drums, metallics. Complex gapped divisions in percussion based on beats of 3, 4, 5 or 6 subdivisions. Reference to 3+3+2 in percussion 3 in ms. 147 augmented to the eighth-note level (see fig. 42).	Vibraphones provide harmonic base while unpitched percussion instruments have primary parts in complex rhythmic interplay (see fig. 42). Dynamic, prevailingly loud.
Marimba re-enters	154	Same	Vibraphone C7-5 ostinato figuration. Marimba passages are in C whole tone or are freely chromatic over	Use of **motive e** (see fig. 30) with references to the tritone. Use of 3+3+2 motive in ms. 156.	Texture is homophonic: marimba and unpitched percussion interact over vibraphone and conga

			vibraphone ostinato.		accompaniment. Alternations vary in length.
	160	Same	Vibraphone C7-5 ostinato figuration continues.	Use of motive e′ (see fig. 31) with second inserted between tritone. Each figure is rhythmically longer than before. Ms. 162 uses 2+3+3 permutation.	Same
	164	Same	Vibraphone C7-5 ostinato figuration continues until ms. 166.	Rhythmic motive augmented to 3+3+2 eighth-notes in ms. 164 followed by irregular augmentation in ms. 165 into 5+6+7 sixteenths. Interval span of each accented figure expands (see fig. 32).	Same
	168	Same	Vibraphone ostinato now using Ab, Bb, C, D whole tone segment (began at ms. 166). Outer pitches form tritone. Pitch content in all parts is C whole tone.	**Motive f** (see fig. 33) used by marimba. The texture is broken dyads with upper note as melody. At ms. 169 marimba superimposes accent pattern that conveys six-eight meter. At ms. 171the marimba broken dyads change to single line melodic passages akin to motive e. Many references to 3+3+2 accent	Texture is 3 voiced homophonic: Marimba with conga and vibraphone.

				pattern in whole or part. At ms. 174 appears a 3+3+2 reference in augmentation at the eighth-note level.	
	176	Same	Vibraphone ostinato uses Eb, Db, A, G. Pitch content in all parts use Db whole-tone.	Marimba figuration similar to vibraphone ostinato but with variations at the end of each measure that emphasize tritones, accents are primarily on beats in all parts (see fig. 34).	Texture adds low tom played with fingers for 4 voices.
	180	Same	C octatonic fragment in vibraphone and Marimba. Emphasis on dyads derived from C and Gb triads return.	Melodic reference to Section B, motive b returns. Accents develop 3+3+2 in marimba. Elongated statement of this idea appears in ms. 183 with 3+3+3+3+2+2 in sixteenth-note accent pattern in marimba.	Texture adds medium tom struck with fingers to bring in all five players. All ensemble members play accented down beats and continuous sixteenth-notes. Soloist varies accent pattern. Soloist at *ff* , ensemble at *mf*.
Climax of C Section	184	Same	Marimba arpeggiates C7-5 in syncopated, descending dyads.	Percussion plays complex mixture of rhythms based on beats divided into triplets, sixteenths and sextuplets (see fig. 35).	Dialog texture between marimba and ensemble. Percussion 3 and 4 now use sticks on drums for dynamic climax.
Conclu-sion of Section C:	188	Same	Vibraphone and marimba use Gb whole tone exclusively.	Meter is three-four. Marimba uses broken dyad texture of motive f	Homophonic texture returns but thins to ringing vibraphone

slacken-ing of energy.			Vibraphone has a two-measure ostinato.	until ms. 198. The dyads are constructed of tritones and are a step apart (see fig. 36). Marimba figuration at ms. 199 is C7-5. The phrase structure from ms. 188 is 2+3 measures followed by 3+4 measures creating a sense of expansion/slowing of motion. At ms. 198 the sixteenth-note melodic grouping is 3+3+3+3.	ostinato in eighth-notes with ringing tam-tam scrapes. Marimba layers a contrasting melodic figure over vibraphone figure.

Cadenza

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Cadenza	205	bmp= 60	Pitch content from C Octatonic, C Whole-tone.	Rubato, figures are reminiscent of previous material. At ms. 211 marimba arpeggiates a C7-9 by inversion coupled with an accelerando.	Marimba only. Dynamics are mixed.

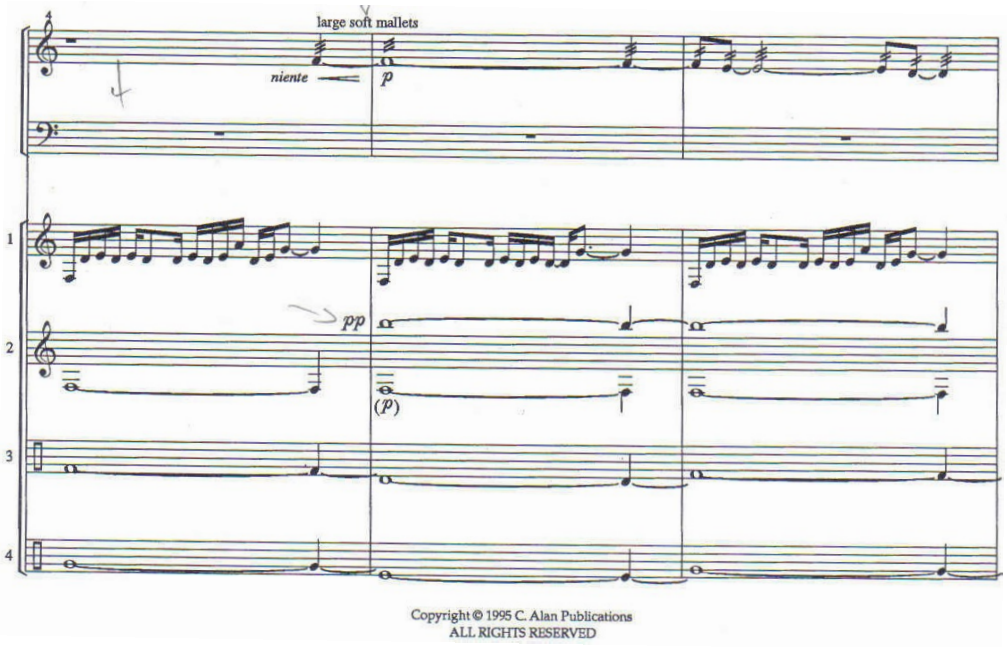
Coda

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Coda	215	Dotted Q=50	Vibraphone ostinato uses C7-9 (no 5^{th}) and Motive b as accompaniment to marimba. Marimba material is based on Section A harmonic motive from ms. 55. Pitch complex is a synthetic mixture of C whole-tone, C octatonic and C major.	Meter is twelve-eight. Marimba melodic material in soprano voice uses fragment of C major (Do, Re, Me, Fa, Sol). This is in contrast to the scalar base of the vibraphones and marimba left hand part. Melodic material vaguely reminiscent of lyric motive.	Primarily two part texture: vibraphone ostinato with marimba rolled chords. Long sounds from tam-tam and second vibraphone.
	220	Same	Vibraphone ostinato uses Gb whole tone. Marimba harmonic structure still based on Section A harmonic motive (see fig. 37).	Same	Same
Conclu-sion	221	Q=72	Harmonic rhythm presents one chord per measure: 221: C7sus4, 222: C7-5 plus Ab, 223: C7 no 3^{rd}, 224: open 5ths: C-G.	Meter is six-four. Arpeggiated figures in marimba accompanied by slower paced arpeggiated figures in vibraphone (see fig. 37).	Two voice texture, vibraphone and marimba. Soft dynamics. Vibraphone sounds ring through each chord in harmonic agreement with marimba.

Figures for *Off Axis*

Figure 22. *Off Axis*, ms. 4.

Introduction, homophonic texture presents lyric marimba that descends a tritone. Two bar ostinato in vibraphone one and tritone in vibraphone two, ms. 5-6.



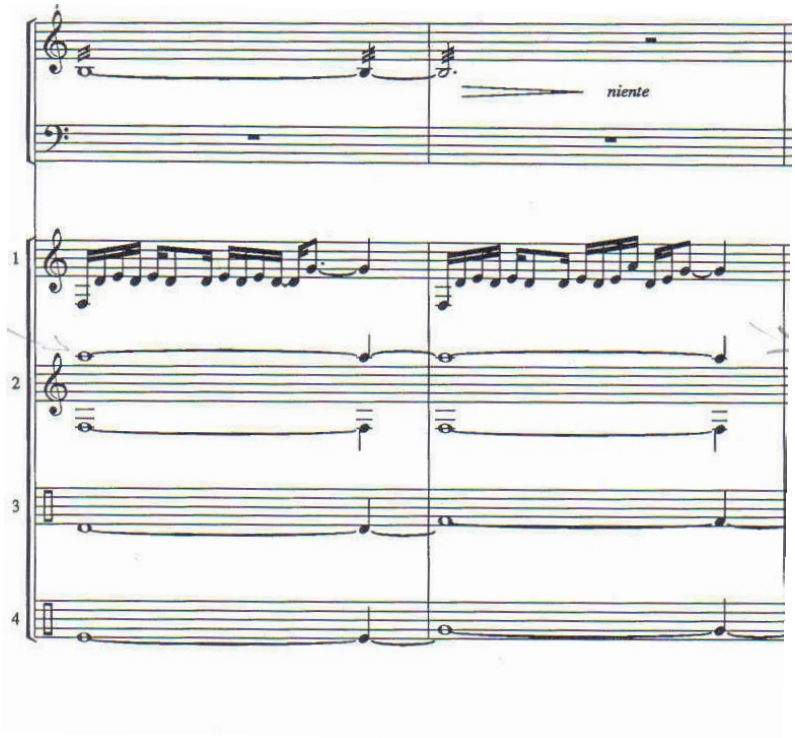


Figure 23. *Off Axis*, ms. 22.

Introduction, sextuplet figuration motive. Tritone in marimba's first four pitches of sextuplet and between vibraphone one and two on beats one and three.

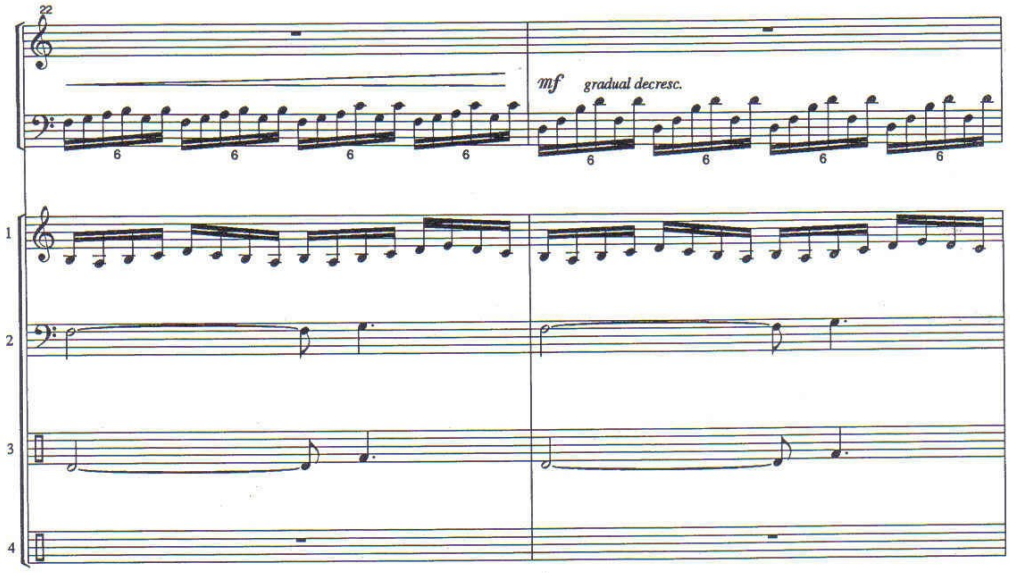


Figure 24. *Off Axis*, ms. 54.

Section A: Harmonic Motive at measure 55. This specific voicing returns throughout the composition and is the source of the C-Gb harmonic/tonal structure. Dialog texture is used in measures 55-56.

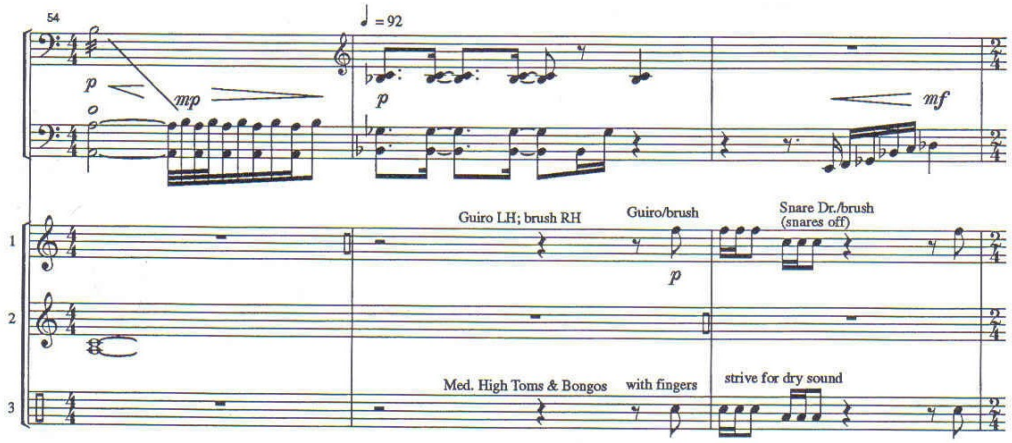


Figure 25. *Off Axis*, ms. 61.

Section A: Rhythmic Motive, 3+3+2 sixteenth-notes at measure 61 in marimba and echoed by ensemble. This structure, based on combinations of 2 and 3 sixteenth-note accent patterns, will appear fragmented, augmented, permutated (re-ordered), shifted to various metric locations within the measure and combined with larger groups of four or more sixteenths to provide much rhythmic variety over the course of the work. A 3+2+3 permutation appears at the end of measure 63 between marimba and ensemble. In this measure the harmonic motive appears transposed on beat one and transposed again with intervallic variance on beat three.

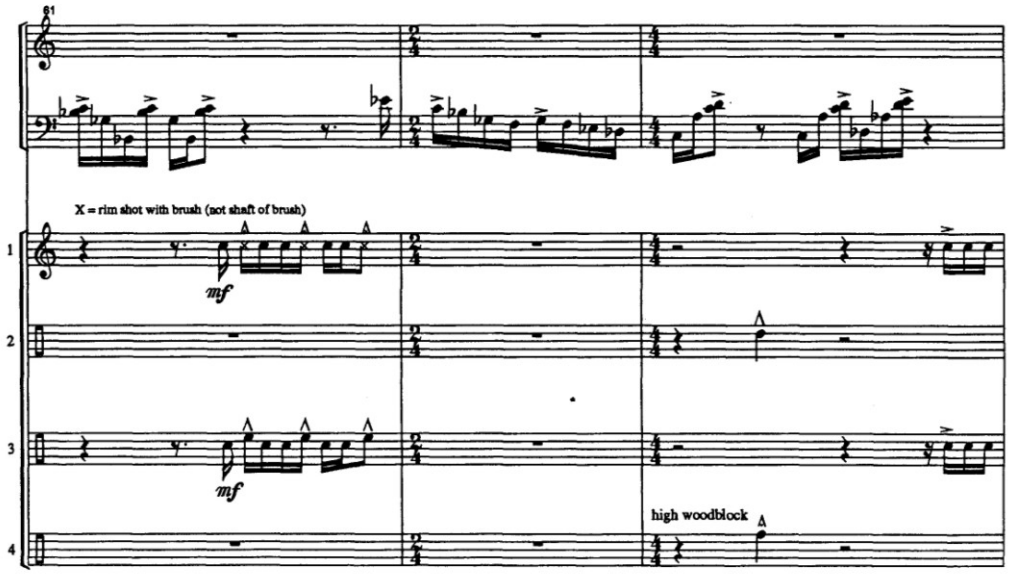


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Figure 26. *Off Axis*, ms. 71.

Section B, motive a at measure 71. It uses the C-Gb harmonic/tonal structure within the C octatonic scale. In this figure the structure uses the C and Gb triads exclusively. This figure also illustrates heterophonic texture (see caption for figure 29). The rhythmic motive 3+3+2 appears three times at the end of this figure.

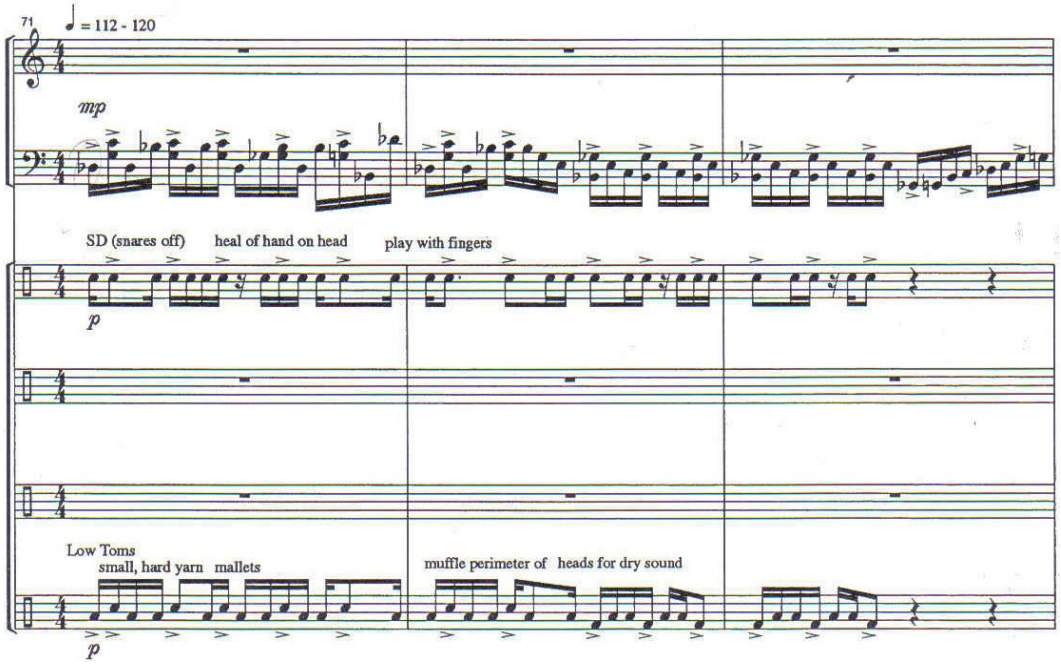


Figure 27. *Off Axis*, ms. 77.
Section B, motive b at measure 77. The motive uses the C-Gb harmonic/tonal structure within the C octatonic scale plus D natural.

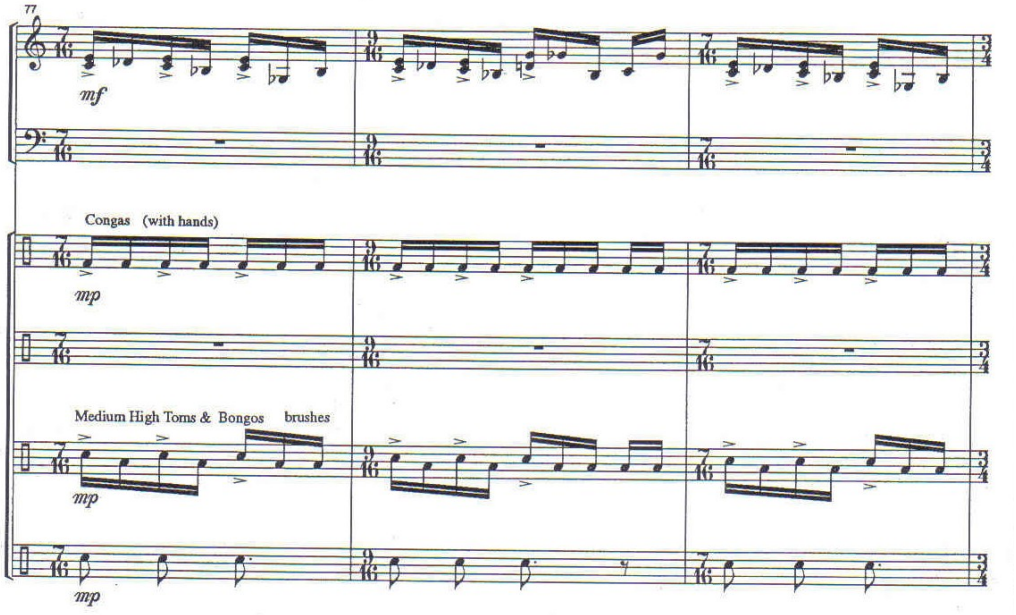


Figure 28. *Off Axis*, ms. 86.

Section B, motive c at measure 86. Uses synthetic pitch content based on two tetrachords: D Major and Ab minor. The tetrachords are tritone related.

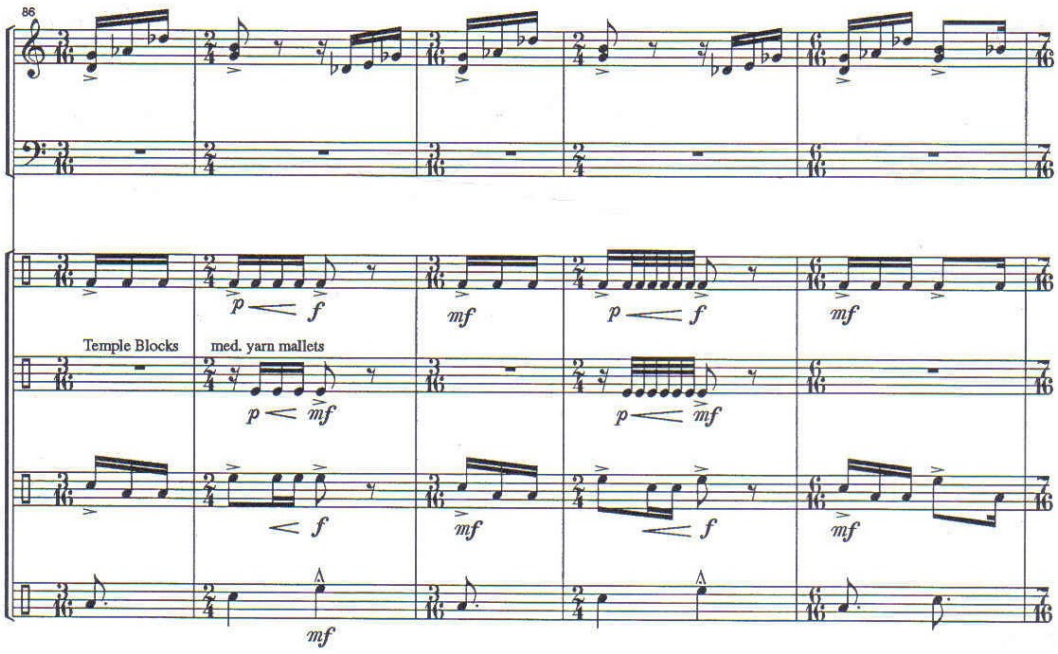


Figure 29. *Off Axis*, ms. 109.

Section B, motive d at measure 109 and following. C-Gb harmonic/tonal structure within C octatonic plus D natural. This figure illustrates heterophonic texture with ensemble intrusions. For purposes of this study, heterophonic texture is where the unpitched percussion tends to mimic the marimba part with rhythmic and accent similarities and in some cases limited melodic similarities.

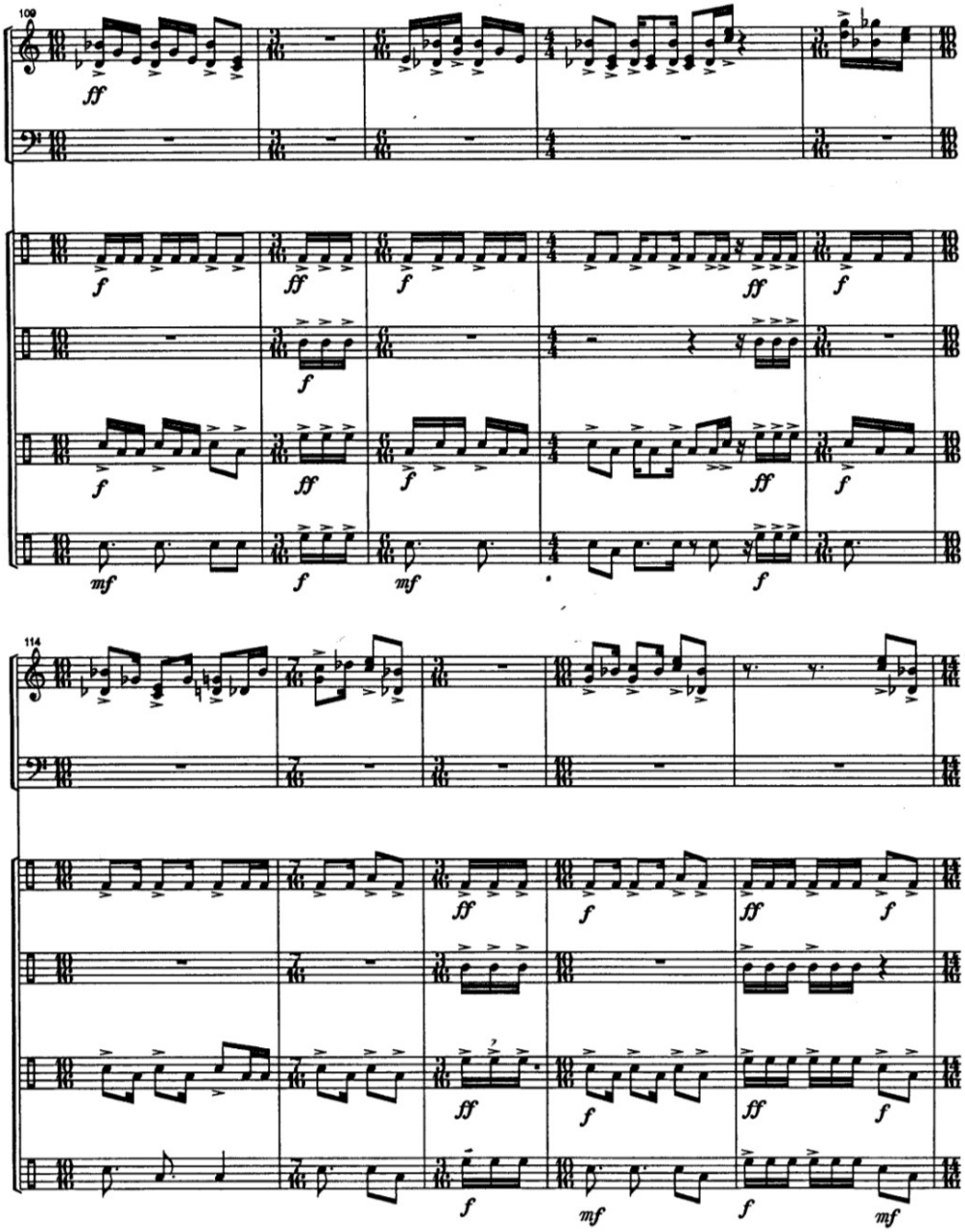


Figure 30. *Off Axis*, ms. 154.

Section C, motive e at measure 154. The motive uses a second, thirds and a tritone over a frozen harmonic base (C7-5). In this excerpt tritone usage appears in measure 154 beat one and two (E-Bb and D-Ab), measure 155 beat three (D-Ab) and the third and fourth beats of measure 156 (Ab-D and Gb-C). The rhythmic motive 3+3+2 appears at the end of 156.

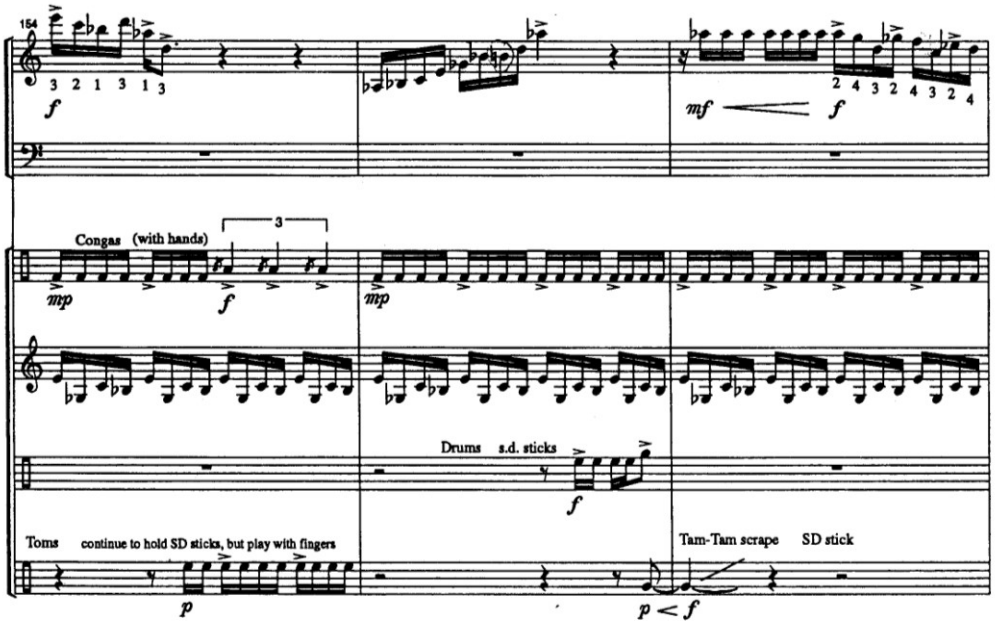


Figure 31. *Off Axis*, ms. 160.

Section C, motive e′ at measure 160 and following. The tritone with an adjacent second attached to the bottom pitch serves as a generative structure with successive figures growing longer rhythmically.

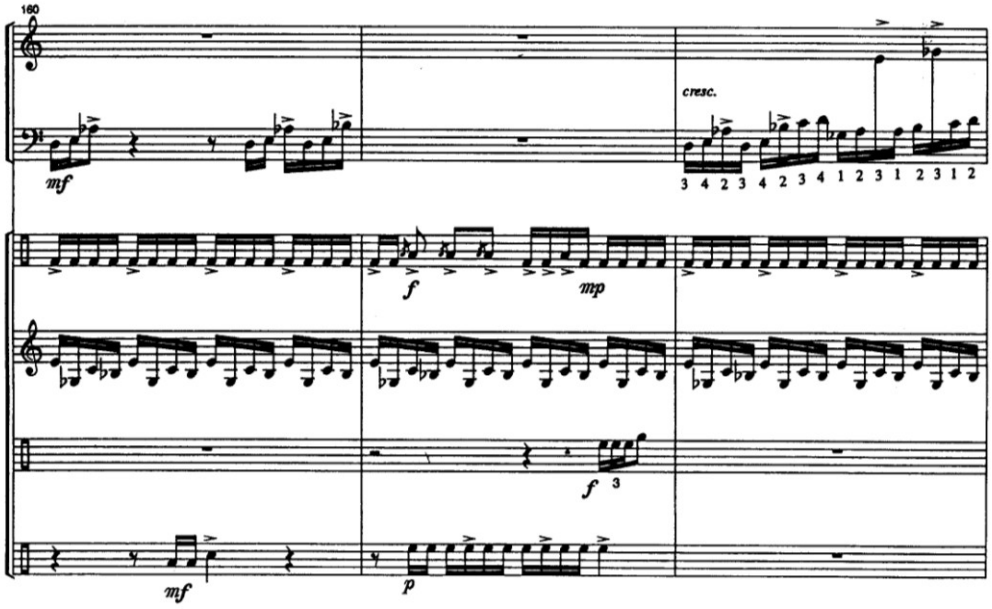
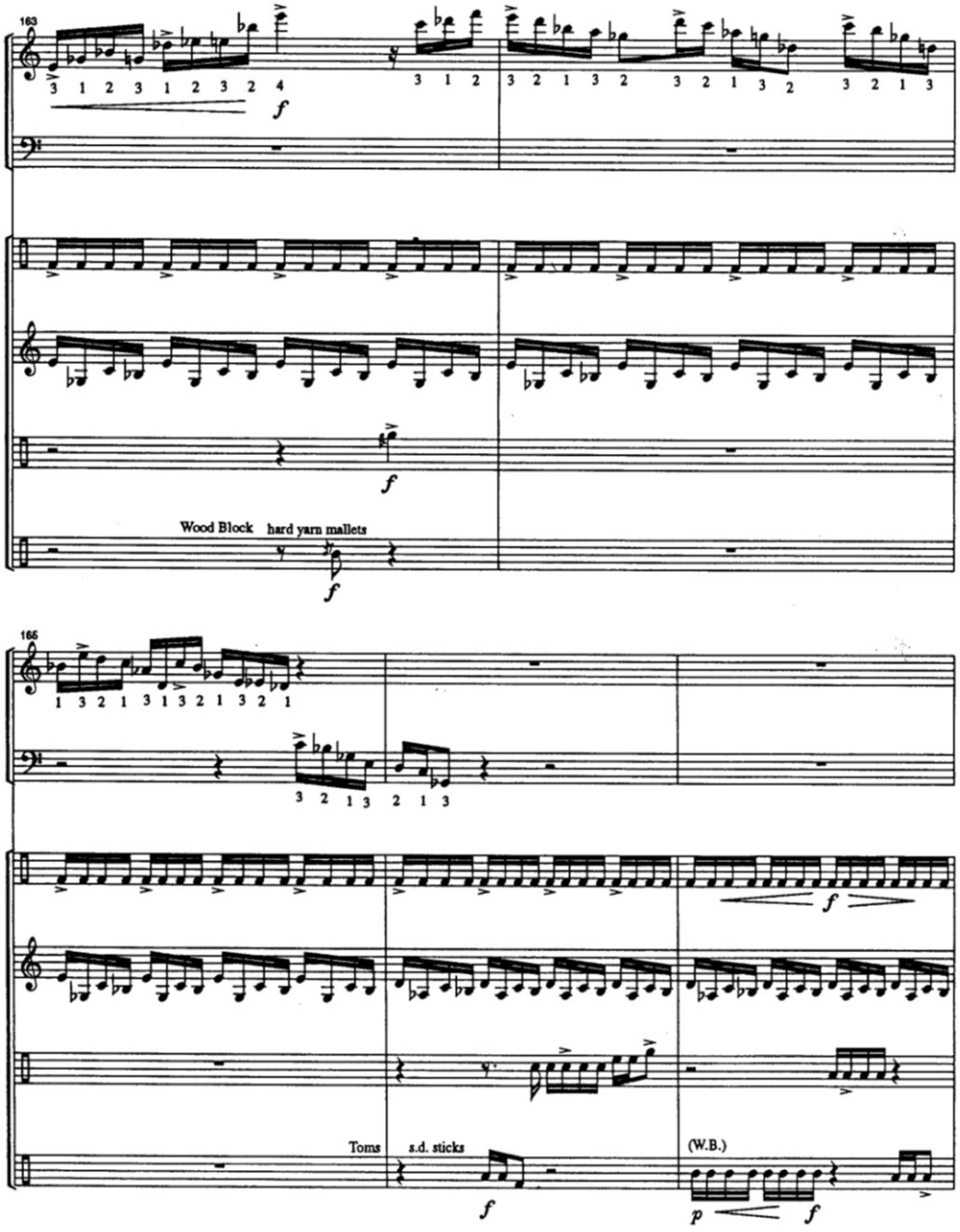


Figure 32. *Off Axis*, ms. 163.

