University of Kentucky
UKnowledge

Theses and Dissertations--Music | Music

2014

A Performance Guide to Glenn Kotche's "Monkey Chant"

Jonathan Sharp
University of Kentucky, jonrsharp@gmail.com

Right click to open a feedback form in a new tab to let us know how this document benefits you.

Recommended Citation

Sharp, Jonathan, "A Performance Guide to Glenn Kotche's "Monkey Chant"" (2014). *Theses and Dissertations--Music*. 26.
https://uknowledge.uky.edu/music_etds/26

This Doctoral Dissertation is brought to you for free and open access by the Music at UKnowledge. It has been accepted for inclusion in Theses and Dissertations--Music by an authorized administrator of UKnowledge. For more information, please contact UKnowledge@lsv.uky.edu.

STUDENT AGREEMENT:

I represent that my thesis or dissertation and abstract are my original work. Proper attribution has been given to all outside sources. I understand that I am solely responsible for obtaining any needed copyright permissions. I have obtained needed written permission statement(s) from the owner(s) of each third-party copyrighted matter to be included in my work, allowing electronic distribution (if such use is not permitted by the fair use doctrine) which will be submitted to UKnowledge as Additional File.

I hereby grant to The University of Kentucky and its agents the irrevocable, non-exclusive, and royalty-free license to archive and make accessible my work in whole or in part in all forms of media, now or hereafter known. I agree that the document mentioned above may be made available immediately for worldwide access unless an embargo applies.

I retain all other ownership rights to the copyright of my work. I also retain the right to use in future works (such as articles or books) all or part of my work. I understand that I am free to register the copyright to my work.

REVIEW, APPROVAL AND ACCEPTANCE

The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Director of Graduate Studies (DGS), on behalf of the program; we verify that this is the final, approved version of the student's thesis including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

Jonathan Sharp, Student

Professor James B. Campbell, Major Professor

Dr. David Sogin, Director of Graduate Studies

A PERFORMANCE GUIDE TO GLENN KOTCHE'S *MONKEY CHANT*

MUSICAL ARTS PROJECT

A musical arts project submitted in partial fulfillment of
the requirements for the degree of Doctor of Musical Arts
in the College of Fine Arts at the University of Kentucky

By
Jonathan Robert Sharp

Lexington, Kentucky

Director: James B. Campbell, Professor of Music

Lexington, Kentucky

2014

Copyright © Jonathan Robert Sharp 2014

ABSTRACT OF MUSICAL ARTS PROJECT

A PERFORMANCE GUIDE TO GLENN KOTCHE'S *MONKEY CHANT*

Solo percussionist and composer Glenn Kotche has achieved international fame with his experimental percussion-based music, collaborating with and composing for renowned contemporary music ensembles such as the Kronos Quartet, Band on a Can All-Stars, So Percussion, and Eighth Blackbird. One of his most celebrated compositions in recent years is *Monkey Chant*, which combines acoustic and electronic elements in a solo multiple percussion setting. Written and premiered in 2006, Kotche was inspired to compose *Monkey Chant* after listening to original field recordings in Bali from the Nonesuch Explorer Series. Found in these recordings is the popular Balinese music and dance drama known as Kecak. *Monkey Chant* showcases, through percussion, the intricate vocal patterns and recounting of the Ramayana Epic featured in Balinese Kecak.

This monograph serves as an informational performance guide for *Monkey Chant* that simplifies and resolves performance questions and issues. It provides a contextual setting for the work with a brief biography of Glenn Kotche, including his musical influences and inspiration for the composition. Balinese Kecak is examined as well as the Hindu Ramayana tale as it relates to Kotche's composition, revealing the function for its compositional form. This document also clarifies and details preparatory procedures for collecting and building the unique instruments required, also detailing schematics for electronic audio equipment and setup. Lastly, there is an analysis of compositional style and form, offering optional solutions to performance obstacles.

KEYWORDS: Glenn Kotche, *Monkey Chant*, Multiple Percussion, Ramayana, Kecak

Jonathan Robert Sharp

Student's Signature

June 6, 2014

Date

A PERFORMANCE GUIDE TO GLENN KOTCHE'S *MONKEY CHANT*

By

Jonathan Robert Sharp

James B. Campbell
Director of Dissertation

Dr. David Sogin
Director of Graduate Studies

June 6, 2014
Date

ACKNOWLEDGEMENTS

There are many individuals I would like to thank for their unwavering support throughout my academic career. First and foremost, I'd like to thank my family for their patience and loving support. My wife Rachel has always encouraged my musical and academic endeavors and has provided emotional support through tough times. My son Aiden has motivated me more than he will ever know. I would like to thank you both for your support while my studies have kept me from home. I love you both.

One person I cannot thank enough is my committee chair and personal friend James B. Campbell. He has provided invaluable experiences and consistent guidance throughout my graduate studies at UK that have made me a better person, musician, and colleague. The advice and support Jim has offered far exceeded my expectations from a graduate professor and will stay with me forever.

I would also like to thank my Advisory Committee: Professor James B. Campbell, Dr. Karen Bottge, Dr. Skip Gray, and Dr. Geraldine Maschio have made themselves readily available throughout my graduate career at the University of Kentucky. These individuals have provided indispensable guidance through all of my academic endeavors. I am very thankful for their positive encouragement and invested time throughout my course of study.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS iii

LIST OF TABLES vi

LIST OF FIGURES vii

PART ONE

CHAPTER ONE: Context

Introduction 1

Glenn Kotche 3

Influences on *Monkey Chant* 6

CHAPTER TWO: Acoustic Instruments and Implements

The Prepared Snare Drum 17

Other Drums 34

Melodic Instruments 37

Found Objects 43

Implements 49

CHAPTER THREE: Electronics

Contact Microphones 54

Volume Pedal 61

Loop Pedal 64

CHAPTER FOUR: Performance Considerations

Form 69

Thoughts on Performance 77

Conclusion 81

PART TWO

PROGRAM NOTES 83

Solo Percussion Recital 84

Chamber Percussion Recital 90

Lecture Recital 95

APPENDIX A 96

BIBLIOGRAPHY 98

VITA 101

LIST OF TABLES

TABLE

2.1 SS4-32 Spring, Century Spring Corp. 27
2.2 E-18 Spring, Century Spring Corp. 27
2.3 E-17 Spring, Century Spring Corp. 27
2.4 Pitch Deviation for Balinese Tuning 41
4.1 Monkey Chant Interlocking Kecak Drum Voicings, Measure 2 72
4.2 Monkey Chant Interlocking Kecak Drum Voicings, Measures 3 and 4 72
4.3 Kecak Rhythmic Patterns 73

LIST OF FIGURES

FIGURE

1.1 Concentric Circle Formation as seen in Kecak Performance by Blahkiuh Group at the Bali Art Centre 9
2.1 Small Cluster Spring 20
2.2 Small Cluster Spring: Cut End 20
2.3 Cluster Spring through Drumhead: Underside View 21
2.4 Prepared Drumhead Diagram: One Contact Microphone 23
2.5 Prepared Drumhead Diagram: Two Contact Microphones 24
2.6 Spring Characteristics: Century Spring Corp. 26
2.7 Prepared Drumhead Diagram: Long Springs 28
2.8 Friction Sticks 30
2.9 Cuíca Stick 32
2.10 Yamaha 'Club Jordan' Cocktail Drumset 34
2.11 Bass Pedal: Regular Cam Orientation 36
2.12 Bass Pedal: Reversed Cam Orientation 36
2.13 Basic Balinese Pelog Scale 38
2.14 Pelog Scale Starting on E^b 39
2.15 *Monkey Chant's* Selisir Mode Pitches 39
2.16 Pitch Intervals in Balinese Modes 40
2.17 Thumb Piano Mounted on Compact Conga 42
2.18 Glenn Kotche's Hanging Fruit Basket 44
2.19 Fruit Nest™ Expansion Fruit Basket 45
2.20 Fruit Nest™ Expansion Fruit Basket, Alternate View 45
2.21 Prodyne Hanging Fruit Basket with Contact Microphone 46
2.22 Chirping Cricket Box 48
2.23 Spring Stick 50
2.24 Superball^{tm} Half with Pilot Hole 51
2.25 Superball^{tm} Mallet 52
3.1 EPM AGT100, 'The Cap' (photo from Michael Gallagher's "Contact Microphones") 56
3.2 Piezo Element 57
3.3 Piezo Element, Opened 58
3.4 Piezo Element, Casing Cut 58
3.5 Piezo Element Separated from Casing 59
3.6 Piezo Element and 1/4" Jack 59

3.7 1/4” Jack: Tip and Sleeve Identified 60
3.8 1/4" Jack: Wires Soldered, Tabs Bent 60
3.9 Finished Contact Microphone 61
3.10 Volume Pedal 62
3.11 1/4" Stereo-to-Mono Splitter 63
3.12 Loop Pedal 65
3.13 Optimal Electronics Setup 67
3.14 Minimal Electronics Setup 68
4.1 *Monkey Chant*, Measures 1-19 71
4.2 *Monkey Chant* Kecak Motive in Notation, Measures 2-4 72
4.3 *Monkey Chant* Structural Diagram, Identified with Narration 75
4.4 *Monkey Chant* modified Kecak Motive, Measures 123-126 76
4.5 *Monkey Chant* Three-Limb Ostinato, Measures 6-8 81

PART ONE

CHAPTER 1 - CONTEXT

INTRODUCTION

> "O, Beautiful one! He in whom you trusted and repelled me when I sought to console you - that murderer of Khara, your husband Rama has been killed in battle. Your root has been cut off in all ways by me and your pride has been slain. By your present evil predicament, you will become my wife. O, Foolish one! Give up this resolution. What will you do with one dead. O, beautiful one! Become the Chief Queen over all my consorts. You think yourself as wise! O, Seetha! Hear about the dreadful killing of your husband in battle, as the killing of the demon Vritra (at the hands of Indra)"[1]

Ravana, the demon-king of Lanka, expresses these words to his captive, Sita, just before a great battle to rescue her ensues. This story excerpt is from the sixth book of the Ramayana, a piece of traditional Hindu literature commonly used as a rich source of stories for Balinese theater.[2] The excerpt also serves as the introduction for a modern solo percussion work by solo percussionist and composer Glenn Kotche, titled *Monkey*

[1] "Book Six – Yuddha Kanda," Valmiki Ramayana, Last modified September, 2009. http://www.valmikiramayan.net/yuddha_kanda_contents.html

[2] I Wayan Dibia and Rucina Ballinger, *Balinese Dance, Drama and Music: A Guide to the Performing Arts of Bali* (Singapore: Periplus Editions, 2004), 40.

Chant. By means of combining acoustic instruments with electronics, *Monkey Chant* retells the story of the Ramayana through percussion.

Kotche was first inspired to compose *Monkey Chant* after listening to Balinese field recordings from the Nonesuch Explorer Series. Found in these recordings is the popular Balinese music and dance drama known as Kecak. *Monkey Chant* showcases, through percussion, the intricate vocal patterns and recounting of the Ramayana epic featured in Balinese Kecak. A pioneer of solo electro-acoustic percussion music, Kotche displays his creative abilities in *Monkey Chant* by using contact microphones on unique instruments and objects.

The aim of this monograph is to serve as a performance guide for *Monkey Chant* that simplifies and resolves performance questions and issues. This first chapter creates a contextual background for the piece beginning with relevant biographical information on Glenn Kotche. Influences of the work are also examined, namely Balinese Kecak and the Hindu Ramayana epic on which the work was based. Chapter two discusses the process for collecting and building the acoustic instruments and implements required for the piece. Chapter three follows by furnishing a detailed explanation of *Monkey Chant's* electronic components, including a PA system, contact microphones and effects pedals. Block diagrams for setting up and connecting the components are also provided. The final chapter presents performance considerations, including an analysis of the compositional form and also an explanation of performance obstacles, detailing the difficult passages and methods for overcoming difficulties.

GLENN KOTCHE

Chicago-based Glenn Kotche grew up in nearby Roselle, IL, where he showed an early interest in drums and percussion.[3] His earliest memory, from when was three years old, is getting a toy drum from his sister for Christmas. Not realizing how to play it correctly, he put the sticks through the paper head and then cried.[4] Since that point, Kotche has identified himself as a drummer blends the mainstream with the avant-garde. "I've always balanced the academic and the rock-drummer sides of my playing, since when I first started taking lessons in fourth grade," Kotche explains. "I was active in school concert and marching bands, and I formed my first rock band at the same time."[5]

Kotche's creativity really began to bloom when he began music training at the University of Kentucky. He enrolled in a Bachelor's degree in Percussion Performance, wanting to quickly gain as many musical experiences as possible. Kotche's interests soon gravitated strongly towards drumset as his studies progressed. In an interview at the 2006 Modern Drummer Festival, Kotche commented "I was almost bitter to a degree that I had to spend so much time in these other areas, learning timpani and marimba and studying all these other things that would take away from my time to

---

[3] Steve Leggett, "Glenn Kotche," *Artist Direct*, http://www.artistdirect.com/artist/bio/glenn-kotche/619677#QYcFyqvVCwwW68RO.99 (accessed March 6, 2014)

[4] *YouTube*; "PROMARK: Glenn Kotche on the new Promark," video clip by Promark Drumsticks, December 10, 2013, http://www.youtube.com/watch?v=sIOA5sPxb_Y

[5] Michael Dawson, "Glenn Kotche: Painting The Sky Blue Sky," *Modern Drummer.com* (June 15, 2007), https://www.moderndrummer.com/site/2007/06/glenn-kotche-2/#.UxtIDvldW8B

practice drumset."[6] Eventually he realized that his experiences in diverse musical styles opened him up to different ways of thinking about playing drumset. With affirmation from Professor James Campbell, he began to think of the drumset as a multiple percussion instrument, opening doors to a wide range of possibilities.[7]

After graduating from college, Kotche moved back to Illinois and started collaborating with numerous musicians in Chicago. He became interested in free improvising with Jim O'Rourke, Darren Grey, and Tim Barnes among others, exploring different sound possibilities. Kotche enjoyed interacting with musicians in a setting where nothing is preconceived. He wanted to avoid falling into the same practices he had learned through formal training and instead focus on developing different sounds. This is when Kotche began building contact microphones, small piezo-electric sensors that pick up sound vibrations on surfaces. He called them "microscopic sounds" because they are difficult to hear until amplified with a contact microphone.[8] Kotche then took John Cage's prepared piano idea, placing screws and metal objects between piano strings, and applied it to the drum head. This prepared snare drum, with various springs and other objects screwed through the head, would eventually become an essential instrument in *Monkey Chant* years later.[9]

---

[6] Glenn Kotche, "Interview," *Modern Drummer Festival 2006*, DVD, Hudson Music, LLC/Modern Drummer Publications Inc., 2007.

[7] Ibid.

[8] Ibid.

[9] The Good American Collective, "In Rhythm With…Glen Kotche," last modified June 17, 2012, http://thegoodamericancollective.blogspot.com.br/2012/06/in-rhythm-with-glen-kotche-of-wilco.html

In 2000, Kotche started an experimental duo with bassist Darin Gray, On Fillmore, with which he still plays. In this group, Kotche continued to use his non-traditional percussion approach and also added other instruments like vibraphone, crotales and found percussion. Soon after Gray and Kotche formed the On Fillmore duo, Wilco member Jeff Tweedy invited Kotche to play percussion on some of ground-breaking American rock band's tracks. Kotche's involvement with Wilco increased when he joined the band in 2001.[10] With Wilco, he has recorded many albums including the Grammy nominated Sky Blue Sky and the Grammy-winning "A Ghost is Born." In 2010, Kotche and his Wilco bandmates started their own music festival, Solid Sound, in collaboration with the Massachusetts Museum of Contemporary Art (MASS MoCA). Kotche created a permanent sound installation to the museum's collection for the 2011 festival.[11]

Heralded as one of the most exciting, creative and promising composers and performers in modern music, Kotche's musical projects span far past his success with Wilco. He has released three solo albums, "Introducing" in 2002, "Next" in 2004, and most recently "Mobile" in 2006. Kotche's electro-acoustic solo work *Monkey Chant* is found on the "Mobile" album, released on the same record label that originally inspired the work with its Explorer's Series. Kotche has also written pieces for world-renowned ensembles including Kronos Quartet, The Silk Road Ensemble, Bang on a Can All-Stars, So Percussion and Eighth Blackbird. His compositions have been performed at venues as

[10] Glenn Kotche, "Interview."
[11] "About," on Glenn Kotche's official website, Last modified February 5, 2014, http://glennkotche.com/about

wide-ranging as Chicagoland's Ravinia, Carnegie's Zankel Hall and Lincoln Center's Alice Tully Hall in New York and Teatro Castro Alves in Salvador, Brazil. Glenn Kotche continues to present the world with new and exciting music, recently collaborating with the New York-based Victoire ensemble for a Carnegie Hall premiere of new works. The February 2014 concert featured a new work by Kotche titled *Bells and Honey*, commissioned by Carnegie Hall. Kotche has also been working on a fourth solo album, titled "Adventureland," which is due out March 25, 2014.[12]

INFLUENCES ON *MONKEY CHANT*

Kecak

Glenn Kotche was first inspired to compose *Monkey Chant* after listening to original field recordings in Bali from the Nonesuch Explorer Series. Nonesuch Records launched a series of field recording albums in the late 1960s that presented indigenous music from around the world. Originally released as LP records, the Nonesuch Explorer Series was revived in August 2002 with the re-release of 13 volumes of African music, followed by the Indonesian records the following year. One of the popular of those albums was "Golden Rain," featuring producer David Lewiston's 1966 field recordings of Balinese Gamelan and Kecak. Nonesuch Records' "Golden Rain" is the album in which Kotche first heard the intense intricate vocal chanting of a Balinese Kecak performance.

[12] "Glenn Kotche and Victoire." Carnegie Hall, http://www.carnegiehall.org/Calendar/2014/2/22/0600/PM/Glenn-Kotche-and-Victoire/

"I was so intrigued by the rhythms of all this chanting and also the power of the performance that I decided to try and imitate that."[13]

According to ethnomusicologist and Kecak choreographer I Wayan Dibia, Kecak is 'a unique dramatic form embodying artistic elements of the ancient and modern Balinese culture.' One of Bali's most well-known performing art forms, Kecak integrates vocal chanting, dance, and drama with costumes, make-up, and lighting. Of these elements, the main artistic beauty lies in its intricate vocal chanting, full of layered interlocking rhythmic patterns on 'cak' syllables.[14]

A typical Kecak performance consists of an all-male chorus of one hundred or more sitting in concentric rings around a small oil lamp, swaying and chanting together.[15] The vocal music is a combination of regular and irregular vocal forms, with the latter of the two using five-tone melodic scales. Regular vocal forms make up most of the polyrhythmic vocal chanting and use even beat rhythms (two-beat, four-beat, or eight-beat) based on short repeated ostinati. The irregular vocal forms are mostly sung in monophonic melodies of irregular phrasing. Both the regular and irregular vocal forms are often used to serve as interludes between scenes and also as scene accompaniment.

As mentioned earlier, Kecak integrates vocal music with theatrical aspects. Kecak performances narrate a story, usually from the Ramayana, with chorus members

---

[13] The Good American Collective, "In Rhythm With…Glen Kotche," last modified June 17, 2012, http://thegoodamericancollective.blogspot.com.br/2012/06/in-rhythm-with-glen-kotche-of-wilco.html

[14] I Wayan Dibia, *Kecak: The Vocal Chant of Bali* (Bali: Hartanto Art Books, 1996), 75.

[15] I Made Bandem and Fredrik Eugene deBoer, *Balinese Dance in Transition; Kaja and Kelod*, 2nd Edition (New York: Oxford University Press, 1995), 128.

and dancers representing the characters. A few important performers are signified as Ensemble Leaders, each with a specific responsibility to the overall performance. The Chorus Leader functions as the artistic leader for the group, responsible for tempo, signaling scene transitions, and starting and stopping the performance. Another leader in the ensemble is designated as The Beat Keeper. This person emulates the 'kajar,' a kettle gong used in Balinese instrumental gamelan music, repetitively singing "pung" to assist in tempo control and keep the complex interlocking rhythms together. The Melodic Leader is an individual who is responsible for maintaining the melody for the whole performance. The Narrator is the person who verbally tells the story, establishes the mood, describes the action in the scene, and provides dialog for characters when needed. All of these ensemble leaders are strategically placed throughout the ensemble so that they can work together to produce a captivating and cohesive performance. Figure 1.1, shown below, illustrates a common arrangement of ensemble performers for a Balinese Kecak performance.[16]

[16] I Wayan Dibia, 10-20.

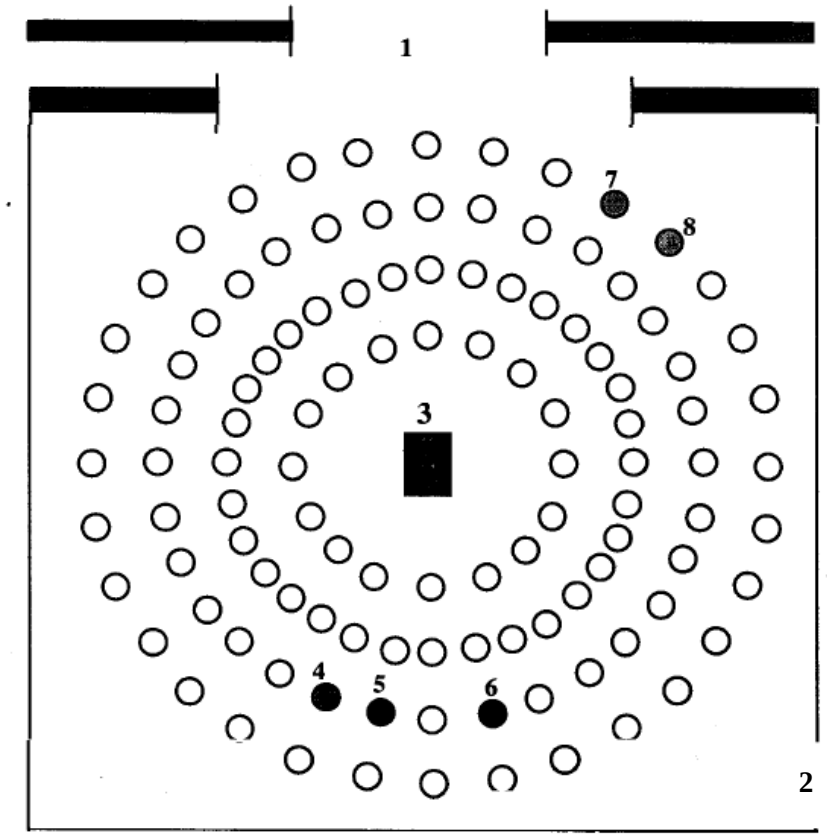

Figure 1.1 – Concentric Circle Formation as seen in Kecak Performance by Blahkiuh Group at the Bali Art Centre[17]

1. Center Stage Entrance
2. Side Stage Entrance
3. Tree Oil Lamp
4. Beat Keeper
5. Melodic Leader
6. Chorus Leader
7. The Narrator
8. Soloist (Singer)

There are multiple suggestions about how Kecak performances historically first emerged, but the account most agreed upon is one centered on German painter and

[17] I Wayan Dibia, 17.

musician Walter Spies.[18] This account asserts that, in the 1930s, Bali resident Walter Spies was inspired by the emotional and dramatic intensity of the ritual Kecak chorus he saw in a performance of Sanghyang Dedari, a religious dance that incorporated Kecak for trance purposes.[19] He suggested to the Balinese that they take the chorus of the Sanghyang and add scenes from the popular Ramayana epic to make the product more exciting and appealing to audiences. Kecak has now become a must-see tourist attraction all over Bali, with several dozen professional groups performing regularly at the larger hotels and on specially-built stages. Every day, tourists come by the busload to see the show.[20]

The Ramayana

Attributed to the sage Valmiki, the Ramayana was written around the fourth century BC and was already well known in Bali and Java by the ninth centuries AD. It is important to note that the Ramayana is as much a Balinese epic as it is an Indian epic, and the Balinese religious culture holds it in very high regard. The Ramayana is still one of the most important dramatic sources in Bali, still being recited in the ancient Kawi language for personal enlightenment and religious ceremonies. The general theme of the Ramayana is centered on two conflicting powers, good and evil, like most Balinese dramas. This source of conflict provides a medium for understanding moral and philosophical truths. The hero of the story, Rama, is an incarnation of the Hindu God

---

[18] Michel Picard. "Cultural Tourism in Bali: Cultural Performances as Tourist Attraction" *Indonesia* 49 (1990): 58.
[19] I Wayan Dibia, 6-7.
[20] I Wayan Dibia and Rucina Ballinger, *Balinese Dance, Drama and Music: A Guide to the Performing Arts of Bali* (Singapore: Periplus Editions, 2004), 92-93.

Visnu and represents all that is good. Evil is presented by the character Ravana, a greedy and lustful ogre king.[21]

In the Ramayana, there are traditionally seven sections, called kanda, from which episodes are re-enacted. The first section, "Bala Kanda," tells of Rama and his younger brother Laksmana as youths when they go into the forest to destroy the ogre Marica and his followers, who have disturbed a hermit-priest's meditation. After killing the ogres, Rama wins the hand of Sita in a royal archery contest. The section book, "Ayodya Kanda," describes the banishment of Rama, the rightful heir to the throne of Ayodya. King Dasaratha's wife wants her son Bharata to become king of Ayodya. She convinces her husband to banish Rama, his wife Sita, and brother Laksmana to twelve years of exile in the forest.[22]

"Aranya Kanda" tells of the abduction of Sita by the ogre-king Ravana. A golden deer, actually the ogre Marica in disguise, entices Sita. She implores her husband to catch the deer for her. Reluctantly, Rama leaves his wife in his brother's care. Shortly after, they hear Rama's cry for help. Laksmana is sure it is a trick, but Sita insists he go after his older brother. Before leaving Sita, he draws a magic circle around her for protection. Ravana, disguised as a starving nomad, approaches Sita begging for assistance. When she steps out of the circle to give him some food, he snatches her up and flies away to Alengka. Ravana is attacked by the giant bird Jatayu, faithful ally of

[21] I Wayan Dibia, 25.
[22] Ibid., 26.

King Dasaratha, but Ravana cuts his wings. Jatayu falls to earth, but before dying tells Rama what has transpired.[23]

"Kiskenda Kanda" describes two monkey brothers, Sugriva and Subali, battling a cave demon. During the fight, Sugriva believes that Subali has been killed by the demon, so he seals the cave with a large rock. Subali manages to escape and seeks revenge on Sugriva, whom he believes trapped him in order to wed his wife, Dewi Tara. With Rama's help, Sugriva destroys his brother. In return, Sugriva lends Rama his monkey armies to rescue Sita from Ravana and to regain his throne.[24]

"Sundara Kanda" depicts Rama sending the monkey army commander Hanuman to Alengka to locate Sita. After overcoming many obstacles, he finds Sita and gives her Rama's ring, proving he is an ally. Sita, hands him a golden flower from her hair to show Rama that they have met. Before leaving Alengka, Hanuman destroys Ravana's palace garden and sets the city on fire.[25]

"Yudha Kanda" describes the battle between the armies of Rama and Ravana. This is the section that Kotche's *Monkey Chant* narrates, beginning with an exchange between Ravana and Sita. Kotche marked specific portions of the Yudha Kanda in the *Monkey Chant* score, presenting brief summaries of action at measures. A more comprehensive summary of the Yudha Kanda is presented in the subsequent paragraphs. However, a discussion of the compositional relationship to the story is discussed in the 'Performance Considerations' chapter of this document.

---

[23] I Wayan Dibia, 26-27.
[24] Ibid., 27.
[25] John Brockington, *The Sanskrit Epics* (The Netherlands: Koninklijke Brill, 1998) 38.

The Yudha Kanda begins with Ravana aiming to frighten Sita into submission, to no avail, by showing her the illusion of Rama's severed head. Rama and his army travel south towards Lanka to battle Ravana's army and rescue Sita. Having received Hanuman's report on Sita, Rama and his brother Lakshmana proceed with their army toward the shore of the southern sea. There they are joined by Ravana's renegade brother, Vibhishana. They construct a floating bridge across the ocean to Lanka and cross over to Lanka. As Rama's army crosses the causeway, Ravana receives information from his spies about the army's size and prepares for battle.[26]

Rama sends a messenger, Angada, over to Lanka warming Ravana of his impending attack, saying, "Rama bids me warn you that your doom is at hand. Even now it is not too late for you to restore Sita and beg Rama's forgiveness. You have troubled the world too long." Rama waits for the messenger to return, hoping Ravana would have a change of heart. However, when he finds out that Ravana ordered the messenger to be killed, he realizes a change of heart is a lost cause and immediately orders the assault on Lanka.[27]

Success favors Ravana during the early stages of battle because Rama and Lakshmana are kept safely out of action and subsequently unable to lead their army. Eventually they are both put into battle, and a long series of duels result in Rama, Lakshmana, and the Monkey Army chiefs killing the most fearsome members of Ravana's army. Rama overcomes Ravana, but chooses to spare his life. As the battle

[26] John Brockington, 38.
[27] R. K. Narayan, *The Ramayana: A Shortened Modern Prose Version of the Indian Epic* (New York: The Viking Press, 1972) 145-146.

continues to favor Rama and his army, Ravana's dangerous brother Kumbhakarna is awoken from a hibernation-like sleep. At first, Kumbhakarna devastates the Monkey Army, but Rama slays him. Ravana's son, Indrajit, uses magic to scare the monkey army and prepares for a sacrifice that will ensure victory. However, Lakshmana prevents the sacrifice and eventually kills Indrajit. At this point in the battle, only Ravana is left and a lengthy duel between him and Rama ensues.[28]

The gods in heaven see that Ravana has powerful chariot to help him in battle. They decide Rama needs all the support they can gather and send him a special chariot.[29] Rama climbs in the chariot with his sword and two quivers full of rare arrows and tells the chariot driver to move slow, allowing Ravana to exhaust himself first. Ravana blows his conch, agitating the entire universe with its vibration and signaling the commencement of the actual battle. Showers of arrows are sent from Ravana's bow, to which they are all neutralized by Rama's bow, arrow for arrow. Ravana then uses his twenty arms to launch arrows with ten bows, but Rama remains unscathed.[30]

With Rama's chariot closely following Ravana's, the warriors fly up into the skies. After circling the globe many times, the chariots return and the fight continues back in Lanka. Ravana now decides to change his tactics by using incantations to create supernatural effects. He invokes a weapon called "Maya," which creates the illusion that all his fallen armies are coming back to life. Rama realizes it is a trick and invokes a rare weapon called "Gnana," which provides clarity by evaporating Ravana's illusion.

---

[28] John Brockington, 38-39.
[29] Ibid.
[30] R. K. Narayan, 151-155.

The warriors both continue sending magical weapons at one another, including a destructive trident, venomous serpents, and thousands of clawing eagles. Neither warrior is injured by the magical weapons, enraging Ravana who then blindly sends a quiver of arrows in Rama's direction in an act of desperation. Rama sends arrows that meet Ravana's half way and turns them around. All the arrows are sent back and their sharp points pierce Ravana's chest. As Ravana's body and spirit weakened, Rama slices off his heads and arms one by one. But as each appendage is lost, a new one grows back in its place. Hundreds of arrows then meet Ravana's body causing him to collapse to his chariot's floor. Honorably, Rama waits for Ravana to revive himself, saying "It is not fair warfare to attack a man who is in a faint. I will wait."[31]

After Ravana recovers, the battle continues and Rama decides to use "Brahmasthra," a special weapon designed by the Creator Brahma. He had designed this weapon for Shiva to destroy a monster set on destroying the world. Rama kneels down to worship with prayer invoking Brahmasthra's fullest power and sends it toward Ravana's heart. The Brahmasthra entered Ravana's heart and sent him face down onto the earth, abruptly ending the battle. Ravana had previously prayed to make his head and arms indestructible, but he had forgotten to strengthen his heart, leaving it vulnerable. Rama, Lakshmana, and Hanuman gather and look over Ravana's body admiring the decorations and extraordinary workmanship of his armor. Rama tells Vibishana, Ravana's brother, "Honor him and cherish his memory so that his spirit may go to heaven, where he has his place. Sita is then rescued by Hanuman and brought to

[31] R. K. Narayan, 158.

Rama, who has mixed feelings about taking her back because he worried about her purity. He is skeptical, wondering if she succumbed to temptation while in Ravana's possession. After much discussion, Sita proves of her purity by walking through the flames of a roaring pyre unharmed and is happily welcomed back in Rama's arms.[32]

The final section of the Ramayana, the "Uttara Kanda," is thought to be a later addition to the original story by Valmiki and concerns the final years of Rama, Sita, and Rama's brothers. Sita, now pregnant by Rama, is abandoned by him because of his suspicions that she was unfaithful while in Alengka. She is exiled to the forest, and meets the sage Valmiki, who helps raise her twin sons, Kusa and Lava. Eventually, Rama realizes his mistake and goes in search of Sita, but she returns to her mother, the earth. Rama escorts his sons back to the kingdom and passes on the throne to them.[33]

[32] R. K. Narayan, 158-160.
[33] I Wayan Dibia, 28.

CHAPTER 2 – ACOUSTIC INSTRUMENTS AND IMPLEMENTS

THE PREPARED SNARE DRUM

There are many materials required for the prepared snare drum, all of which are affixed to the batter head of the drum. The process for acquiring all of the materials and attaching them to the drumhead can be time consuming. A little patience will go a long way. Each of the drumhead preparations assist the personification of certain characters in the Ramayana story that Kotche retells with the composition. Care must be taken when choosing possible sounds, as they will directly affect the way the characters are represented. Below is a materials list that includes the tools and sound materials needed. There are many other possible solutions, but this list contains everything I used for my own preparations.

Drumhead Materials List:

- Gaffers or other similar tape
- Drill with a few small drill bits of varying size (a safety pin could also work)
- Hack saw (or another saw that can cut though snare drum sticks)
- Wire cutters
- Needle-nose pliers
- Violin or cello rosin
- beeswax
- A two-ply snare batter head (preferably with pre-drilled air vent holes)
- 1-2 contact microphones

- Electrical wires (3-4 pieces of varying small gauge rubber coated wire, each about 2 feet long)
- Bamboo Skewer (the kind used for cooking)
- Medium-heavy gauge fishing line - three or four feet
- Two snare drum sticks (the top four-five inches of the stick will be cut off and used)
- About a dozen small springs 1/2" to 3" in length with varying gauges and coil diameters
- 2-4 long springs (like those used for vintage screen doors)

A two-ply batter head with pre-drilled air vent holes is best suited for the prepared snare drum. In the performance notes Kotche suggests an Evans HD drumhead, which comes with small pre-drilled holes around the perimeter. This is ideal for *Monkey Chant* because preparation materials can be attached to the drum by inserting them through the pre-drilled holes.