Next page: Section C, rhythmic motive in augmentation at the eighth-note level (3+3+2) in measure 164 and irregularly augmented into a pattern of 5+6+7 sixteenths in measures 165-6. The interval spread from the accented note to the last note before the next accent generally gets larger in measures 164-6: +6, +8, M9, M7, +11.



6-5

Figure 33. *Off Axis*, ms. 168.

Section C, motive f at measure 168, beat one. Constructed using broken dyads (r, l, r, l). The tritone is used in the marimba and vibraphone.

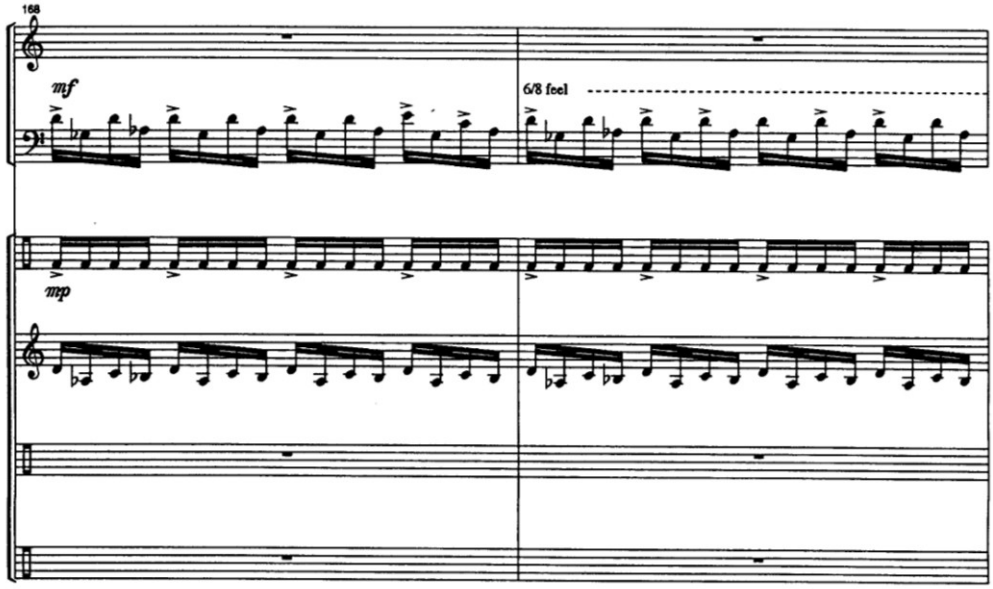


Figure 34. *Off Axis*, ms. 176.

Section C, at measure 176. Tritone receives emphasis in the marimba part at the end of each measure.

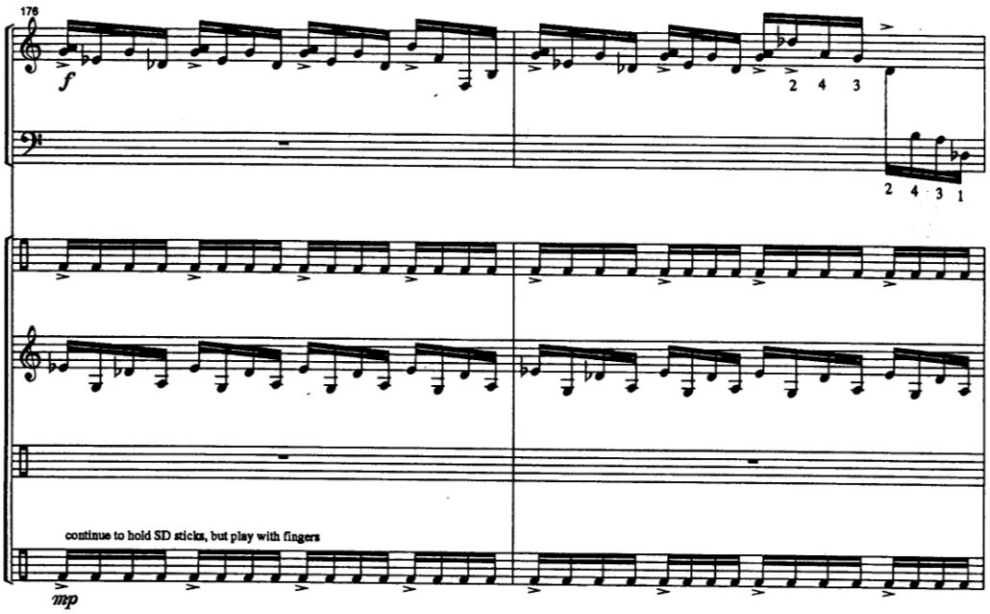


Figure 35. *Off Axis*, ms. 184.

Section C, Climax at measure 184. C-Gb harmonic/tonal structure. Dialog texture. Reference to 3+3+2 eighth-notes in ensemble at 186 and 187.

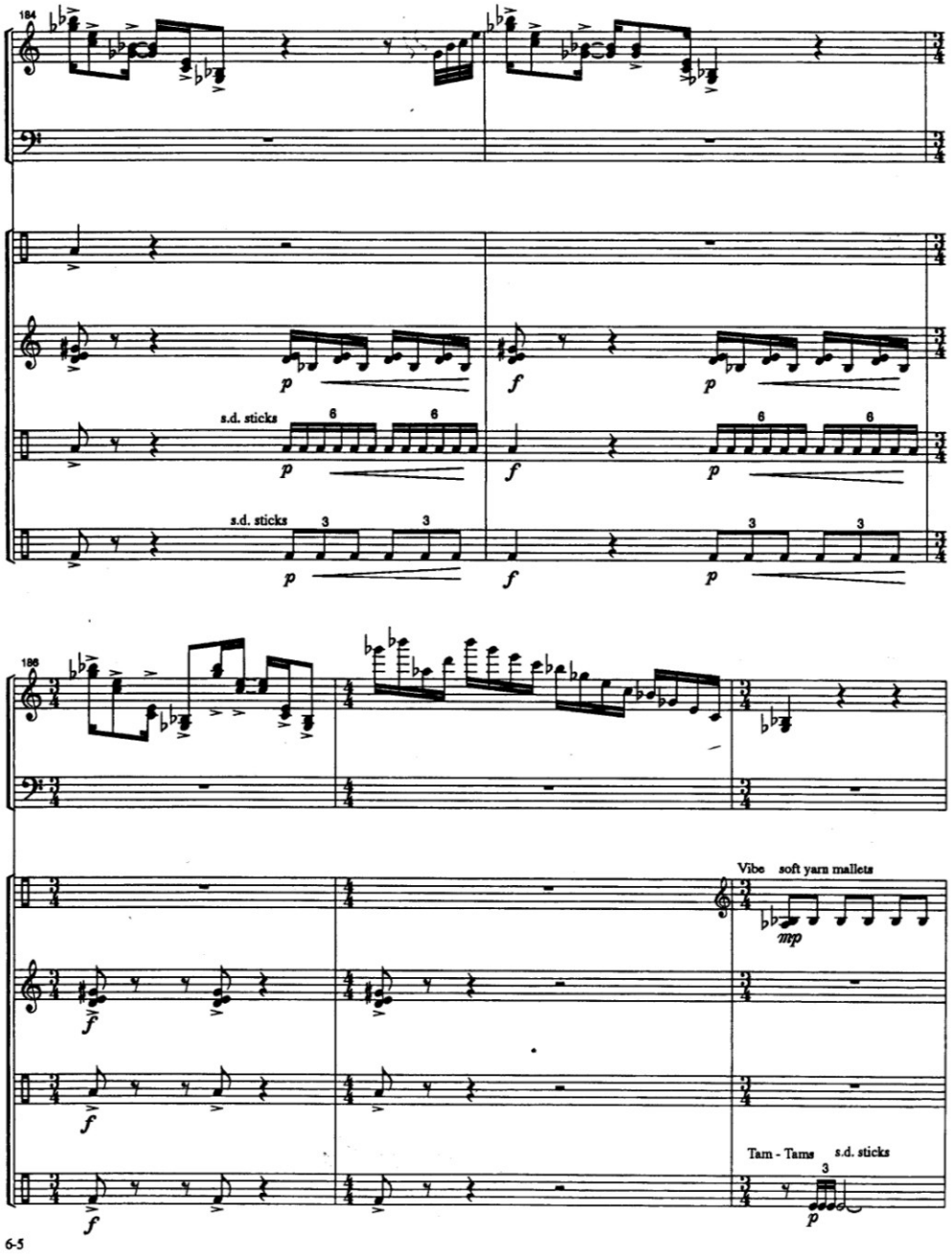


Figure 36. *Off Axis*, ms. 189.

Section C, conclusion using motive f (broken dyads) in marimba. Tritones present in vibraphone and marimba in 191 and 192.

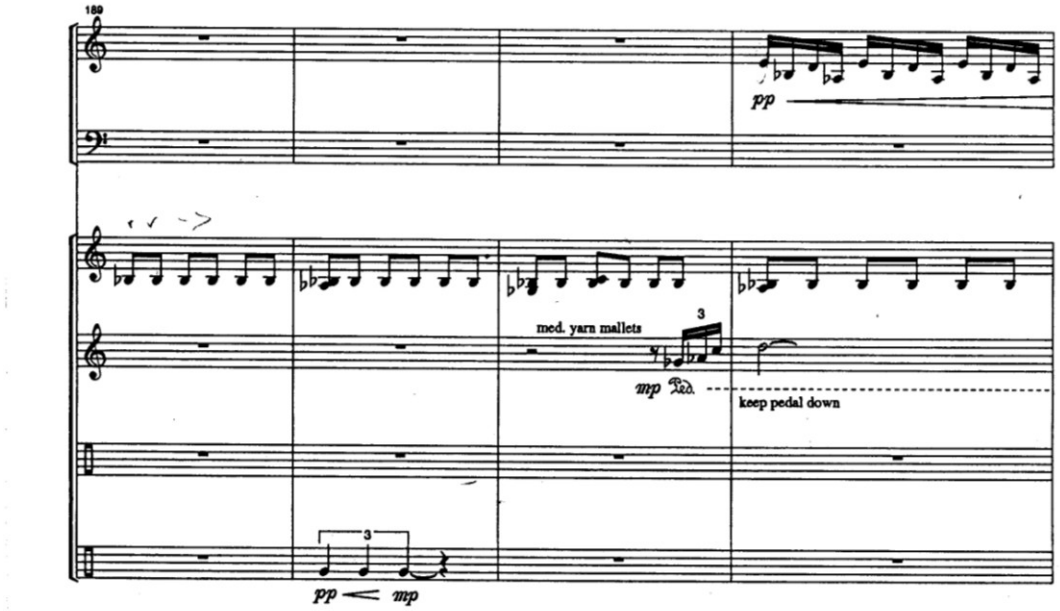
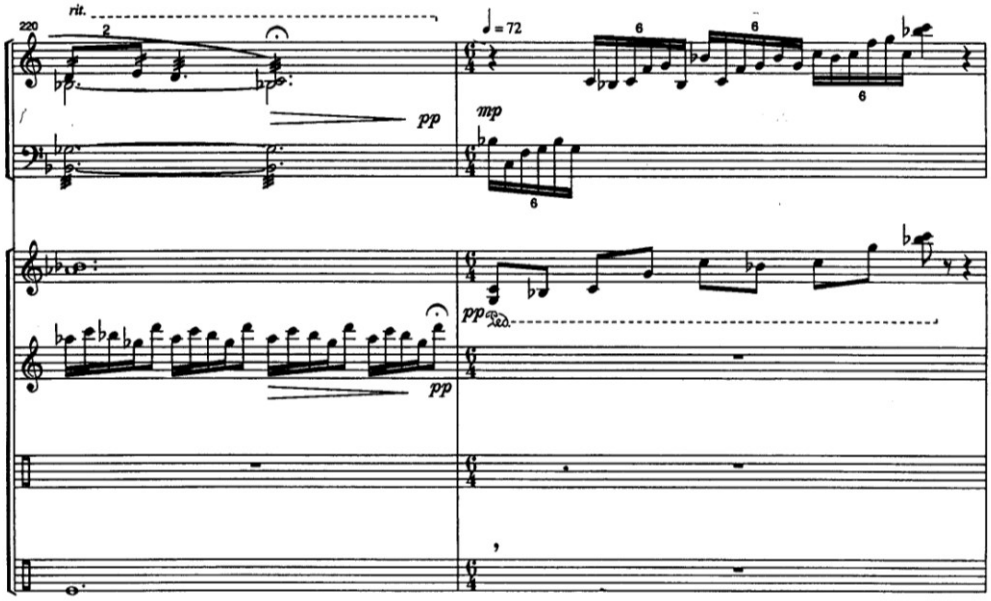


Figure 37. *Off Axis*, ms. 220.

Return of Harmonic Motive at 220 in marimba using C-Gb structure accompanied by Gb whole tone in vibraphones. First of final cadential figures at 221.



Performance Problems in *Off Axis*

The marimba part has many stickings provided by the composer. Since Glassock is a percussionist, his suggestions stem from firsthand experience. Thus, issues of sticking are often solved by the indicated markings. One of the idiosyncrasies of the work is the way the hands tend to split between the two keyboards in some sections of the work. Marimbists do use split keyboard stickings, where the right hand is on one keyboard and left hand is on the other. By example, an Eb major scale or arpeggio could be played with the hands split and assigned a keyboard. But it would be unique for the split to last more than a few measures. In this work, however, it seems that the conceptualization of the figures in measures seventy-one to eighty-five had the left hand on the accidental keyboard and the right hand on the natural keyboard with only occasional shifting between the keyboards (see fig. 38 below). This split lasting fourteen measures is longer than most split keyboard technique applications. The performance of this lengthy passage presents some challenges. In measures seventy-one to eighty-five, a mallet will at times be partially over another mallet in the opposite hand. Care must be taken to not click the shafts or diminish the dynamic of the lower set of mallets. An additional problem occurs when one set of mallets must travel to the opposite keyboard. The player is most likely playing on the center of the bars, a further distance than the inside edge of the bars. The shift therefore must begin as soon as possible to ensure timely arrival. The stroke's recovery must move immediately and efficiently towards the next set of pitches. In measure seventy-five the left hand plays the accented dyads starting on beat three and moves from the accidental manual to the natural manual and back to the accidental, all descending in register with either two or

one right handed sixteenth(s) between each dyad (see fig. 38, mm. 75-76). Speedy recovery and efficient motion to the next accent in the left hand is essential for accuracy. Since the second accented stroke in the left hand duplicates the right hand dyad (C-E in measure 75 on the last sixteenth of beat three) a swing stroke in the right hand is necessary to allow the left hand to play the dyad. In essence the right hand must swing out of the way to allow the left hand to play the dyad. The right hand then returns to play the same two notes again.

Figure 38. *Off Axis*, ms. 71.

Measures 71 to 82, Marimba stickings are split between the keyboards except for the circled pitches.

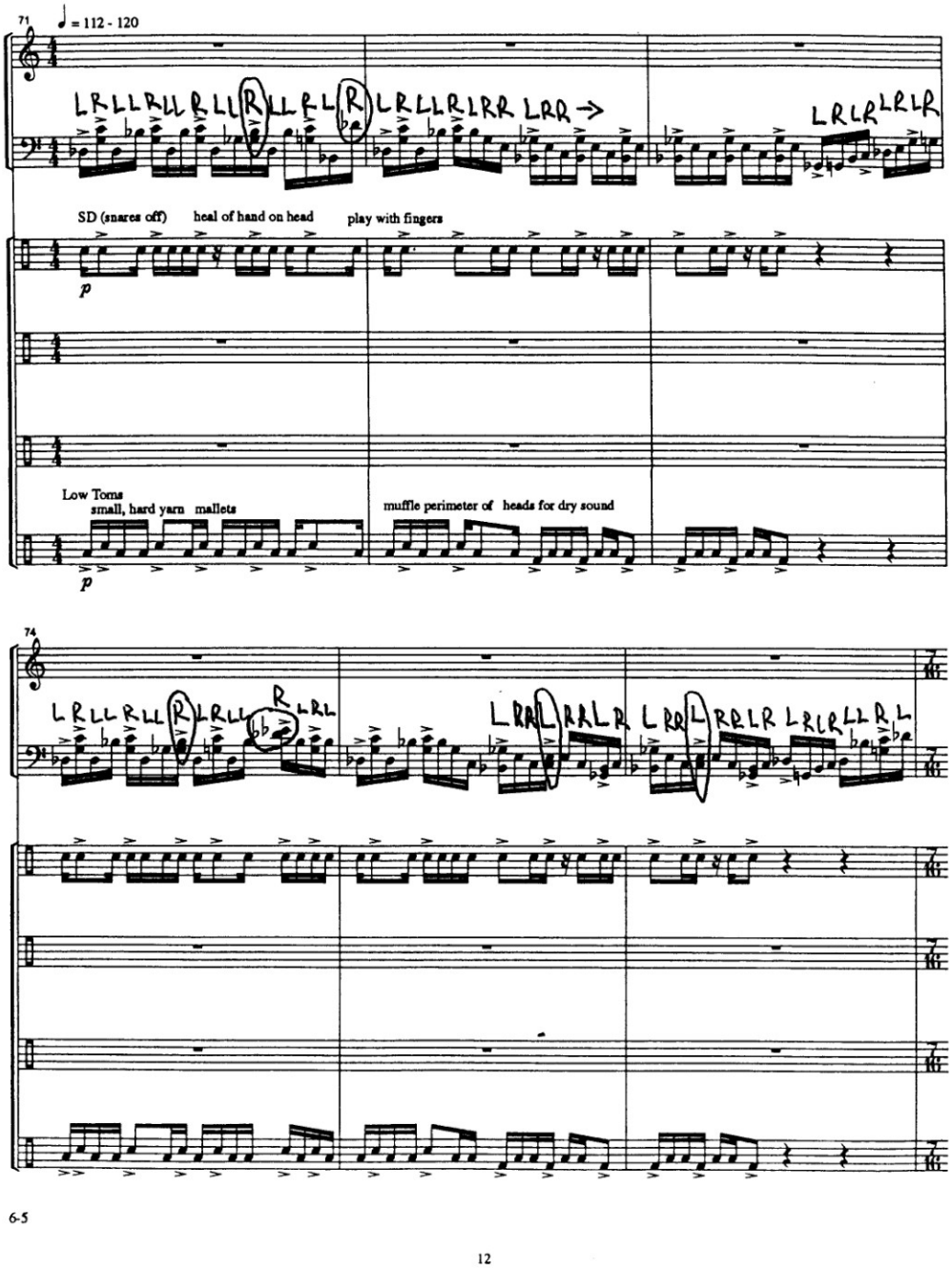
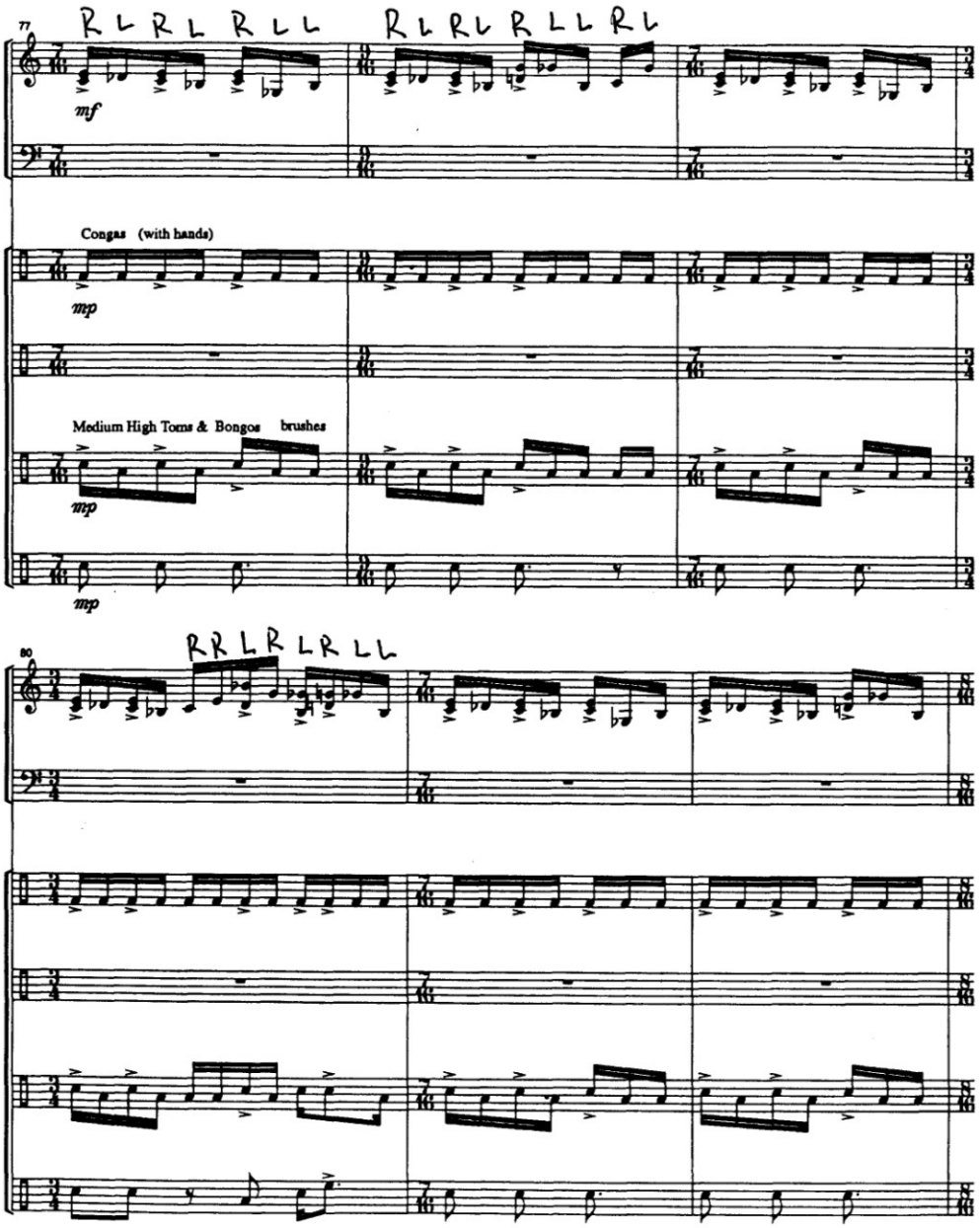


Figure 38, continued.



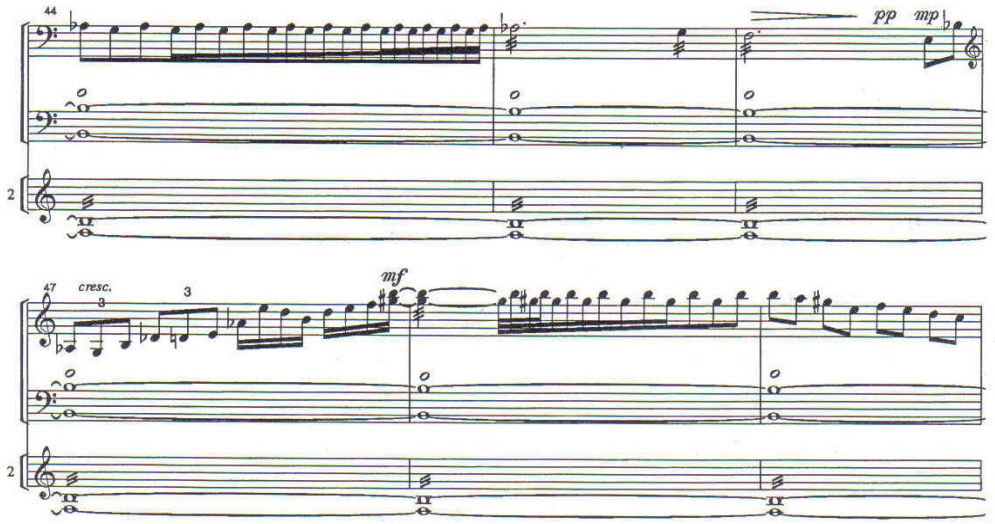
6-5

-13-

The independent roll in the left hand during the cadenza can prove challenging. This roll provides a pedal over which the right hand plays a melodic line. Gaining the independence necessary to sustain the pedal in octave Bs in the left hand and execute a melodic line in the right hand requires considerable technical development. An alternative approach to this section is to use a double vertical stroke in the left hand to perform the octave and to alternate the left hand with single independent strokes in the right hand for the melodic line. The net result is the melody played by the right hand with a sustained octave played by the left hand. This produces an alternative technical approach with similar musical results. The performer can switch between these types of rolls, especially at moments when the right hand is not playing or needs to stop playing to aid phrasing. This passage is illustrated in the following figure:

Figure 39. *Off Axis*, ms. 44.

Measure 44, the accompanied cadenza.



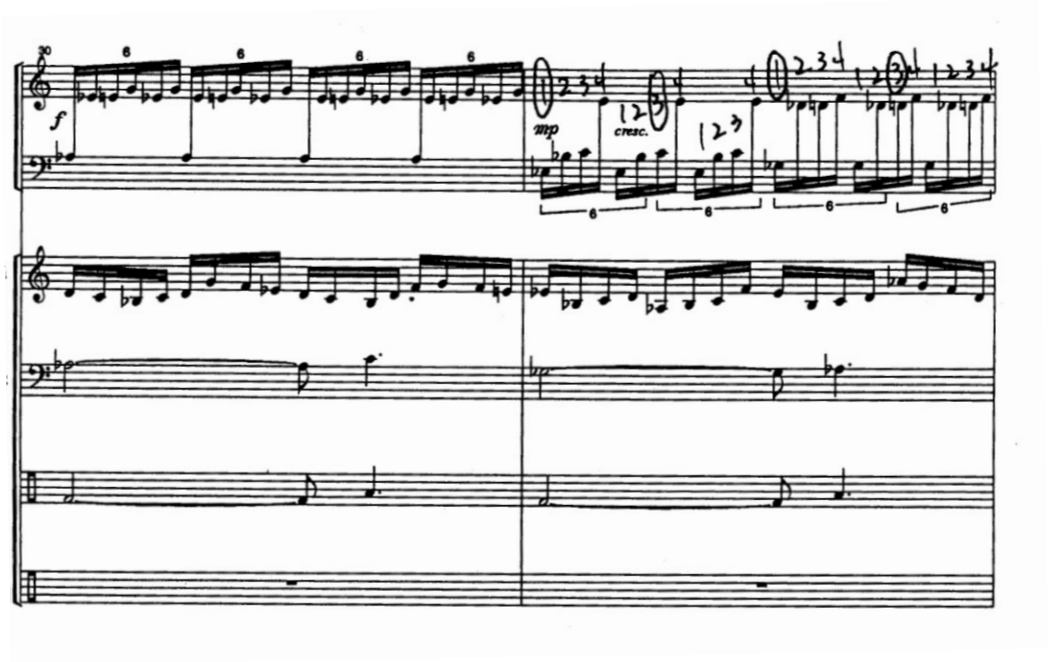
The ensemble set up is a concern that is not addressed in the score. One possible solution is to set the ensemble in a "U" fashion like a string quartet, with the

open part of the "U" facing the audience. The marimba faces across the stage towards two off-set vibraphones that face back towards the marimba. The percussionist can form the bottom of the "U" and directly face the audience. This configuration places the dynamically softer keyboards in front of the louder un-pitched percussion. It also allows for visual communication between the ensemble members.

Rhythmic complexities exist in this composition. In the introduction the marimbist performs sextuplets against the vibraphone's sixteenth-notes. The beat and the eighth-note after-beat are in common to both divisions in this polyrhythmic figure. In other passages the marimbist groups the sextuplets into four note melodic units within the sextuplet over the vibraphonist's sixteenths. Maintaining beat integrity and general synchronization between the two parts can be achieved by having the marimbist mentally coordinate the imbedded tones within the sextuplets that line up with the vibraphonist's beats. In measure thirty-one, the marimbist's sticking would be 1234 for each four-note group. Thus the marimbist's beats that correspond with the vibraphonist's beats would occur on the first of every sixth note of the sextuplet: **1**234, 12**3**4, 1234, **1**234, 12**3**4, 1234. The marimbist can synchronize correctly by knowing which one of the four mallets plays on the vibraphonist's beat notes (see fig. 40).

Figure 40. *Off Axis*, ms. 31.

Implied polymeter in measure 31. Marimba is in six-four and the vibraphone is in four-four. Circled stickings coordinate with vibraphone beats.

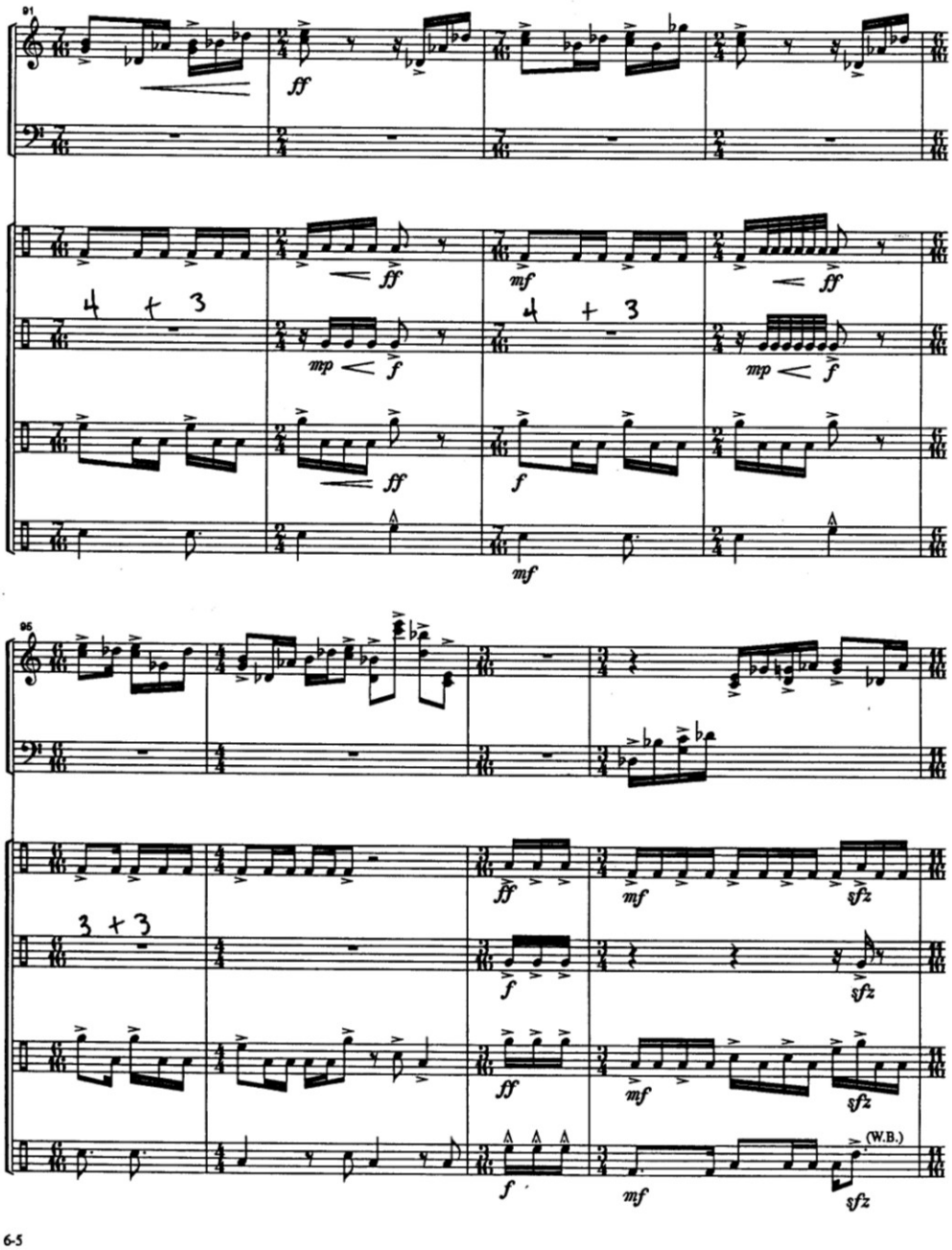


Another rhythmic challenge is to play the mixed meters accurately, especially when there are gaps and syncopations within those meters. Solutions include familiarity with the work through commercial recordings, making click tracks with subdivisions that can be added or removed through sequencing software, recording of sections by the ensemble for close scrutiny and using a metronome capable of playing the divisions common to the measures in question. Having the ensemble clap the structural rhythms (large pulses) over a time keeping device is helpful. Also, marking the parts with details of ensemble divisions can be very helpful. By example, from measure ninety-one to ninety-seven percussion two has rests for various measures of mixed meter and then must enter in some cases on syncopations. Most of the rests for the duration of the passage are indicated as whole notes. The player will be more likely

to execute the entrance successfully by marking the sixteenth-note groupings corresponding to the rhythmic pulsations of the ensemble. Careful part editing can save rehearsal time (see fig 41).