Successful drumhead preparations strongly depend on their proximity to the contact microphones. The program notes mention the need for one contact microphone affixed to the batter head. The contact microphone is necessary so that the all the sounds from the preparations will balance with the other instruments being played simultaneously. Through experimentation, I have found that the use of two contact microphones placed across from one another at approximately 9 o'clock and 3 o'clock is ideal as it provides two points of amplification. Either contact microphone

option will suffice, even though one is preferred over the other, but each option requires different placements of preparation materials.

All of the preparations need to be close to the perimeter of the drumhead to allow for a large enough playing area in the center of the head. Unfortunately, this makes is difficult for all the drumhead sounds to balance well. If only one contact microphone is utilized for the batter head, the preparation materials that naturally provide the least amount of sound should be placed closer to the microphone while louder materials can be located farther away. This will help the amplified sounds to be balanced.

The contact microphones, which will be discussed in more detail in the electronics and p.a. section of this document, can be affixed to the drumhead with a small amount of gaffers tape. Many contact microphones come with an adhesive on the underside. However, the stretching of the batter head during tuning and playing can cause the adhesive to detach from the drumhead. So it is a good idea to 'assist' the adhesive with some gaffers tape, applied over the body of the contact microphone. After contact microphones are secured onto the drumhead, the small spring clusters can be affixed. The spring clusters consist of various sizes of small springs ranging from 1/2" to 3" in length with varying gauges and coil diameters. They can be found in almost any hardware store, usually in the door hardware section, and generally come in variety packs. They are played by hitting them with the hand or stick in a sideways sweeping motion parallel with the batter head to which they are affixed. In the music, the spring clusters represent Ravana, a ten headed evil king. With this theme in mind, each spring

can be viewed as one of Ravana's heads, and identical spring sounds should be discouraged because they each should have their own personality. The easiest way to affix each spring to the batter head is to cut the end of spring so that there is an endpoint. Needle-nose pliers can pull the endpoint away from the rest of the coils. That end of the spring now has a sharp point that can easily be threaded into the batter head hole.

Figure 2.1 – Small Cluster Spring

Figure 2.2 – Small Cluster Spring: Cut End

The spring can now be threaded through the drumhead. Only a few revolutions are needed to strongly imbed the spring.

Figure 2.3 – Cluster Spring through Drumhead: Underside View

One of the benefits of using springs is that they can quickly and easily be adjusted, even when the drumhead is already mounted on the drum shell. In fact, I recommend waiting until the entire batter head is finished being prepared and is tuned on the shell before worrying about what the small springs will sound like. Once the batter head is mounted and tuned to a desirable tension, the spring sounds can be tested. It should be expected that the performer will have a desire to change some of the spring sounds. A few quick twists of the springs clockwise or counterclockwise can change the character and timbre. If one of the springs is wobbling too long after being struck, screw it further through the batter head. There are no ramifications for having a large amount of the small spring screwed through the batter head. When struck, if one of the springs sound is shorter than desired, the performer can unscrew the spring to

allow more coils to be on top of the batter head. The spring wire gauge might also be too thick. In this case, just unscrew the spring completely from the batter head and replace it with a more appropriate spring.

As noted in the score and performance notes, the small springs should be grouped into clusters. The music is written so that there are three clusters that interact back and forth with each other. And since Ravana is a ten-headed demon king, it would make sense that the clusters consist of 3-4 springs each. I prefer this arrangement because I can make sure each spring has its own characteristic sound, or personality, and that each cluster of springs varies in timbre from the other clusters. This makes it easy to hear the interaction between the clusters in the music.

The three small spring clusters are the most often played preparations and usually need the most amplification during performance. So keeping them in close proximity to the contact microphones is ideal. If only one contact microphone is used, I suggest utilizing Figure 2.4, shown below. The spring clusters need to be close to the contact microphone in order for it to pick up the sound vibrations well. I found that this layout works very well when cluster B consists of the smallest size springs, as this cluster is closest to the contact microphone. When the springs are smaller in wire diameter and overall size and length, they can maintain a similar characteristic sound to larger springs, but simply produce less sound. So as clusters A and C are farther away, cluster B is naturally quieter. The contact microphone then picks up all three sound clusters in similar amplitude, balancing all of the springs.

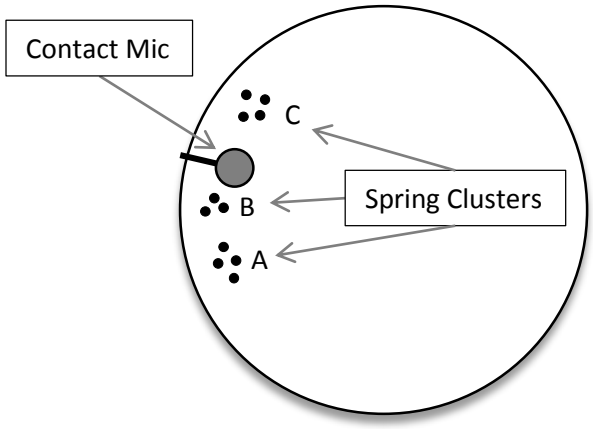

Figure 2.4 – Prepared Drumhead Diagram: One Contact Microphone

When utilizing a setup similar to Figure 2.4, the remaining drumhead preparation materials can become very difficult for the contact microphone to amplify. As I will detail later, the rest of the preparations will be affixed to the rest of the perimeter of the drumhead, forcing their locations to become much farther away from the contact microphone. This results in lowered volume outputs from those materials and an overall unbalanced sound from the prepared drumhead.

If two contact microphones are utilized for the prepared drumhead, I suggest modeling after the microphone and spring cluster locations in Figure 2.5, shown below. This layout features the contact microphones located in an opposing fashion close to 9 o'clock and 3 o'clock. The two microphones will provide an overall closer proximity to all the preparation materials around the perimeter of the drumhead. As shown in the figure, the three small spring clusters now can each be located equidistant from the contact microphones. This also means that the clusters can have similar sized springs because there is no need to 'battle' for a good balance between all three. This ultimately offers the performer more options for choosing spring sounds. It should be

noted that, in either of the figures shown, the specific number of small springs in each cluster (A, B, or C) is only an approximation. The actual number of springs within each cluster is up to the performer.

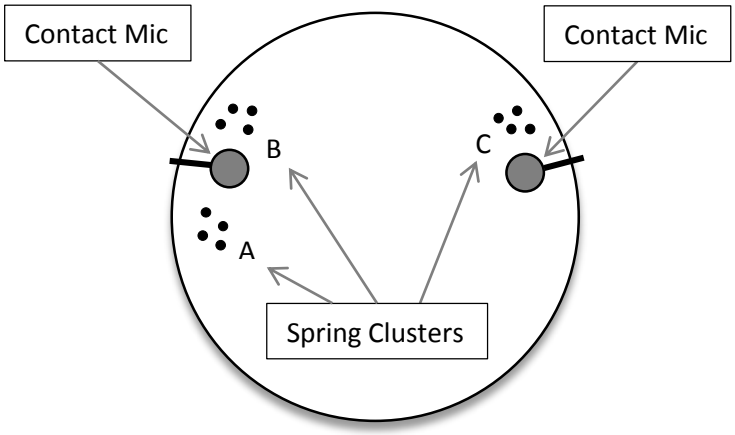

Figure 2.5 – Prepared Drumhead Diagram: Two Contact Microphones

As mentioned earlier, the spring clusters need to be struck with a sideways sweeping motion during performance with either the hand or a stick. With this in mind, I suggest keeping the spring clusters at locations either in front of or behind the contact microphones (this applies to either setup figure), and not in line with them. This will offer less of a chance that the hand, stick, or moving spring will inadvertently strike one of the microphones, which would result in an unpleasant harsh sound and possible damage to the microphones.

The other kinds of springs that are needed to be affixed to the drumhead are long springs that will be pulled and stretched in performance instead of being struck. In the program notes, Kotche writes that the long springs are played by being pulled

taught with one hand while sliding or rubbing one's thumbnail along the spring to produce a screeching sound. He also mentions that these springs are similar to those used on old screen doors, which use a very thin gauge wire and are usually about two feet long. This type of spring is different than the long springs currently found in most hardware stores. Screen door springs can be found in stores between 8 ½ and 16 inches in length. However, these springs are a newer style that features a much thicker gauge wire. This makes them very difficult to stretch in the manner required for performance, rendering them unfit.

It is extremely difficult to acquire the proper vintage screen door springs that best suit the *Monkey Chant* performance. However, there are companies that manufacture springs for a variety of uses other than for screen door applications. Century Spring Corp. is a manufacturer of custom springs that sells dozens of varieties of long springs through their website. Figure 2.6, shown below, is an image from the Century Spring Corp. website. It shows how each spring is characterized, allowing you to choose springs based on overall diameter, wire diameter, approximate initial tension, the rate in pounds per inch, suggested maximum load, and overall length.[34]

[34] "Extension Springs," Century Spring Corp., accessed February 10, 2014, http://www.centuryspring.com/Products/extension.php

EXTENSION SPRING
(Long Length)

Part Characteristics

CSC Stock #	E-17
OD (in)	0.375
Wire Dia. (in)	0.028
Approx Init.Tension (lbs)	0.500
Rate (lbs/in)	0.590
Sugg. Max Load (lbs)	2.100
Length (in)	36.000

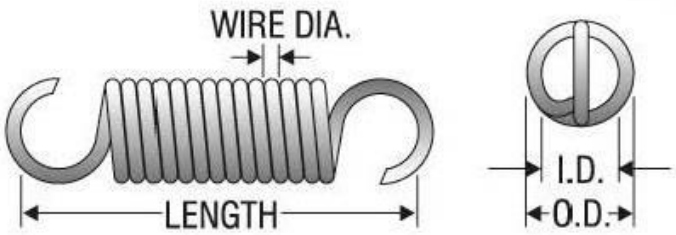

Figure 2.6 – Spring Characteristics: Century Spring Corp.[35]

In the *Monkey* Chant program notes, Kotche recommends the use of two to three long springs. It is logical that the performer would not want an identical sound from each of the springs. Therefore, it is wise to find springs with somewhat different characteristics. Wire diameter and overall spring diameter (abbreviated 'OD' in the image and tables) directly affects the timbre of the pulled spring sound. After experimenting with many springs of various sizes and diameters, I found a few models that worked very well for the prepared drumhead. The tables below show the specific springs from the Century Spring Corp. that I chose to use. Each model varies slightly from the others, characterizing each with its own unique timbre.

[35] "Extension Spring (Long Length) E-17," Century Spring Corp., accessed February 10, 2014, http://www.centuryspring.com/Store/item_detail.php?StockNumber=E-17

Table 2.1 – SS4-32 Spring, Century Spring Corp.[36]

CSC Stock #	SS4-32
OD (in)	0.250
Wire Dia. (in)	0.032
Approx Init.Tension (lbs)	1.000
Rate (lbs/in)	4.100
Sugg. Max Load (lbs)	4.800
Length (in)	20.000

Table 2.2 – E-17 Spring, Century Spring Corp.[37]

CSC Stock #	E-17
OD (in)	0.375
Wire Dia. (in)	0.028
Approx Init.Tension (lbs)	0.500
Rate (lbs/in)	0.590
Sugg. Max Load (lbs)	2.100
Length (in)	36.000

Table 2.3 – E-18 Spring, Century Spring Corp.[38]

CSC Stock #	E-18
OD (in)	0.375
Wire Dia. (in)	0.035
Approx Init.Tension (lbs)	1.000
Rate (lbs/in)	1.900
Sugg. Max Load (lbs)	3.900
Length (in)	36.000

[36] "Extension Spring (Long Length) SS4-32," Century Spring Corp., accessed February 10, 2014, http://www.centuryspring.com/Store/item_detail.php?StockNumber=SS4-32
[37] Ibid., "Extension Spring (Long Length) E-17," http://www.centuryspring.com/Store/item_detail.php?StockNumber=E-17
[38] Ibid., "Extension Spring (Long Length) E-18," http://www.centuryspring.com/Store/item_detail.php?StockNumber=E-18

The same method should be used to affix the long springs to the drumhead as was used for the small spring clusters. Wire cutters can be used to shorten the springs, if needed. Then needle nose pliers can pull the endpoint outward so it can guide easily into the small drumhead holes. Once again, only a couple revolutions are needed when screwing the long springs into the batter head. The proximity of the long springs to the contact microphone(s) is not as important as it was with the short spring clusters. I did, however, prefer to keep the long springs on the hemisphere of the drumhead closest to me. When I had the long springs on the far side of the drumhead they would often fall and get caught onto other instruments in the percussion setup. The hemisphere of the drumhead closest to the player has the most open space for the long springs to fall freely. The figure below shows the approximate location of the long springs on the prepared drumhead that worked well for my performances.

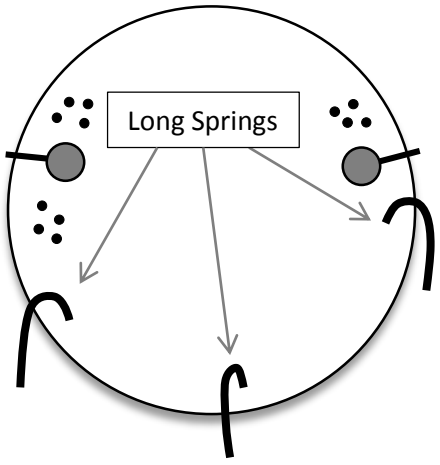

Figure 2.7 – Prepared Drumhead Diagram: Long Springs

Next, some fishing line and the end of a snare drum stick will be used to create a creaking sound on the drumhead. I suggest using a fairly strong monofilament to reduce the risk of breakage. Fifty pound test line works well. In the program notes, Kotche suggests making two of these 'friction sticks', and I agree. It is a good idea to have two of them, in case of breakage or malfunction during performance. With this in mind, the preparation will require a duplication of the required materials.

For each friction stick, a twelve to eighteen inch piece of fishing line will be needed. The line will be threaded through one of the vent holes of the batter head and knotted several times underneath. This will create a 'stopper' so that when the line is pulled upward, the knots will keep the bottom end of the line from pulling through the vent hole. Once the fishing line is threaded through and knotted underneath the batter head, it can be tied to the end of a drumstick. A drumstick with a medium to large bead is suggested so that the fishing line will not slip off. The drumstick will need to be cut at the shoulder, leaving the top four or five inches to be used and discarding the rest. Securing the drumstick with a vice attached to a table will keep the drumstick from sliding, reducing the risk of injury. A hacksaw can then be used to cut the drumstick at the appropriate place on the shoulder.

Once cut, the drumstick tip should be rubbed with violin or cello rosin at the neck. This is the place on the drumstick with the smallest diameter, right below the bead. This is the place on the stick where the top end of the fishing line will be knotted. During performance, the stick will be pulled taught and rotated, creating a creaking sound. The rosin increases the friction between the fishing line and the stick, sending

vibrations down the fishing line and onto the drumhead. The drum acts as a resonating body for the creaking vibrations.

The knot around the neck of the drumstick should not be so loose as to risk slipping over the bead. However, if the line is knotted too tightly, it can be too difficult to rotate the drumstick. So a delicate balance must be reached. When not played, the friction stick will hang freely over the side of the drum, requiring only five to eight inches of fishing line between the stick and the drumhead. This is up the preference of the performer. As mentioned earlier, two of these friction sticks should be made and affixed to the batter head.

Figure 2.8 – Friction Sticks

One of the last batter head preparations is a bamboo stick that will function as a cuíca sound. A cuíca is a Brazilian friction drum that features a bamboo stick attached to a drumhead. The stick is rosined and rubbed with a wet cloth to create a high-pitched squeaky sound. The cuíca preparation for *Monkey Chant* works in a very similar way. The bamboo stick will be attached to the batter head, rosined, and rubbed to create friction that vibrates the drumhead, recreating a sound similar to the Brazilian cuíca.

The best and easiest type of bamboo stick to acquire for the cuíca preparation is a skewer used for cooking. They are very inexpensive and usually come in packs of 50 or more. The skewer should be cut down to between eight and ten inches in length. As the bamboo stick will be through the head, one end will need to have a stopper to keep it from pulling out. A few layers of gaffers tape wrapped around the end works well.

Once a stopper is affixed to the skewer, one end will be pushed through a hole in the batter head. The holes required for the preparations discussed up to this point required only a very small hole in the batter head. The bamboo skewer, however, has a relatively large diameter. So a larger drill bit should be used to increase the size of a preexisting hole or to create a new one. The skewer can be pushed upward through the batter head hole from the underside, leaving the end with the stopper underneath the head. The length of stick should then be rubbed with beeswax to create friction when stroked with the fingers.

During performance, the bamboo skewer can sit pushed downward through the batter head, leaving only an inch or two above the head, keeping it out of the

performer's way. When needed, the performer can then pull the skewer up to play and then back down to its lowered position.

Figure 2.9 – Cuíca Stick

The final preparation to the snare drum batter head consists of various electrical wires that function in a similar way to the cuíca stick. These wires should be threaded through the head in the same manner as the fishing line, with a knot underneath acting as a stopper. Pulling on the wires during a performance is mostly improvisatory. And while a suggested number of wires are not indicated in the program notes, I suggest at least three so the performer is not limited by a small number of available sounds.

Through experimenting with many types of wire, I have found that the kind used for connecting home audio speakers works very well. This type of wire is usually a double-conductor, having two rubber-coated strands that are connected. These strands are made to be pulled apart from one another, allowing the user to attach the strands to the two conductors on home audio speakers. This type of wire works very well because it is very flexible. This allows the performer to pull on the wire during a performance, and then let it drop down to the side of the drum when not in use. When wires are too stiff, they remain erect and in the way of the performer. Ultimately, the performer can choose any type of wire they prefer. Thicker gauge wires (8-AWG is the thickest gauge I advocate) create a darker timbre, while thinner gauge wire produces a brighter timbre.

The wires should be cut to a desired length, completely up to the performer. I suggest cutting the wires to between twelve and twenty four inches in length. As mentioned earlier, the wires are to be knotted and threaded upward through the batter head, leaving the knotted stopper on the underside. Then the entire length of the wire is to be rubbed with beeswax to create friction when the fingers are run along the length of the wire. This is the same technique as the cuíca stick described earlier.

This completes the preparations required for the snare drum batter head. Once all the materials are affixed to the drumhead, it can then be placed on the shell and tuned up. The process for tuning this drum should be similar to regular snare drum tuning. However, the materials attached to the drum make it very difficult to tap the head and hear the pitch at each tension rod. Extra care must be taken to tune each lug

to the same tension. Damage from uneven tuning will result in the need to rebuild the preparations on a new head.

OTHER DRUMS

Other than the description of the prepared snare drum, there are only generic names for the drums in the piece. The notation key calls for bass drum, floor tom, rack tom, and conga but no further explanation is provided.

The bass drum should actually be in the form of a cocktail drum, a vertical bass drum with a smaller diameter and deep shell that doubles as a bass drum and snare or tom. The photo below, courtesy of the Yamaha Drum Company, shows a modern cocktail drum kit.

Figure 2.10 – Yamaha 'Club Jordan' Cocktail Drumset[39]

[39] "Club Jordan," Yamaha Corporation, accessed March 3, 2014 http://usa.yamaha.com/product_archive/drums/club_jordan/?mode=model

The combination setup allows for extreme portability, which is one of the reasons Kotche uses a cocktail-type setup. In an interview at the 2006 Modern Drummer Festival, Kotche commented "When I was touring with all these bands and had very limited space, it was very practical for me to leave the bass drum at home and instead use a floor tom with just a cocktail-style foot pedal underneath it. It's the same idea as a cocktail drum, except cocktail drums are actually pretty big. . . . For me to save space that wasn't ideal. So this is just a floor tom." In *Monkey Chant* the bottom head of the floor tom is played with a cocktail bass drum pedal and the top head is played with sticks, acting as the floor tom.

The other reason a cocktail-style drum should be used in *Monkey Chant* is for the purpose of blending drum tones. The work recreates interlocking vocal Kecak rhythms on the bass drum, toms, and snare drum. A traditional bass drum sound would not blend well with the other resonant drums. Kotche mentions, "It wouldn't mix well with the floor tom to get that chanting. It would be two completely different types of tones. So this way I get to match the tones a lot more since they're the same drum."

Monkey Chant is usually performed sitting, making a traditional 24 inch deep cocktail drum much too high for the player. A standard floor tom with a 14 or 16 inch depth provides a perfect height for a sitting playing position. The tom will need to be raised on its legs to a height that fits a traditional bass drum foot pedal underneath and the pedal will need to be modified for cocktail-style playing.

To make the cocktail bass drum pedal, the mechanics between the footboard and the beater will need to be reversed so that the rotating cam pushes the beater upward instead of forward and down.

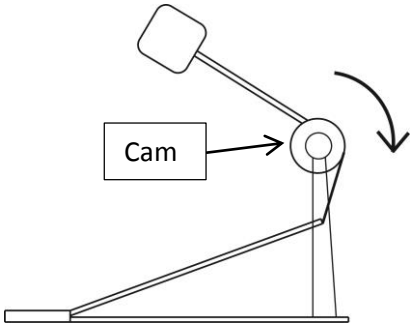

Figure 2.11 – Bass Pedal: Regular Cam Orientation

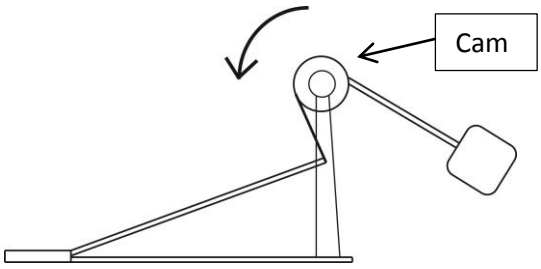

Figure 2.12 – Bass Pedal: Reversed Cam Orientation

The floor tom also has an optional pitch bend that is produced by blowing into a tube connected to the air vent. The end of a piece of clear vinyl tubing should be placed in the air vent of the floor tom and the performer blows on the other end, increasing the pressure inside the drum and raising the pitch. Kotche first got the idea from Mani Neumeier of the 1970s German psych band Guru Guru. Mani used tubes to bend the pitches of his toms, naming his system the "Mani Tom." For *Monkey* Chant, one piece

of tubing five or six feet in length and 3/8 of an inch in diameter (or whatever size best fits in the air vent hole) is all that is needed.

The rack tom noted in the score and instrument list does not need to be of any specific style or size and requires no preparation, but the conga needs some explanation. Staying true to Kotche's performances of *Monkey Chant*, the conga should actually be a Compact Conga manufactured by the LP Corporation. This type of conga features no shell and is only a couple inches in depth, but it still produces a traditional characteristic conga sound. A traditional conga may be used, but the Compact Conga can be placed in closer proximity to the player because it can be mounted on a snare drum stand. If no conga is available, an additional rack tom tuned high in pitch is an adequate substitute.

MELODIC INSTRUMENTS

While the drums mentioned above serve a rhythmic purpose throughout much of the piece, a thumb piano and crotales provide melodic material. Kotche asks the performer to place the thumb piano, also termed kalimba or mbira, on the conga head. This offers a suitable playing position as the performer must occasionally tap on the body of the thumb piano and conga head simultaneously.

Most thumb pianos on the market are appropriate for *Monkey Chant* as long as the body is durable enough to withstand drumsticks. Both Kotche and I ordinarily use a thumb piano with a solid body instead of the standard hollow-body design. This allows the conga to act as the resonating body. The Inscapes Gallery based in Newport Oregon

offers a few different thumb pianos of this style. Their instruments are about 8" tall and 5 1/2" wide and are made of several types of hardwoods including Cherry, Mahogany, and Walnut.

Six pitches are needed for the thumb piano in *Monkey Chant*: E^b, G, A^b, B^b, D, and E^b. These pitches make up the Balinese pelog selisir mode. Balinese scales can be divided into two main systems: pelog and slendro. Both systems are fundamentally pentatonic, but the pelog system features a slightly different tuning as well as two additional tones within the octave.[40]

While exact Balinese tuning does not fit in the Western equal temperament system, an approximation of the basic pelog scale is shown below. The pitches are approximated by gravitating them to the closest equal temperament notes. The parentheses designate the two extra tones in the system.

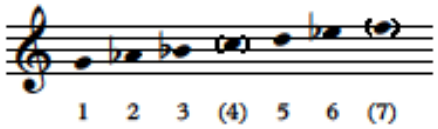

Figure 2.13 – Basic Balinese Pelog Scale

While the thumb piano's tuning in *Monkey Chant* is based on this pelog scale, its perceived tonic starts on scale degree 6. The figure below shows the pelog scale starting on E^b.

[40] Colin McPhee, "The Five-Tone Gamelan Music of Bali" The Musical Quarterly 35, no. 2 (1949): 257.

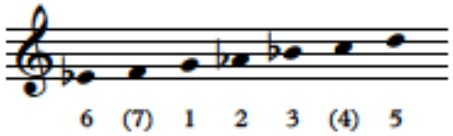

Figure 2.14 – Pelog Scale Starting on E^b

The *Monkey Chant* melody uses scale degrees 1, 2, 3, 5, and 6, designating the selisir mode in Balinese music. The figure below shows the selisir pitches of *Monkey Chant*, starting on scale degree 6.

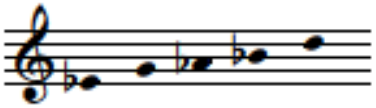

Figure 2.15 – *Monkey Chant's* Selisir Mode Pitches

As mentioned earlier, these tones are an approximation of the actual Balinese tuning and do not fit with equal temperament tuning. Selisir mode is shown first, using scale degrees 1, 2, 3, 5, and 6. The figure below shows exact Balinese pitch relationships, in cents.

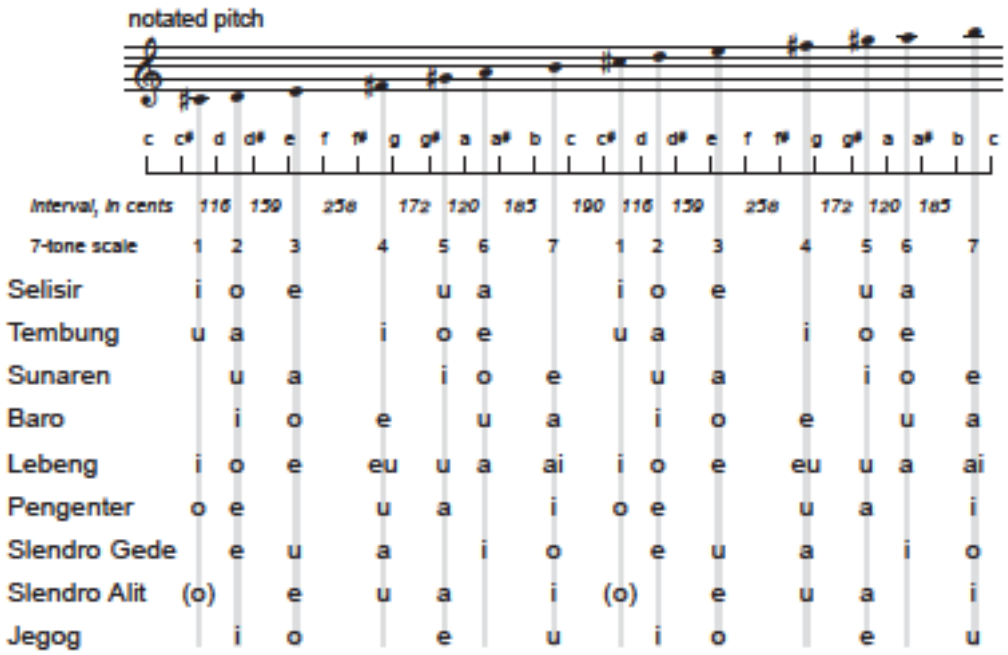

Figure 2.16 - Pitch Intervals in Balinese Modes[41]

I calculated the exact pitch (in Hertz) each note should be tuned for the selisir scale used in *Monkey Chant* by using an audio calculator from Sengpiel Audio, a German audio engineering website.[42] This calculator converts intervals to frequency ratios in Hertz and cents. The first column in the figure below presents each note of the *Monkey Chant* melody (E^b, G, A^b, B^b, D, and a repeated E^b at the top of the octave). The second and third columns provide the frequency of those notes in Western equal temperament tuning and Balinese tuning, respectively. The last column displays the Balinese pitches' deviation from the notes in the equal temperament system. As E^b is the beginning of

[41] Wayne Vitale, "Balinese music breaks the five-tone barrier: new composition for seven-tone gamelan," *Perspectives of New Music* 40, no. 1 (2002): p. 5-69.
[42] "Conversion of Intervals," *Sengpiel Audio,* last modified February 28, 2014, www.sengpielaudio.com/calculator-centsratio.htm

the scale, no alteration in tuning is required and the frequencies are the same. There is no deviation from the original E^b. The second note, G, is 25 cents lower in Balinese tuning than in equal temperament tuning. There are 100 cents between each semitone (half step) of the equal temperament system. This means that note 'G' should be tuned 1/4 of a semitone lower than the equal temperament 'G.'

Table 2.4 – Pitch Deviation for Balinese Tuning

Note	Equal Temperament Hertz	Exact Hertz in Balinese tuning	Deviation, in cents
Eb	311.13	311.13	0
G	392	386.38	-25
Ab	415.3	413.16	-8.94
Bb	466.16	452.9	-49.96
D	578.33	580.59	6.75
Eb	622.25	622.25	0

As the thumb piano is free from equal temperament and can be tuned to exact pitches, the performer can choose to tune the instrument accordingly. A tuning device can be used for this purpose, or the performer can just approximate the deviations from equal temperament pitches.

Once tuned, the thumb piano can be placed on the conga head, leaving an adequate playing area for sticks on the conga. The figure below is a photograph of the thumb piano and conga in my performance setup. I affixed the thumb piano to the conga head with a small amount of gaffers tape to prevent any slipping.

The *Monkey Chant* performance notes suggest amplifying the thumb piano in the same manner as the prepared snare drum. A contact microphone should be affixed

to the body of the instrument, amplifying all of the pitches equally. On some instruments, it may be more beneficial to attach the contact microphone to the horizontal bar on the tines. As with the prepared snare drum, gaffers tape or something similar can be used to secure the microphone.

A 1 x3 or 1 x 4 inch piece of coarse (60-grade) sandpaper should also be affixed to the thumb piano's body. This will provide an area for scraping the instrument with a 'spring stick,' described later. The performer needs a clear area on the body to tap the instrument with sticks. With this in mind, the sandpaper should be placed in different location. It can be secured on the body of the thumb piano with a small amount of gaffers tape. The figure below shows my thumb piano setup on the compact conga.

Figure 2.17 – Thumb Piano Mounted on Compact Conga

The last melodic instrument needed is a pair of almglocken, which are essentially tuned cowbells. Almglocken usually come in octave sets and are very expensive, but occasionally they can be purchased individually. Kotche instructs the performer to use two almglocken tuned to G^3 and D^4. The almglocken are used in a recurring ostinato throughout the piece and emulate the beat keeper in a Kecak chorus, regularly calling out "pung" in steady rhythm.

FOUND OBJECTS

One of the unique objects needed for *Monkey Chant* is a wire fruit basket amplified with a contact microphone to produce a deep gong-like sound. In an interview at the 2006 Modern Drummer Festival, Kotche talks about his fruit basket: "It was a wedding present to my wife and I. So when it's not amplified, it doesn't sound that great. I've got it hanging from a rubber band over a contact mic. You can hear how it sounds with the contact mic. So basically, it sounds like a huge gong, but it's a lot easier to carry around."[43] A photo of Glenn Kotche's amplified fruit basket is shown in the figure below.

[43] Kotche, Glenn. "Interview." *Modern Drummer Festival 2006*, DVD. Hudson Music, LLC/Modern Drummer Publications Inc., 2007.

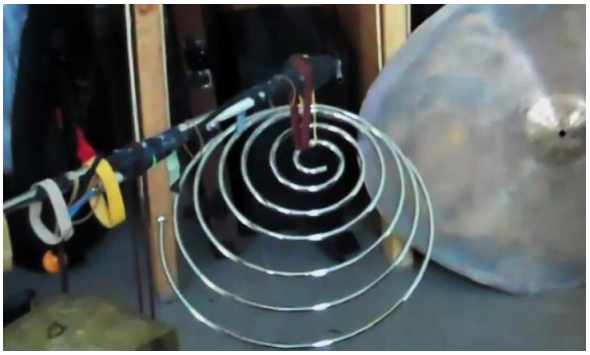

Figure 2.18 – Glenn Kotche's Hanging Fruit Basket[44]

Striking the basket sends complex vibrations into the contact microphone because of its spiral design. For this reason, the coils of the basket all need to be free-floating (not touching each other). The basket is hung with a rubber band from a cymbal stand or something similar. A contact microphone is attached to the rubber band, with location varying depending on the type of rubber band and desired sound. When the fruit basket is struck with a rubber mallet, vibrations are sent through the coils, up the rubber band, and into the piezo surface of the contact microphone.

Unfortunately, the exact fruit basket used by Kotche is not manufactured anymore. However, the California based Prodyne Company makes a wire fruit basket, called The Fruit Nest[tm], which features a similar spiral design.[45] The figures below show the Prodyne basket, which has an attached frame that must be removed from the spiral body. A pair of pliers can twist the marble-shaped joints off of the spiral body by

[44] Screen capture from "Glenn Kotche: Sound Possibilities," Meet the Composer, December 2, 2010. https://www.youtube.com/watch?v=F3iGfkxy5KM

[45] "Fruit Nest™ Expansion Fruit Basket," Prodyne Inc., accessed March 2, 2014, http://prodyne.com/index.php/catalog/product/view/31/3

breaking the weld connection. Once detached, the spiral body is free to hang and vibrate.

Figure 2.18 - Fruit Nest™ Expansion Fruit Basket[46]

Figure 2.19 - Fruit Nest™ Expansion Fruit Basket, Alternate View[47]

[46] Ibid.

[47] "Fruit Nest™ Expansion Fruit Basket," Prodyne Inc., accessed March 2, 2014, http://prodyne.com/index.php/catalog/product/view/31/3

The fruit basket should be suspended from a rubber band looped through the center of the spiral. In order to amplify the sound vibrations from the basket, the rubber band should have a secure connection with a contact microphone. This connection could be made with gaffers tape or by simply looping the rubber band over top of the microphone's piezo surface. The performer should experiment with different types of rubber bands and contact microphone locations to find what works best for their equipment. The figure below shows my Prodyne fruit basket setup with the contact microphone taped to a heavy gauge rubber band.