Figure 41. *Off Axis*, ms. 91.

Next Page: Beat groupings indicated for percussion two.

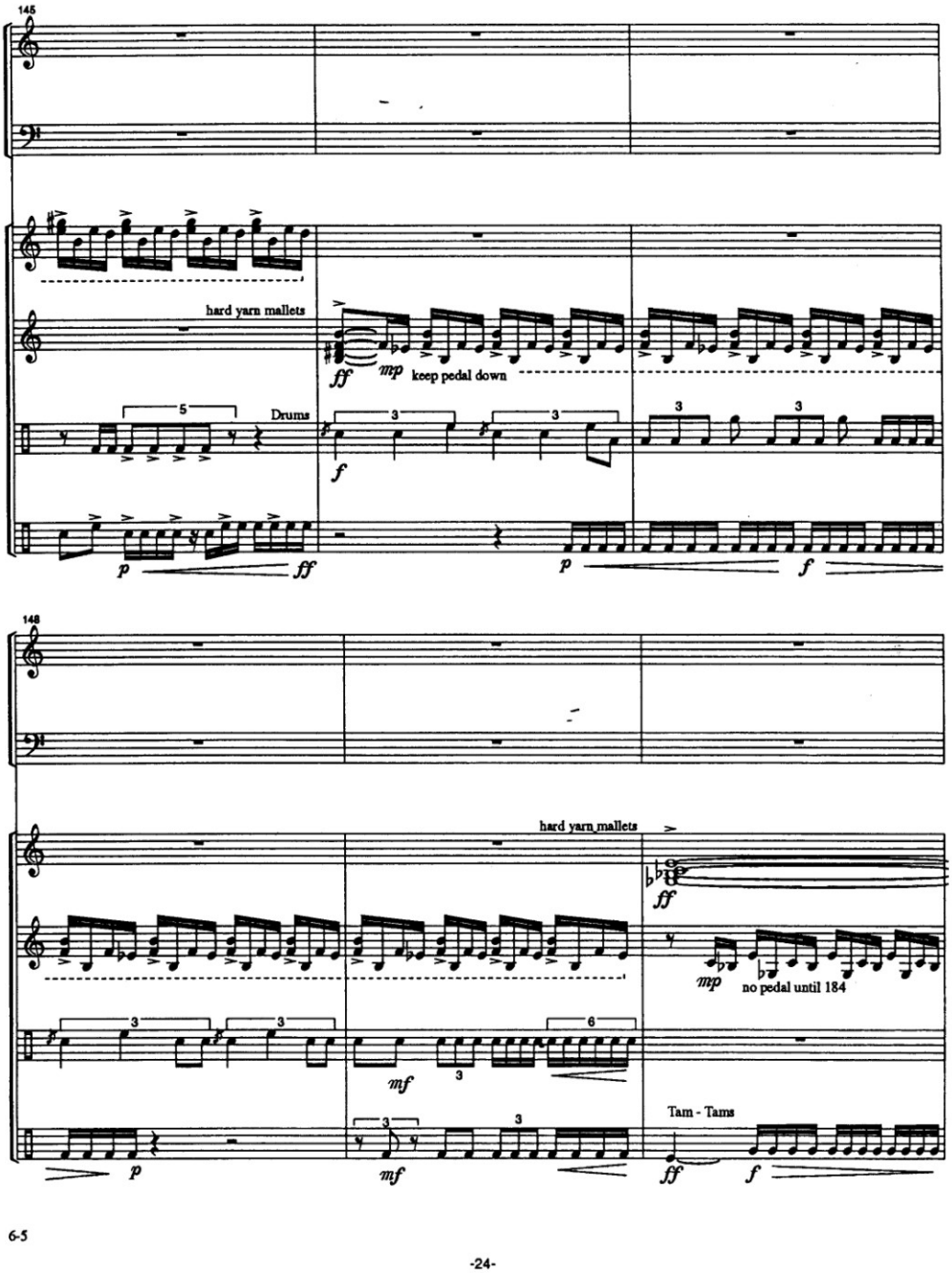


A coordination problem frequently occurs at measures ninety-two and ninety-four (see fig. 41). The sixteenth-notes and thirty-second notes in percussion one and two can be out of synchronization or late in execution. The key to proper placement is

to keep the sixteenth note unfolding mentally and, for measure ninety-four, to pulse what would be a seven stroke roll. An open roll technique will produce the desired thirty-second note rhythms. Player two must start the notes without a down beat, being especially careful to not be late. Having both players begin with a left hand double stroke will aid uniformity of execution and phrasing.

Another coordination challenge occurs at measure 125. The concern here is silence. The entire ensemble is silent for a beat and a half, reentering after a sixteenth note pickup by the marimbist. The ensemble must maintain forward momentum and not rush or drag the downbeat of measure 126. Accurate subdivision of the beat coupled with a body/physical gesture that signals beat four can ensure uniform arrival. One of the more complicated passages concerning mixed rhythmic division occurs at measures 140 to 149. The percussion parts play gapped eighths, triplet eighths, sixteenths and quintuplets. These difficult rhythms can coordinate with the vibraphone part, whose function is timekeeping and phrase marking (see fig. 42 below).

Figure 42. *Off Axis*, ms. 145.



Issues of balance are always a problem in a percussion ensemble. The marimba is one of the dynamically softer percussion instruments. When it is coupled with the unpitched percussion instruments, potentially some of the loudest of all instruments, balance will be an issue. Some performers chose to use amplification and indeed some composers request or suggest that the marimba be amplified. William Moersch suggests that the dynamic spectrum of the soloist needs to be raised.[52] All softs and louds will be a bit louder in solo with ensemble settings. He also suggests that marimbists use not just harder mallets, but heavier mallets to aid projection. The mass of the mallet aids projection.[53]

Mallet selection in this work is indicated by the composer. Large soft mallets are suggested at the beginning and a switch to medium mallets is indicated at measure twenty. However, since the entire range of the keyboard is used after the first part of the Introduction, a mixed set of medium mallets can aid in achieving a characteristic tone in the lower register and projection in the mid and upper register. Combining a medium mallet in the lower position and medium bright in the upper three mallets will aid color nuance and add tonal variety to the solo part as well as aid in projection.

The composer has given very detailed information concerning vibraphone pedaling, mallet selection, beater types, and instrument choices and striking instructions. These features are greatly appreciated and are useful in the development of the genre. They display examples of the vast variety of sounds available to

[52] Moersch is recognized to be a leading performer of marimba concertos with orchestra. He is Professor of Percussion at the University of Illinois.

[53] "Mallets and Balance for a Concerto," Percussive Arts Society, http://pas.org/Members/forums/textthread.cfm (accessed February 22, 2009).

composers dealing with percussion instruments. Timbral nuances can contribute to structural features as illustrated in the structural analysis.

One additional challenge occurs when the composer asks for the cymbal to be bowed. This technique is aided by downward finger pressure on the cup of the cymbal while bowing upward and perpendicular to the cymbal. Beginning at the frog of the bow will allow for needed pressure to begin the vibrations that will produce the tone. A well rosined bow is required.

Diptych No. 2

Diptych No. 2, by Gordon Stout was composed in 1979. The work, commissioned by the University of Oklahoma Percussion Ensemble, had nine PAS program submissions. It was performed by the University of Oklahoma at PASIC 1990 in Philadelphia with Gordon Stout as soloist. The composition is dedicated to John Beck, Stout's percussion professor at the Eastman School of Music.

The instrumentation uses a large group of pitched instruments played by six players and a group of unpitched percussion instruments played by three players. The pitched instruments include the common kinds except for xylophone and crotales. Each keyboard player uses the instrument exclusively except for the bell player, who doubles on temple blocks and the pianist who doubles on celeste. The soloist uses the only marimba in the work. The unpitched instruments are grouped homogeneously for each player into multiple percussion set-ups and are exploited for their timbral variety (three cymbals, three snare drums, three low drums). Two of the unpitched percussionists also have a metallic instrument. These metallic instruments along with the celeste are used more prominently in the second large section of the work. This shift in timbre corresponds to structural delineation. Specific instrument distribution is as follows:

Percussion 1: Bells, five temple blocks.
Percussion 2: Chimes.
Percussion 3: Vibraphones.
Percussion 4: Piano, Celeste.
Percussion 5: Four Timpani in Eb, Bb, Eb, F.
Percussion 6: Triangle and small, medium and large suspended cymbals.
Percussion 7: Piccolo and regular snare drum, field drum and finger cymbal.
Percussion 8: Bass drum and two low tom-toms.
Marimba Soloist: Four and one-third octaves from Great A (low pitch is Great Bb).

The formal structure of the work is in two parts, Part I and Part II, the second of which begins at measure 150. Part I is an A, B, A′ structure with the A Section's sub-units forming an arch relationship when restated.[54] The A Section contains three sub-units, with each of the sub-units consisting of two parts: a fast tempo metric structure played primarily by the unpitched percussion and a slower tempo chorale played by the pitched instruments. The metric structure of the fast unit is ten measures: 5/8, 3/4, 3/8, 5/8, 3/4, 3/8, 7/16, 7/16, 5/16, 5/16. The following chorale section is five measures except for the third time when it is extended to ten measures. Each of these sub-units of the A Section, designated as unit a/b1, a/b2, and a/b3 repeats the material (mixed metric structure followed by chorale) with changes in instrumentation, accent placement, embellishments and subtle metric regroupings (2+3 becomes 3+2 in 5/8). In the first A Section there is a general thickening of instrumentation, increase in dynamic and addition of new melodic lines and doubling of pitch content. These features are reversed in the corresponding A′ Section at the conclusion of Part I. On the whole, measures 1 to 40 are reversed in measures 100-139.

The B Section of Part I appears after a transition. The B Section maintains a steady tempo and makes use of the mixed metric structure from the A Section either in whole or in part. Tonally this section centers on an eb minor/F Major polychord. An incomplete version of this chord appears at the conclusion of each chorale in the A Section. The scoring of the B Section mixes all instruments rather than the previous section's prevailingly segregated approach (unpitched versus pitched).

[54] Arch similarities include: ms. 1-12 equals 129-139; 13-24 equals 116-128; 25-40 equals 101-115. Some of the second statements have instrumentation adjustments but retain recognizable elements of reference to the original measures.

After the arch reprise of Section A, a piano cadenza appears. Its content is reminiscent of the quartal structures from the chorale section and will be recalled by the marimbist's cadenza at the conclusion of the work. Part II's three sections (C, D and E) are all in a different tempo and are distinguished by ringing metallics for Section C, use of voices for Section D and timpani and marimba in rhythmic alternation for Section E. A quick tempo coda and slower marimba cadenza conclude Part II. The two part formal structure of *Diptych* summarizes as follows:

Table 2. Formal summary of *Diptych No. 2*

Part I					**Part II**				
A Ms. 1	Tran-sition Ms. 41	B Ms. 53	A Ms. 101	Piano Cadenza Ms. 139	C Ms. 150	D Ms. 162	E Ms. 174	Coda Ms. 190	Marimba Cadenza Ms. 201
ab1, ab2, ab3.			ab3, ab2, ab1.						
a is Q= 132. b is Q= 72-80.	Q= 124-132	Same	Like before	Rubato	Q=76-84	Slighty Faster	Q= 60	Brilliantly	*senza misura*, distantly

The harmonic structures in the work are based on quartal, polychordal and tertian harmonies. Tonal centers are confirmed by cadential arrival, ostinato and static oscillation between harmonic structures (Bb minor and Gb Major in Section C, for example). At rehearsal A, the marimbist and pianist present the chorale material that makes substantial use of descending parallel perfect fourths except for the bass line

which has mixed motion melodic activity.[55] These bass line pitches are part of the quartal harmony, usually forming the interval of an augmented fourth either above the perfect fourth structure or below. The first two harmonic structures are voiced as follows:

G#, E, A, D and

A, D#, G#, C#.

In the first structure G# is an augmented fourth above D and in the second, A is an augmented fourth below D#. All other intervals are perfect fourths. Each of the chorale phrases cadences on a quartal structure. The pitch content of these cadence points includes Gb, C, F, Bb, Eb. This quartally derived presentation contains all the pitches necessary to produce an eb minor/F Major polychord except A natural. The missing pitch does appear in the second statement of the chorale in measure twenty-four (vibraphone). This particular polychordal harmony (eb/F) forms the harmonic and tonal basis for the B Section of Part I.[56] The quartal voicing used in the chorale gives way to polychordal voicing that emphasizes the tertian relationships in Section B (see fig. 46). Tertian harmonies are used in Part II. At measure 150, in Section C, the music oscillates between Bb minor and Gb Major or minor chordal structures. At measure 163 in the D Section, the music oscillates between eb minor and e minor chords. The marimbist adds melodic non-harmonic tones over these tertian harmonies.

[55] The bass line's contour is mixed, using contrary and similar motion to the planing texture of the upper voices.

[56] Other polychordal structures appear, for instance at measure 59 an e minor/Gb major polychord is used.

The primary structural materials are presented in the figures beginning on page 139. Their specific location in the work will be documented in the Structural Diagram below. Figure 43 presents ab1, the quicker tempo, ten measure metric structure (including the repeat) and the first chorale statement at the slower tempo. Figure 45 presents the transitional section and the quintuplet motive derived from the chorale bass line now in rhythmic diminution. The interval content of the quintuplet motive (half steps and thirds) will be a source of melodic development throughout the work.[57] Figure 46 shows the refrain motive (unison sixteenth-notes) that will appear several times and the accompaniment motive in the piano, marimba and timpani that is based on the eb minor and F Major polychord. Figure 48 shows the pitch content of the melodic piano solo. This series of pitches will form a large part of the harmonic and melodic content of Part II.

[57] The bass line of the chorale becomes the quintuplet motive. The intervals of the quintuplet motive (using permutation and interval inversion) appear at 64, 71, 92 and 93 among other locations.

Structural Analysis of *Diptych No. 2*

***Part I* (*ABA'*)**

A

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
A, a1	1	Q=132		Structure is: 5/8, 3/4, 3/8; 5/8, 3/4, 3/8; 7/16, 7/16, 5/16, 5/16 (see fig. 43).	Unpitched percussion present **10 measure metric structure**[58]. Piccolo snare drum has lead voice with high tom and temple blocks reinforcing larger rhythmic groupings. Suspended cymbal wash transitions into chorale.
A, b1	8	Q=72	All pitches are quartally derived: perfect fourths or augmented fourths.	Half step descent in top voice. Active bass line presents pitch content that will become central to transition and developed in Section B and Part II (see fig. 43).	Piano and Marimba double each other in a four-voiced **chorale**. Planing texture in top three voices. Bass line moves independently.
	11		Cadential appearance of quartal harmony that incompletely projects eb/F polychord of Section B (see fig. 43).		Marimba plays from center to nodes providing tonal nuance and dissipation of the sound. Repetition of the chord and decrescendo

[58] Ten measures including the repeat of the first three measures.

					contribute to cadence.
A, a2	13	Q=132		Repetition of metric structure. Some groupings switched (3+2 becomes 2+3) and some accents are displaced from before.	Same as mm. 1-8, but now regular snare drum and lower tom. Dynamically louder than a1.
A, b2	20	Q=72	Same as b1, Quartal structures.	Same as before, but new vibraphone counter-melody that begins with perfect fourths above the top note of piano and marimba. The vibraphone part eventually cadences on A and C (third and fifth of F Major).	Dynamically louder than b1. Piano and marimba, still in planing texture are joined by vibraphone. The vibraphone thickens the texture with counter melody that begins with after-beats.
A, a3	25	Q=132	At ms. 25 the piano joins unpitched percussion with an ostinato. Ms. 28 discloses the first complete appearance of eb/F polychord in piano. This chord is presented as a pedal that punctuates the larger groupings within the metric structure (see fig. 44).	Same ten measure metric structure.	Same as mm. 1-8, but now field drum and bass drum are used in place of regular snare drum. Low temple block is used as well as piano. Dynamically louder than a2.
A, b3	32	Q=72	Same as b1, quartal structures.		Dynamically louder than b2. Piano and marimba, still in planing texture with vibraphone

					counter melody are joined by chime counter melody.
A, b3	36	same	Restatement of b3. Vibraphone uses four- note structures and chimes use dyads (see fig. 44).		Addition of bells and subtraction of marimba. This is the dynamically loudest, registrally highest and texturally thickest statement of b.

Transition

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Trans -ition	41	Q=124-132	Quartal harmony, frequently in step relation to each other.	Marimba presents **quintuplet motive** based on the bass line of b1 now in rhythmic diminution (see fig. 45).	All keyboards participate in long-short chordal punctuations outlining metric structure while marimba presents primary melodic material. Unpitched percussion supports keyboards and matches articulations.
Re- frain	51	same	Pitch content: eb/F polychord.	Unison presentation of **refrain motive** using 3+2+2+3 sixteenths (see fig. 46).	Melodic unison. Decorated by multiple snare drums and cymbal roll.

B

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Sec-tion 1	53	Same Q=124-132	eb/F polychord. Marimba uses dyadic groupings in each hand; piano uses triadic groupings in each hand.	Presents **accompaniment motive** in marimba, piano and timpani (see fig. 46). Abbreviated metric structure twice presented (5/8, 3/4, 3/8).	Ringing pitched metallics present roots and fifths of eb/F at the beginning of each three measure unit. Bass Drum marks down beats of first and second measures of each unit.
Re-frain	59		Refrain based on eb/F. Piano uses e/Gb and eb/F polychords. Marimba uses Gb/F.	Refrain Motive returns (Melodic and un-pitched percussive aspects).	Pitched metallic percussion presents refrain.
Sec-tion 2	61		eb/F.	Accompaniment motive continues in piano and timpani. Marimba begins solo melodic activity in ms. 62 based on eb/F polychord. An important melodic figure appears in ms. 64 that is derived from the bass line of the chorale (m2 and m3, now m3 and M7). Vibraphone uses abbreviated refrain motive in many of the 3/8 measures (see fig. 47).	This section uses an entire restatement of the 10 measure metric structure. Ringing metallic pitched percussion mark the beginning of each 5/8 and 3/4 measure. Drums mark metric grouping. Marimba has lead voice in homophonic texture.
Bom-bastic-ally	67		Triadic oscillations and polychordal	This segment uses the last four measures of the ten measure metric	Piano has lead voice and other keyboards are in

			combinations (see fig. 47).	structure. Bombastic motive appears complete in piano. Its content is split into hocket texture between the marimba and metallics. Each group meets at the end of each measure as a polychord.	hocket texture doubling a portion of the piano part. Suspended cymbal in unison with rim shots of snare drum. Low drums mark larger metric groupings. Marimba in rhythmic and pitch similarity to piano right hand chords. Metallic pitched percussion in rhythmic and pitch similarity to piano left hand. (see fig.47) Hocket texture between marimba and metallic pitched instruments.
Sec-tion 3	71		eb/F.	Abbreviated metric structure is presented three times (5/8, 3/4, 3/8). Accompaniment motive in piano, multiple snare drums and timpani. The melodic activity is in the marimba part and uses many thirds and seconds from the bass line motive. In the marimba part measures 63-66=76-79.	Ringing metallic pitched percussion on roots and fifths. Marimba has lead voice in homophonic texture.
Sec-tion 4	80		eb/F.	This section uses an entire restatement of the 10 measure metric structure.	

				Accompaniment motive resumes primary attention doubled in piano, marimba, multiple drums and timpani. New variation in piano, where on beat three of the 3/4 measure e/Gb and eb/F polychords are used. Varied in the next 3/4 measure as D/Gb and eb/F	
Bom-bastic -ally	86		86-89 is the same as 67-70.	86-89 is the same as 67-70.	86-89 is the same as 67-70, except for the use of a different snare drum.
Sec-tion 5	90		eb/F used in accompaniment motive. Quartal structures from transition and Section A used in keyboard percussion.	Abbreviated metric structure is presented three times (5/8, 3/4, 3/8). Accompaniment motive in marimba and timpani. The melodic activity in the piano begins with the quintuplet motive and recalls material similar to marimba figure in measure 64, but is now transposed. This series of pitches will be reused melodically and harmonically in Part II (see fig. 48).	Textural double exposure. Metallic pitched percussion, cymbals and snare drums recall transition texture, marimba and timpani use accompaniment motive and metric structure. Piano is lead voice overlaying the two textures.
Re-frain	99		Metallic pitched percussion plays polychords: e/Gb and eb/F.	Piano plays the refrain motive.	Homophonic texture with piano as lead voice.

A′ (arch restatement of A)

A′, a3	101	Q=132		New marimba figure in last four measures. Still based on eb/F dyads.	Reorchestration, what was piano now is metallic pitched percussion.
A′, b3	108	Q=72-80		The two statements of the chorale are reversed: highest, thickest and loudest comes first.	Marimba part absent from both chorale statements, but provides one measure transition to a2.
A′, a2	116	Q=132	Harmonic pedal is quartal but related to eb/F (Bb, Gb, C, F; spelled in fourths: Gb, C, F, Bb).		Marimba provides harmonic pedal to metric structure.
A′, b2	123	Q=72-80			Piano and vibraphone are identical. Marimba is absent until last two measures where it replicates the parallel measures in A, b2.
A′, a1	129	Q=132			Same as A, a1
A′, b1	136	Q=72-80			Same as A, b1 except now only piano (not doubled by marimba). Solo piano texture leads into cadenza.
Brief piano ca-	139	Slow-ing, rubato.	Quartal structures return.	Melodic rise and fall corresponds to chord structures that are	Begins accompanied by timpani. Then

denza				restated in arch relationship. The arch and cadenza are very brief, lasting only a few measures.	solo piano. Ends accompanied by chimes.

Part II (CDE)

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
C	150	Q=76-84	Static oscillation between tertian harmonies: Bb minor, Gb major or minor, and Db major in many cases with added 7ths, 9ths and 11ths. Chord fifths are frequently omitted. Harmony derived from melodic series of pitches in piano solo (mm. 92 to 98). Some momentary free repetition and development occurs.	Slower rhythmic motion with frequent use of half and quarter or half and two eighth note rhythm gives easy lilt. (This contrasts the rhythmic complexity of the previous metric structure.)	Texture characterized by long ringing metallic percussion (triangle, finger cymbal, bowed vibraphone, bell and ringing timpani notes Bb and Gb (see fig. 49).
	157	moving ahead	Polychord Eb/F and open fifths E-B/Gb major seventh oscillate in one measure harmonic rhythm.		First appearance of celeste (no piano).
D	162	Slightly Faster	Beginning in ms. 163 strict oscillation of eb minor and e minor triads	Marimba plays piano solo pitch series now augmented to the level of eighths and quarters (was sixteenths and	Texture includes ringing timpani stroke on root of triads; vibraphone

			(see fig. 50).	eighths). Melodically, measures 162-169=92-99.	doubles celeste, both playing complete triads. These are doubled by voices of ensemble members.
	169		Harmonic rhythm slows.		Suspended cymbal crescendos to climax with rolled marimba and celeste and ringing metallic sounds. Mallet change for bell, chime and triangle to affect climactic attack in ms. 171.
E	174	Q=60, or less, steadily	Vibraphone provides harmonic structures derived from same pitch series as marimba (harmonic presentation of marimba melody). Piano moves between eb minor and e minor with added major 13ths (see fig. 51).	Marimba in steady quarter note rhythm through ms. 188. Timpani is mostly off-beat (Eb, Bb and Gb). Melody traces piano solo pitch series, register is changed. Bells and vibraphone double selected notes in marimba melody. The tempo moves ahead and even faster into a unison figure that leads into coda.	Marimba is strictly in melodic quarter notes, homophonic texture. Vibraphone plays harmonic accompaniment. Return of piano.
Coda	190	Bril-liantly	Eb/F polychord.	Melodic arpeggiated figure doubled in marimba and piano.	Ringing pitched percussion provides harmonic support.
	195	Q=60	Open fifths E-B/F# Major polychord.		Solo marimba.

	196	Bril-liantly	Same idea as 190.	Same idea as 190.	Same idea as 190.
Ca-denza	201	*senza misura*, dis-tantly	All pitches derived from quartal harmonic structures. Events recall piano cadenza (mm. 142-145). Arch structure recalls Part I's arch restatement of A Section.	Begins and ends with whole notes, all other durations are half notes. Rhythmical simplification (versus complexity) characterizes Part II.	Solo Marimba chorale (see fig. 52).
	202	Slowly	Final oscillations between e/Gb and eb with minor 9^{th}.	Melodic recall of opening motive from piano solo (ms. 92) in marimba.	
	205		Cadences on eb minor.		Solo marimba roll on eb triad followed by short, cadential piano and timpani tonic chord (no third).

Figures for Diptych No. 2

Figure 43. *Diptych*, ms. 1

Part I, Section A, ab1. The first ten measures, including the three bar repeat present the metric structure. The chorale follows with the bass line motive which appears in the piano part, measures 8-11 and doubled in the marimba part, measures 8-10. The quartally derived, not yet complete eb/F polychord appears in the last two measures of the figure.

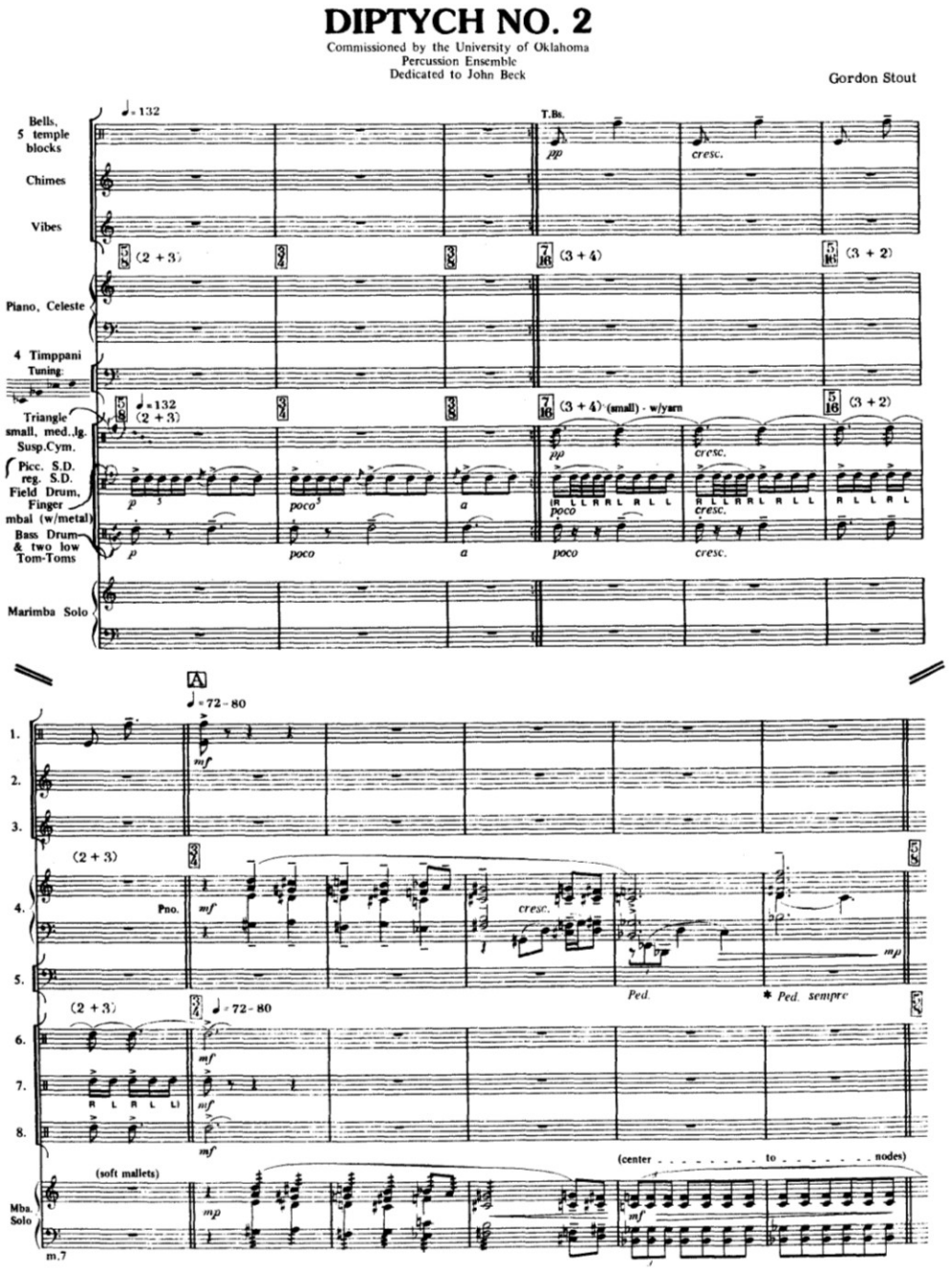


Figure 44. *Diptych*, ms. 25.

Part I, Section A, ab3. This figure illustrates the same structure as figure 43. Differences include the use of new instruments, new melodic lines based initially on fourth relationships and generally thicker, higher and louder statements of b3. The eb/F polychord appears in the piano part, fourth measure of the figure.

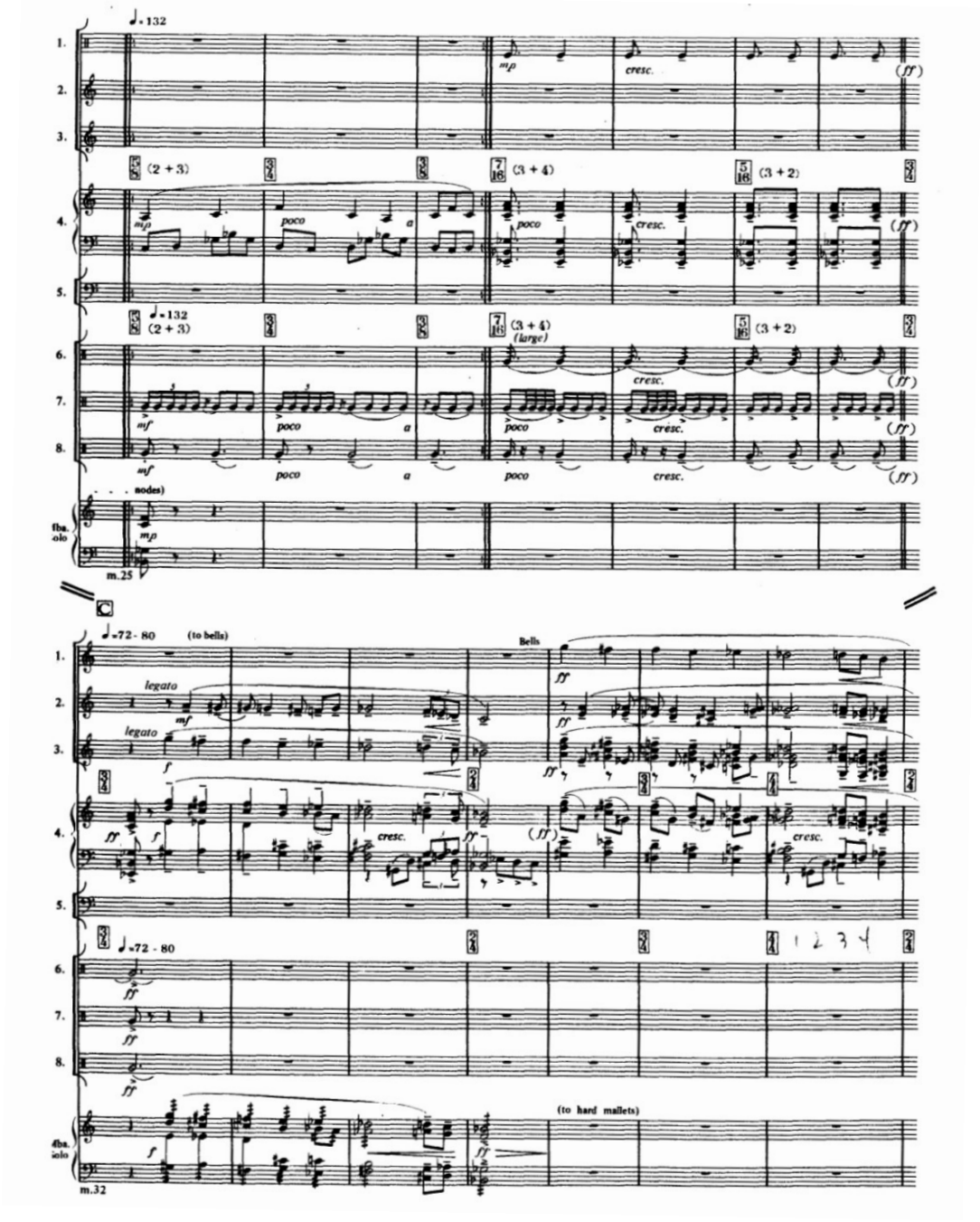


Figure 45. *Diptych*, ms. 39.