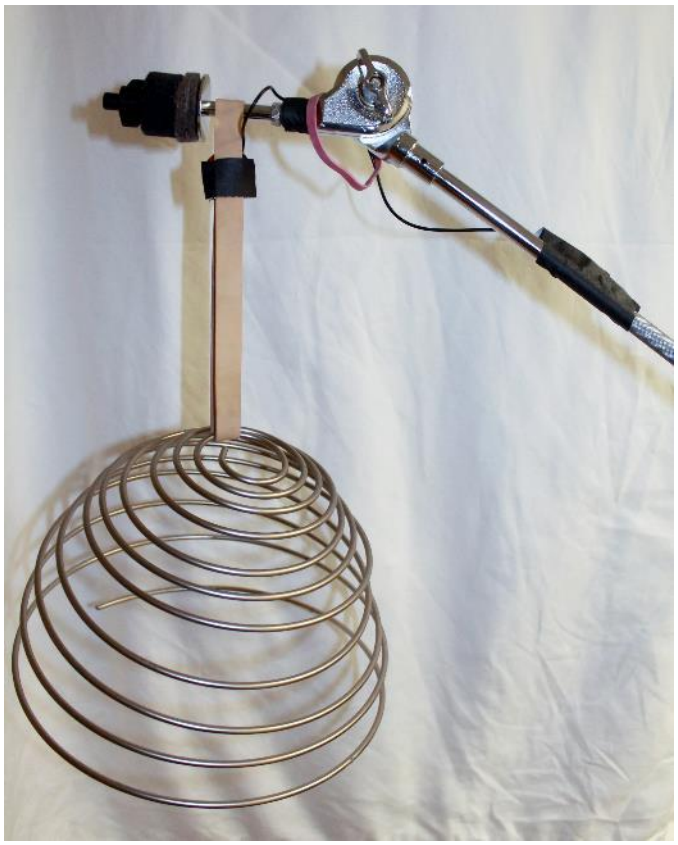

Figure 2.20 – Prodyne Hanging Fruit Basket with Contact Microphone

While not mentioned in the program notes, Chinese cricket boxes are to be used throughout *Monkey Chant*. The piece starts with the opening of small cricket boxes (noted in the first measure), creating a dense backdrop of chirping cricket sounds reminiscent of a warm Balinese evening. Kotche first came across the aforementioned cricket boxes in a Chinatown shop for about two dollars each.[48] Pictured below, each box contains two light-sensitive electronic golden crickets. When the box lid opens, the crickets are activated by the light and begin chirping. Many of these cricket boxes are to be opened at the beginning of the piece, producing complex interlocking chirping patterns.

[48] "In Rhythm With…Glen Kotche," The Good American Collective, last modified June 17, 2012, http://thegoodamericancollective.blogspot.com.br/2012/06/in-rhythm-with-glen-kotche-of-wilco.html

Figure 2.21 – Chirping Cricket Box[49]

Unfortunately the Chinese cricket boxes are extremely difficult to find. Many distributors I contacted informed me they are not manufactured anymore. However, using prerecorded audio for a performance is an appropriate substitute. There are numerous websites devoted to downloadable audio clips and loops of virtually any sound. I suggest downloading multiple sound bites of crickets chirping and layering them into one audio file. Most downloaded audio clips lengths will be short, so looping will be needed to make the final audio file at least the length of the performance (about fifteen minutes). To avoid concern about whether a particular performance will match up appropriately with the length of the audio file, the performer can simply fade the audio out at the end.

[49] Screen Capture from "Monkey Chant," *Modern Drummer Festival 2006*, DVD, Hudson Music, LLC/Modern Drummer Publications Inc., 2007.

IMPLEMENTS

A variety of sticks and mallets are required for the unique instruments and extended techniques used in *Monkey Chant*, including drumsticks, a crotale mallet, spring stick, threaded rod sticks, and a Superball[tm] mallet. Most of these implements are unusual and must be constructed by the performer.

Though there is no mention of a spring stick in the performance notes, it is needed to produce a scraping sound on the thumb piano. The stick is constructed from a short spring and a threaded metal rod, both of which can be found in most hardware stores. Threaded rods are commonly found in twelve inch lengths with varying diameters, perfect for the spring stick in *Monkey Chant*. The diameter is up to the performer, but I found that 1/4" provides a good weight for the stick.

A short spring will be screwed onto one end of the threaded rod. This is the type of spring used for the spring clusters on the prepared snare drum. The only requirement for its size is that the diameter must allow for a snug fit on the threaded rod. To allow some bending of the spring when the thumb piano is scraped, all but 1/2" of the spring should be screwed into the rod. The end of the spring should then be pulled away from the rest of the coils in the same fashion as the short cluster springs of the prepared snare drum, leaving a sharp point for scraping. A final version of the spring stick is shown in the photo below.

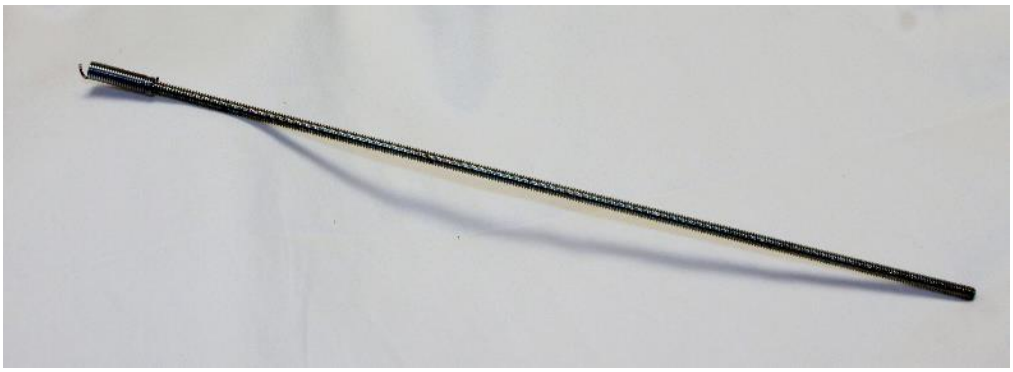

Figure 2.22 – Spring Stick

The same type of threaded rod used for the spring stick is also needed for 'threaded rod sticks' that are used on the hi-hat. These threaded sticks are used in one of the middle sections of the piece to strike and scrape the hi-hats. If two spring sticks are made, they can be used in place of separate threaded rod sticks. The performer can use the spring end of the stick for scraping the thumb piano and the opposite end for striking the hi-hat, reducing the number of sticks and mallets needed for the piece.

Lastly, a Superball^{tm} mallet is needed as a beater for the hanging amplified fruit basket. This mallet consists of a rubber bouncy ball, named a Superball^{tm} attached to a dowel. Superballs^{tm} are trademarked by the Wham-o Toy Company are usually found in toy vending machines in a variety of sizes. A ball with a diameter of 1 1/2 to 2 inches provides the best surface area and mass for striking the fruit basket. If the Superball^{tm} is too small, the mass and surface area will be too small to get the proper fundamental tone from the fruit basket.

To construct the mallet, the ball will need to be cut into two equal halves. The manufacturing process usually leaves a seam through the center of the ball, separating

it into two equal hemispheres. A knife should be used to cut along this seam to make the cutting process easier and error-free. Only one of the halves will be used to construct the mallet. A threaded metal rod similar to those used for the other implements should be used as the shaft of the mallet. A small pilot hole can be drilled into the flat side of the ball to allow for the threaded rod to be inserted without risking any tearing. The drill bit should have a significantly smaller diameter than the threaded rod so that the rod will fit snugly.

Figure 2.23 – Superball^{tm} Half with Pilot Hole

Once the pilot hole is drilled, the threaded rod can be screwed into the ball. The completed mallet is shown below.

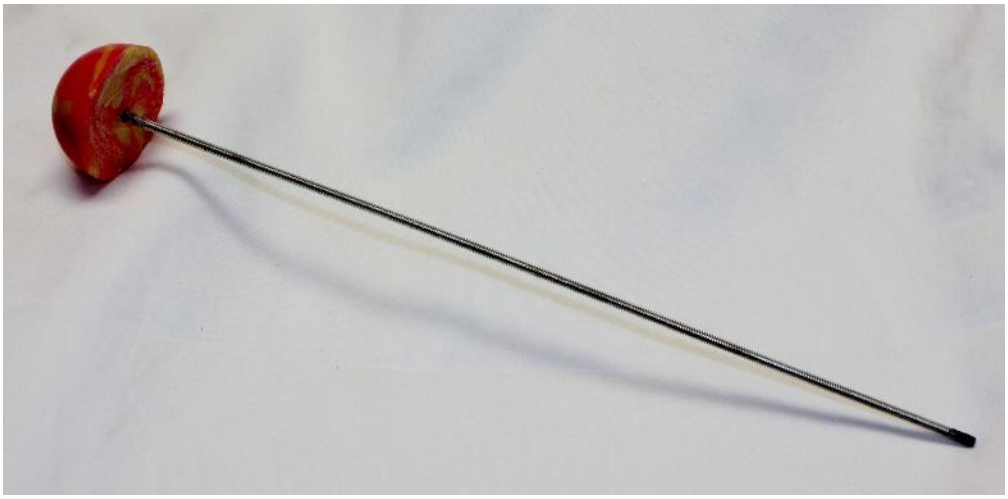

Figure 2.24 – Superball^{tm} Mallet

CHAPTER 3 - ELECTRONICS

Many of the sounds played in *Monkey Chant* require electronic amplification, creating the need for the performer to have access to a PA system.[50] There are multiple contact microphones attached to different objects and instruments in the percussion setup which need to be sent through a mixer and out to PA speakers. During performance, these electronic sounds will be heard through the PA system and should balance with the acoustic instrument sounds. I will discuss the electronic hardware requirements for *Monkey Chant* below, beginning with an equipment list:

- PA System (mixer and speakers)
- 3-5 contact microphones (preferably 5)
- Loop pedal
- Guitar volume pedal (optional)
- Audio cables

Most types of PA speakers on the market will work well for *Monkey Chant*, as will the house PA system in the performance venue. There are many affordable 'portable' PA systems, such as the Yamaha *Stagepas* series, that are powerful and compact for easy transport. The sound levels needed for live performance do not require an extremely high-powered system. Using a PA system that is rated at 300 watts or higher should meet all needs without risking any system damage.

[50] A public address system (PA system) is an electronic sound reinforcement system, traditionally used to allow a person to address a large public. In music performance, a PA System usually consists of a microphone, mixing console, amplifier, and loudspeaker(s).

The system's mixer must have enough inputs and the correct type of auxiliary in/outs. The number of inputs must equal or exceed the number of contact microphones utilized (a discussion of contact microphone options follows). Hence, if using five contact microphones, the mixer must have at least five inputs. *Monkey Chant* also requires the performer to record and play back live loops of various amplified instruments, for which a simple guitar loop pedal is the simplest solution. This creates the need for the mixer to have an auxiliary input and output, allowing the pedal to loop all or any of the microphones plugged into the inputs of the mixer.

CONTACT MICROPHONES

Contact microphones are heavily relied upon in *Monkey Chant* as they are needed to amplify the quieter sounds on the percussion setup, including the fruit basket, prepared snare drum, and thumb piano. If contact microphones were not used, these sounds would never be able to compete with other instruments in the setup that naturally produce louder acoustic dynamics, such as the drums and cymbals. Kotche says "I started building contact mics, and realized that there are all these really great interesting sounds that are just quiet that aren't really useful unless they have a little more amplification. I call them 'microscopic sounds,' and when you amplify them, they can interact with all the other instruments in any sort of setting in a really nice way."[51]

Contact microphones different from regular microphones in that they are used to detect sound waves in solid materials rather than through the air. As sound waves

[51] Glenn Kotche. "Interview." *Modern Drummer Festival 2006*, DVD (Hudson Music, LLC/Modern Drummer Publications Inc., 2007), DVD

can travel through the air, they can also travel through solid objects, and a contact microphone can pick up these waves and turn them into an electric signal that can be amplified. A contact microphone is very simple in construction: a small piezoelectric crystal element with two attached wires that can be connected to any audio receiver. The element is usually a flat ceramic disc that can be fixed to a vibrating object. The element vibrates as if it was part of that object, and these vibrations are sent through the wires in the form of electronic sound waves.[52]

The performer can choose to purchase contact microphones or build their own. Premade contact microphones can be fairly inexpensive, costing as little as four dollars each. These types are made for fastening to the body of stringed instruments, with an adhesive underside for easy attachment. They also usually feature a 1/4' female jack for attaching to any audio equipment. In *Monkey Chant,* a 1/4' patch cable will be used to connect the contact microphone directly to a guitar pedal or mixer. One of the best ready-made contact microphones for percussion use is the EPM AGT100, nicknamed 'The Cap.' It is basically a regular piezo contact microphone with a metal bottle cap glued on top. The bottle cap protects the element from possible damage from drumsticks, and the cable attached is a very heavy gauge.

[52] Michael Gallagher. "Contact Microphones," *Creative Practice* Primer (blog). http://experimentalnetwork.wordpress.com/creative-practice-primer-2/creative-practice-primer-techniques-and-technologies-contact-microphones/

Figure 3.1: EPM AGT100, 'The Cap'

(photo from Michael Gallagher's "Contact Microphones")

It can also be very simple to build a contact microphone, requiring only a small amount of inexpensive materials.

Contact microphone building materials:

- piezoelectric transducer element (RadioShack #273-073A is used here)
- female mono jack (cable mount RadioShack #274-340)
- small diameter heat shrink tubing, about 5" long (optional)
- self-mixing epoxy with syringe (optional)
- soldering iron
- small flat-head screw driver or similar tool
- razor blade, wire cutters, or similar tool

The first step is to open the plastic casing of the piezo element. A small flat-head screw driver can slip between the plastic seams and pry them apart. In the RadioShack piezo model, the best place to insert the screwdriver is where the wires exit the casing. Care must be taken not to damage the internal element, as it is very fragile. Figures 3.2 through 3.9, from Josh Gumiela's website GumiElectronics, illustrate the step by step process for building contact microphones.[53]

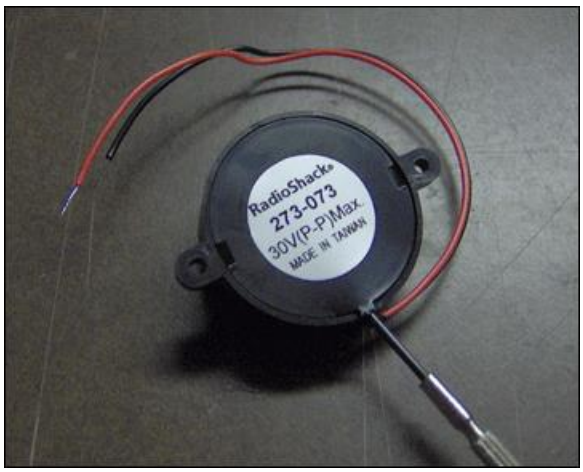

Figure 3.2 – Piezo Element

Prying with the screwdriver will eventually open the entire back panel, revealing the internal piezo element.

[53] Josh Gumiela, *GumiElectronic* (blog), last modified April 25, 2011, http://gumielectronic.net/?p=934

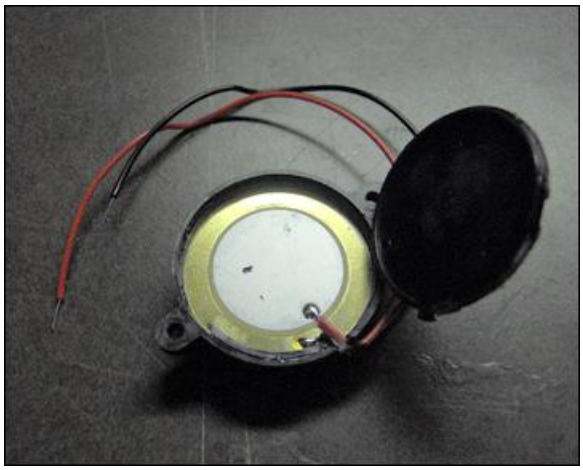

Figure 3.3 - Piezo Element, Opened

The remaining part of the case holding the piezo element must now be cut upen in order to pull the element out. A razor blade or wire cutter can be used to cut a line from the center of the pastic casing to the edge, as shown. The cut will now allow you to blend the casing enough to get the piezo element to pop out. Twist the casing until the edges of the element separate from the edge of the case. The element can now be extracted, and the casing can be discarded.

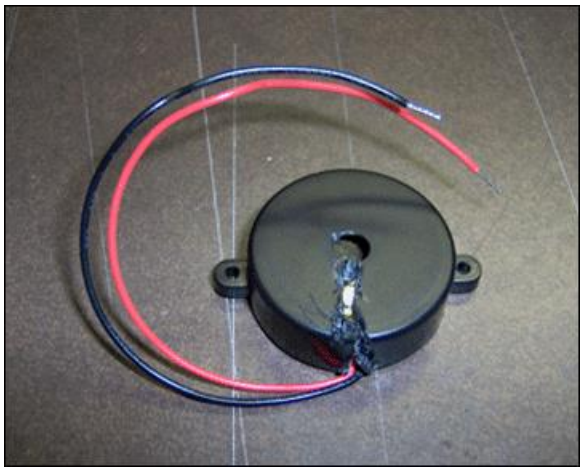

Figure 3.4 – Piezo Element, Casing Cut

Figure 3.5 – Piezo Element Separated from Casing

Heat-shrink tubing can now be slipped onto the wires of the piezo element. Next, the wires need to be soldered onto the female 1/4" jack. The jack consists of two parts: the jack itself, and the jack housing. Unscrew the housing from the 1/4" jack so the two parts are separated. Then slip the housing over the piezo element wires.

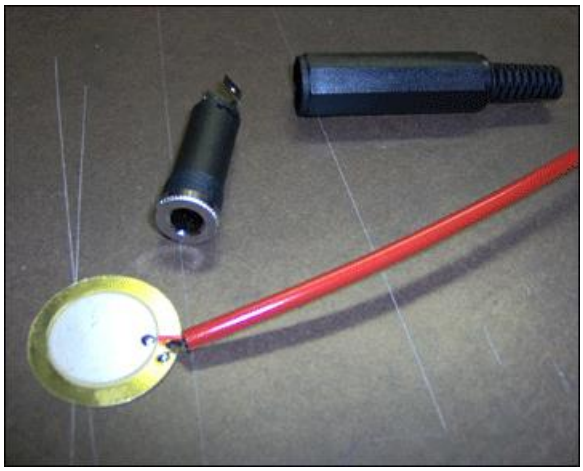

Figure 3.6 – Piezo Element and 1/4" Jack

Next, solder the wires to the 1/4 jack's tabs. The black wire attaches to the sleeve (ground), and the red wire attaches to the tip (signal).