Transition to Section B. The quintuplet figure is a rhythmic diminution from the bass line of the chorale. The succeeding notes of the marimba part are also derived from the notes of the piano bass line of the chorale. (See fig. 43 piano bass line, measures 8-11).

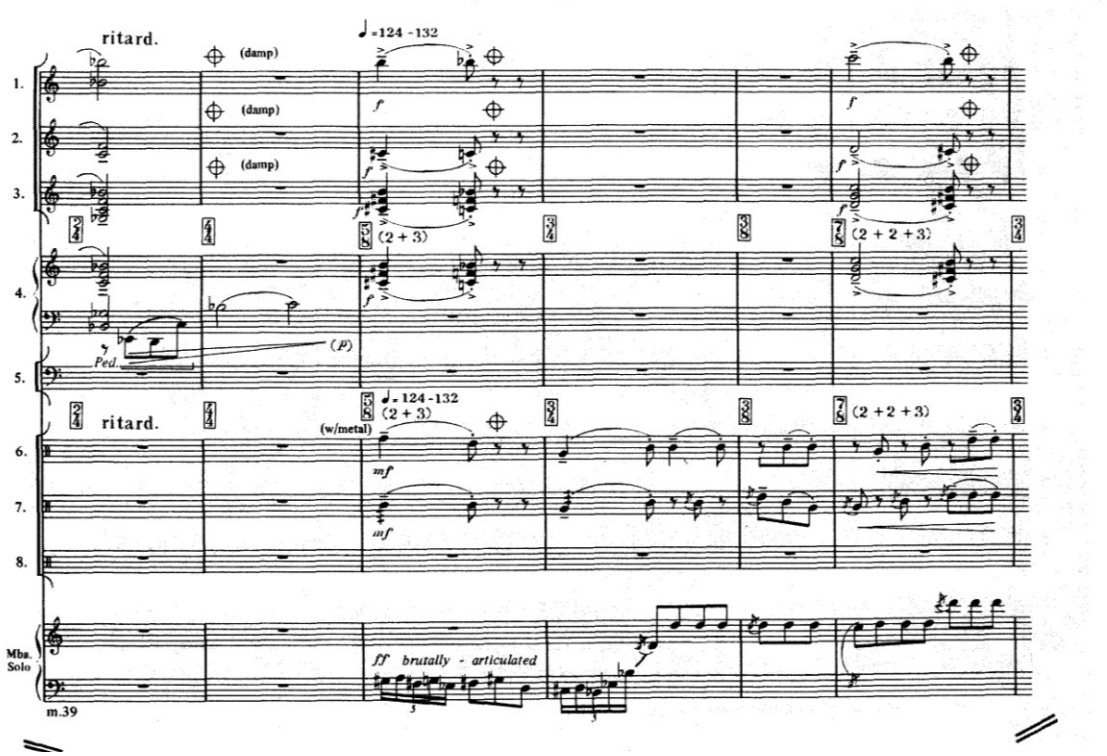


Figure 46. *Diptych*, ms. 51.

Next page: Refrain motive in unison. Measure 53 presents Part I, Section B where the accompaniment motive appears in the piano, timpani and marimba. The polychord eb/F is used as a harmonic/tonal structure. An abbreviated use of the 10 measure metric structure is used.

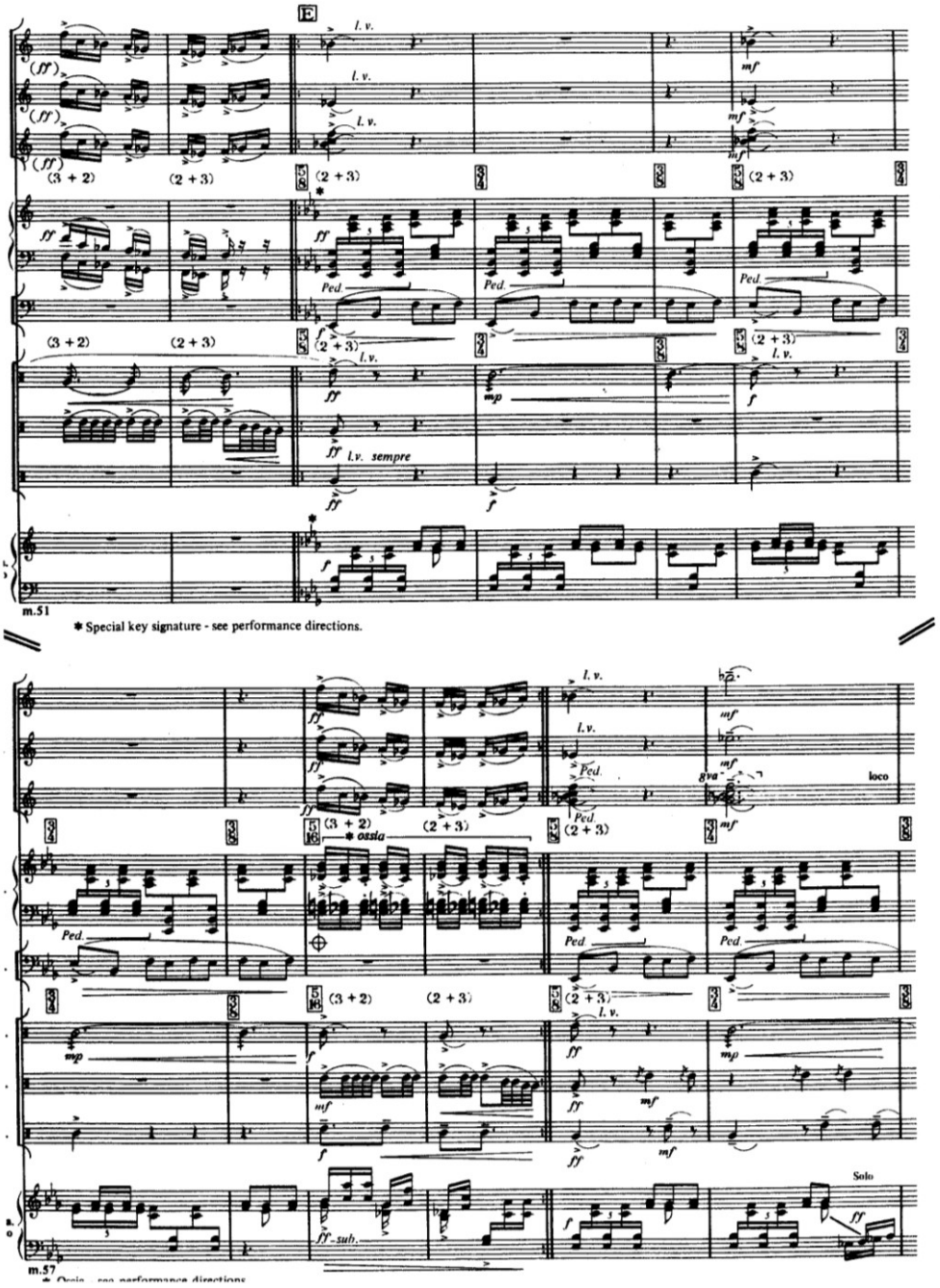

E
l. v.
(ff)
mf
(3 + 2)
(2 + 3)
ff
Ped.
mp
f
l. v. sempre
m.51
* Special key signature - see performance directions.
gva
loco
* ossia
Solo
ff-sub.
m.57

Figure 47. *Diptych*, ms. 63.

Measure 63 presents a variation of the refrain motive as an accompaniment in the vibraphone. The marimba has the lead voice using figuration based on the eb/F harmonic/tonal structure and motives from the quintuplet figure. At "Bombastically" the music presents a hocket texture related to the piano part. The marimba part relates to the pianist's right hand while the other keyboards relate to the pianist's left hand. Sticking options are indicated in the last measure of the figure.

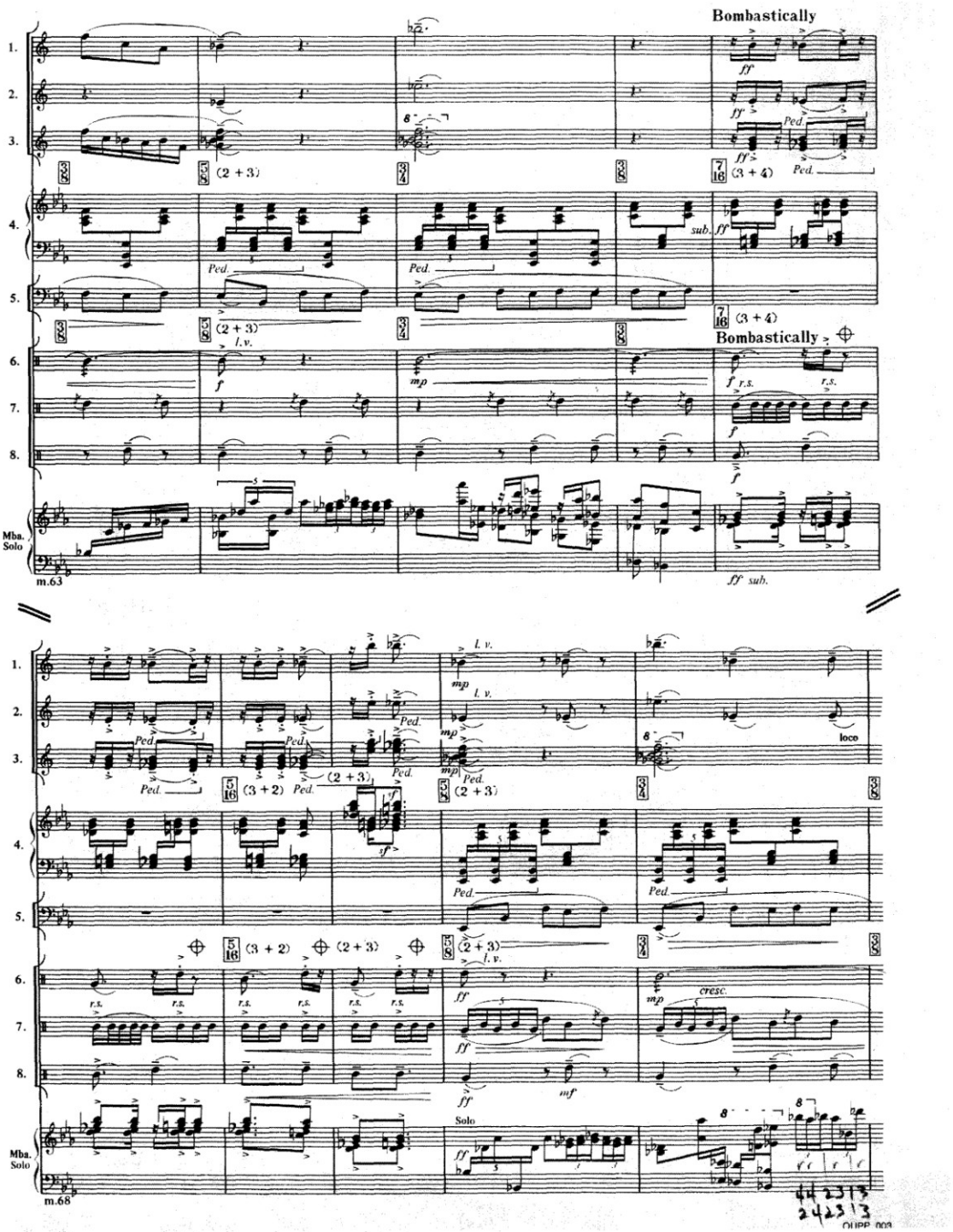


Figure 48. *Diptych*, ms. 92.

Section B. The piano presents the quintuplet motive and follows with solo melodic material that will be the harmonic and melodic source of much of Part II. A structural double exposure appears in measures 91 and 93. Compare to figure 45 where similar texture and harmonic structures appear. The figure continues on the next page.

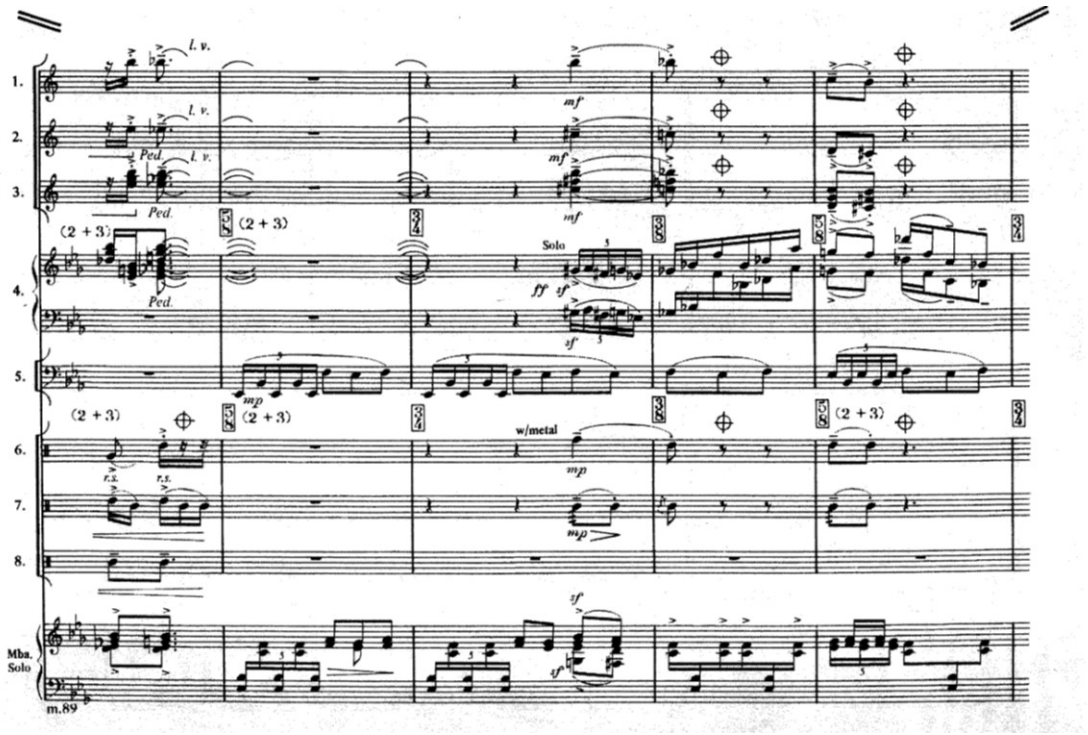


Figure 48, Continued

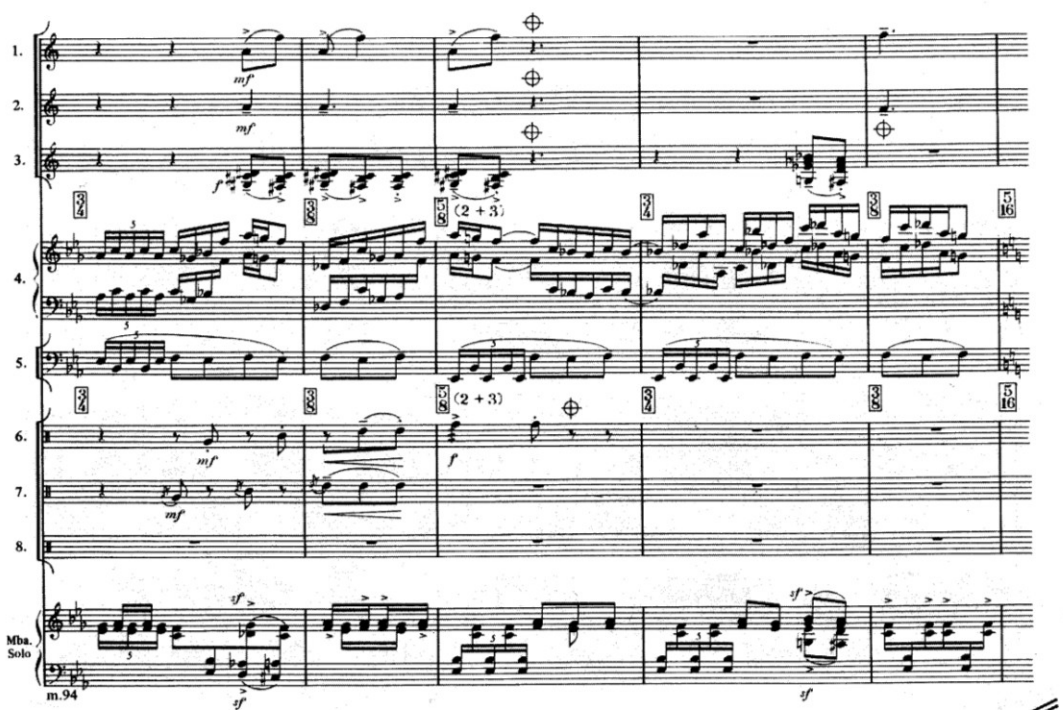


Figure 49. *Diptych*, ms. 150.

Next page: Part II, C. Marimba uses the melodic series of the piano solo in figure 48 as the source for harmonic structures. Tempo is slower and the instrumentation, now characterized by ringing metallic sounds projects a contrasting formal structure.

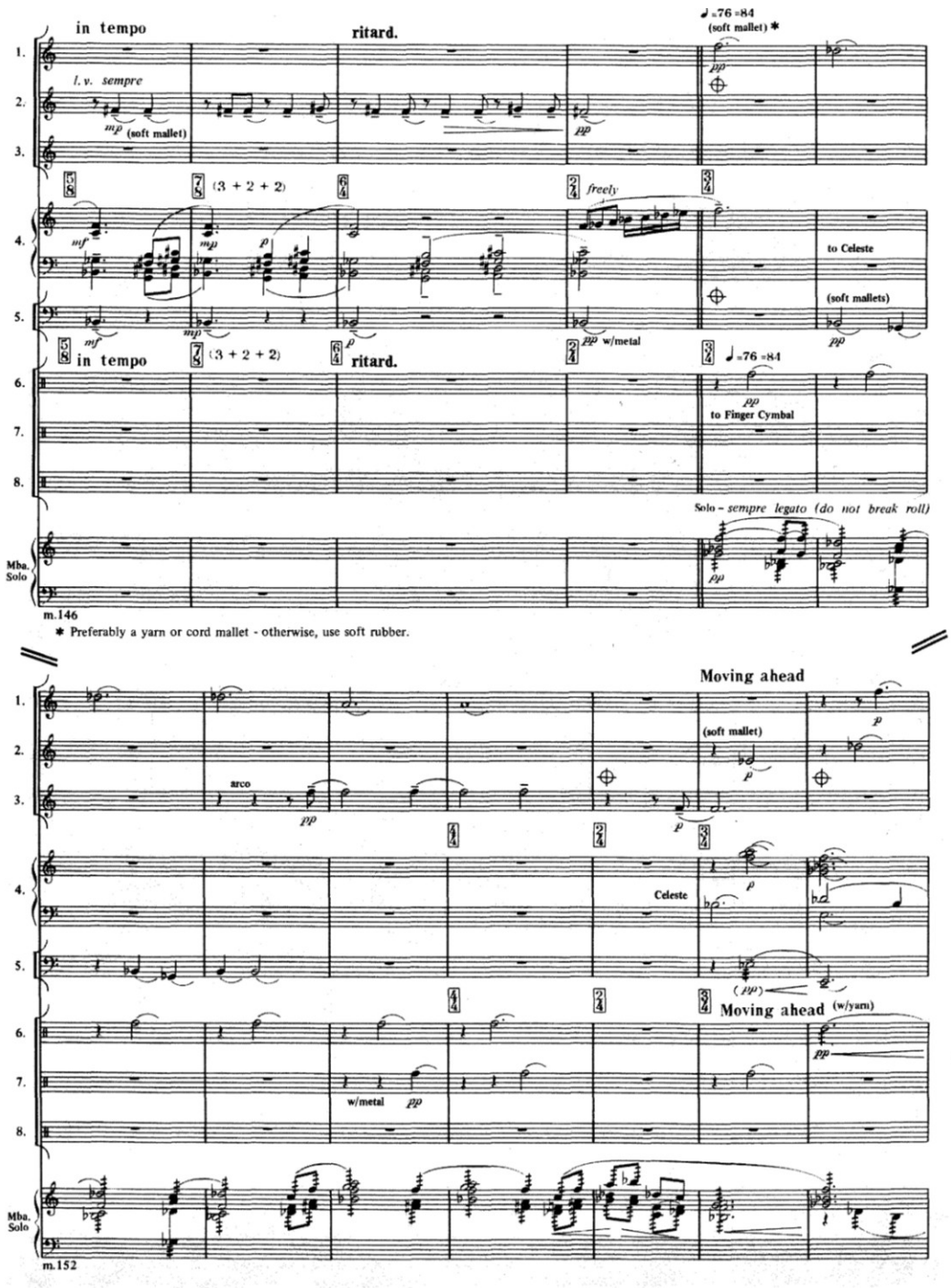

in tempo
ritard.
♩ =76 =84
(soft mallet) *
l. v. sempre
mp (soft mallet)
pp
(3 + 2 + 2)
freely
to Celeste
(soft mallets)
mf
mp
p
pp w/metal
in tempo
(3 + 2 + 2)
ritard.
♩ =76 =84
pp
to Finger Cymbal
Solo - sempre legato (do not break roll)
Mba. Solo
m.146
* Preferably a yarn or cord mallet - otherwise, use soft rubber.
Moving ahead
(soft mallet)
arco
pp
p
Celeste
(pp)
Moving ahead (w/yarn)
w/metal
pp
Mba. Solo
m.152

Figure 50. *Diptych*, ms. 161.

Part II, Section D. Rhythmic augmentation of piano solo pitch series appears in the marimba part and is accompanied by ensemble singing with vibraphone, celeste and timpani doubling of eb and e triadic oscillations. Compare the pitch series of the marimba at measure 162 to the piano part in figure 48 at measure 92.

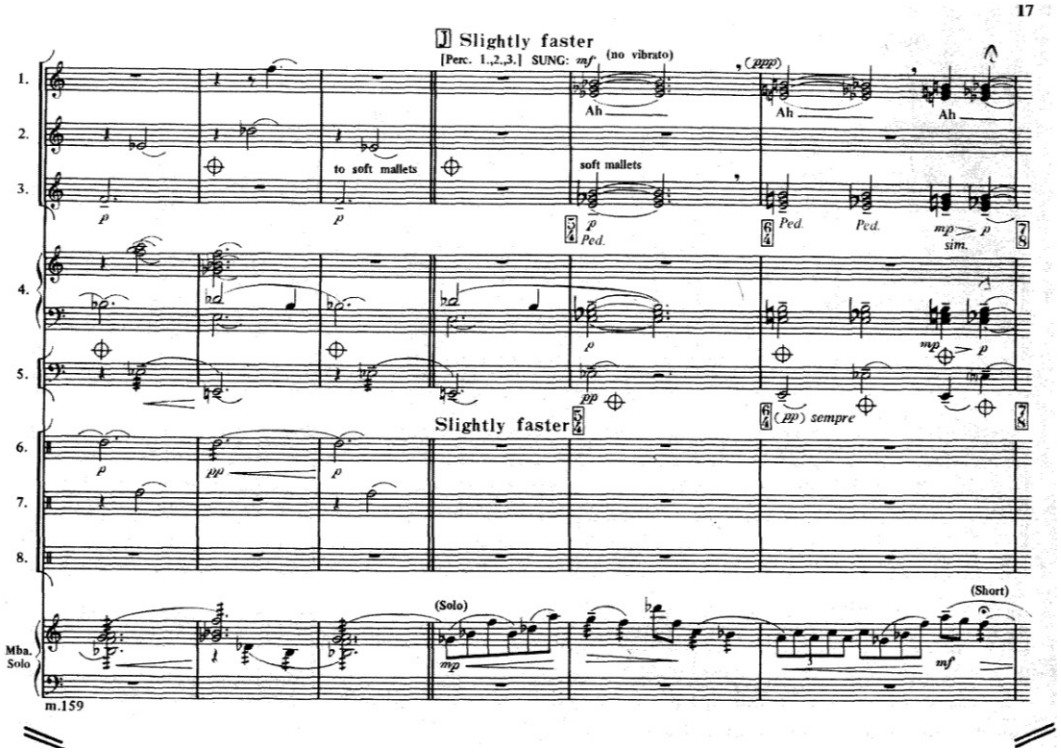


Figure 51. *Diptych*, ms. 174.

Next page: Part II, Section E. At rehearsal K the marimba presents even slower and lower statement of the piano series of pitches. The timpani and marimba are in alternation rhythmically. The vibraphone presents a harmonic version of the melodic marimba part.

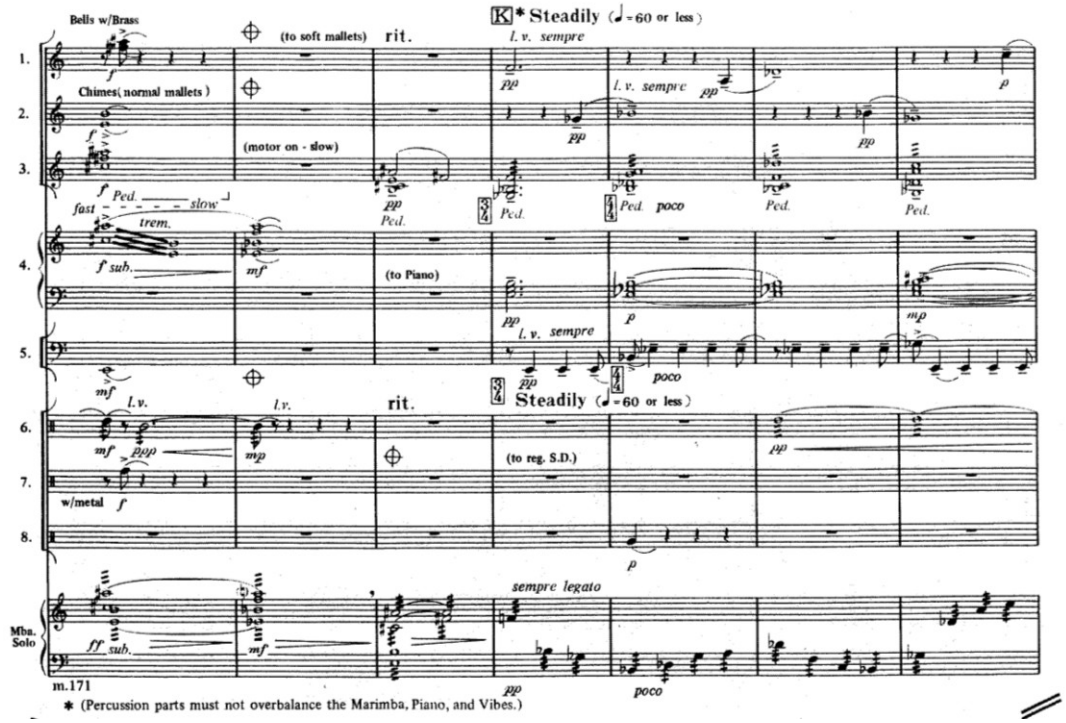
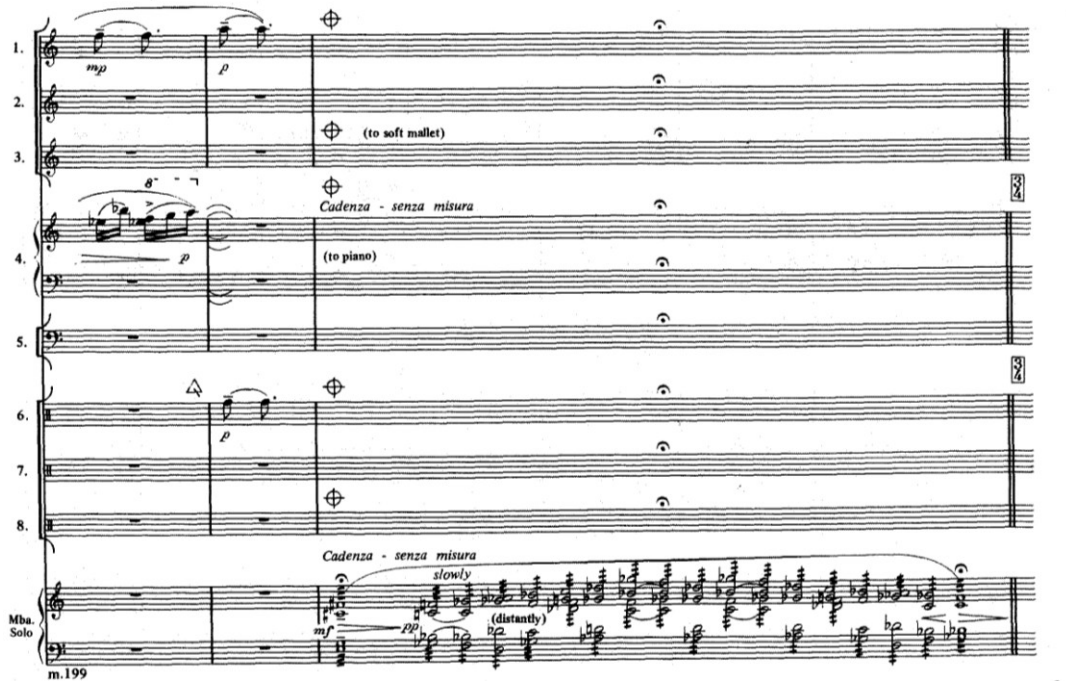


Figure 52. *Diptych*, ms. 199.

This figure shows the final bars of the quick tempo coda based on Eb/F polychord followed by the chordally arched marimba cadenza based on quartal harmonic structures.



Performance Problems in Diptych No. 2

The composer provides two pages of performance directions for the work. He addresses issues that include mallet selection for the various instruments, specific instruments needed for each player and the staff notation that will be used. Stout uses an abnormal key signature that includes the accidentals Bb, Eb and Gb. He also uses a larger font accidental that applies to all the notes in its proximity. This notational short hand usually applies to a triad and signifies eb minor or e minor. The composer also instructs the snare drum roll to be performed using a concert/buzz style when traditional three slash notation is used. Thirty-second notes will use open/diddle style performance.

The score proper is filled with notations concerning most parameters of performance. Muffling of instruments is indicated by a circle with a plus sign in the middle. Pedaling on the vibraphone and piano are clearly indicated. The ringing instruments, bells, chimes, toms, suspended cymbal and the like are meticulously notated with indications concerning articulation (usually short or let ring). Phrasing is indicated for all instruments. The composer gives detailed instructions on the kinds of mallets to use in each section of the work. Stickings are given for many of the most difficult passages for the snare drummer and marimbist. Some of the solo marimba passages are notated so that stem direction and/or clef segmentation indicates which hand plays what note (see fig.46, rehearsal E).

The solo part uses the special key signature of Bb, Eb and Gb. It is a particularly idiomatic group of pitches that corresponds to the eb/F polychord and allows for split keyboard performance. The accompaniment motive uses left hand on

the accidental keyboard and the right hand on the natural keyboard. Playing sixteenth-note quintuplets in the five-eight meter can be challenging (see fig. 47, measure 64). Stout indicates grouping the measure into 2+3. Thus, playing the quintuplets over the quarter note followed by a three eighth-note group should facilitate the rhythm. An especially difficult figure occurs in measure 72 on beat four, the sextuplet grouping (see fig. 47). Two sticking options include 2, 4, 2, 3, 1, 3 or 4, 4, 2, 3, 1, 3. The first sticking maintains the interval spread of an octave in each hand. The left hand plays all the Bbs and the right hand plays all the As and the final Db. The challenge is the large shift of an octave at a very quick tempo for the left hand. The second sticking uses a double stroke for the higher Bb and A played by mallet 4. This is followed by prepositioned performance of the following pitches, Bb, A, Bb. A small shift facilitates the final Db. This sticking uses two smaller shifts (half-step and third). It also maintains the octave interval spread that precedes the figure. The performer does not have to change interval spread within each hand to play the sextuplet figure. The drawback of the second sticking is a less pronounced quality of the first two notes due to the double stroke. Those two notes are, however still audible. The facility of the second sticking will probably outweigh the projection of the first, primarily because of the cumbersome octave shift in the left hand.

Roll base in the chorale of Part I, a1 is important because of the unison timing and pitch content between the marimbist and piano. Using right hand divisions and filling in with the left hand at a speed that produces a musically acceptable sustain will be the starting point. This can then be adjusted to maximize expression and phrasing while maintaining proper ensemble timing. Careful attack spots on the bars will be

necessary to maximize the tonal gradations requested as the performer moves from center to node. Mallet selection is not indicated for the marimba soloist. A medium mallet capable of projection and rolling a chorale style in the middle and lower register of the instrument is appropriate for the A Section of Part I. A medium mallet will facilitate the legato, chorale style and be loud enough to project through the ensemble. A mallet which is too soft will produce a sound that lacks ample projection. The transition, marked "brutally" and "articulated" will require a harder set of mallets. These will be needed in the B Section as well. Part II's predominantly rolled texture, except for struck eighth-notes in Section D, will require a medium or medium bright mallet to maximize the change of expression. Part II does use the full range of the instrument and will require a mallet warm and resonant for the middle register and bright enough to project the upper register.

The most challenging performance problem for the marimbist and ensemble is the rhythmic detail of the work. The ten measure metric structure and its various modifications present details that require meticulous preparation from the ensemble as a whole. Stout is faithful to edit the parts with helpful information. The performer can track the perpetually changing sub-groupings of the measures even in rests. This kind of editing saves the conductor from having to communicate how measures will be divided. The depth of rhythmic detail can be illustrated in the Bombastic section of Part I, Section B (see fig. 47). The metric structure is two measures of 7/16 followed by two measures of 5/16. Stout indicates a division of 3+4 for the measures of seven and 3+2 and 2+3 for the measures of five. The performers are playing syncopations within the sub-groupings. The ensemble and soloist should memorize the piano passage, which

sounds the composite rhythm. The syncopated and rhythmically gapped keyboard percussion parts coordinate to the piano part. The Bombastic part is repeated exactly later in the score. Other figures are related to their unique previous statements but are slightly adjusted according to grouping, accent or embellishment. These details are essential to the work and require accurate preparation from the performers.

An additional challenge concerns the repetitions in the music, especially the arch restatement of A and the immediate restatements of the ab figures in Part I. The composer has in most instances composed, or recomposed slight variations on previously heard material. By example, a1, a2 and a3 use different snare drums and temple blocks and different rhythmic sub-groupings of the two 5/16 measures for each statement; b1 uses only piano and marimba, b2 adds vibraphone and b3 adds bells and then chimes in addition to thicker scoring and dynamic growth. The conductor and performers should be sensitive to the projection of these unique features. Variety and fresh sounds with new relationships will be audible throughout this section.

Configuration of the ensemble is not indicated. The marimba will need to be in front for projection. The piano can be in a variety of places, perhaps on the opposite side of the marimbist and conductor at the front of the stage. The piano does have a primary part that includes melodic and harmonic significance and solo passages. The other instruments could be spread out behind these two. The piano also could be at the back of the ensemble in the middle to allow the ensemble to hear the many key parts it plays. The unpitched percussion players should be set up close together to facilitate the performers in hearing the intricate rhythmic details. This group frequently performs related rhythmic structures.

Concerto No. 1, Gate to Heaven

Gate to Heaven, by David Gillingham had 15 PAS program submissions and a PASIC performance by soloist Janis Potter, former percussionist with the Marine Band, and the Marcus High School percussion ensemble in 2003 at Louisville, Kentucky.[59] The work, composed in 1998 was commissioned by a consortium that included: Randy Fluman, Texas A. and M. University at Kingsville; Dr. Julia Hillbrick, University of Missouri; Dr. Cort McClaren (now retired) University of North Carolina at Greensboro; Dan Moore, University of Iowa; Chalon Ragsdale, University of Arkansas; Dr. Lisa Rogers, Texas Tech University; and Andrew Spencer, Central Washington University. All the commissioners are percussion professors at the respective universities, and Dr. David Gillingham is Professor of Music at Central Michigan University.

The instrumentation of this work is unique among the four works examined in this study. The work uses the instrumentation of the percussion orchestra genre that emerged in the fourth period of activity outlined in Bruce Robert's University of Oklahoma document, "The Emergence and Development of Mallet Ensemble Literature in the United States."[60] Typically works in this genre include the use of a large keyboard ensemble of mixed keyboard types. The marimba voice is central, and the instrumentation will include marimba parts for three or four players, if not more. These works can include an array of unpitched percussion instruments played either by

[59] I-Jen Fang, "A Marimba Journey with Janis Potter," *Percussive Notes* 42, no. 5 (October 2004): 38-40.

[60] Roberts, 142.

dedicated players or by the keyboardists doubling on the unpitched instruments.[61] Timpani may or may not be used.

In *Gate to Heaven* a mixture of keyboards with two unpitched percussionists are used. In addition to the soloist, it uses eight percussionists, six of which play keyboard instruments exclusively. The two unpitched percussion players are assigned a fairly large group of mixed instruments that include various drums, metal and wooden idiophones. Their role is primarily one of accentuation, coloration, dramatic climax, and, with the keyboards, co-creators of ostinato. This is in contrast to the way Stout used the unpitched percussion to produce structurally significant activity.[62] The ensemble keyboard instruments include three marimbas, two vibraphones with one vibraphonist doubling on crotales. The final keyboard player uses orchestra bells, chimes and a xylophone. The scoring in the work tends to exploit the metallic instruments (bells, chimes, vibraphones and crotales) as a contrasting group to the wooden instruments (marimbas and xylophone). The two groups are used heterogeneously, (mixed metal and wood) or homogeneously (all metal or all wood). The prevailing texture is homophonic in support of the marimba soloist. The ensemble does act at times as co-contributors of thematic material while the remaining members of the ensemble serve as an accompanying force. Bells and xylophone provide a very high, projecting quality. In addition they are used either for their delicate, expressive side or as part of a blended sonority. Vibraphones, chimes and bells are exploited for their resonant and brilliant qualities while the marimba group has the largest and lowest

[61] Michael Hennagin's work, *Duo Chopinesque,* published by OUPP*,* asks keyboard players to perform a variety of un-pitched percussion instruments in addition to the keyboard part.

[62] In contrast, Stout's ten measure metric structure was instigated, developed and largely maintained by the unpitched percussion group.

range and is generally warmer than the metallic instruments. The instrumentation is as follows:

> Marimba Soloists: Five octave instrument from *Great C*.
> Percussion 1: Xylophone, Bells and Chimes
> Percussion 2: Vibraphone and Crotales
> Percussion 3: Vibraphone
> Percussion 4: Marimba I (standard range)
> Percussion 5: Marimba II (standard range)
> Percussion 6: Bass Marimba (*Great C* to c1)
> Percussion 7: Brake Drum, Large Tom-tom, Cow Bell, Suspended Cymbal, Large Tam-tam, Shaker and Five Temple Blocks
> Percussion 8: Two Bongos, Small Tom-tom, Two Congas, Medium Crash Cymbals, Hi-hat, Medium Triangle

The formal structure of the composition is in three parts with each part titled Remission, Reflection and Redemption. These correspond to the work's descriptive program provided by the composer in the score:

> Each movement of the work reflects the movement of the soul into the portal of heaven. The first movement, titled "Remission", is indicative of death and the consequences of the soul's former life. …the introduction captures the hard blows of death and the mysterious passage into the unknown world beyond. The ensuing presto is representative of the tribulations of the former life fluctuating between evil and ecstasy. … "Reflection" is a solemn look into the past life of the soul and suggests mixed emotion about the former life of the soul as a human form and its present state as energy moving through the infinite universe…. "Redemption" …invokes whatever image one has of "heaven". It was the composer's intention to paint a musical image of golden light shining upon a rainbow-colored landscape.

The formal unfolding of Remission begins with a sectional introduction that presents the harmonic/melodic structures used frequently in the first movement. These structures appear (see fig. 53, page 174) as both a harmonic structure (f with a major seventh) and as a melodic structure played by the soloist (Ti, Do, Me, Sol); the melodic

figure will be designated the Remission Motive.[63] The introduction also uses a descending half-step melodic motive excerpted in figure 54. It will reappear in movement two in diminution. The tempo increases through metric modulation to presto and the movement proper. The formal structure is a rondo: A, B, A, C, D (developmental), cadenza, A, Coda. The A section is made up of the rondo refrain motives a and b, see figures 58 and 59, and form a ternary design within each A section: a, b, a. While the A Sections use fast melodic passages over homophonic accompaniment, the B and C sections use rolled four-note textures in the solo part. The ensemble provides a homophonic accompaniment. The D Section uses ostinato created through pitched and unpitched percussion and develops the Remission motive.

Reflection moves very loosely through a strophic design. Three ideas are presented and reworked twice, followed by a partial statement. These sections are: a dirge-like chordal introduction by the marimba ensemble, presentation of the Reflection Theme (see fig. 63) by the soloist (A) and, finally, a developmental elaboration (B). Thus, the sections Introduction, A and B are presented three times and a final statement through A concludes the movement.

Redemption formally mixes elements of Rondo (thematic alternation) and sonata (contrasting thematic material and recapitulation after development). Structurally the movement uses two main themes, Theme 1 (quick rhythmic figure played in the upper register of the solo marimba) and Theme 2 (slower rhythmic material in lyric style played lower in the solo marimba register). These are illustrated

[63] Chord symbols will used to describe harmonic structures and keys. Lower case letters signify minor keys or triads and upper case letters will signify major keys or triads. When referring to scale degrees, moveable Do and Do based minor will be used. (Do, Re Mi for Major and Do Re Me for minor).

in figures 67 and 68. The composer cyclically recalls the Reflection Theme in movement three, where it appears structurally at the beginning of both the Development and Coda. There are several instances where thematic materials are simultaneously presented. The movement sectionalizes as a sonata form as follows:

Exposition (measure 289): Theme 1, Theme 2. Both themes exposed in Db. Both themes are then presented again in A followed by Gb.

Development (measure 339): Reflection Theme from movement two, Theme 1 developed, Theme 2 developed. False Recapitulation at measure 397.

Recapitulation (measure 401): Theme 1, Theme 2. Both themes now in D. Interlude.

Developmental Coda (measure 430): Reflection Theme and Theme 1 and 2.

Texture in the marimba part makes use of traditional types: chordal textures, arpeggiated figures and scalar figures. It also uses melodic material rolled in octaves and is performed between the hands with mallets two and three or two and four. In addition the composer calls for double octaves (one in each hand). These are all common marimba techniques.

The work has neo-romantic qualities. Harmonic structures are tertian and tonal centers are established through repetition but also root movement. There are many instances of dominant/tonic or other functional harmonic progressions.[64] Tonal centers in mediant relationships occur frequently. An example occurs in Redemption's Theme

[64] Examples: mm.73-74 uses a minor Neapolitan to an altered dominant to the tonic in f; mm. 105-107 uses an altered dominant to the tonic in f; mm. 212 to 213 modulates from f to b-flat using i to VI in f and N6 to V7 in b-flat; mm. 286-287 uses a borrowed ii diminished triad with half-diminished 7th moving to the tonic in Db.

1 from measures 289 to 294. The theme occurs in the tonal areas of Db, F, A and Db; all are major chromatic mediant relationships.[65] The conclusion of Remission, measures 206-208 uses the harmonic progression f, a, Db, e, g, b-flat, C, Bb, Eb to f, with f as the tonal center. Many of those progressions are mediantly related. The composer also uses modal flavoring to provide pitch variety. The Introduction to Remission, Section 3b at measure 27 and following, uses g Dorian, b Dorian and b-flat Dorian. The essence of the mode is evident even though some statements are incomplete inventories of the modes. Another example of modal flavoring occurs at measure 351 in Redemption. In these measures the Lydian mode is used with chromatic mediant root relationships: C, E, Ab, F, D, B.

Rhythmic devices include the usage of metric modulation in the introduction. Figure 57 illustrates this first metric modulation. The triplet eighth-note in measure 52 becomes the speed of the eighth-note in measure 53. This increases the tempo from sixty to ninety beats per minute.

Rhythm is used to define and/or vary formal sections. Some sections are rhythmically stable while other sections are less stable through the use of mixed meters. By example, the Redemption's second theme uses the accompanying instruments as a constant eighth-note division of meters based on the half note as the unit of the beat. In the second appearance of the theme, the composer uses four-four and six-eight meter in alternation (same theme, different meters).[66] Theme 1 of the Redemption uses meters

[65] The same progression occurs in the recapitulation where Theme 1, at measure 410 uses a transposed version: D, F#, Bb, D.

[66] Compare Theme 2 in measure 295 and following with the same Theme in 316 and following.

based on the quarter note as the unit of the beat. These rhythmic devices help to provide variety as well as clarify the formal structure.

Structural Analysis of *Gate to Heaven*

Introduction

(Four Parts)

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Part 1	1	Q=60	Harmonic structure is minor triad with Major seventh. Appears first in f followed in c in mm. 5-6.	Syncopated rhythmic unison figure represents the "hard blows of death." Melodic presentation of **Remission Motive** by soloist (see fig. 53).	Homophonic texture in unison by ensemble supported by percussive brake drum attacks. Dynamic is loud.
Part 2a	9	same	b minor tonal center. Harmonically moves between b, F#; a, E.	**Descending half-step motive** appears in bells and vibraphones (mm. 10-15, see fig. 54). Rhythmic content includes sextuplets in marimba and longer tones for the half-step motive.	Homophonic texture with marimba playing faster accompaniment figures. Metallic ensemble has melodic material. Dynamic is soft.
Part 2b	15	same	Center is a minor. (Harmonic motion moves between E, a, c#).	Accompaniment shifts to marimba ensemble in sextuplets. Solo presents chorale texture with augmented Remission Motive in the top voice (Ti , Do, Me, Sol).	Four voice chorale texture in solo with homophonic sextuplet accompaniment in marimbas (see fig. 55).
Part 3a	22	same	Change of triad color from E to e. Progressions: e, C, a, E).	Solo uses thirty-second note figuration to develop Remission Motive. Mixed metric activity creates intensity (6/32, 2/4,	Homophonic texture. Accompaniment alternates wooden and metallic

				12/32, among others).	ensemble. Metallics ring.
Part 3b	27	same	Harmonic oscillation between g and b-flat, both using Dorian mode (see fig. 56).	Metric ostinato for two measures using 2/8 and 7/32. Seven statements of the ostinato. Accompaniment marimba figuration is constant thirty-seconds with one three-note grouping (4+4+3+4).	Four voice chorale texture in solo with homophonic thirty-second note accompaniment in marimba group.
	41		Similar.	Rhythmic motion changes to sixteenths in accompaniment and transitions to Part 4.	Similar texture with decrescendo.
Part 4a	44	same	f minor. (Harmonic motion moves between f, c#, e, C).	Rhythmic activity slows to eighths in accompaniment. Remission Motive is developed in the solo with thirty-second note figuration through the various harmonies. At ms. 50 the accompaniment rhythm changes from eighths to triplets (gaining momentum).	Quiet dynamic, homophonic texture. Accompaniment oscillates between the wooden and metallic ensembles.
Part 4b	53	Q=90	Similar.	Continued development of Remission Motive in solo (see fig. 57).	Metric modulation quickens the tempo (see fig. 57). Same texture and oscillation.
Part 4c	58	Q= 135, accel.	Similar.	Mixed meter and quicker tempo contribute to intensification. Similar motivic development in solo.	Metric modulation again quickens the tempo. All keyboards accompany solo. Upper marimba ensemble has continuous eighths while metallics and

					bass marimba reinforce larger groupings. Dynamics crescendos to Remission proper.

Remission

(Rondo: A, B, A, C, D, Cadenza, A)

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
A, a	63	Presto Q=160	f minor. Minor triad with major seventh harmonic structure used pervasively in rondo refrain except for dominant to tonic motion.	Solo presents **Remission Motive** Ti, Do, Me, Sol (see fig. 58). New counter motive in upper marimbas derived from Remission motive.	Homophonic texture. Metallic and wooden ensembles blended. Bells omitted. Brake drum adds attack to first two measures.
A, b	68		Harmonic motion between c# and g, both with major sevenths. At ms. 73 and 74 dominant motion leads back to f.	Mixed metric structure. Melodic material in solo similar to Remission Motive but developed. Mixed metric structure assumes primary attention (2/4, 6/16).	Homophonic texture, accompaniment by bass marimba and two vibraphones (see fig. 59).
A, a	75		f.	Similar to mm. 63-67.	Similar to mm. 63-67.
B	80		f . Also moves through a, c, Cb, and g at mm. 88, 90, 92 and 94 respectively (see fig. 60).	Two measure rhythmic ostinato: 2/4, 7/8, eighth-notes grouped as follows: 2+2+2+2+3. Eight complete statements of the ostinato. Melodic content of solo marimba chorale is Do, Re, Me, Re, Do, Ti.	Four voice chorale texture in solo with homophonic eight-note accompaniment in lower marimbas. Metallic pitched instruments

				(This is similar to Redemption Motive and Reflection Theme).	mark ends of phrases at mm. 88 and 94.
Trans.	96		Harmonic motion: g, b-flat, C, b-flat, db, b-flat and Eb.	Meter is six-eight.	Metallic group with solo. Homophonic texture.
	100		Cadential preparation for return of rondo refrain. Ab, G triads at ms. 100 and C7 at 105 and 106.	Remission Motive in solo.	Chordal accompaniment supported by brake drum (death blows). Massive dominant crescendo stemming from staggered entries from each marimba and vibraphone towards refrain's return.
A, a	107		f minor.	107-111=63-67.	107-111=63-67.
A, b	112		c# and g minor.	112-118=68-74.	112-118=68-74.
A, a	119		f minor. 123 to 125 is dominant cadential extension: ensemble in rhythmic unison with brake drum.	119-122=75-78. Cadential extension uses soloist playing fragment of Remission Motive in dialog with an ensemble marimba.	119-122=75-78. At ms. 123 homophonic texture with two upper parts in dialog.
C	126		f with mediant motion (f to a for example). Cadential motion toward transition beginning in measure 137: b-flat, f, Gb (iv, i, N in f).	Marimba plays three chorale like phrases. The first two melodically rise by step while the third uses melodic skips and sequence.	Four voice chorale texture in solo with homophonic eight-note accompaniment in lower marimbas. Bass marimba has slower moving rhythmic figure (see fig. 61).
Trans.	140		C.	Pedal Cs and glissando in xylophone.	Xylophone and marimba

					ensemble with multi-drums and cowbell.
D	144		Change of mode to c minor.	Ostinato over a two measure metric pattern: 4/4, 7/8 (Fourteen statements). Ensemble marimbas on octave Cs and busier unpitched percussion ostinato using shaker and drums. Solo develops Remission Motive and four voiced chorale phrases (see fig. 62).	Homophonic, marimba solo over marimbas and unpitched percussion. Metallic ensemble marks sections with harmonic colorations over the pedal (ms. 156, 161).
Re-trans.	172		C Major.	Solo figures derived from Remission Motive.	Chordal punctuations from marimba group. Xylophone glissandos return.
	177		C7, half cadence.	Death blow figure returns. (Compare to ms. 1).	Brake Drum punctuates marimba and xylophone ensemble.
Ca-denza	178		C7,b9#9.	Mostly arpeggiated chordal figuration.	Marimba Solo. At ms. 186 the ensemble enters with a near tutti V7 leading to rondo refrain.
A, a	187		f is the tonal center.	187-191 similar to 63-67.	187-191 similar to 63-68.
A, b	192		c# and g chordal oscillations.	192-198=68-74.	192-198=68-74.
A, a	199		f is the tonal center.	Similar to 75 but varied through texture and harmonic motion, Remission Motive is still source of melodic material.	Vibraphones and long tones thicken texture. Crash cymbals support bass marimba chordal punctuations, ensemble marimbas play a

					counter figure to solo.
Coda	204		f. Many mediant progressions. Beginning at 206: f, a, Db, e, g, b-flat, D, b-flat, Eb and f.	Remission Motive fragment in 208.	Death blow figure, with brake drum returns in 208.

Reflection

Strophic: Dirge Introduction (Dirge), Reflection Theme (A), Elaboration (B)

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Dirge 1	209	Lento, Q=52	Begins in f and modulates from f to b-flat.	Sparse rhythms in unison.	Marimba ensemble only. Soft dynamic.
A, 1	213		Primary harmonic maneuver is b-flat to f#. Scales degrees Do to Le with minor triads built on the roots. This progression is cyclically brought forth from Remission's Rondo refrain key centers of sections A,a and A,b. The keys of the rondo sections were (f, and c#). See ms. 63 and 68.	**Reflection Theme** appears in solo (Me, Re, Do, upper Ti, see fig. 63). This bears some resemblance to Remission Motive (all ascending: Ti, Do, Me, Sol,). The Reflection Theme is worked through several keys with harmonically deceptive maneuvers and gentle metric adjustments (4/4 and 3/4).	Homophonic texture using exclusively the marimba ensemble. Texture of solo part is melody in rolled octaves in low and middle registers. Dirge accompaniment continues through A.
B, 1	227		Harmonic ostinato lasting two measures: b-flat to f#. Total statements:	Marimba decorates the harmonic content with scalar and arpeggiated figuration based on harmonic	Texture is Homophonic. Accompaniment uses vibraphone and marimba in

			five and one-half.	accompaniment. Rhythmic content moves from sextuplets at ms. 233 to thirty-seconds at ms. 235. Sextuplets return at ms. 237.	alternation at the interval of one measure. Addition of voices singing Me, Re, Do respective to harmony. Bass marimba plays continuously (see fig. 64).
	238		New Harmonic content: In eighth-note rhythm: F, D for one measure followed by c#, F# for the second.	Solo figuration ends. Adds vibraphone with pitch doubled by singing of stepwise chord tones: C, D and E, F#. Marimba figuration increases to thirty-seconds. Cadences in ms. 240 with solo arpeggiation returning on f.	Crescendos to *FF* at ms. 240 for climax.
Dirge 2	241		Brief reference to dirge in f.		Marimba ensemble presents dirge.
A, 2	243		f is the tonal center.	Chorale presentation of Reflection Motive.	Four voice solo Marimba with soprano doubled by Bells.
	245		f is the tonal center.	Vibraphone present half-step descending motive (cyclic use of half-steps from Remission's introduction, mm. 10-15).	
	247		f is the tonal center.	Reflection Motive in Solo.	Four voice solo marimba.
B, 2	248		Tonal center changes to e minor. Marimba ensemble presents pedal e minor triad. Vibraphones present	Solo presents new theme rolled in octaves. Marimba accompaniment plays two eighth-notes every third quarter. This gives the illusion of 3/4 meter with the	Three strata: Marimba theme, Bells and vibraphones with chromatic major thirds, marimba ensemble with e

			descending major thirds in hocket oscillation between the two instruments. Top note doubled by bells.	prevailing 4/4 meter for the solo marimba. The metallic group repeats its figure every four eighth-notes for a 2/4 metric repetition (see fig. 65).	minor pedal. Vibraphone instructed to keep pedal depressed creating a blending of the pitch content.
	254		g is the tonal center.	Return of solo melodic arpeggiation based on harmonic content of ensemble.	Similar texture continues. Marimba solo overlays arpeggiated figures in thirty-second note rhythm.
	256		Quicker harmonic rhythm in quarter notes: f, D, f, D, A, f#, A, f#, f.	Solo arpeggiation continues. At climax in ms. 258, bells descend in solo thirty-second note broken thirds.	Marimba ensemble in triadic rolled quarters, vibraphone and bell continue texture from before. Crescendo with suspended cymbal to Climax in ms. 258.
Dirge 3	259		f is the tonal center.		One ensemble marimbist rolls f minor.
A, 3	261		f to c# harmonic motion.	Reflection Theme bowed by marimbas and vibraphones. One note per player moving across the ensemble.	Homophonic, rolled marimba texture under bowed theme.
B, 3	265		Quicker harmonic rhythm in eighth-notes: F, ab, Eb, f#.	Bells play descending half-step motive. At ms. 266 solo marimba begins arpeggiated figuration based on bell's descending line.	Marimba ensemble rolls triads with top player playing minor third sextuplet figuration.
	267		New progressions, in	Similar figures in solo and bells. In ms. 268	Ms. 268 adds vibraphones

			267: a, E, g, D, f, e, B, d; in 268: A, c, G, Gb.	marimba uses sextuplets in double octaves (one for each hand).	using dyads.
	269		Similar harmonic materials.	Thirty-second notes in octaves by soloist based on minor thirds descending chromatically.	Similar texture.
	270		Harmonic rhythm increases from eighths to sixteenth notes, same progression.	Divisions increase in solo part to triplet thirty-seconds and sixty-fourths, still in octaves.	
	271		Harmonic rhythm slows. Climaxes on Db in mm. 275 and 276.	Rhythmically unison figures using a descending minor third with step between (see fig. 66).	Texture adds chimes, crash cymbal, bass drum and tam-tam to support massive climax of Reflection culminating in mm. 275 and 276. Two measures of ringing sonority transitions to Dirge.
Dirge 4	278		Dirge moves from Db to f.		Marimba ensemble.
A, 4	281		Harmonic progression, f to c# returns.	Reflection Motive in solo marimba.	Homophonic texture with marimba ensemble in dirge with solo in rolled octaves.
	285		Dirge ends with a half cadence on eb diminished (borrowed ii diminished in Db). Db is the key of Redemption.		

Redemption

(Sonata Form)

Introduction and Exposition

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Intro.	286	Presto, Q=160	Db is the tonal Center. Harmonic structures: Db9 and Ab9, the latter with suspended fourth.	The introduction's unison chordal rhythms are similar to the Remission rondo refrain's chordal rhythms. The beginning of both use eighth notes grouped into 3+3+2. (Compare fig. 67 and fig. 58).	Xylophone with vibraphone and marimba ensemble. Hi-hat provides rhythmic propulsion.
Expo. Th. 1	289		Db continues with transpositions in mediant relationships: Db, F, A Db.	**Theme 1** in solo (Sol, Fa Mi Fa Sol, Do Re Mi, see fig. 67).	Homophonic, xylophone and hi-hat continue with vibraphone and marimba ensemble.
Th. 2	295		Db with modulation to Bb at 301.	**Theme 2** in rolled octaves in solo (Sol, La, Do, Sol, see fig. 68).	Theme 2 is lower and slower than Theme 1. Texture is homophonic with theme in marimba. Eighth-notes in both marimba and vibraphone ensemble. Hi-hat and xylophone disappear.
Trans.	306		Begins on Gb. Harmonic	Melodic aspects based on Theme 1 material.	Hi-hat reenters.

			progressions in step and mediant relationships.	Material functions transitionally and is briefly developmental.	
Th. 1	310		A is tonal center. Moves as follows: A, C#, F and A. Similar motion as 289 and following.	Theme 1 presented over each harmonic area.	Hi-hat and xylophone with vibraphone and marimbas in homophonic textures.
Th. 2	316		A is tonal center.	Theme 2 presented by solo marimba in four voiced rolled texture, tune on top. New rhythmic structure for Theme 2 using longer note values (loosely augmented) and mixed meters.	Homophonic with lower marimbas accompanying rolled marimba solo texture. Metallic ensemble, including bells, emphasizes selected notes in the thematic material.
Inter-lude	325		Moves through Gb and Cb then Bb and Eb (I to IV in both cases).	Mixed metrics, primary activity includes chordal oscillations and unpitched percussion dialogue.	Marimba ensemble with temple blocks and hi-hat.
Th.1 and 2.	331		Tonal centers move from Gb in 331 to Bb in 335.	Theme 1 presented in Marimba solo. Theme 2 simultaneously presented in vibraphones (see fig. 69).	Interlude texture continues under Themes 1 and 2. Bells added on top of texture for harmonic and rhythmic support.
Trans.	337		Chordal alternation between Bb and g.	Unison rhythmic figures lead to Development.	Suspended cymbal crescendos into next section.

Development

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Part 1	339	Same	Tonal center is f# minor. Reflection Theme associated harmonic progression returns: f# to d (see fig. 70).	Reflection Theme cyclically returns in solo marimba rolled in octaves. Bell figure at ms. 343 recalls climactic bell figure in movement 2 at ms. 258, (descending broken thirds).	Homophonic texture with marimba ensemble and vibraphone as accompaniment.
Trans.	351		Lydian flavored harmonies in mediant relationships: C, E, Ab, F, D, B.	Recurring 4/4 meter.	Bells, vibraphones and marimba in homophonic texture. No solo.
Part 2	356		Tonal center is D. Harmonic material repeats I and IV corresponding to each measure of the metric ostinato. Marimba accompaniment emphasizes sol, la, and upper sol. These are melodically related to theme 2 (see fig. 71).	Metric ostinato presented: nine repetitions of two measures alternating 6/8 and 5/8. Theme 1 is developed in the solo marimba in the upper register. This material is rhythmically syncopated and fragmented.	Marimba ensemble plays all of ostinato, metallic ensemble joins in the 5/8 measures.
Trans.	374		D and G continue.	Theme 1 is referenced incompletely.	Tom-toms and bass drums added for emphasis.
Part 3	377		Gb is the center.	Theme 2 fragment (sol, la, do, sol) presented in the chimes rhythmically augmented. These structural tones are	Homophonic texture with accompaniment by marimbas and vibraphones.

				embellished by the soloist in eighth-note arpeggiation (see fig. 72).	
	388		Harmonic motion between D and Gb and other transpositions.	Dialog between soloist and other keyboards passing triplet figures among the players.	Dialog accompanied by rolled marimba ensemble. Texture changes at ms. 392 to unison chords on beats one and three while dialog continues.
Part 4	397		G is the tonal center.	False Recapitulation. Uses Theme 1 Fragment (Sol, Fa, Mi, Fa, Sol) with wrong accompanying rhythm (not 3+3+2 as in measure 289).	Brake drum is used rather than hi-hat, unison chords return like exposition.

Recapitulation

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Th.1	401	Same	Tonal center is D. Harmonically moves through: D, F#, Bb, D. Recapitulation is a half-step higher than the Exposition.	Complete Theme 1 returns in solo marimba. Mm. 401-406 is similar to mm. 289-294.	Similar to Exposition. Homophonic texture with xylophone and hi-hat joining vibraphones and marimbas.
Th. 2	407		Tonal center is D.	Theme 2 returns in octaves by solo marimba. Mm. 407-417 is similar to mm. 295-305.	Similar to Exposition.
Trans.	418		Begins on G.	Based on fragment of Th. 1 material. Mm. 418-419 is similar to mm. 306-307 in	Similar to Exposition.

				Exposition.	
	420		Begins on G.	Four measure ostinato in 7/8 using melodic fragments from Theme 2 (sol, la, Do) in upper ensemble marimba part.	No soloist. Marimba ensemble only.
	425		Same material as ms. 420 transposed to B.	7/8 ostinato continues. Still based on fragment of Theme 2.	No soloist. Adds metallic group.
	428		B and g# oscillation.	Like exposition mm. 337-338. The parallel measures in the exposition lead into the Development. Now they lead into a developmental Coda.	No Soloist. Similar to Exposition. Suspended cymbal crescendos to next section.

Coda (Developmental)

Form	Ms	Tempo	Harmonic/Tonal	Melodic/Rhythmic	Texture, Articulation, Dynamics
Coda	430	Same	Tonal center is f#. Harmonic progression is f# to c#.	Reflection Theme in four –voiced harmonization in marimba soloist, Theme 1 fragments in an ensemble marimba (see fig. 73).	Marimba ensemble, vibraphones and xylophone provide accompaniment texture to thematic material.
	438		Transposed to d and b-flat.	Reflection Theme in vibraphones and the upper ensemble marimba part. Theme 1 fragment in xylophone and followed by marimba soloist.	Similar texture continues.
	444		G is tonal center. Chordal punctuations on G9.	Theme 1 fragments in solo and upper ensemble marimba part.	Vibraphone, xylophone and brake drum add attacks.
	446		G is tonal center.	Theme 1fragments in	Texture mixes

				solo with mixed rhythmic divisions that include sixteenths and triplets. Theme 2 in marimba ensemble (see fig. 74).	quick rhythmic activity of Theme 1 with longer note values of Theme 2. Vibraphones provide rhythmic pedal of repeating broken eighth notes.
	453		Cadential grandeur. G is tonal center.	Marimba glissandos from sol to sol. Chimes play tonic figuration. Final solo marimba figuration uses Theme 1 fragment in double octaves.	Bass drum and large toms join in the ensemble push to the end.