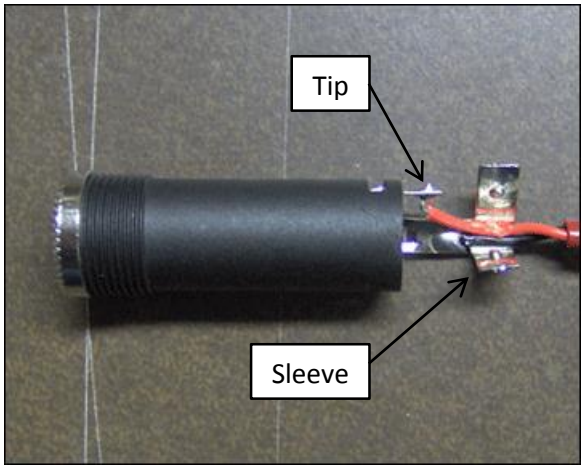

Figure 3.7 –1/4" Jack: Tip and Sleeve Identified

Pliers can now be used to bend the tabs on the sleeve around both wires, forming a secure grip that will help prevent the soldering points from detaching. The jack housing can now be pulled up over the jack and screwed back together. Now a heat source, such as a hair dryer, should be used to shrink the entire length of the heat shrink tubing around the wires.

Figure 3.8 – 1/4" Jack: Wires Soldered, Tabs Bent

Once finished, the contact microphones will look like the photo below.

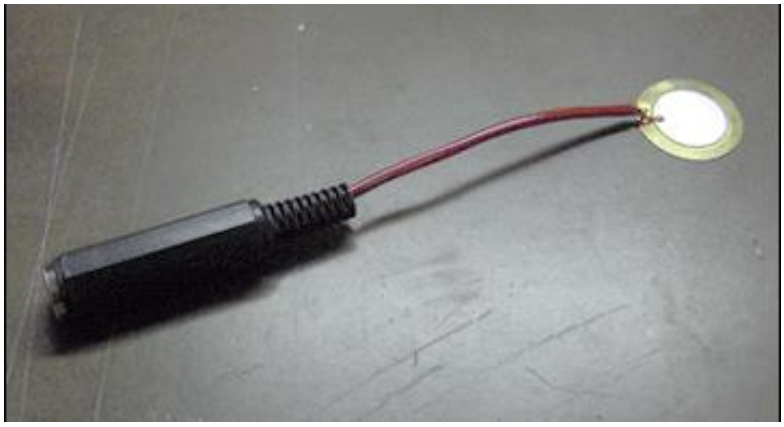

Figure 3.9 – Finished Contact Microphone

The contact microphone's piezoelectric disc is very fragile, putting it at risk for damage when used on percussion instruments. To increase the disc's durability, felt furniture pads commonly used on chair leg bottoms can be placed over the top of the disc. The pad should be the same diameter as the disc, leaving no area of the element exposed. Another option is to apply an epoxy or hot glue over the top of the disc, protecting it from impact damage and keeping the wires from breaking off.

VOLUME PEDAL

Included in the electronic audio setup is an optional volume pedal. This is the type of pedal used for electric guitars. In *Monkey Chant,* the volume pedal will be used to turn the prepared snare drum contact microphone volume up and down. Essentially, the pedal provides the performer a simple way to balance the sound output between playing the prepared materials, which need to be amplified, and playing the drum with

sticks, which needs no amplification. So the pedal can be used during performance to turn the contact microphones up and down when needed.

Most types of guitar volume pedals will work for the purposes of *Monkey Chant*. The only requirements for the pedal are that it has at least one input and one output. The pedal pictured below is from the Ernie Ball website, and features one input, out output, and a tuner jack. This model is called the VP JR 250K, with a 205K ohm resistance. This means that it is designed for passive electronics, perfect for the contact microphones used in *Monkey Chant*.

Figure 3.10 – Volume Pedal

To connect the volume pedal to the audio systems, the prepared snare drum's contact microphone(s) will need to be connected to the input of the pedal. If using two contact microphones, the volume pedal will either need to have two input jacks or the two mono signals will need to be combined into one stereo signal. A 1/4" stereo-to-mono splitter, shown below, can be used to accomplish this. A patch cable from each contact microphone will be connected to each of the female mono jacks on the splitter.

Then the male stereo jack can connect to the 1/4" 'input' on the volume pedal. The splitter takes the mono signals from the contact microphones and combines them into one stereo signal that goes to the volume pedal.

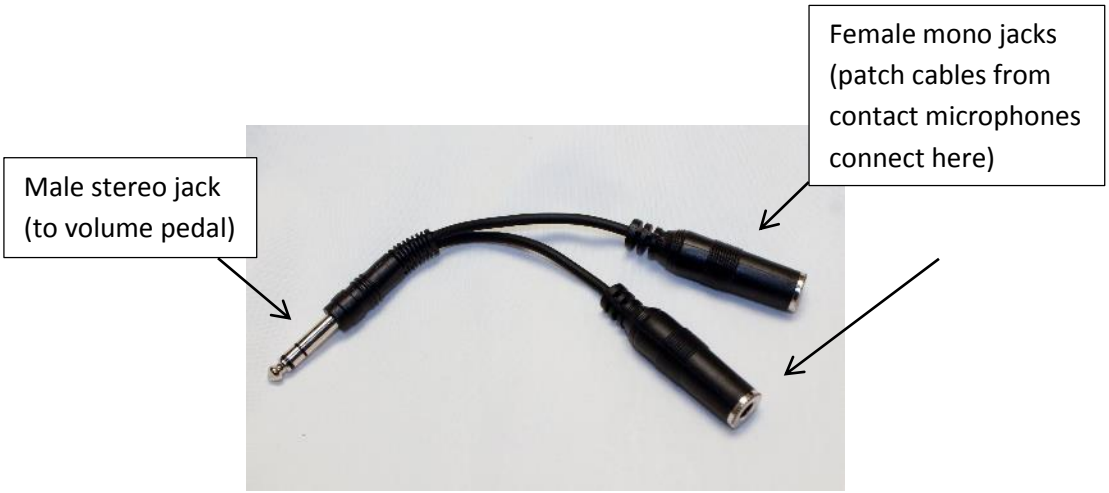

Figure 3.11 – 1/4" Stereo-to-Mono Splitter

Once the connections to from the contact microphones to the volume pedal are made, the volume pedal can now be connected directly to the mixer. The volume pedal now represents the audio for the prepared snare drum. So it should be assigned one of the inputs on the mixer. Connect one end of a patch cable to the volume pedal 'output' jack and the other end to an line input channel on the mixer. If the mixer only has XLR input connections, a cable with an xlr connector or adaptor must be used. Once connected to an assigned mixer input channel, the mixer can now control the sound output of the prepared snare drum's contact microphones.

LOOP PEDAL

As mentioned earlier, the performer must play back live loops of various amplified instruments during a *Monkey Chant* performance. In order to achieve this, a looping system must be incorporated into the electronic setup. The simplest way to record and playback a loop is with a guitar loop pedal. There are many of these pedals on the market from companies like Boss, Line 6, and DigiTech among others that work perfectly for *Monkey Chant* applications. My personal setup uses a Boss DD-20, which is primarily a digital delay pedal that also includes a looping feature.

While no two loop pedals are exactly the same, the basic manner in which they operate is very similar between them. A patch cable must run from the desired sound source into the 'input' jack on the loop pedal. Then another cable will run from the loop pedal's 'output' jack to a desired location (in *Monkey Chant*, a mixer). The performer can then press a pedal or button on the loop pedal to start recording any sound traveling into the 'input'. Another pedal or button is pressed to begin the playback of what was just recorded. Once the length of the recorded audio ends it loops back to the beginning and repeats, creating a 'loop'.

The figure below shows the Boss DD-20 pedal used in my *Monkey Chant* electronics setup.

Figure 3.12 – Loop Pedal

In *Monkey Chant*, the performer is required to loop audio from many contact microphones in the setup. Hence, the loop pedal must be connected to 'auxiliary' jack on the mixer. The performer can now choose what mixer channels will be affected by the loop pedal. Most mixers accomplish this by including an 'FX' knob on each channel. Turning the knob directly affects the volume of the loop pedal on that channel. If the knob is set to zero, no sound from that channel will go to the loop pedal. Similarly, if the knob is turned up, the loop pedal will be able to loop that channel's sound.

Since the performer is required to loop both the prepared snare drum and the fruit basket, the 'FX' knobs are turned up on the corresponding mixer channels. The rest of the channels do not need looping, so I have their knobs turned down to zero.

Occasionally a loop must be faded out during a performance. In this situation, the performer can simply turn the 'FX' knob down slowly, press the pedal to stop the loop, and then reset the knob back up to its original position. This also requires the mixer to remain at an arm's length to the performer at all times.

Now that all of the electronic equipment has been explained, diagrams shown in the two figures below illustrate two possible electronic setups. These setups are based on the availability of audio equipment. The first figure shows an optimal setup that includes a mixer, five contact microphones, a loop pedal, and a volume pedal. The second figure illustrates a minimal setup including a mixer, three contact microphones, and a loop pedal.

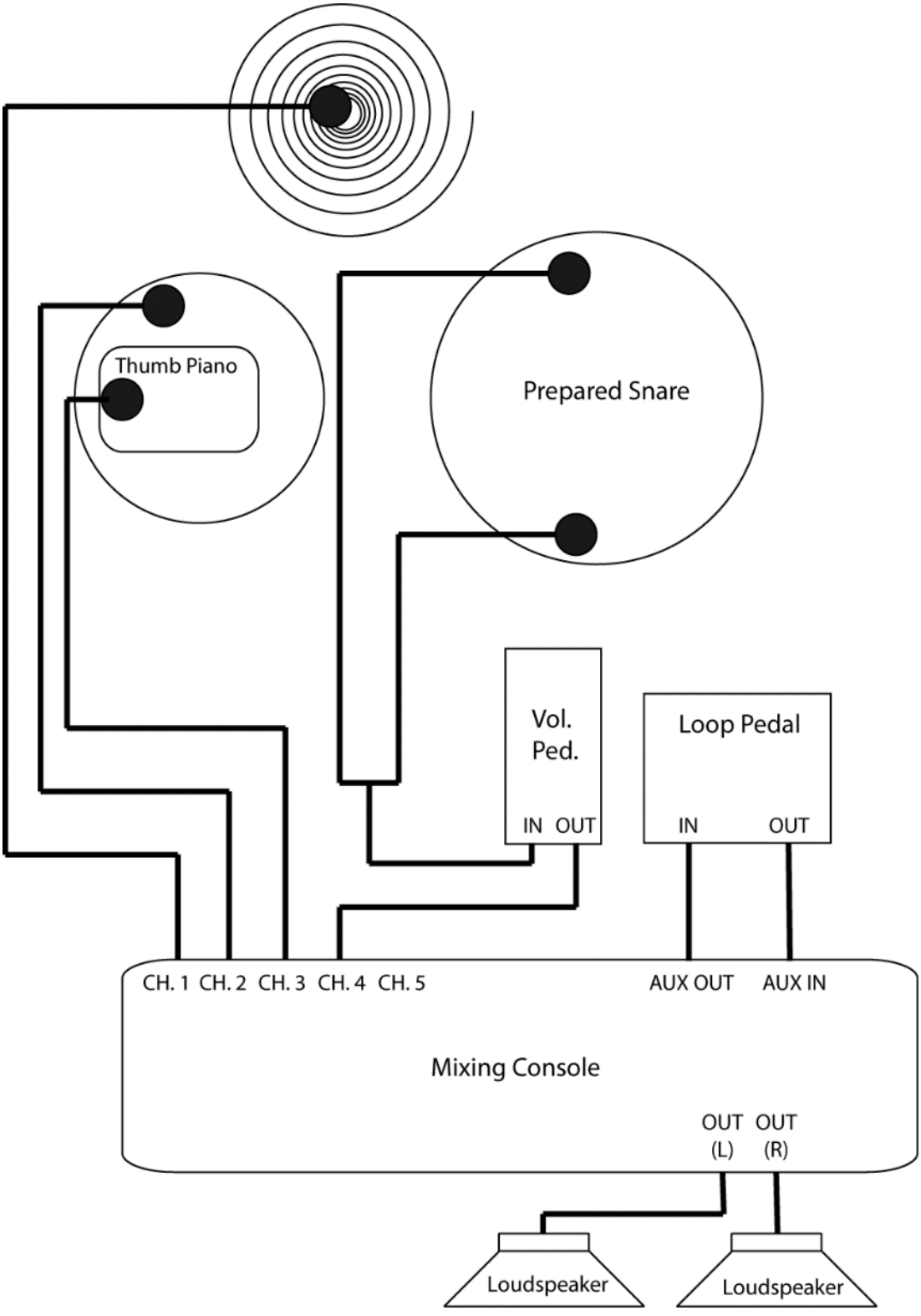

Figure 3.13 – Optimal Electronics Setup

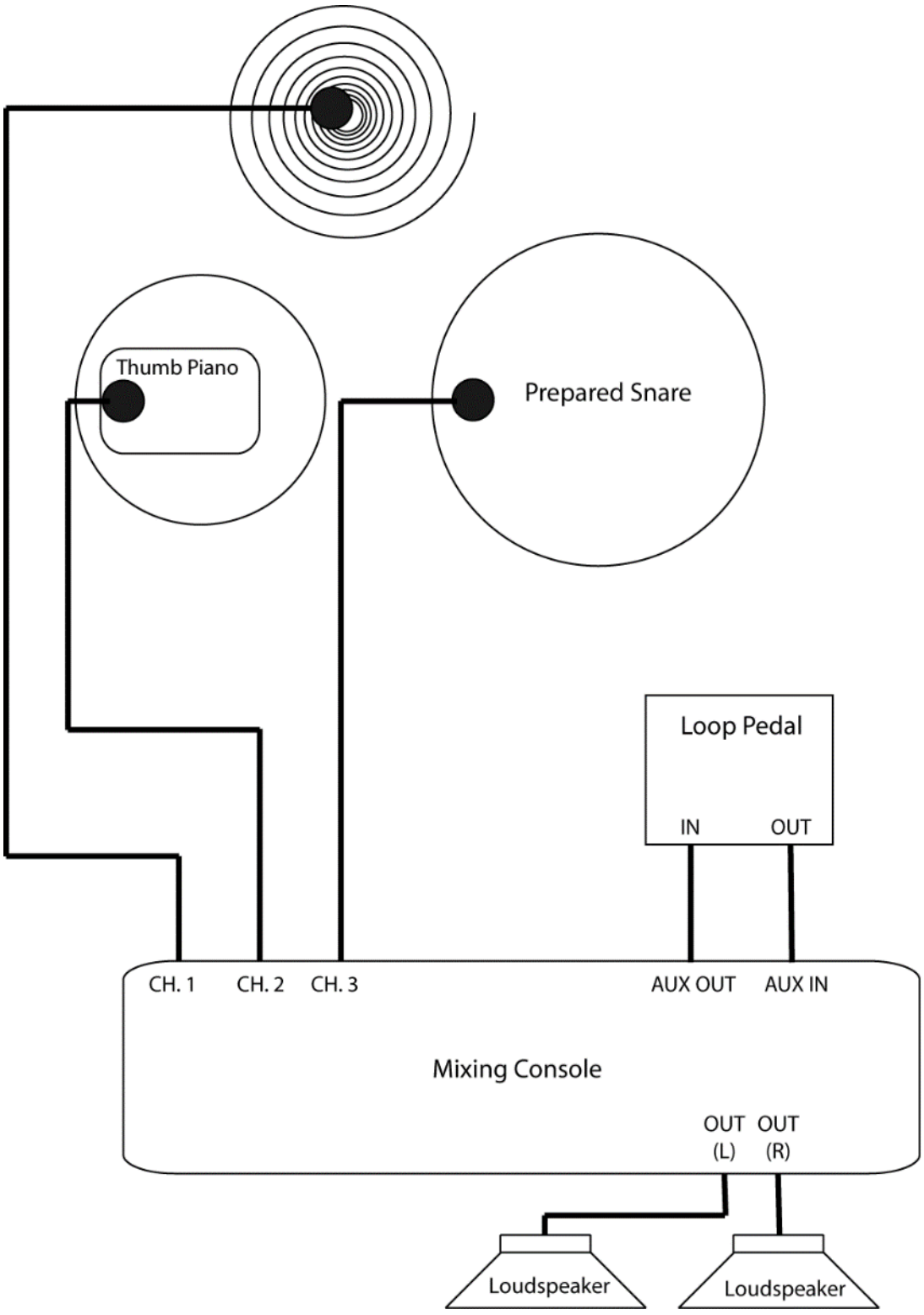

Figure 3.14 – Minimal Electronics Setup

It is possible to perform the piece utilizing the minimal setup. Using only three contact microphones is not ideal, requiring the performer to use only one contact microphone on the prepared snare drum and none on the conga. However, it still provides acceptable amplification for performance. The lack of a volume pedal limits the performer's control of snare drum amplification during a performance. Earlier, I mentioned the need to turn the volume down when the snare drum is played with sticks. Without a volume pedal, the performer must reach for the mixer channel's volume knob to adjust the amplification level. Another option is to keep the prepared snare drum's volume at a moderate level, soft enough for stick but loud enough so that the quiet springs are still heard. Hence, a compromise must be made.