Figures for Gate to Heaven

Figure 53. *Gate to Heaven*, ms. 1.

Part 1 of the Introduction to Remission. This figure shows the harmonic structure, f with a major seventh. The harmonic "death blows" are reinforced by the brake drum. The marimba soloist presents the Remission Motive in measure 3, Ti, Do, Me, Sol. The harmonic structure is transposed to c in measure 5. This figure also illustrates typical percussion orchestra instrumentation: three ensemble marimbas, two vibraphones, xylophone and unpitched percussion in addition to the soloist.

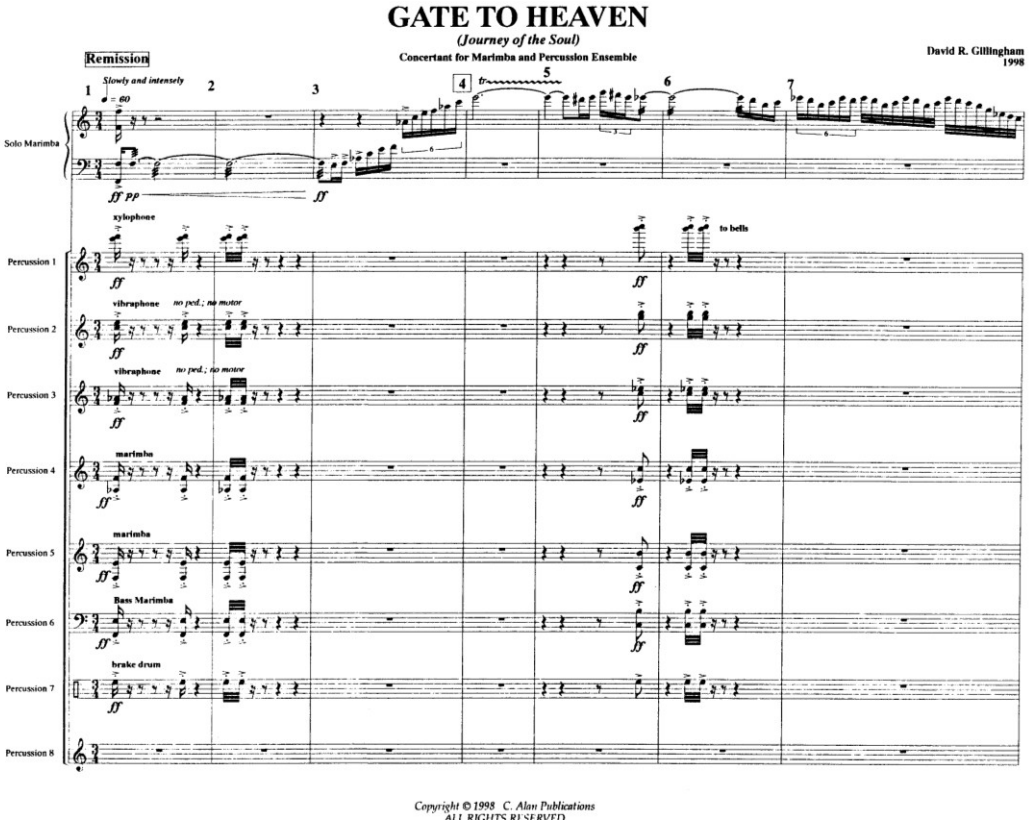


Figure 54. *Gate to Heaven*, ms. 9.

Measure 9, Part 2 of the Introduction. Sextuplet figuration in the solo marimba accompanies the beginning of the descending half-step motive in the bells and vibraphones. Harmonic motion from b to F# occurs in measures ten to eleven.

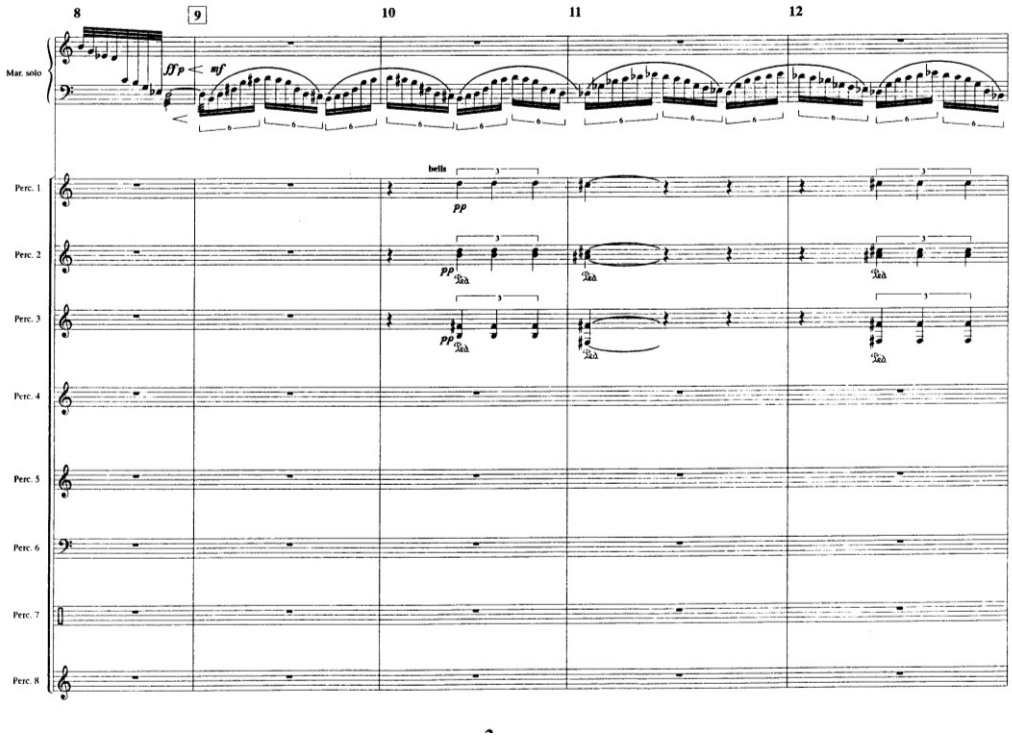


Figure 55. *Gate to Heaven*, ms. 15.

Part 2b of the Introduction. Sextuplet figuration is transferred to the marimba ensemble. The soloist presents a four-voiced harmonization and rhythmic augmentation of the Remission Motive, Ti, Do, Me, Sol.

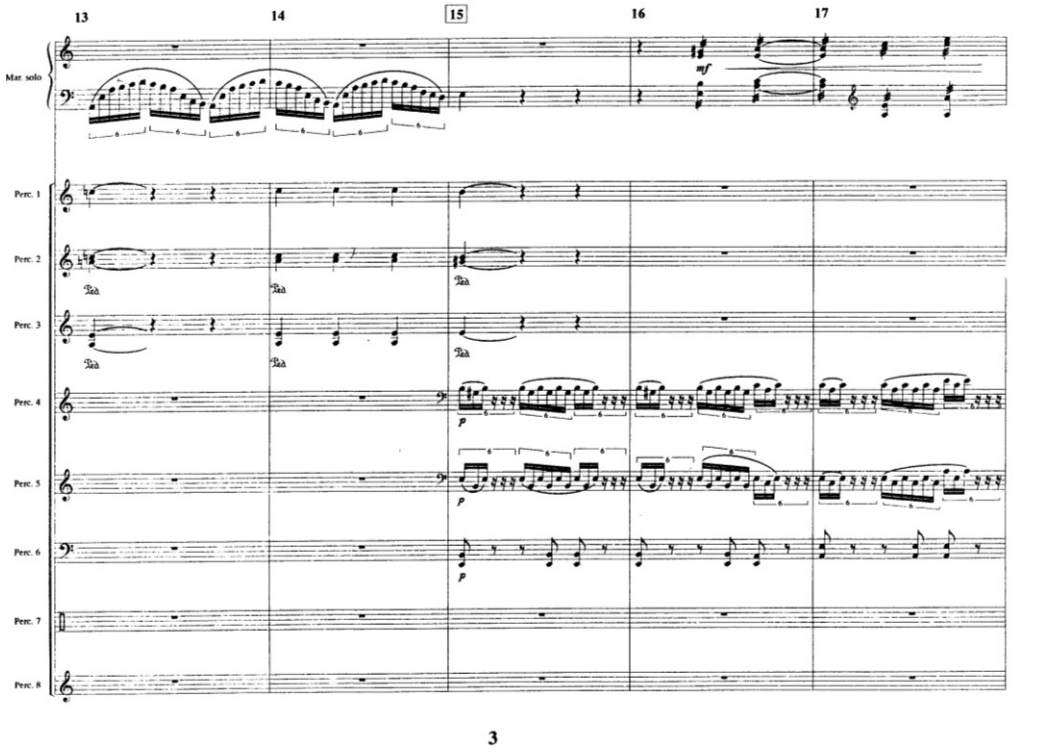


Figure 56. *Gate to Heaven*, ms. 23.

This figure illustrates the conclusion of Part 3a and the beginning of Part 3b (3b is at measure 27). Thirty-second notes and mixed meters are characteristic of Part 3. The meters can all be tracked with the thirty-second note groupings usually in three or four note patterns. At measure 27 the figures are in g dorian with four-voiced solo material beginning in the last measure.

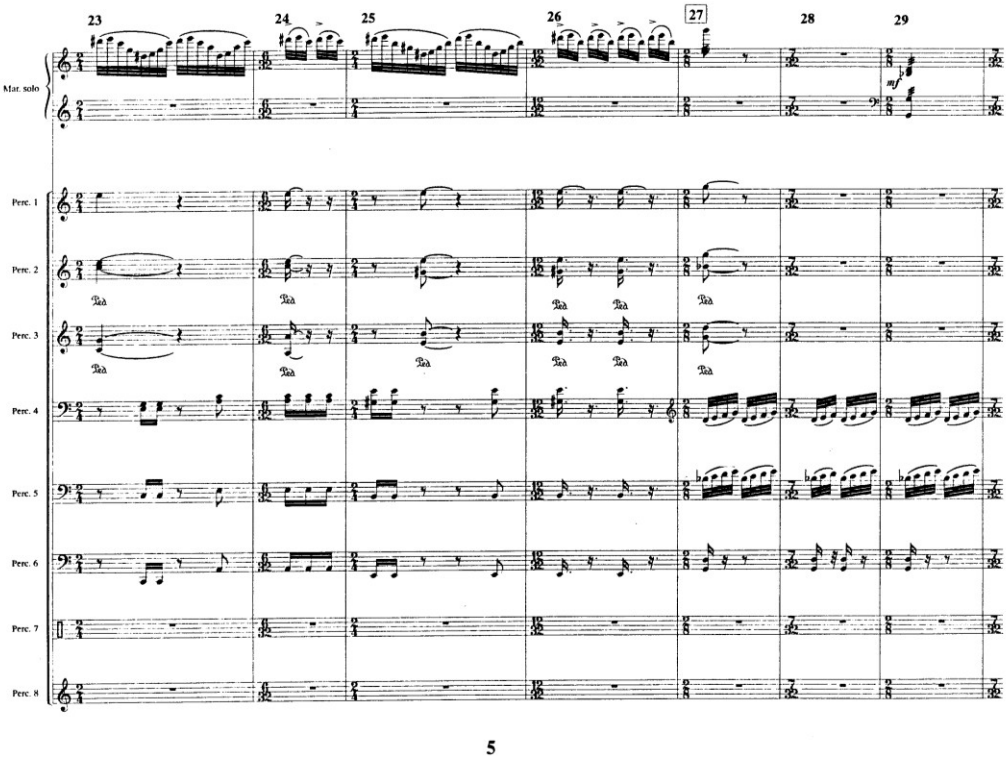


Figure 57. *Gate to Heaven*, ms. 47.

Measures 47 and following illustrate the conclusion of Part 4a and the beginning of Part 4b, still in the Introduction. The Remission Motive is used in the solo part. The ensemble instrumentation segments into metallic versus marimba ensemble. Both contribute to near continuous eighths or triplet eighths. The metric modulation occurs at measure
53.

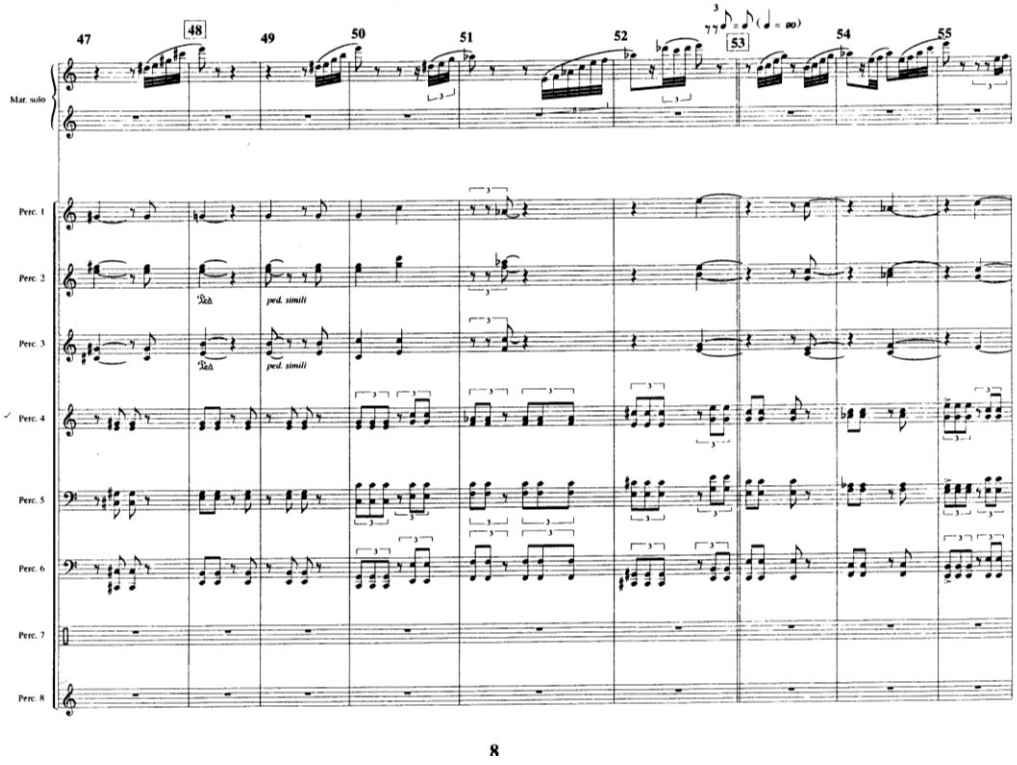


Figure 58. *Gate to Heaven*, ms. 63.

This is the beginning of the presto section of Remission. The Remission motive is now the a motive of the a, b, a rondo refrain. The tonal center is f and uses the same harmonic structure as measure 1, f with a major seventh. The texture is homophonic with a counter figuration in the upper ensemble marimbas. The first measure uses 3+3+2 rhythmic groupings as accompaniment.

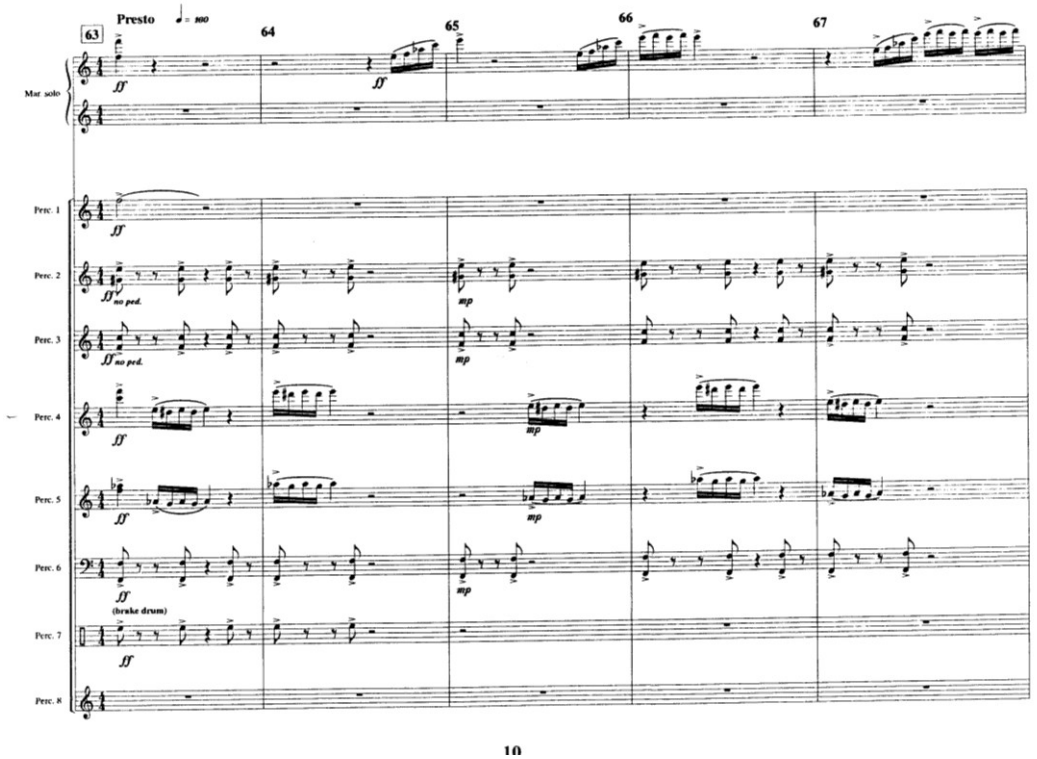


Figure 59. *Gate to Heaven*, ms. 68.

Motive b of the rondo refrain appears in measure 68. The key center is now c# with the same harmonic structure (mM7). This section is characterized by the irregular metric structure. The last measure illustrates harmonic motion towards f, a minor Neapolitan and a dominant ninth, V7-9. The tonic returns in measure 74.

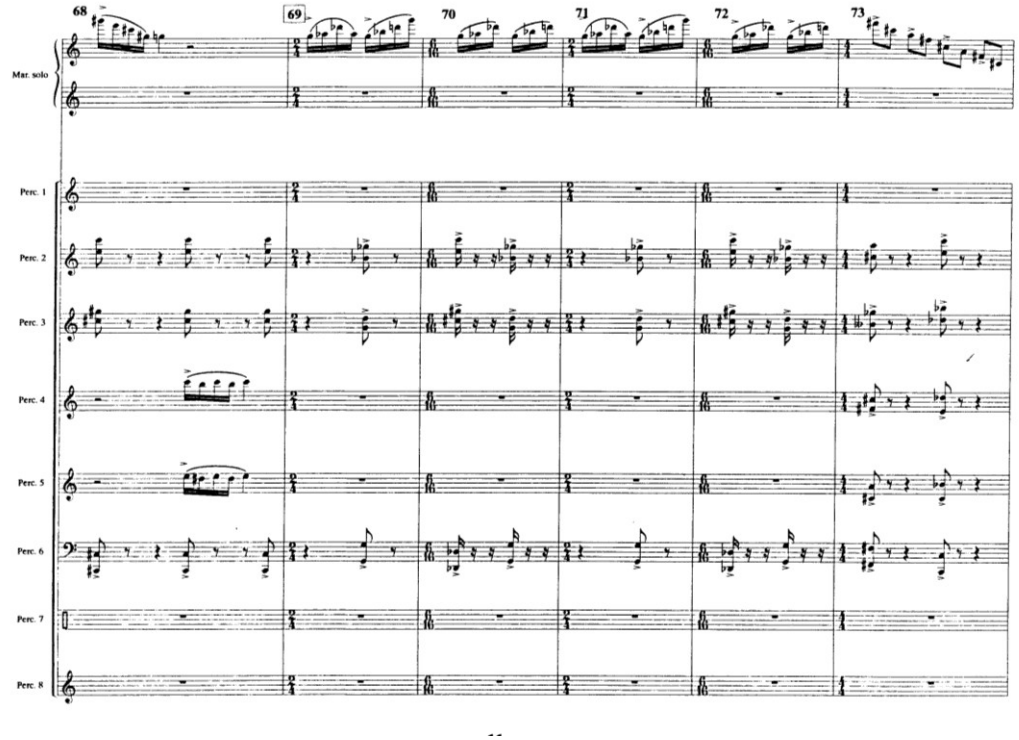


Figure 60. *Gate to Heaven*, ms. 87.

Measure 90-91 illustrates the metric ostinato used in the Rondo B Section. The accompaniment is provided by the marimba group with metallic figures occurring occasionally. The soloist uses contrasting rolled texture to the A Section. Scale melodic activity is related by inversion to the Remission Motive (measure 92 to 94).

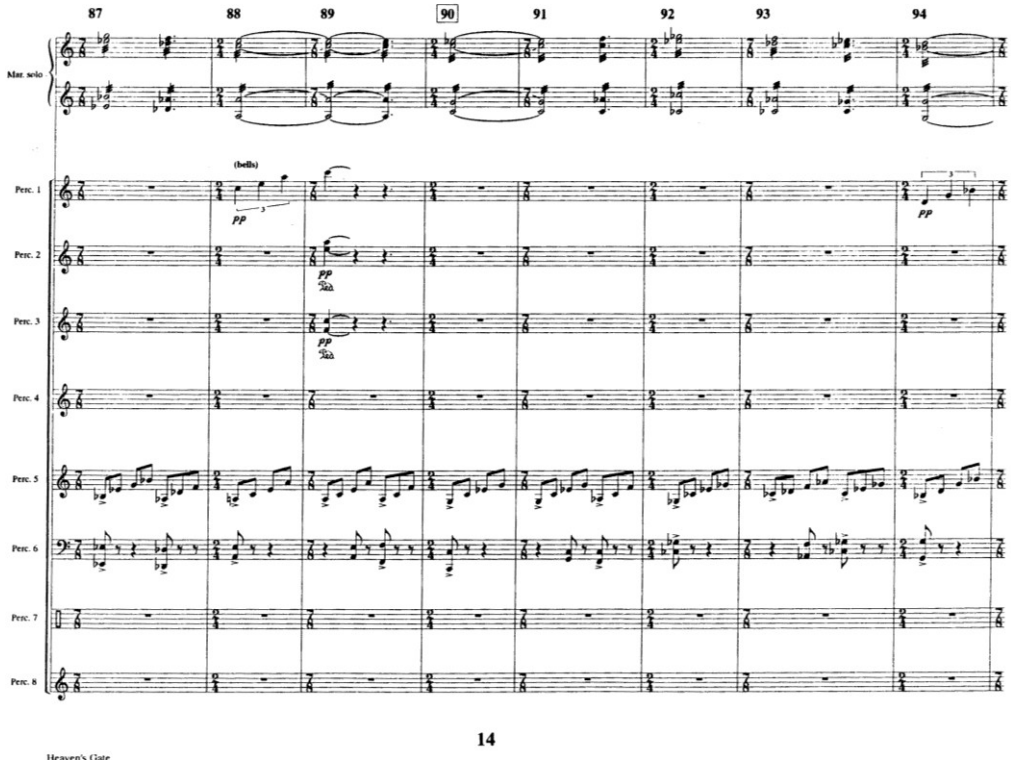


Figure 61. *Gate to Heaven*, ms. 123.

At Measure 126 the Rondo C Section Begins. Rolled four-voiced texture occurs again in the soloist. Rhythmic structure is now in four-four with continuous eighths in the upper marimba ensemble.

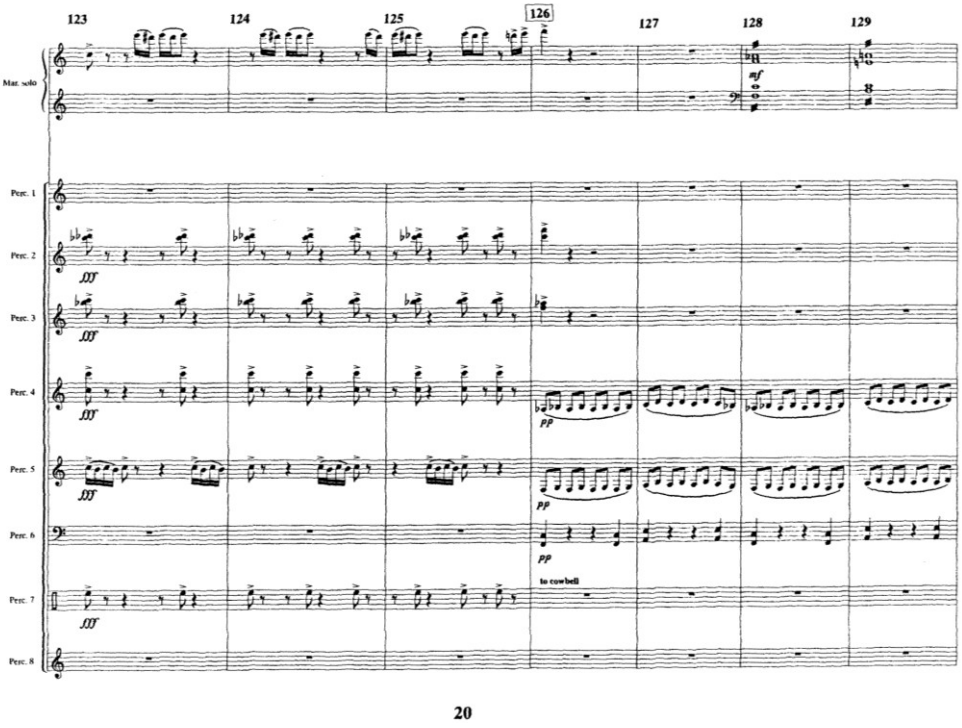


Figure 62. *Gate to Heaven*, ms. 147.

This section is from the Rondo D Section, where the Remission Motive is developed in c. At Measure 148 and following the motive progressively gets longer. At 153 the rolled texture returns with scales degrees Me, Re, Do in the soprano. All of this material occurs over a two measure metric ostinato based on octave Cs in the marimba and the use of shaker and drums.

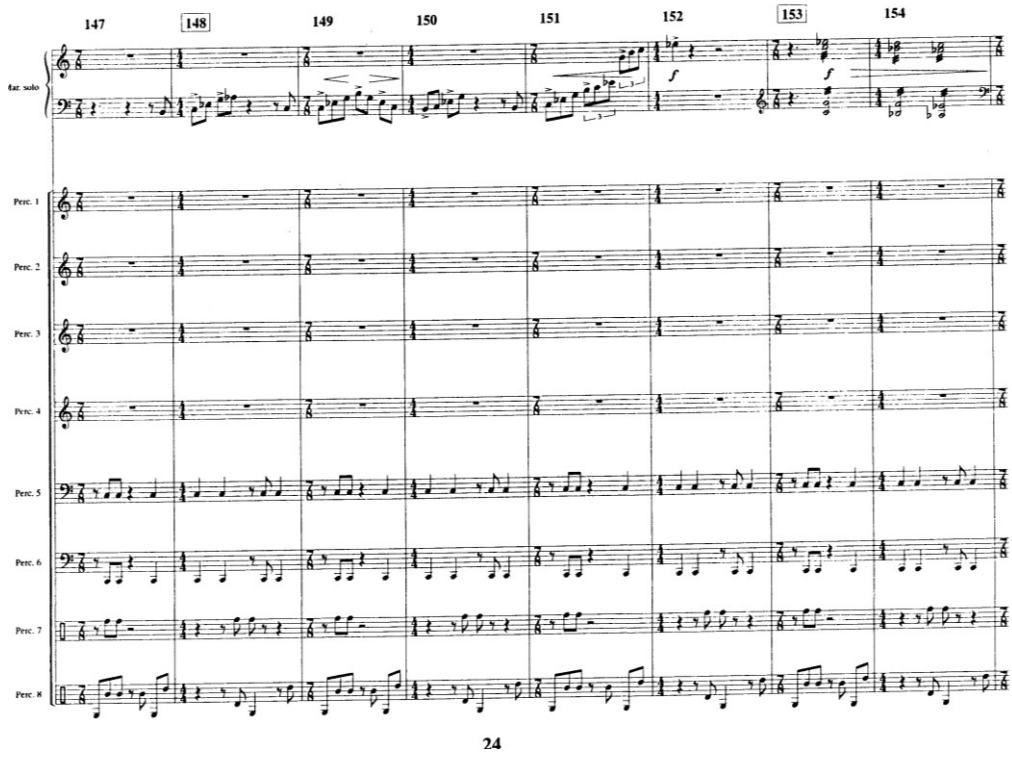


Figure 63. *Gate to Heaven*, ms. 216.

This excerpt shows the Dirge accompaniment in the marimba ensemble with the Reflection Theme in octaves played by the marimba soloist. At 222 the Theme begins again with the original harmonic progression: Me, Re, Do, upper Ti over b-flat to f#. At 224 and 225 a re-harmonization occurs using b-flat to D.

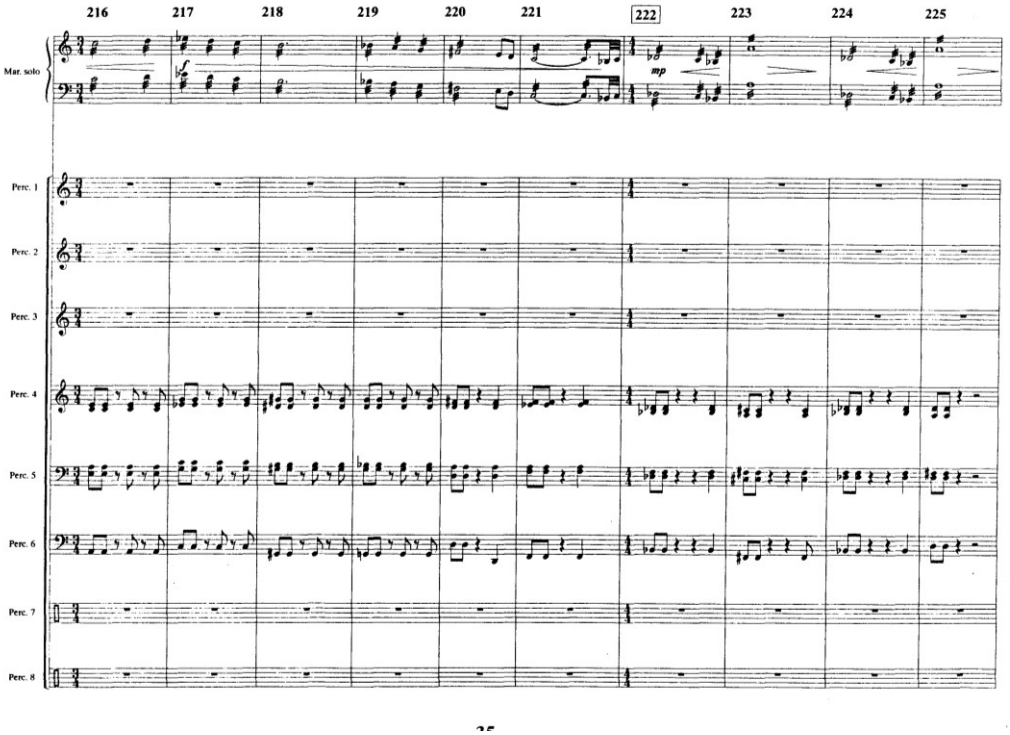


Figure 64. *Gate to Heaven*, ms. 232.

This is the B1 section of Reflection. A two measure harmonic structure is presented with the vibraphone and marimba groups alternating sixteenths and singing the movement's opening harmonic and melodic structures b-flat to f# and Me, Re, Do, Ti. The x over the stems of the half and quarter rhythms indicate to sing and play that pitch. The soloist melodically decorates the harmonic content.

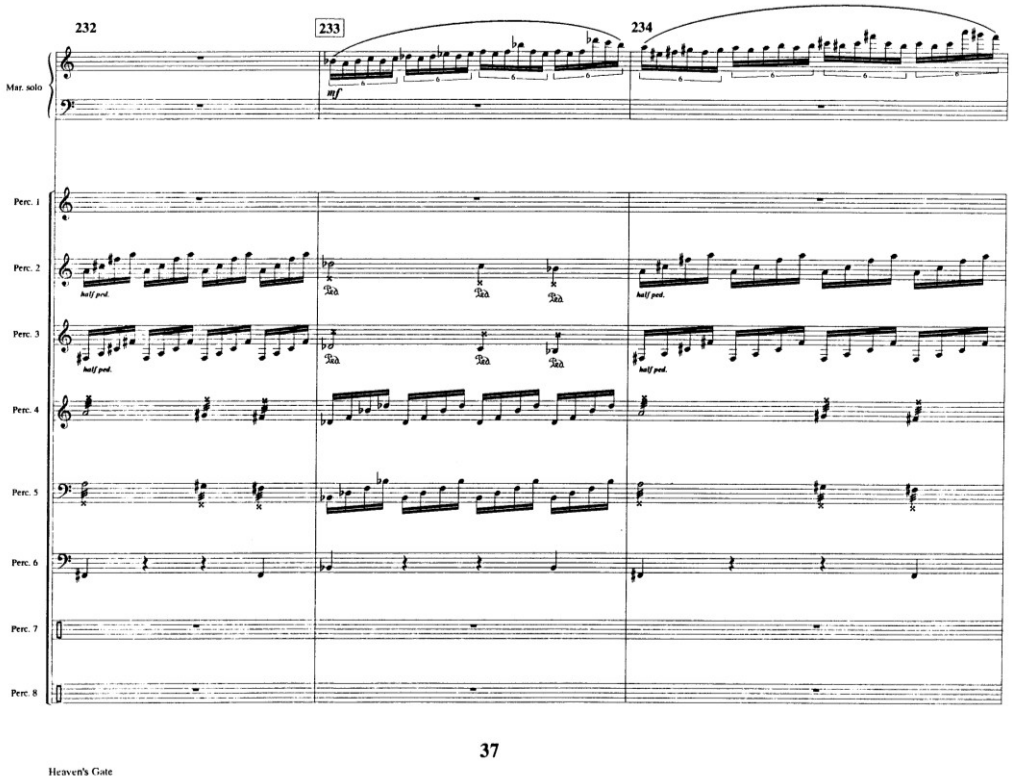


Figure 65. *Gate to Heaven*, ms. 248.

This figure is in Reflection's B2. Dirge like accompaniment is present in the marimba ensemble, which plays two eighth-notes at the time interval of every third quarter. The bells present the descending half-step motive over two quarters that is cyclically recalled from the Remission's introduction. The vibraphones decorate the bell line with melodic broken thirds. The soloist presents new melodic material.

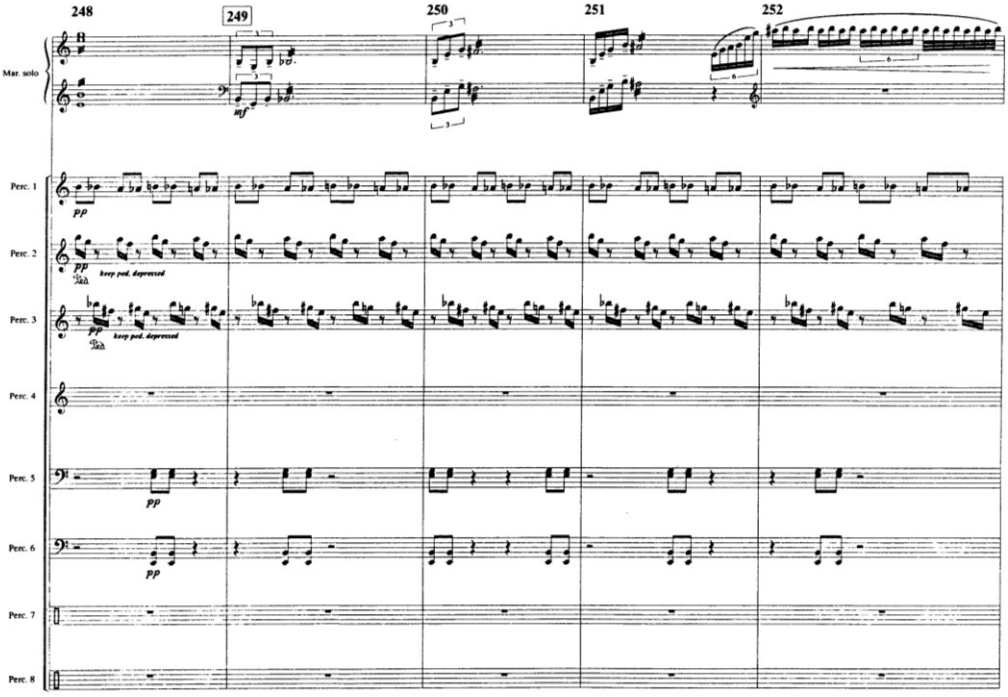


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Figure 66. *Gate to Heaven*, ms. 271.

B3 of Remission. Melodic figures based on minor thirds. Double octaves in the solo part in measure 271. The rhythmic figures use a notated accelerando and are supported by unpitched percussion.

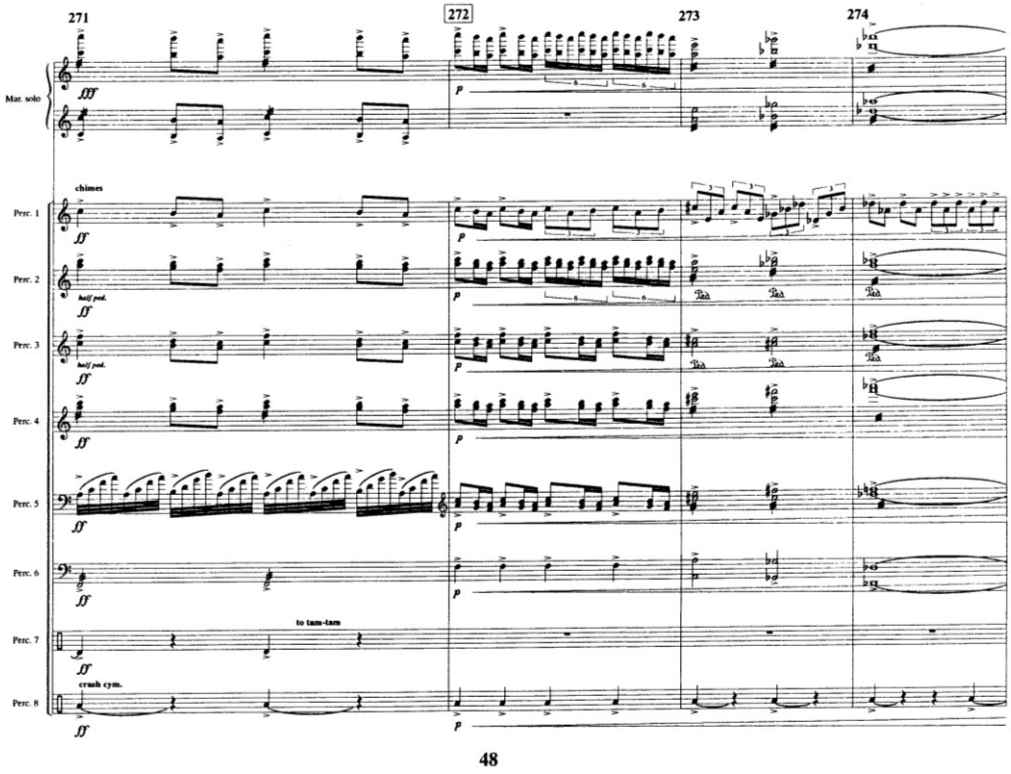


Figure 67. *Gate to Heaven*, ms. 285.

The beginning of Redemption. Measure 287 uses a 3+3+2 rhythmic grouping like the beginning of Remission's presto. These figures are supported by the hi-hat. Harmonic structures are Db9 and Ab9 with a suspended fourth. The Theme 1 of the Sonata Form appears in the last measure, Sol, Fa, Mi, Fa, Sol; Do, Re, Mi.

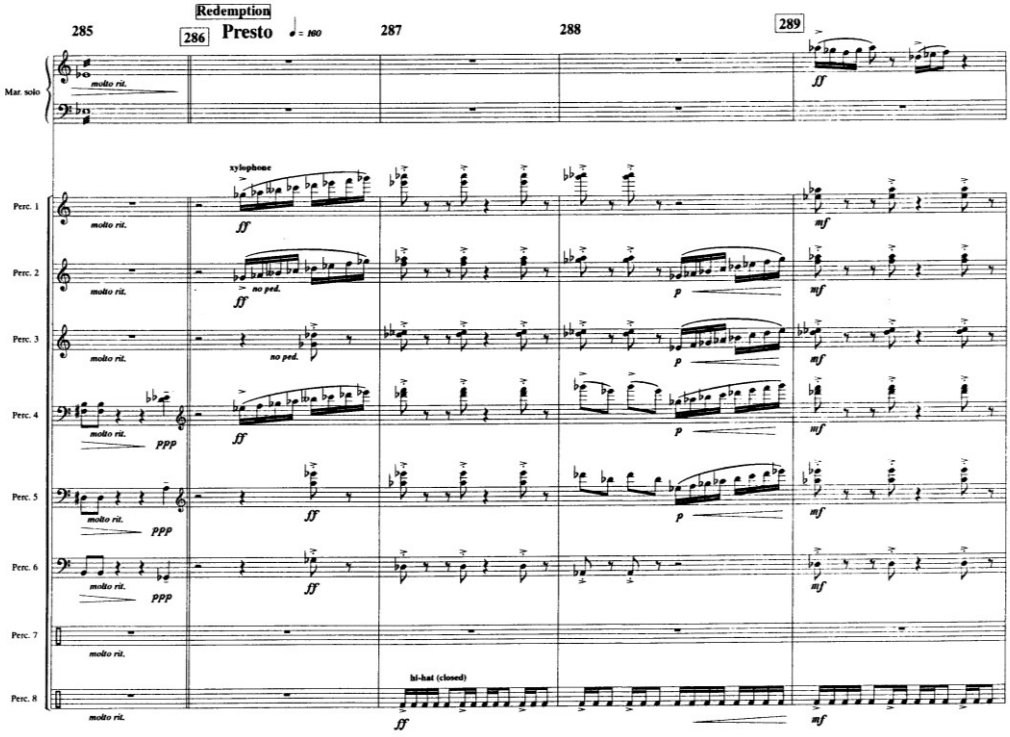


Figure 68. *Gate to Heaven*, ms. 296.

Theme 2 of the Sonata form is presented in octaves by the soloist. The marimba ensemble is joined by the second vibraphone player to create a blended accompaniment sonority. Theme 2 begins using Sol, La, Do, Sol in Db.

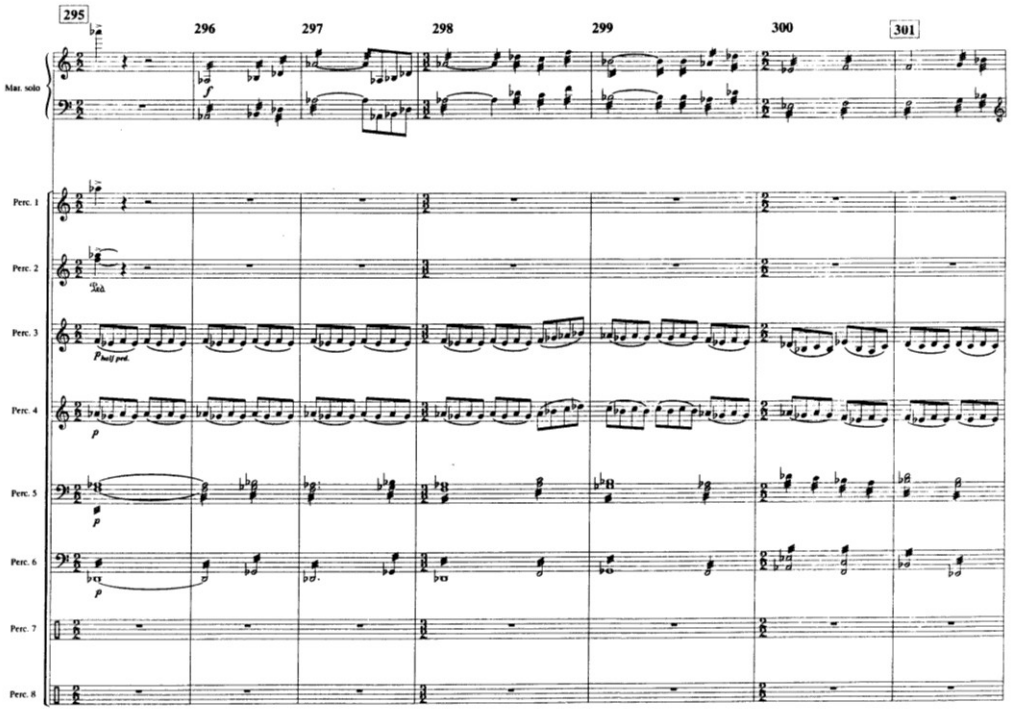


Figure 69. *Gate to Heaven*, ms. 331.

This excerpt occurs near the end of the Exposition. Theme 1 is used by the soloist while the vibraphones present Theme 2. Bells and marimba ensemble as well as unpitched percussion provide accompaniment.

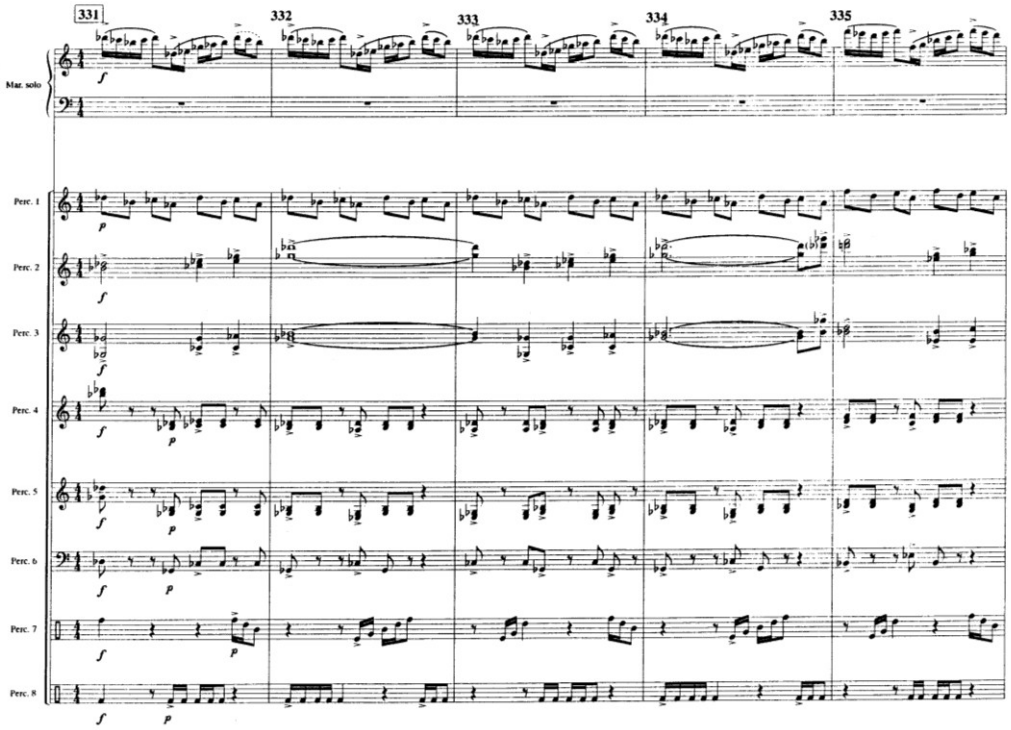


Figure 70. *Gate to Heaven*, ms. 336.

Measure 339 marks the beginning of the Development. In measure 341 the cyclically recalled Reflection Theme appears. Both vibraphone and marimba provide accompaniment for the Theme rolled in octaves.

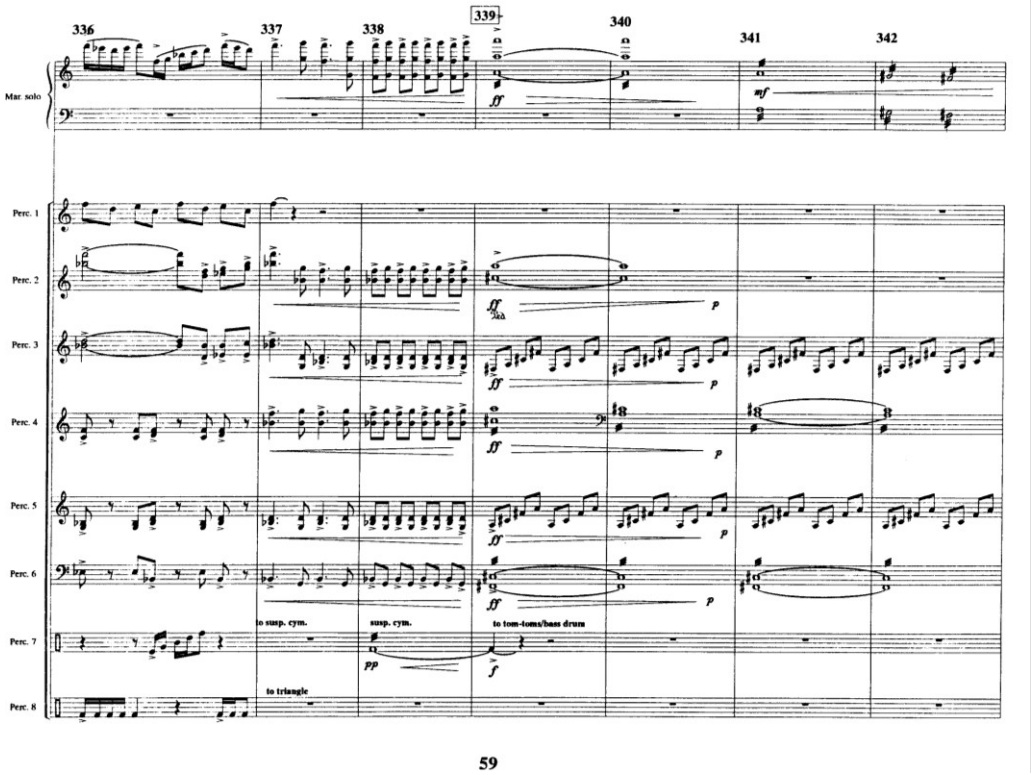


Figure 71. *Gate to Heaven*, ms. 359.

Development Section. A two measure ostinato is presented in the marimba ensemble based on D and G. The highest marimba uses Theme 2 fragments as the beginning of the figures (Sol, La, Sol). The metallic keyboards play in the five-eight measures. Primary developmental activity is in the solo. Theme 1 is fragmented and shifted metrically.

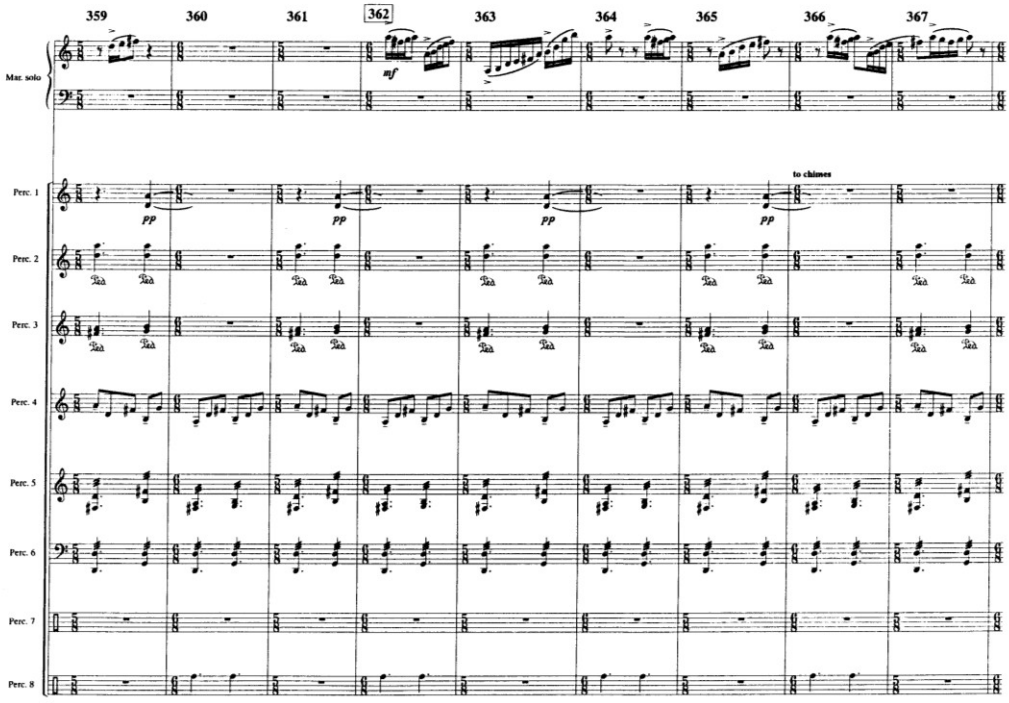


Figure 72. *Gate to Heaven*, ms. 381.

Development Section. Theme 2 is augmented and presented in the chime part beginning in measure 382. These pitches serve as tones for elaboration by the soloist. The top note of the solo part (the upper treble clef pitches) corresponds to the chime pitches.

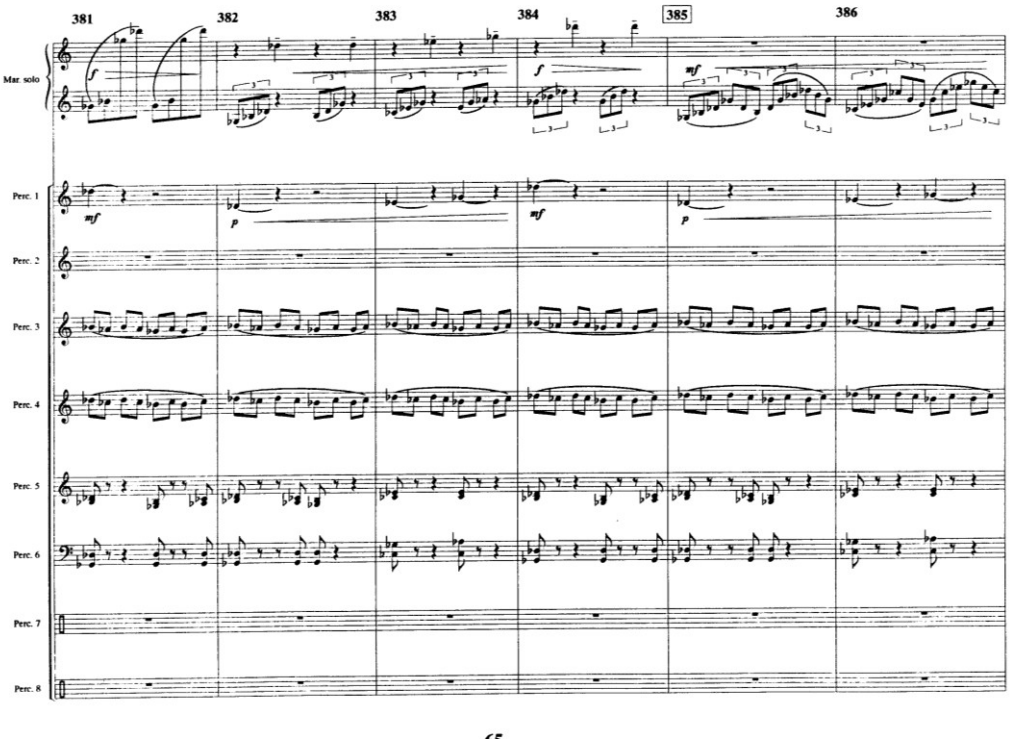


Figure 73. *Gate to Heaven*, ms. 432.

The Reflection Theme returns at the beginning of the Coda. A Theme 1 fragment receives further development in the upper ensemble marimba part in measure 434 and following.

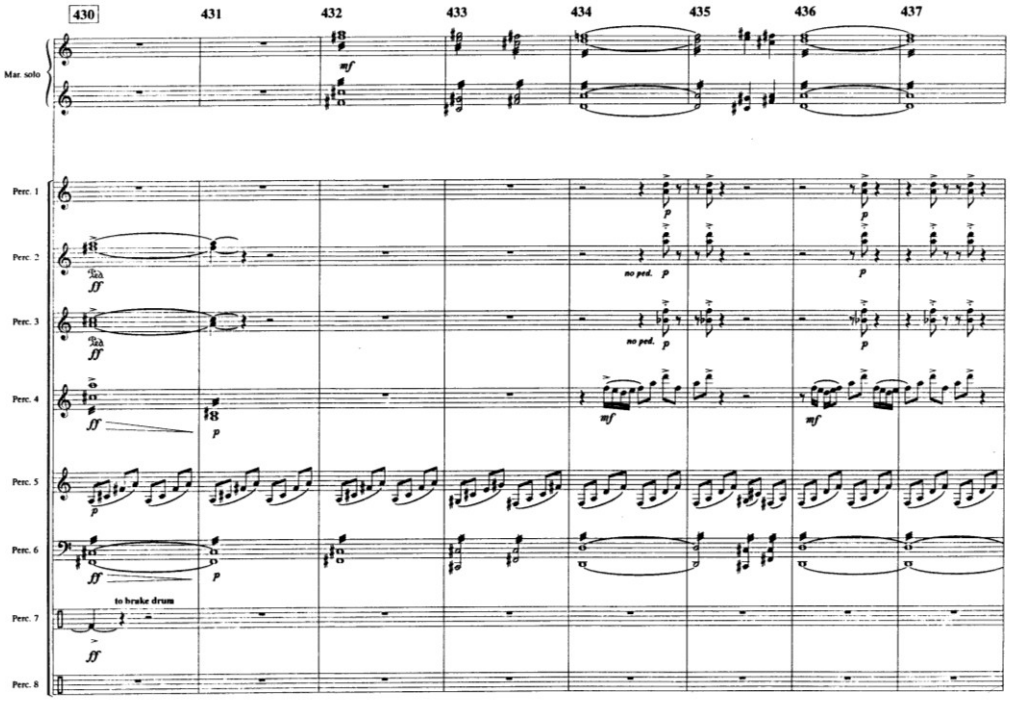
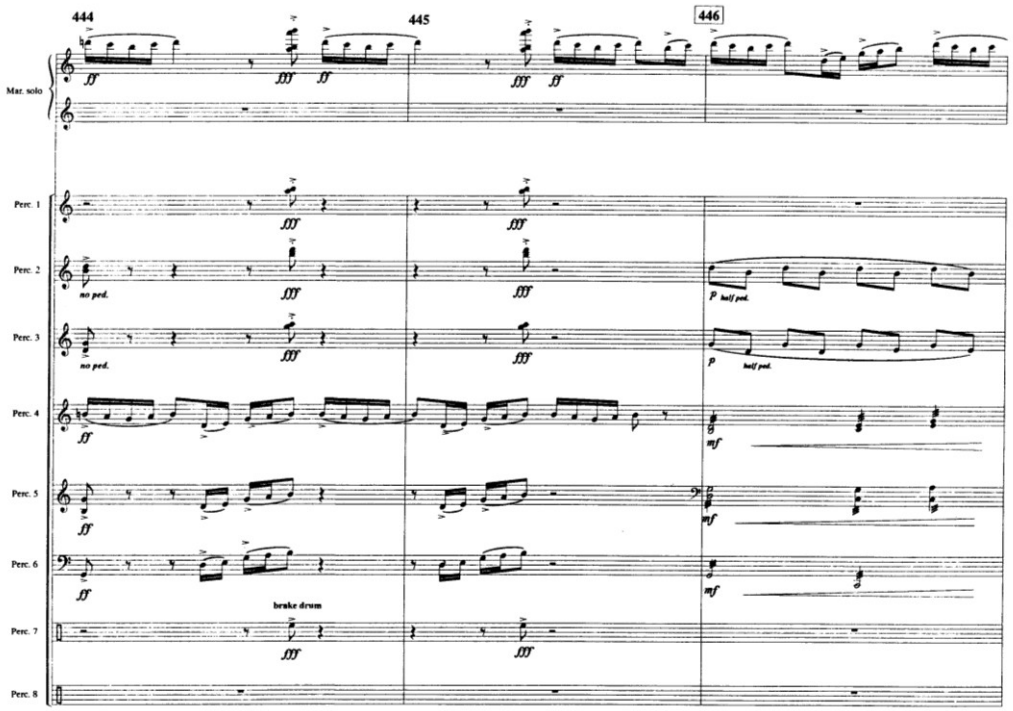


Figure 74. *Gate to Heaven*, ms. 444.

Coda. More development of Theme 1. In measure 446 Theme 2 in the marimba ensemble joins the texture.



Performance problems in *Gate to Heaven*

In this work, as in any work in the percussion orchestra genre, care must be given to the kinds of mallets used in the homogeneous groups within the ensemble. The marimba ensemble and vibraphone ensemble must produce sounds that can be blended within each group and not, through mallet selection inconsistencies produce unblended sonorities, unless appropriate to the context. There is an enormous variety of mallets that offer choices in regard to material of wrapping, construction of the core and overall weight. All of these will affect tone quality. Careful comparisons of mallets will be necessary to determine the proper blend unless the ensemble has the same kinds of mallets at its disposal for each player. It will likely be necessary to change mallets according to the expression and context over the course of this work. By example, the marimba ensemble mallets used for the dirge in Reflection will be inappropriate for the beginning of Redemption. The dirge accompaniment will need a heavy and soft mallet to produce the dark and resonant sounds implicit in the score (see figure 63 above). Gradations of hardness will be needed for the various registers used in the dirge. The bass marimba in these measures will need a grade softer mallet than the upper marimbas. The soloist, who plays in the middle register, will likely need a slightly harder mallet than the ensemble players. The mallets selected for the beginning of Redemption in measure 288 (see figure 67) should be based on the fact that the ensemble's register spans from the lowest Ab on the marimba to the highest Gb. The mallets selected would need to be appropriate for the registral context of each part as well as the long term needs of the movement. The sonata form exposition has Theme 1 followed immediately by Theme 2. The former is bright and rhythmic and the latter is

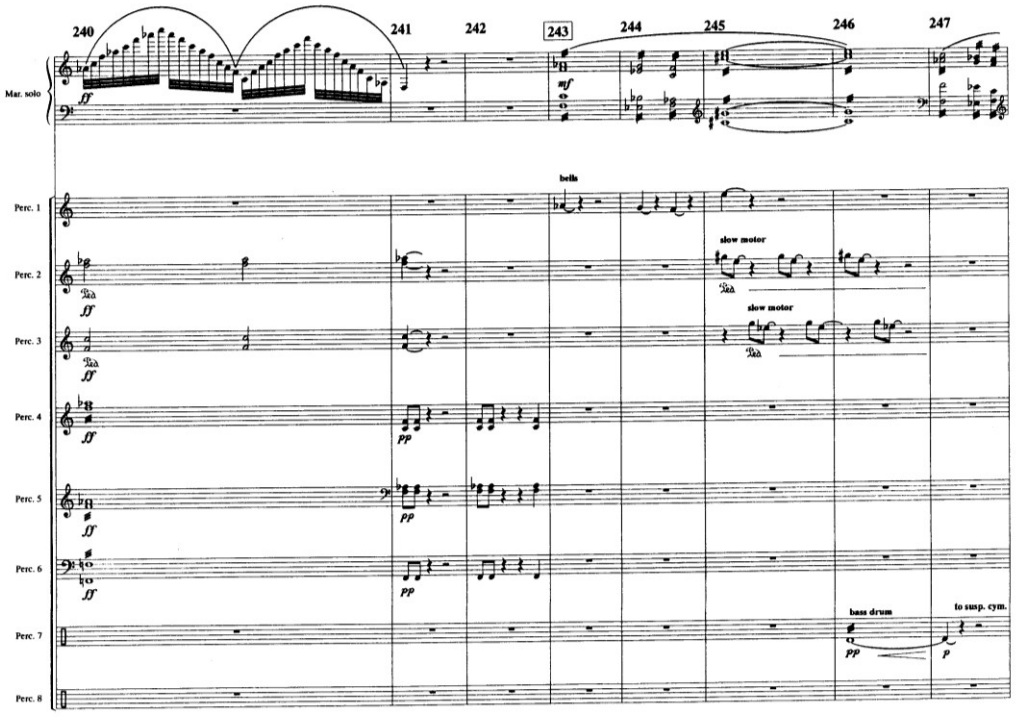
legato and lyric. There is no opportunity to change mallets before the contrasting theme; a mallet compromise is the solution. The marimbists will need mallets that can produce articulate accompaniment figuration as well as legato rolled tones (compare figures 67 and 68).

Similar considerations can be applied to the vibraphone ensemble. The conductor will need to consider the musical role of the instrument. Does the context require the player to maximize the metallic tone quality with a harder mallet or should it strive for a darker sound to blend with the marimba tone quality? The B Section of Reflection would likely use a darker sound to match the expression of the movement and to blend with the marimba ensemble (see figure 64). In contrast the vibraphone ensemble has a leading voice at the conclusion of the Exposition in projecting Theme 2 against the soloist's projection of Theme 1. A bright and heavy mallet would be needed to project the melodically important material (see figure 69).

The xylophone and bells (and chimes to a lesser degree) are dynamically the most powerful among the keyboard instruments. These instruments have no trouble projecting through an ensemble of this size. Care should be taken to choose a mallet that will produce a characteristic tone but not overpower the ensemble. Player sensitivity to balance will likely be part of the solution to this challenge. Tone color is again an issue of matching the sound to the prevailing expression and context. Harder mallets will produce brighter sonorities and softer mallets will produce darker sonorities that can be blended within the context. For comparison, the bells in figure 69 could use a bright mallet played at the soft dynamic to match the spirit of Redemption, while at measure 243-245 in Reflection, a darker mallet could be used. In these measures of

Reflection, the bells form a duo with the solo marimba in presentation of the Reflection Theme. A darker tone produced by a softer, yet characteristic mallet blends with the solo marimba and projects the musically introspective content.[67] Measures 243-245 follow:

Figure 75. *Gate to Heaven*, ms. 243.



[67] "Softer, yet characteristic" means there is a range of appropriate mallets for bells. All bell mallets are generally hard, but within this category some are less hard and therefore produce a darker, characteristic tone.