CHAPTER 4 - PERFORMANCE CONSIDERATIONS

FORM

The Ramayana story described earlier in this document provides the basic compositional form for *Monkey Chant*. Structural landmarks in the piece are clearly marked in the score with narration from the Ramayana. Kotche chose to remain somewhat close to typical Kecak performances by using a rhythmic motive to essentially 'call out' new territory in the composition. Just as a Kecak Chorus Leader uses a rhythmic motive signaling the chorus into a dramatic transition, *Monkey Chant* uses a similar Kecak motive to signal transitions between sections. It should be mentioned that the *Monkey Chant* score used in this monograph, which is commercially available, is actually a transcription of Glenn Kotche's performance of the piece on the "Mobile" album. In a March, 2014, email interview displayed in appendix A, Kotche mentioned that percussionist friend Colin Campbell transcribed the piece to make it commercially available.

The first nineteen measure of *Monkey Chant* and shown in the figure below, beginning with the opening of cricket boxes to recreate a Balinese soundscape. Measures 2 through 5 make up the Kecak motive mentioned earlier, with an introductory lead-in and three following measures of interlocking sixteenth notes. This motive is an imitation of the Kecak vocal chanting. The four eighth notes on beats 3 and 4 of measure 2 signify the Chorus Leader signaling the rest of the group to join with a loud "Cak-Cak-Cak-Cak."

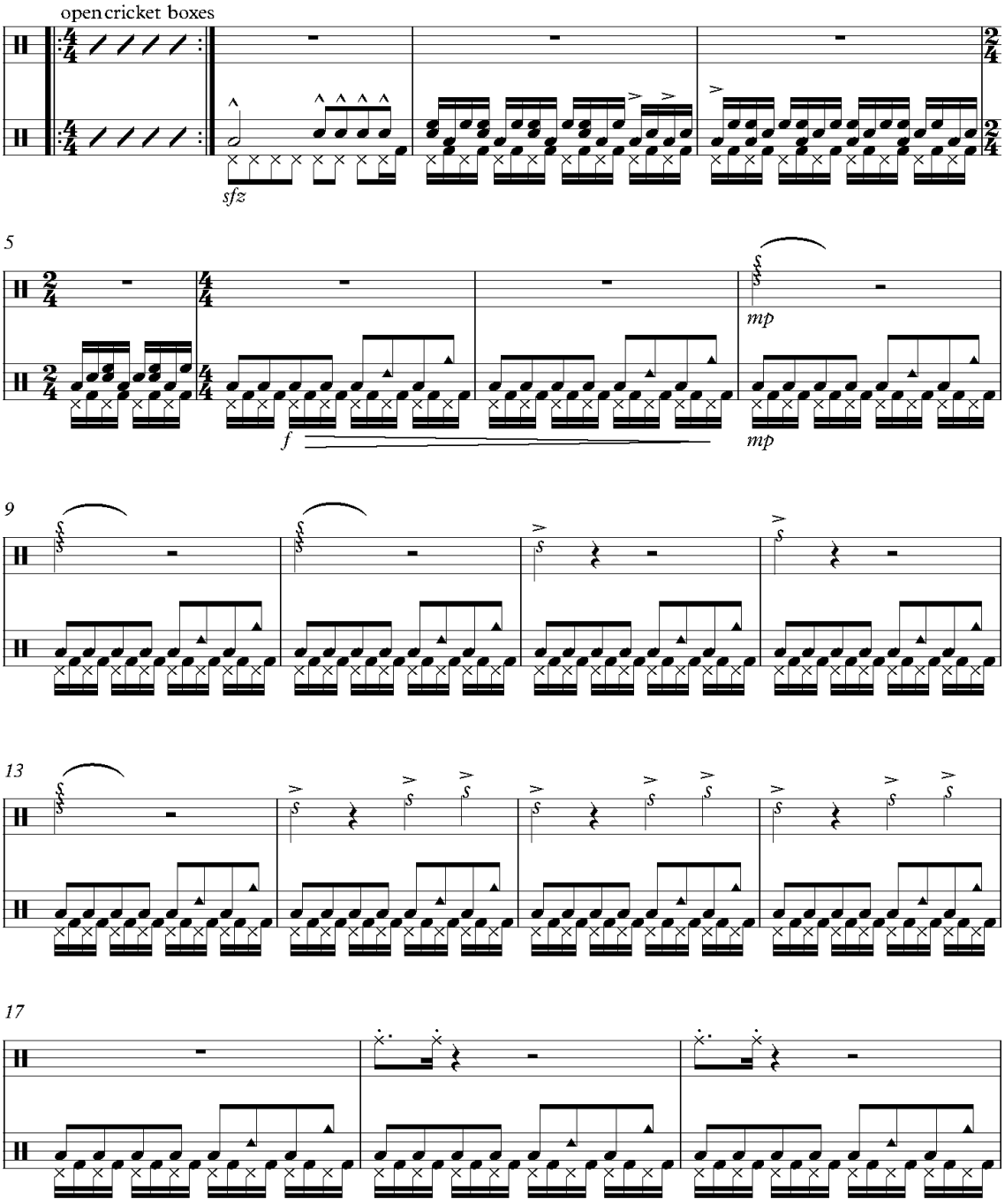

Figure 4.1 – *Monkey Chant*, Measures 1-19

Figure 4.2 displays the Kecak motive after the measure 2 eighth note lead-in.

The stems-down notes are played with the feet on the hi-hat and foot pedal and the

stems-up are played with the hands on the snare drum, rack tom, and floor tom. While the foot pattern remains the same throughout the entire Kecak motive, the voicing patterns in the hands change every measure.

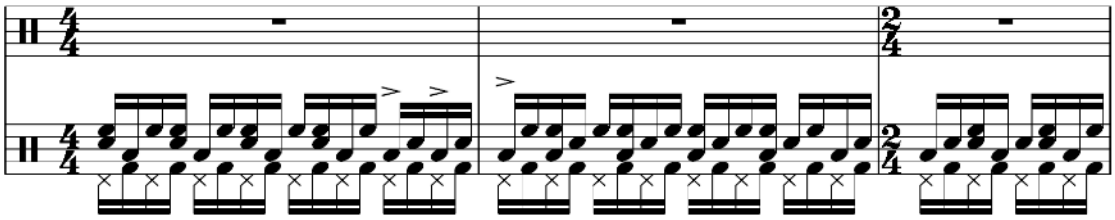

Figure 4.2 – *Monkey Chant* Kecak Motive in Notation, Measures 2-4

To facilitate an understanding of patterns in each individual voice, a view of the Kecak motive voicing patterns in graphic notation is shown tables 4.1 and 4.2. Each box represents a sixteenth note and the first row, labeled "Beat," relates the graph to the meter.

Table 4.1 - *Monkey Chant* Interlocking Kecak Drum Voicings, Measure 2

Beat	1				2				3				4			
Rack Tom	X		X	X		X	X		X	X		X				
Snare	X			X			X			X				X		X
Floor Tom		X			X			X			X		X		X	
Foot		X		X		X		X		X		X		X		X
Hi-Hat	X		X		X		X		X		X		X		X	

Table 4.2 - *Monkey Chant* Interlocking Kecak Drum Voicings, Measures 3 and 4

Beat	1				2				3				4				1				2			
Rack Tom		X	X		X	X		X	X		X	X		X					X			X		X
Snare				X			X			X			X			X		X	X		X	X		
Floor Tom	X		X			X			X			X			X		X			X			X	
Foot		X		X		X		X		X		X		X		X		X		X		X		X
Hi-Hat	X		X		X		X		X		X		X		X		X		X		X		X	

A metric chart of standard Kecak rhythmic patterns in a four-beat cycle is illustrated in table 4.3 below. The similar graphic notation is used here, each box essentially representing a sixteenth note. There are many similarities between the *Monkey Chant* Kecak motive and the standard four-beat Kecak pattern shown. The rack tom pattern is very similar to T1, L1, and L2 voice patterns in Table 4.3, and the snare pattern show many similarities to B1. Observing these and other voices reveals that Kotche deviated from standard pattern cycles in beat 4 of the second and third measures.

Table 4.3 – Kecak Rhythmic Patterns

K	**X**	-	-	-	**X**	-	-	-	**X**	-	-	-	**X**	-	-	-
T1	X	-	x	X	-	x	X	-	X	-	x	X	-	x	X	-
T2	-	x	X	-	x	X	-	X	-	x	X	-	x	X	-	X
T3	-	X	-	x	X	-	x	X	-	X	-	x	X	-	x	X
L1	X	-	x	X	-	x	X	-	x	X	-	x	X	-	-	X
L2	-	x	X	-	x	X	-	x	X	-	x	X	-	x	X	-
E1	X	-	x	X	-	x	X	-	x	X	-	x	X	-	X	-
E2	-	x	X	-	x	X	-	x	X	-	x	X	-	X	-	X
B1	X	-	-	X	-	-	X	-	-	X	-	-	X	-	-	(X>)
B2	-	-	X	-	-	X	-	-	X	-	-	X	-	-	X	(- >)
B3	-	X	-	-	X	-	-	X	-	-	X	-	-	X	-	(- >)
P	X	-	-	-	X	-	X	-	X	-	X	-	X	-	X	-

Just as a Kecak performance features brief periodic spells of loud polyphonic chanting to mark large changes in the drama, the *Monkey Chant* Kecak motive occurs many times throughout the composition to mark sectional divisions. As mentioned earlier, the form of the piece directly relates to the Ramayana narration. In fact, the liner notes to Glenn Kotches solo album "Mobile" contains the narration for *Monkey Chant* as it relates to specific time markings on the recording.[54] Figure 4.3, below,

[54] Glenn Kotche, *Mobile*, Nonesuch Records 7559-799272-4, 2006, compact disc.

shows a structural diagram of *Monkey Chant*, identifying form-related narration in the score.

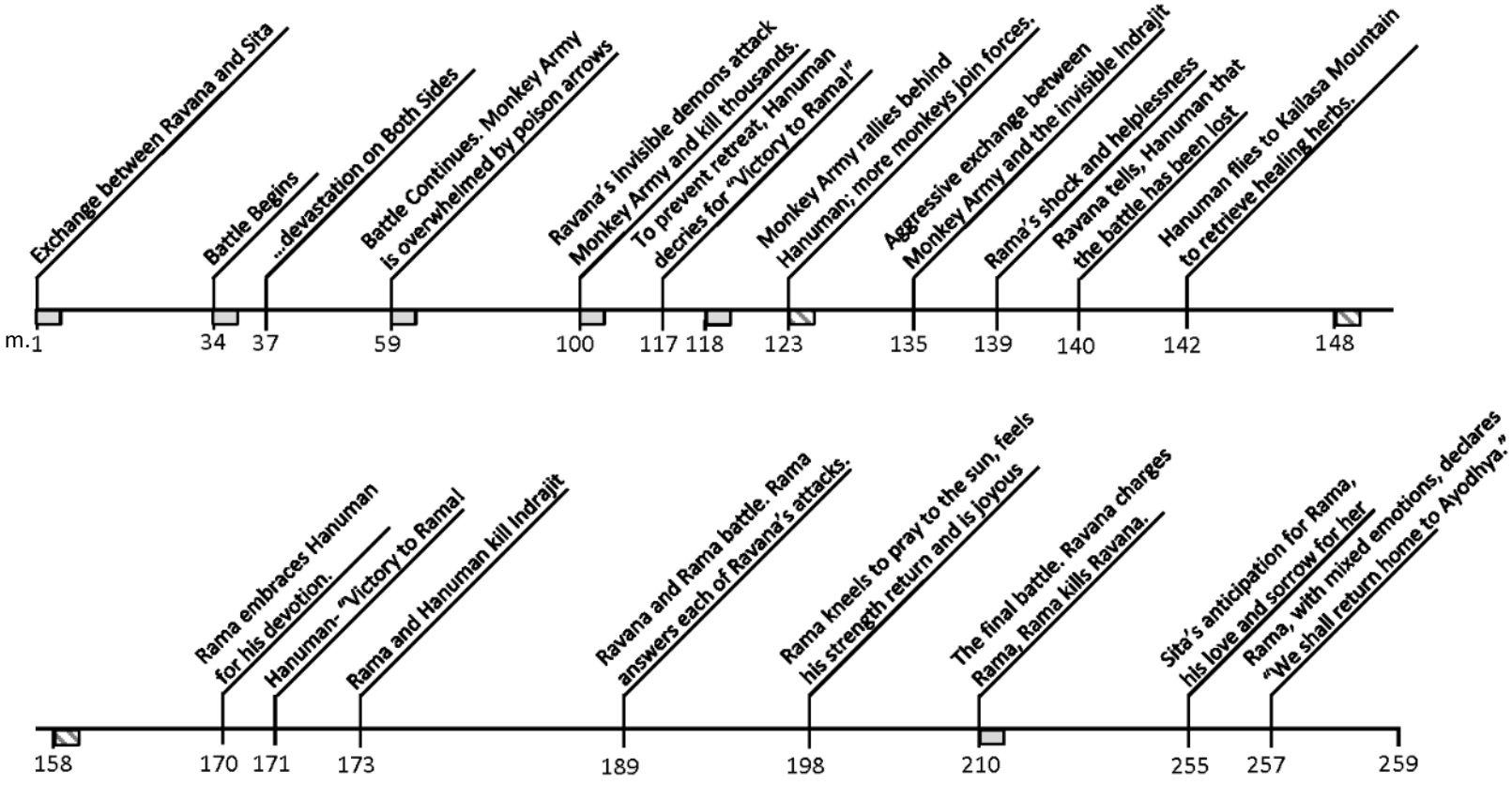

Figure 4.3 – *Monkey Chant* Structural Diagram, Identified with Narration

It is easy to see that the recurring Kecak motive, identified in the diagram with a gray rectangle, indicates changes in much of the dramatic form. Rectangles with diagonal lines at measures 123, 148, and 158 identify modified Kecak motives. While these motives do not coincide with structural changes, they use an underlying accent and sticking pattern closely related to the original Kecak motive. Figure 4.4, below, shows a suggested sticking for the modified Kecak motive in measures 123 through 126. The "(B)" under each flam distinguishes that both hands are playing. The original Kecak motive in measures 2 through 5 of the original score does not contain any flams, but both hands play simultaneous notes and are identified with a "(B)" as well. Both the original and modified versions of the Kecak motive are played with the same sticking throughout the composition unless the performer chooses to vary the sticking when improvising drum voicings.

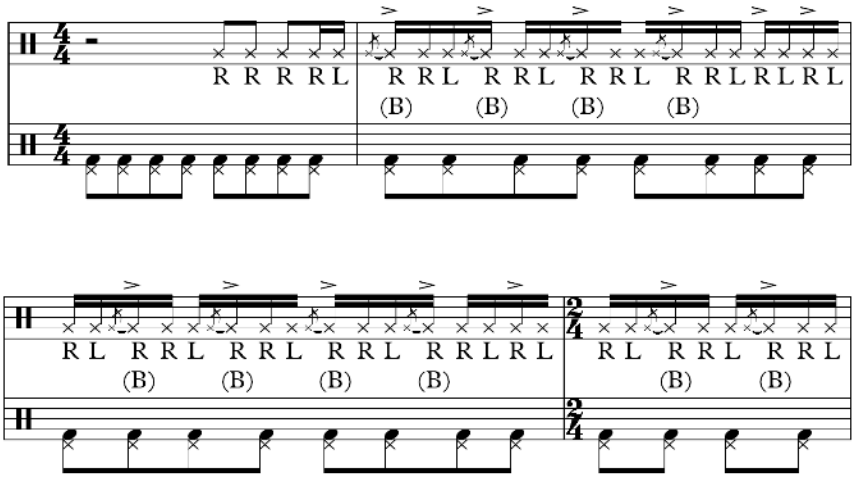

Figure 4.4 – *Monkey Chant* modified Kecak Motive, Measures 123-126

The other aspects of *Monkey Chant*'s form are directly related to specific instruments and sounds in the percussion set. When a specific character has an important action or dialog in the story (noted as it occurs in the score), a corresponding instrument is notated to be performed. Essentially, the composition uses percussion to act out the drama and express the narrative.

THOUGHTS ON PERFORMANCE

Various instruments in the percussion setup represent certain Ramayana characters. These characters are discussed in the Ramayana section of Chapter 1, but here I will discuss their instrumental personification. In the performance notes, Kotche identifies specific instruments or sounds that represent the story's characters. Rama, the seventh incarnation of the Hindu God Vishnu, is represented with the wires and friction stick on the prepared snare drum head and also by all of the drums in the last section of the piece. Sita, Rama's wife, is represented with the prepared drumhead's friction stick. This is the drumstick with fishing line that creates a creaking sound when twisted. Hanuman, the Monkey Army General and Rama's ally, is personified by the long springs on the prepared drumhead. Hanuman is a great warrior who dominates much of the battle at Lanka. The violent screeching sounds of the long pulled springs personify his power. Ravana, the ten-headed demon king of Lanka, is represented by the small spring clusters on the prepared snare drumhead. Throughout the piece, the performer plays the various small springs in an alternating fashion as if Ravana's many heads are conversing. Indrajit, Ravan's son, is represented by the hi-hat when struck.

Finally, the Monkey Army is represented by the rhythmic melodies and chanting ostinati of the drums, the Kecak rhythms.

During a *Monkey Chant* performance, the prepared snare drum volume must be periodically adjusted depending on the implements in use. Using sticks requires a low volume while playing prepared materials with the hands requires a higher amplified volume. The loop pedal will also need to be activated and deactivated throughout a performance, noted at specific points in the score. With these two aspects in mind, the performer must create a plan for how to operate these devices because all four limbs frequently play simultaneously.