The unpitched percussion parts use staff notation, and the composer provides a notational key for each player. Set-up of the instrument collection for each of the percussionists is not provided. The instruments that require the most technical facility should form the center of each set-up. The multi-drums and hi-hat are central for percussion eight and the brake drum and temple blocks are the most actively used instruments for percussion seven. The players should set these up conveniently and place the others in close proximity. Balance will be a concern especially for those instruments that are capable of overwhelming dynamic levels: brake drum, bass drum, crash cymbals and tam-tam. The conductor and players should choose instruments that contribute to the expression but do not overpower an ensemble of nine players. Player sensitivity will be as important as instrument choice in these dynamically vulnerable cases.

Set-up of the ensemble can have several solutions. Grouping the marimbas and vibraphones as separate entities with one group to the left of the conductor and the other to the right can maximize the differences between these groups. Alternatively, setting them up in rows, with marimbas in the first row and the vibraphones forming a second row is feasible. The upper marimba part can be to the conductor's left with the middle and bass parts in the center and right, similar to an orchestral string section. The xylophone, bell and chime player can be grouped with the two vibraphone players. The unpitched percussionists can be symmetrically in the back of the percussion orchestra and the soloist in front.

Gate to Heaven presents several rhythmic challenges. Figure 56 is representative of the many changing metric structures in the composition. In this figure the meters

vacillate between 2/4, 6/32, 12/32, 2/8 and 7/32. The ensemble members, for the most part, play occasionally within each measure. The common division between all measures is the thirty-second note. A continuum of thirty-second note figuration is presented in the solo and then the upper ensemble marimbas. All of these divisions are grouped into either three or four note segments. Successful coordination of this passage can be aided by awareness of the thirty-second note pulsations grouped into threes or fours as played by the marimba ensemble or soloist.

A metric modulation occurs in figure 57. Gillingham indicates that the triplet eighth in the current tempo becomes the speed of the eighth-note in the new tempo, thereby increasing the tempo to Q=90 in measure 53. The modulation can be practiced on single pitches until comfortable. Knowledge of the ensemble's underlying rhythmic structure can simplify the passage: a composite rhythm of eighth-notes in measure 49 is followed by a composite rhythm of triplet eighth-notes leading into the new tempo. The dialog scoring of metallic versus wooden instruments enriches the texture of simple rhythms. The soloist can process the simple eighths or triplet eighths occurring compositely and successfully begin the figurations that lead to down beats.

Distinguishing challenges in the solo marimba part include rolling a legato, four-voiced texture over mixed rhythmic structures in the ensemble. Section 3b of the introduction to Remission, mixes this textural dichotomy. Choosing a proper roll base is essential for the marimbist. In addition the soloist should accurately begin each chord with a clear attack that coordinates with the ensemble metrics. A similar passage is noted in figure 60. The legato and long note texture of the solo marimba should

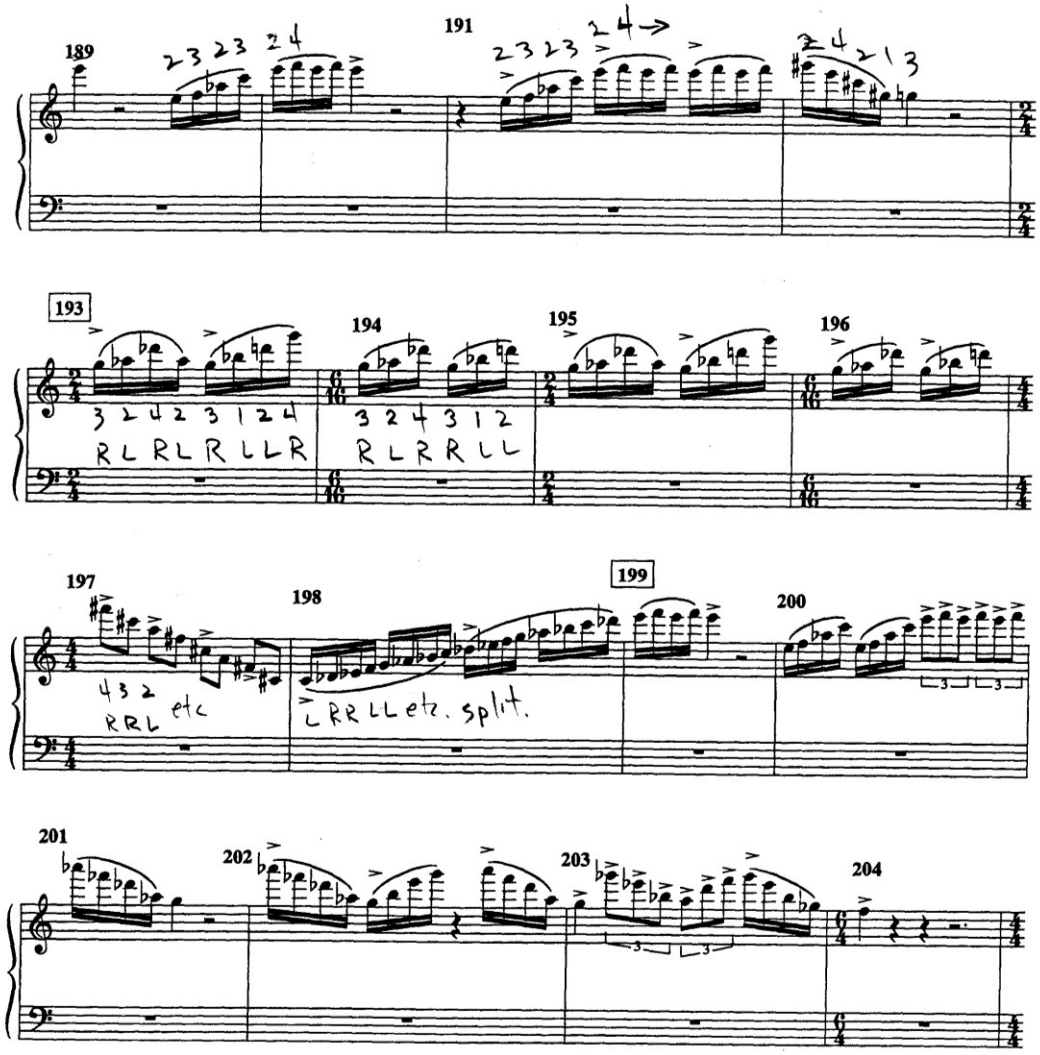
contrast the smaller note values and mixed metric groupings in the accompanying ensemble.

There are many passages that will require sticking decisions. Sticking choices will be chosen from the various techniques available, single independent strokes, double strokes, single alternating strokes, double lateral strokes, split keyboard sticking, or sequential stickings (4, 3, 2 repeatedly). Generally, reduced shifting through the use of double strokes, single alternating strokes and double vertical strokes increases speed and note accuracy. Increased dynamic power results from using single independent strokes. All of the choices can be tried and blended with issues of dynamic, tempo and preference.

A difficult passage appears in the final statement of the Rondo refrain's b motive. The melodic material from 190 to 192 (see below) can be played successfully using single independent strokes or mixing single alternating stokes to reduce shifting. In measures 193-6 the melodic patterns turn back on themselves and restart from G each time. Using the sticking 3, 2, 4, 2, 3, 1, 2, 4 allows the right hand's large interval to remain open to play all the Gs, low or high, and the Db. There are many other viable solutions to this passage including maintaining the sequential sticking in measure 194 (3, 2, 4) on both groups of three sixteenth-note groups. The f# triad in 197 can be played using split keyboard sticking with sequential sticking (right hand on the sharps, left hand on the naturals using 4, 3, 2 repeatedly). The f minor scale in measure 198 can be played using split keyboard sticking and double strokes as indicated. The player should be mindful that beats one and two are arrival points for the left hand while the opposite is true for beats three and four. An alternative approach to this passage is to

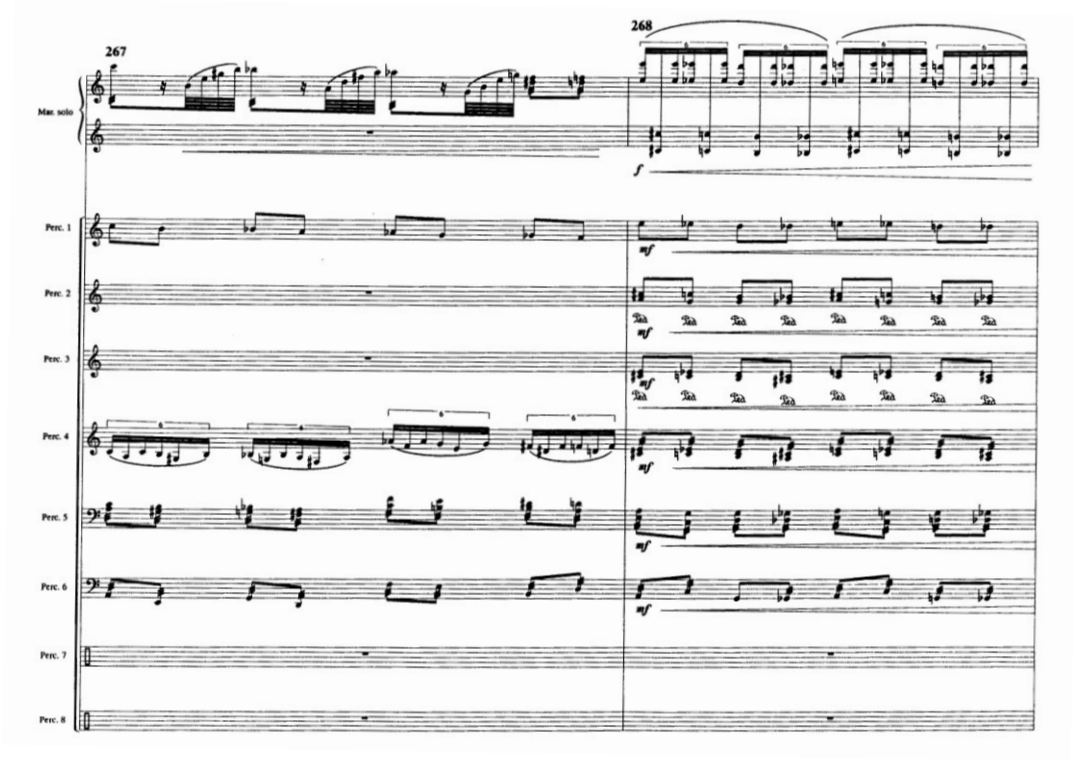
play measure 198 with alternating single independent strokes (L, R, L, R). The former sticking will keep the hands from moving between the keyboards for the duration of the passage and promote smooth shifting along the length of each of the keyboards. The latter will likely be louder but potentially more hazardous concerning accuracy due to shifting horizontally as well as between the keyboards. The excerpt follows.

Figure 76. *Gate to Heaven*, ms. 189.



Metric challenges in the solo part can be solved in part with proper score study and being aurally aware of the ensemble parts. By example the bells at 267 play eighth-notes descending by half steps. The marimba line is in essence a highly decorated version of the bell line and coordinates rhythmically with it. Aurally tracking the bell pattern allows the soloist to coordinate the more difficult rhythms.

Figure 77. *Gate to Heaven*, ms. 267.



Another rhythmic challenge occurs in the development section of Redemption (see fig. 71). Knowledge of the accompanying figures (a two measure ostinato with metallics joining in each second measure; ostinato pattern is 3+3+3+2) will aid the soloist in performing the rhythmically displaced figures.

This work uses double octaves in the solo part (see fig.66).[68] These can be extremely difficult and will require patient practice to develop a feel for the variably sized octaves used. Unlike piano, the physical size of the octave changes with register. It is sometimes impossible to see all four notes directly when playing double octaves. Development of peripheral vision and the use of snap-shot glances can greatly aid the accuracy of these intervals. Additionally, accuracy can be obtained by focusing on the center two pitches of mallets two and three, and using a sense of touch/muscle memory for the outer pitches of mallets one and four.

Another problem is the work's use of the highest register of the marimba in contexts that need power and projection. Unlike the xylophone that is extremely powerful in its high register, the marimba sound is weaker in its highest octaves. The upper register will suffer if mallets are used that flatter the middle and lower registers of the marimba. For those passages that are predominantly high, the soloist will need to use a fairly hard and heavy mallet to maximize the marimba's ability to project (see fig. 74). A compromise mallet that accommodates all registers will need to be selected for those passages that are followed immediately by lower registers.[69] Another option would be a mixed set of mallets that has harder mallets in the top three positions and a softer mallet for the bass register.

This work uses the instrumentation of the percussion orchestra. Its demands on the players are unique in that the difficulties are similar to the kinds of challenges that

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[68] The double octaves begin in measure 268 and last through 271. The work concludes with double octaves beginning in measure 455.

[69] There are several instances when primary thematic material has a lengthy tessitura in the highest two octaves of the instrument. See the following examples: 289-295, 331-340 and 397-407. In all of these cases the section immediately following is in a low or middle register. In the case of 407 to 408, the register drops four octaves from the highest A to the lowest A on the instrument.

wind and strings players encounter in advanced literature. Issues of concern for the ensemble center on balance, blend, pitch accuracy, and function within the texture. The soloist is challenged with tremendously difficult passages where accuracy within the neo-romantic tonal structures is essential.

CHAPTER FIVE

Summary and Conclusions

The compositions in this study, marimba soloist with percussion ensemble form a sub-genre of the percussion ensemble movement. Important activity in the percussion ensemble movement occurred at the University of Illinois in the 1950s. There the percussion ensemble was placed in the university curriculum, and the first work using a marimba soloist with the genre (Kelly's *Toccata*) was composed and premiered. The rise of the marimba as a solo instrument was largely cultivated in the universities and conservatories after initial efforts by the early soloists Vida Chenoweth and Keiko Abe. The concerto for marimba and orchestra or wind ensemble has also seen a great deal of activity by significant composers and marimba soloists. The genre of marimba soloist with percussion ensemble has grown through much activity over the decades. The commissioning of new works by performers or conductors and the composition of works by performers as composers has been especially important. Significant compositions have been produced from both sources. The four works analyzed in this study, represent both categories. The commissioned works, by Stout, Miki and Gillingham are exemplary works from gifted composers. Equally exemplary works composed by performers (Glassock and Stout) offer insights into what is idiomatic about marimba and percussion playing and provide a deep intimacy with the expressive potential and nuance of the genre. Both sources are valuable and treasured and have achieved due success in musical communities.

The Catalog

This study has collected 112 works composed in a forty-nine year period. By decade the number of works composed has increased as the following chart illustrates. The four works discussed are placed in their appropriate decade:

1959-1969: Three.
1970-1979: Eleven, including *Diptych*, 1979.
1980-1989: Twenty-two, including *Marimba Spiritual*, 1983.
1990-1999: Twenty-eight, including *Off Axis*, 1995; *Gate to Heaven*, 1998.
2000-2008: Forty-eight.

The number of works that exist in multiple versions present an interesting trend. A growing number of works have alternate accompaniments to the same solo part. Examples of various settings include the solo with piano, orchestra, wind ensemble, or electronic accompaniments. These alternate versions provide ample opportunities for varied performance venues. Related to the notion of multiple versions is the fact that some of the works can be performed as solos. Representative works that can be performed as solos or as solo with percussion ensemble include Burritt's *Shadow Chaser,* Schmitt's *Ghanaia* and Miki's *Marimba Spiritual*. Seventeen composers have written more than one work in the genre. The following list indicates those composers and provides the total number of works for each composer:

Abe, Five	Burritt, Five
Dietz, Two	Gillingham, Two
Glassock, Two	Ishii, Three
Kopetzki, Two	Leshnoff, Two
McCarthy, Four	Miki, Two
Nishimura, Two	Rosauro, Two
Stout, Two	Udow, Four
Wada, Two	Yoshioka, Three
Zivkovich, Two	

Comparison of the Four Works in the Study

The four works in this study have been analyzed in regard to structural material. Comparison of these musical materials provides insight into compositional approach and is useful for the performers and conductor learning the works.

Formal Structure

Gate to Heaven uses traditional forms as follows:

Remission: Rondo, A, B, A, C, D, cadenza, A
Reflection: Strophic, Dirge, Reflection Theme (A) and Elaboration (B)
Remission: Sonata Form

In addition to the formal divisions, the work makes significant usage of cyclic treatment of themes, a harmonic structure and a rhythmic motive. The Reflection Theme from movement two begins both the development and coda of the sonata form. The pitch content of the Remission Motive is similar to the Reflection Theme. The rhythmic grouping of the presto in movement one also begins the third movement (3+3+2), and the tonal relationships of the rondo refrain are used harmonically to accompany the Reflection Theme.

Marimba Spiritual is in two parts and the Resurrection uses a drum refrain to begin each lettered section:

Requiem: AA′BA″ Cadenza.
Resurrection: A, B, C, percussion episode, A, coda.

Gordon Stout's ***Diptych No. 2*** also divides into two parts. The work moves from complexity of meter and texture to simplification of the same.

Part I: A, Transition, B, A.
Piano cadenza.

Part II: C, D, E,
Marimba cadenza.

The final work, ***Off Axis*** uses a three part structure after an introduction and cadenza. The body of the work is followed by a cadenza and coda. A Rondo-like structure appears in Section B.

Introduction, Cadenza
Section A
Section B, (rondo) a, b, c, a′, d, a
Section C, begins with percussion episode.
Cadenza, Coda

Harmonic/Tonal Structures

The four works display a variety of contemporary harmonic and tonal techniques. The earliest work, Stout's *Diptych* uses quartal harmonic structures that mix perfect and augmented fourths. These give way to the use of a polychordal structure based on eb/F and other tertian based combinations. Part I's A Section uses quartal harmonies that cadence at first on incomplete eb/F structures. The B Section centers on the eb/F polychord. Part II's tonal activity centers on various polychordal combinations as well as tertian oscillations creating static harmonic activity. The work concludes on Eb.

Miki's composition uses modal pitch collections as well as other chromatic collections. Pitch repetition and ostinato create tonal centers. The tritone is used to construct harmonic structures in the B Section of the Requiem and result in an intensely expressive tool in conveying the pain of starvation detailed in the program of the movement. A characteristic harmonic structure used frequently over the course of the work is made up of two perfect fifths in half-step proximity (A-E and Bb-F). These

help also to convey the expressive content. The work's first movement begins by centering on the pitch A and moves through C, back to A and then to E, where more dissonant tonal structures are used (the B Section) before returning to Section A. The cadenza uses tritone pairs and moves toward D, the Resurrection's over-riding focal pitch. In the second movement all Sections begin on D.

Glassock's quintet uses modal, whole tone, octatonic, freely chromatic and synthetic scales and relies largely on repetition of harmonic structures to center the music. The over-riding structure is the C-Gb pitch complex that typically includes the major third above each note or both the third and fifth forming complete triads. This structure is imbedded into octatonic and whole tone scalar bases. The tritone used in the introduction generates motion towards the C-Gb structure's appearance in the A Section. It continues with scalar variations in the ensuing rondo-like B Section and is present in much of the figuration in the C Section. There, various harmonic structures are used in ostinato while melodic activity is developed. The work concludes with a coda centered on various structures built on the root C. Miki's and Glassock's works use harmonic structures that are related to Stravinsky's Petrushka chord: two triads in tritone proximity, C/F#. The half step between the triad roots occurs below the upper fifth in Stravinsky's structure (C to G and down to F#). Glassock's structure is clearly related to that. Miki's half step connections are above both the lower and upper notes of the fifth: A-E/Bb-F. Additionally, Miki rarely makes use of the complete triads. Instead, he emphasizes the tendency of the upper note of the half-step to resolve to the lower note. This gives his Requiem structure more of a Phrygian mode flavor where Ra moves to Do (Bb-A) and Le moves to Sol (F-E).

Gillingham's neo-romantic composition uses traditional tertian structures and functional harmonic progressions to establish tonal areas. A frequent harmonic maneuver is chord roots in mediant relationships. Keys in the work's formal structures have traditional relationships. In the rondo form of Remission, the tonal centers of all refrains are f, c#, f corresponding to the a, b, a formal structure. The other sections are as follows: episodes B and C are in f, and the developmental D section and cadenza are in c. The latter two function as dominant preparations for the refrain's final return. The f and c# tonal centers in the rondo refrains forecast a characteristic chord progression transposed and used in Reflection. Structural keys used in Reflection include b-flat, f, F, A, e and Db. Each dirge is in f except the first, which moves from f to b-flat. In the sonata form of Redemption, the two themes are presented in the same key, Db and then transposed to A. They are combined at the end of the exposition in Gb. The development begins in f# minor, parallel to Gb. The recapitulation has similar tonal motion stating both Themes 1 and 2 in the key of D, transposed up a half-step from the exposition, and the work concludes in G.

Melodic/rhythmic structure

Gillingham's *Gate to Heaven* uses the most traditional melodic materials. These are clearly diatonic in tonal areas. Characteristic contrasts between kinds of melodic material rely on faster melodic passages played in the middle and upper registers and melodic material comprised of longer note values that are usually in low and middle registers. The longer note values use the roll to sustain the slower rhythmic motion. Theme 1 versus Theme 2 of the sonata form and the rondo's refrain versus the episodes adhere to this pattern of contrast. The work makes use of melodic similarities between

some thematic materials. The Remission Motive uses diatonic pitches in ascending order: Ti, Do, Me, Sol. Related scale degrees are used in the Reflection Theme, now descending: Me, Re, Do, and upper Ti. Both Themes of the sonata form begin on Sol. Rhythmic activity, exhibited either through changes in metric structure or augmentation of values is used as a variation device. Its use is noted as a structural difference between sections of the rondo. Ostinato is a characteristic device used by Gillingham in all three movements of the composition. Finally, the composer uses harmonic rhythm as an intensification tool in the developmental elaborations of Reflection.

In Glassock's composition the tritone emerges in the introduction as structurally important. It appears there harmonically and melodically. It continues its importance as part of C-Gb structure in the B Section and is used frequently in the developmental melodic figuration in Section C. The harmonic motive and the C-Gb rondo refrain motive return most frequently. The work uses a rhythmic motive based on eighth-notes grouped into 3+3+2 units. This work is rich in rhythmical development of various permutations and augmentation of the motive. Rhythmic dissonance is used to intensify passages. The introduction moves from regular sixteenth-note pulsations towards polymetric combinations between the vibraphone and marimba. Differences in meter correspond to the formal structure: the introduction has beats that divide into four sixteenths, the A Section is in mixed meters, and the B Section oscillates between beats of four sixteenths and mixed meters corresponding to the rondo segmentation. Section C begins in four-four and ends in three-four. Meter, then, is used to help create structure.

The melodic structures in Stout's composition form a less obvious cycle than the cyclic material in Gillingham's composition. Melodic transformation seems a useful descriptive term. The bass line of the chorale, through rhythmic diminution, becomes the quintuplet motive used in the transition. The intervals used in the quintuplet motive are developed in the B Section. Similar figures in the B Section appear in the melodic material played by the piano solo later in the B Section. This series of pitches form the melodic and harmonic content of Part II's Sections C, D and E. In Part I's A Section, a ten measure metric structure is used to create formal segmentation at the phrase level as it alternates with a chorale phrase. The ten measure structure recurs in whole or in part in the B Section. The rhythmic activity moves from complexity to simplification creating a sense of turbulence to repose over the course of the work. Unlike most of the other compositions, Stout's work depends on the unpitched percussion to carry structurally significant material. Only Miki's percussion refrain has a similar function as it signals the appearance of new sections.

The majority of melodic material in Miki's composition stems from evolution and development of five motives. This coordinates with his statement in the score's preface that the work was composed in an organic fashion. Miki's melodic material tends to be motivic with small figures subjected to developmental activity. This is in contrast to the generally longer, phrase-length thematic material in Gillingham and Glassock. Rhythmically the Requiem uses free, non-propulsive rhythm in the A Section to convey famine. The wooden, rhythmic canon that follows is more periodic but is frequently interrupted by the marimba intrusions stopping the forward momentum. As

the Resurrection begins the composer uses an accompaniment based on perpetual eighth-notes in four-four meter to convey unstoppable momentum.

Texture

Glassock's use of textural contrast contributes to formal articulation. The introduction is prevailingly homophonic, while Section A uses dialog texture between the soloist and ensemble. The B Section, in contrast, makes use of heterophonic texture with intrusions by the ensemble. The C Section, after a percussion episode, uses homophonic texture. Other textural features include the addition or subtraction of players to create various levels of intensity and the use of timbral nuance to coordinate with formal structural differences. Section A is rich with timbral variety while other sections do not rely on as much nuance. This contrasts the largely repetitive and propulsive sounds in Miki's Resurrection to the predominantly keyboard sounds in Gillingham's composition.

Stout's work, in the A Section of Part I, alternates two opposite textures: the first uses prevailingly unpitched percussion and a ten measure, mixed meter structure while the second texture uses mostly pitched instruments in a slower and choral like structure. The B Section uses tutti scoring to create a thick sound rich in a variety of colors in a homophonic texture. Part II is strikingly different in overall sound. Sparse, ringing and primarily metallic sounds (triangle, finger cymbal, and celeste) accompany the marimba soloist, who uses chordal structures that eventually give way to melodic activity.

Miki's evolving and partially open instrumentation gives the texture new and potentially different sounds from interpretation to interpretation. The first repeat of A

in the Requiem uses ringing metallic sounds; all dry and wooden sounds accompany the B Section. The Resurrection uses two players using primarily drum sounds with a third player using metallic sounds. This movement of the work maintains a perpetual eighth-note accompaniment that propels the solo marimba forward. It maintains this texture until Section C, where the accompaniment changes to match the marimba's content. Miki makes structural use of unpitched percussion in a refrain and drum interlude. The Miki and Stout compositions are related in this way. Finally, Miki's unpitched percussion players are allowed to improvise before the recapitulation of the A Section. This is the only work to use improvisation.

Gillingham's texture is primarily homophonic. Both solo and ensemble participate in exchanging thematic and accompaniment roles. This work uses the instrumentation of the percussion orchestra and uses heterogeneous and homogeneous groupings of wooden and metallic keyboard timbres.

The voice is used in three of the compositions. Stout asks players to sing harmonic structures doubled in the keyboards, and Gillingham asks the players to sing a melodic line derived from the keyboard part each player is performing. Miki instructs the ensemble to shout certain syllables during the conclusion of the drum episode.

Use of Percussion

In *Diptych* the composer groups the unpitched instruments homogeneously. A player performs on a set-up comprised of three low drums while another player uses three cymbals and still another player requires three snare drums. This is similar to the way Miki grouped the instruments for the Requiem, where one player plays three high metallic sounds while the others play three middle or low metallic sounds. Later the

same grouping is applied to wooden instruments. *Diptych* indicates various drumming styles to enhance the work. Composer instructions indicate roll styles and various applications of sticking details that will affect phrasing. Stout is also extremely helpful with notational details addressing vibraphone, chime and piano pedaling, mallet changes for all the instruments, and articulations. While all the composers provide helpful performance indications, Stout's score is the most rigorously notated.

Gillingham's score uses the unpitched percussion as a supportive voice and coloristic option. The use of the instruments in this way resembles their historical role in the symphony orchestra. Overall these instruments play far less than the keyboard instruments.

Minoru Miki uses an evolving approach to the unpitched percussion. In the Requiem, the instruments move from metallic to wooden timbres, while for the second movement, he uses primarily drums with metallic instrumentation. The function in the latter movement is one of strength and propulsion; the accompanying instruments are ever present. The element of choice concerning the instruments used and improvisation during the percussion episode is unique to this composition.

Glassock takes a heterogeneous approach to the kinds of instruments used by the percussionist. Each player's set-up is unique and groups together different kinds of instruments to offer a mixture of ringing versus articulate instruments as well as various timbres: metal, wood, skin.

The keyboard percussion usage in each work is varied. *Diptych* uses a large number of different keyboards with none doubled (one marimba played only by the soloist, one chime, one vibraphone and so on). In *Marimba Spiritual* the only keyboard

in the work is the solo marimba. Glasscock uses two vibraphones to contrast the solo marimba, and Gillingham uses the large, marimba centered percussion orchestra to accompany the soloist.

Solo Marimba Textures

The use of single line melodic passages that make use of scalar and arpeggiated figures is common to the all the works. Rolled textures using one to four pitches are employed also in the works. A single line melodic passage is rolled in the introduction to *Off Axis* and the D and E Sections of *Diptych*. A single line doubled in octaves is used in several instances in Gillingham's work. Examples include the Redemption Theme 2 and the Reflection Theme.

Idiomatic techniques used include the one-handed roll requested by Glassock in the first cadenza. The left hand sustains an octave while the other hand plays melodic figuration. Also unique to the marimba is Miki's use of meta-dependent texture, where registral separation of the hands in alternating sticking produce linked melodic lines. Miki's extensive use of alternating struck dyads, usually two fifths, produces a thick texture unique to marimba playing. This is used in planing textures or a texture created by the hands moving in contrary or oblique motion. Stout also used planing texture in the chorale portions of Part I. There, the only voice not participating in the planing texture is the melodic bass line. Both Glassock and Stout, performers on the instrument, composed sections that make extensive use of split keyboard stickings. Glassock's Rondo refrain in the B Section as well as Stout's usage of the eb/F polychord figuration appear to be conceptualized with split keyboard technique in mind. In the other works instances of split keyboard usage occur, but as an optional sticking

chosen from among several. A final idiomatic technique appears in *Gate to Heaven*. Gillingham asks the performer to use double octaves over the course of the work.

Performance Problems

Each work has required unique solutions to performance problems. These have included issues of ensemble configuration, player set-up of multiple percussion instruments, rhythmic intricacies, and the use of special techniques like the independent roll or double octaves.

Common to all the works is the issue of balance. Ensemble configuration can aid in projecting the soloist's sound above the ensemble in addition to proper mallet selection by the soloist. A mallet that is both bright enough as well as heavy enough to project the soloist's sound should be used. A controversial solution is amplification of the solo marimba. Some composers suggest that the performers use amplification, and indeed this solution is being used by some performers.

Mallet and beater selection of the ensemble members is also critical. Consideration of register, dynamic, blend, function within the texture and the long range requirements of the passages will aid in finding the right mallets and beaters. The choice of stickings is of perpetual concern for performers. The player must weigh tempo and dynamic against appropriate kinds of techniques. Single independent strokes favor projection while single alternating and double lateral strokes favor reduced shifting and increased speed. But the latter techniques are potentially softer, especially when the intervals in each hand are small. Also common to the works is the necessity of selecting a workable roll base. Some marimba passages require attention in

coordinating the contrasting rolled texture against the rhythmically complicated figures in the ensemble. A generalized roll speed can greatly help this process.

Suggestions for Further Research

While many soloists have recorded works in the genre and use them in residencies and workshops, many works are left with only a few performances and most have no analytical studies. There is a wealth of literature that is available for exploration. Further analysis related to the performances of these works would certainly be beneficial.

The analyses presented in this study follow a convenient format and could be applied to compositions by a variety of musicians. The format could be useful for conductors learning these scores. It could be used by student musicians in preparation for recitals and concerts. Or, more detailed and mature studies could be made available to the music communities through on-line or journal publication. Especially beneficial are literature data bases that are capable of being updated and amended. The Percussive Arts Society and the now-on-line Siwe Guide to Percussion Literature come to mind in this regard.

The percussion ensemble has many sub-genres that need focused studies: two examples include non-percussion soloist with percussion ensemble and the marimba quartet. As time goes by and more works accumulate, the relative importance of such sub-genres will become clearer. The same efforts could be devoted to marimba solo and chamber music literature. The last few decades have seen chamber musicians become very active in commissioning works in support of their efforts to champion

certain combinations like marimba and violin, marimba and saxophone or percussion and flute.

This document provides a chronological list of works for marimba soloist and percussion ensemble. The Percussive Arts Society's program archives and performance at the Percussive Arts Society International Convention provided an assessment tool for generating a pool of works that have a record of success. The four works chosen for analysis represented large and small ensemble categories. Further, three of the works were written by commissioned composers and two were written by performers as composers. Both sizes of ensembles and kinds of composers are valued and treasured and have achieved due success. It is hoped that the catalog and the detailed analysis of structure and performance problems will serve the musicians interested in this genre.

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- First 10 measures, (10 total)
- 13 measure from R3 (13 total)
- R4, 2 measures, (2 total)
- R5, 1 before and 2 after, (3 total)
- R6, 3 measures, (3 total)
- R7, 4 before and 5 after, (9 total)
- R13, 4 before and 4 after, (8 total)
- R14, 6 before and 1 after, (7 total)
- R18, 5 before and 2 after, (7 total)
- R20, 7 before and 1 after, (8 total)
- R22, 1 before and 11 after, (12 total)
- R27, 3 before and 5 after, (8 total)
- R28, 2 before and 10 after, (12 total)
- 3 after R31, 4 measures, (4 total)
- R32, 4 measures, (4 total)
- R35, 4 measures, (4 total)
- R39, 4 before and 3 after, (7 total)
- R42, 4 before and 5 after, (9 total)
- R45, 3 before and 5 after, (8 total)
- R56, 3 before and 8 after, (11 total)
- R58, 7 before and 3 after, (10 total)

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