The piece begins as the performer opens the small cricket boxes, imitating Nonesuch Records' Balinese field recording that Kotche first heard. Gradually opening the cricket boxes creates increasing rhythmic polyphony and ultimately a dense soundscape onto which the rest of the piece lays. The volume pedal should be turned down because sticks are first used on the drums to simulate interlocking Kecak rhythms. When the three-limb ostinato begins in measure 6, the fourth limb is free to turn the volume pedal up. The performer has two full measures to put their stick down and adjust the volume before striking the amplified springs in measure 8. The process of adjusting electronic equipment and changing implements continues consistently throughout the composition. The list below identifies specific places in the music in which the performer should execute these specific actions. Unless otherwise noted, 'volume pedal up' or 'down' means to turn the volume of the prepared snare drum up or down with the pedal.

m. 1 – Open cricket boxes, or slowly fade in cricket soundscape (volume preset down), pick up snare sticks

m. 6 – Volume up, put snare stick down

m. 34 – Volume down, pick up snare stick

m. 104 – Volume up, put snare stick down

m. 118 – Volume down, pick up snare stick

m. 122 – Volume up, put snare sticks down

m. 123 – Pick up snare sticks

m. 127 – Put down snare sticks

m. 128 – Start loop (record, play loop until m. 139)

m. 129 – Volume down, pick up snare sticks

m. 139 – End loop, disconnect hi-hat clutch, pick up spring stick

m. 162 – Put down spring stick, pick up snare stick (option: play floor tom with spring stick)

m. 170 – Put down all implements, reconnect hi-hat clutch, volume up

m 176 – Start loop (record, play loop until m. 195)

m. 177 – Pick up threaded rods (spring sticks)

m. 187-188 – Play fruit basket with threaded rods, or use superball mallet

m. 188 – Put down threaded rods (or superball mallet)

m. 194 – Pick up superball mallet

m. 195 – Fade loop, reset loop pedal so it is ready to record a new loop

m. 196 – Start loop (record, play loop until m. 207)

m. 207 – Fade loop

m. 210 – Volume down, pick up snare sticks

m. 214 – Volume up

m. 217 – Volume down

m. 224 – Volume up

m. 227 – Volume down

m. 239 – Optional: pick up 'mani-tom' tubing (for pitch bend later), hold in mouth

m. 252-253 – Optional: floor tom pitch bend (up) with 'mani-tom' tube

m. 254 – Volume up, put sticks down

m. 259 – Close cricket boxes, or slowly fade cricket soundscape

Difficulties in performing *Monkey Chant* are mostly associated with electronic adjustments and implement changes which were described earlier. A trap table to the performer's left can facilitate easy implement changes. Additionally, the volume and loop pedals should be placed on the trap table. There are many passages in which the performer must put a implement down and adjust the volume pedal in a very short period of time. Having the pedals on the same table as the implements allow for quick changes.

Rhythmic complexity is limited in the work, with a lack of polyrythms and nothing more dense than sextuplets. The bulk of one's practice time must focus on performing rhythmic melodies over top of a four-beat ostinato. Shown in the figure

below, a three-limb ostinato is repeated throughout much of the composition. It resembles the soft polyphonic interlocking chant rhythms heard throught most of a typical Kecak performance.

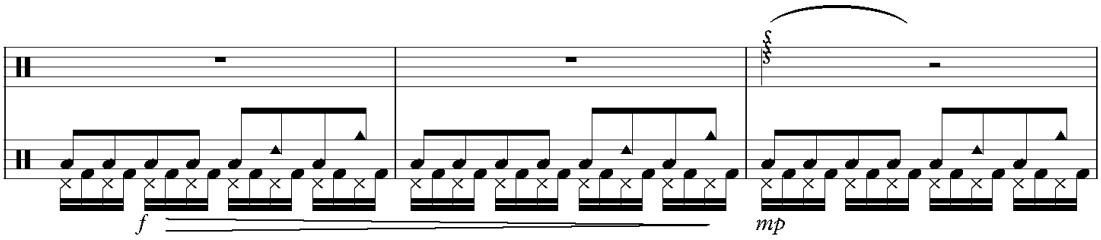

Figure 4.5 – *Monkey Chant* Three-Limb Ostinato, Measures 6-8

The performer should practice this four-beat ostinato until it becomes second nature. Isolating the feet, which alternate sixteenth notes, can be a helpful starting point to gain consistency in basic rhythm. The right hand can then be added, still focusing on a steady sixteenth note composite rhythm. Once consistency is achieved, the performer can move focus to the left hand which performs most of the rhythmic melodies in the piece. Independence is achieved between the left hand and the three-limb ostinato in order to achieve a consistent and confident performance.

CONCLUSION

Multiple percussion is a rapidly growing genre of solo percussion music with its future heavily grounded in exploration of timbre. The incorporation of electronic elements into acoustic performances creates a subgenre called electro-acoustic music, with which Glenn Kotche continues to push the limits. *Monkey Chant* transcends what we know of the modern multiple percussion repertoire by blending numerous approaches to music-making. The combination of a multiple percussion setup, drumset

arrangement, live electronics, prepared instruments, and found objects makes *Monkey Chant* the first of its kind in the genre.

My hope in writing this document is to see more performances of *Monkey Chant* in the future. I also hope that there will be a greater awareness and appreciation for Glenn Kotche's groundbreaking musicianship and compositional skills. He is an inspiring innovator in our field and hopefully will continue to break the boundaries of what we know is possible in music for years to come.

PART TWO

PROGRAM NOTES

A candidate for the Doctor of Musical Arts degree at the University of Kentucky must present three recitals in partial fulfillment of program requirements. Following are programs and program notes for the DMA Solo Percussion Recital on Monday, April 16, 2012; the DMA Chamber Percussion Recital on Thursday, March 7, 2013; and the DMA Lecture Recital on Saturday, April 5, 2014.

DMA Percussion Solo Recital

Jonathan Sharp
April 16, 2012, 7:30 P.M.
Singletary Center for the Arts
Concert Hall

Program

The Hinchinbrook Riffs (2009) — Nigel Westlake (b. 1958)

Animism for Prepared Timpani and Playback (1995) — Steven Ridley (b. 1973)

Reflections on the Nature of Water (1986) — Jacob Druckman (1928-1996)

I. *Crystalline*
II. *Fleet*
III. *Tranquil*
IV. *Gently Swelling*
V. *Profound*
VI. *Relentless*

The Apocryphal Still Life (1996) — Christopher Deane (b. 1957)

Bell Plates (2002) — Scott Lindroth (b. 1958)

Program Notes for the DMA Solo Percussion Recital

Hinchinbrook Island is one of the world's most diversely beautiful wilderness areas. It lies off the Cardwell coast, halfway between Cairns and Townsville in North Queensland Australia. Originally populated by the Bandjin people, its current name was given by Captain Cook in 1770 & it is now listed as part of the "Great Barrier Reef World Heritage Area" being Australia's largest island National Park. I first encountered the island whilst cruising the coral coast on my father's yacht in 1975, & I was awestruck & inspired by the overwhelming grandeur of the rugged peaks & lush tropical gorges. A number of musical motives or "riffs" immediately came to mind which I notated & initially incorporated into one of my very first compositions, ***The Hinchinbrook Riffs*** written for my garage band at the time "Eggs Benedict".

The piece consists of a string of "motives" or "riffs" that are digitally copied within the delay & made to repeat 600 milliseconds (about half a second) after they have been performed "live". The performer is required to interlock with the delay signal by adhering to a strict tempo indication (100 beats per minute), creating the riffs to interplay & trip over themselves, causing interesting rhythmic & melodic variants that surge & ebb in wave – like formations. Originally written for guitar, the idea for the marimba version was suggested to me by Rebecca Lagos, principal percussionist with the Sydney Symphony Orchestra.

Nigel Westlake's career in music has spanned more than 3 decades. He studied the clarinet with his father, Donald Westlake (principal clarinetist, Sydney Symphony

Orchestra 1961-1979) and subsequently left school early to pursue a performance career in music. His interest in composition dates from the late 1970's when he formed a classical/jazz-rock/world-music fusion band to play original music. During this time he started to receive offers to compose for radio and circus. Commissions for TV and film soon followed. His film credits include the feature films *Miss Potter*, *Babe*, *Babe – Pig in the City*, *Children of the Revolution, A Little Bit of Soul, The Nugget* and the Imax films *Antarctica*, *Imagine*, *The Edge* and *Solarmax*. Westlake's work has been widely performed and has earned numerous awards, including the Gold Medal at the New York International Radio Festival and numerous APRA and Screen Composer Guild awards for his film and concert music. Westlake was awarded an honorary Doctorate in Music by the University of New South Wales.

Animism for Prepared Timpani and Tape is based on a thirteen measure theme in mixed meter, which is initially stated in measure four. Most of the piece contains events which are strictly metered and must line up with the tape precisely. Other times, the performer freely improvises in unrestricted time. This piece is intended to be played on older instruments, preferably with dents and other abnormalities, generally found in a set of school or practice drums. As the score calls for extensive hand drumming techniques, and for various preparations of the drums, playing the piece could unduly stretch or damage the heads. In addition, the score requires the performer to 'explore' timbres and nuances within the dents of the bowls.

Stephen Ridley is a composer and orchestrator based in Los Angeles. His music features unique percussion instruments and electronics, blended with the traditional orchestra. Ridley received his Masters in Music Composition from UCLA, where he was a student of the late, great Jerry Goldsmith. He is a successful film score composer and orchestrator with credits including the 2006 movie “Stranger than Fiction.” Ridley is also very active in the world of concert and academic music. He has many concert works for percussion published and distributed by C. Alan Music Press.

Jacob Druckman's ***Reflections on the Nature of Water*** (1986) for solo marimba was commissioned by William Moersch under a Consortium Commissioning Grant made through the National Endowment for the Arts. Druckman used Reflections on the Nature of Water as an homage to Claude Debussy, whose *Preludes* had inspired the young composer. It was Monet's painting "Reflections on Water" that inspired Debussy's "Reflections in the Water," from Images, Book One (1905). Druckman likewise paints a musical text for the listener by titling each of the work's six pieces.

Jacob Druckman was an American composer and graduate of the Juilliard School. While at Julliard, Druckman studied composition with Vincent Persichetti, Peter Mennin, and Bernard Wagenaar. In 1949 and 1950 he studied with Aaron Copland at Tanglewood and later continued his studies at the École Normale de Musique in Paris. He worked extensively with electronic music, in addition to a number of works for orchestra or for small ensembles. In 1972 he won the Pulitzer Prize for his first large orchestral work *Windows*. He was composer-in-residence of the New York Philharmonic

from 1982-1985. Druckman taught at Juilliard, The Aspen Music Festival, Tanglewood, Brooklyn College, Bard College, and Yale University, among other appointments.

The Apocryphal Still Life was written upon the request of the Percussive Arts Society to be performed by contestants for the 1996 Vibraphone Competition to be held at the PASIC Convention '96 in Nashville, Tennessee. The work is dedicated to the virtuoso vibist, Jon Metzger. Special preparations are made so that two notes, d' and e', would sustain throughout, regardless of the position of the damper bar, thus replicating the still life. By exploiting these prepared notes, Deane's composition successfully juxtaposes layers of varied rhythmic durations and densities with layers of notes that are sustained throughout the composition with effortless continuance. By combining these different layers throughout the piece, Deane effectively portrays the contradiction of a still-life study in motion.

Christopher Deane is assistant professor in percussion at the University of North Texas. Prior to his appointment with UNT, he was the principal timpanist of the Greensboro Symphony for nine years and a regular performer as both percussionist and timpanist with the North Carolina Symphony for ten years. Deane's chamber music experience includes performances with the Aeolian Chamber Players, the Percussion Group Cincinnati, the Mallarme Chamber Players, and the New Century Saxophone Quartet. He is a founding member of the Philidor Percussion Group. Deane has won both first and second prize in composition from the Percussive Arts Society. A number of his compositions are considered standard percussion repertoire and are played

internationally. Deane has appeared as a performer, composer, or clinician at seven Percussive Arts Society International Conventions.

Bell Plates is scored for percussion solo and electronic sounds. The soloist plays brake drums, aluminum pipes, woodblocks, bongos, tom toms, and suspended cymbals. The electronic accompaniment consists of samples of various drums, cymbals, and gongs. These samples are heard at the beginning of the piece in their original form. Later, the sampled instruments are manipulated in Csound processing software to resemble a variety of gongs and bells.

Scott Lindroth has been on the faculty at Duke since the fall of 1990, having earned degrees in music composition from the Eastman School of Music (BM 1980) and the Yale School of Music (DMA 1991). His work as a composer has centered on instrumental and vocal media, including compositions for the Chicago Symphony Orchestra, the New York Philharmonic, the Philadelphia Orchestra, the Netherlands Wind Ensemble, and the Ciompi Quartet. He has also composed music for dance, theater, and video. Recordings of his work are available on CRI, Equilibrium, and the Centaur labels. Recent works include Nasuh for soprano and string quartet, and Bell Plates for percussion solo and electronic sound.

DMA Chamber Percussion Recital

Jonathan Sharp with the UK Percussion Group
March 7, 2013, 7:30 P.M.
Singletary Center for the Arts
Recital Hall

Program

Bloom (2011)	Ivan Trevino (b. 1983)
Postludes (2012) *VI*	Elliot Cole (b. 1984)
The Frame Problem (2003)	James Romig (b. 1971)

- - Intermission - -

Flux (2012)	Mei-Fang Lin (b. 1979)
Postludes (2012) *VIII*	Elliot Cole (b. 1984)
Sun (2011)	Baljinder Sekhon II (b. 1980)

Program Notes of the DMA Chamber Percussion Recital

Bloom was first prize winner in the 2011 Percussive Arts Society's Composition Contest. The piece weaves between minimalism and post-rock, reflecting Ivan Trevino's interest in bands like Radiohead and Sigur Ros. Much like minimalism, post-rock compositions feature motivic ideas that are organically developed over time. This marimba quartet features the same idea of textural and motivic development across the ensemble. Thick textures of sound are created through intricate interlocking rhythms between all the performers. The metamorphosis of the form and materials creates a narrative that evolves naturally and organically.

Ivan Trevino is a rock drummer at heart, and brings that spirit into other avenues of his life, such as classical percussion, composing, and teaching. Ivan has recorded, and composed extensively with Break of Reality, a national touring cello rock band. As a composer of percussion music, Ivan has received multiple awards and commissions, all of which are regularly performed by collegiate and professional musicians around the world. Ivan is currently on faculty at the Hochstein School of Music & Dance in Rochester, NY, where he teaches percussion, composition, and chamber music. He is also on faculty at the Eastman School of Music, where he teaches a course in music business.

Postludes was premiered by So Percussion in May 2012. *Postludes* is a book of eight pieces for a familiar instrument played in a new way. Four players, with eight double-bass bows, play interlocking lines on a single vibraphone. The interplay of bows

and hands tapping, muting and touching harmonics, weaves an intimate and intricate counterpoint that is as beautiful, fragile, tender and haunting. Elliot Cole's music has been performed by Ensemble ACJW, FLUX Quartet, Metropolis Ensemble, and the Brentano Quartet, among others.

Elliot Cole is a composer who also uses video art and computer programming to explore liminal spaces in individual consciousness and cultural memory. His chamber music has been performed by So Percussion, and the FLUX Quartet, among others. As a programmer, he is developing a composition tool that blends chance, serialism, ear-driven musicality, and plant-modeling formal grammars. In December 2011, he presented this work with members of the Metropolis Ensemble at The Box (NYC). He is a doctoral candidate in composition at Princeton, and also holds degrees in music and cognitive linguistics from Rice University.

The Frame Problem refers to a primary difficulty in designing robots and computer programs with "artificial intelligence." Human brains have a remarkable ability to "frame" information: in an instant, we are able to observe and organize an enormous amount of data, sorting and categorizing what is relevant and what is not. When listening to music, one of the primary hierarchical "frames" we create is that of meter. In this percussion trio, multiple distinct meters occur concurrently—in different lines, at constantly shifting dynamic levels, and in different timbral aggregations—providing human listeners with the opportunity to resolve multiple overlapping "frames" simultaneously. Robots in the audience will probably just be confused.

James Romig composes music that endeavors to reflect the intricate complexity of nature, where fundamental structures exert influence on both small-scale iteration and large-scale design, obscuring the boundaries between form and content. His work shows the influence of academic study with Charles Wuorinen and Milton Babbitt, interaction with the natural world through hiking and photography, and an interest in chaos theory, fractal geometry, and small-world networks.

Flux was commissioned by percussionist Yi-Chia Chen from Arizona State University. The piece continues an ongoing interest of the composer in pursuit of musical continuity through a constant flow of energy throughout the piece. A big part of the electronic sound was derived from analysis/resynthesis and granular synthesis. The acoustic writing itself incorporates a lot of similar concepts and techniques to reflect the same processes used in the electronic part.

Mei-Fang Lin is currently an Assistant Professor in Composition at the Texas Tech University. She received her Ph.D. from the University of California at Berkeley and her M.A. from the University of Illinois at Urbana-Champaign where she also taught as Visiting Assistant Professor in Composition. Mei-Fang studied with composer Philippe Leroux in Paris during 2002-2005 and participated in the one-year computer music course “Cursus de Composition” at IRCAM in Paris in 2003-2004. Lin’s music has received awards, performances and broadcast internationally in over 25 countries.

Sun by Baljinder Singh Sekhon, II is a percussion trio that was commissioned by The Volta Trio. This piece explores a variety of musical energies. From tired phrases to extended climactic passages to short-lived bursts of sound, many segments of music are intertwined and overlaid in a way that creates a singular event (the piece) with various "flares" of sound on its surface. These segments are often separated by silent moments that, because of their context, each express a different type of energy. The three performers exploit the various energies through gestural communication, creating a piece that is as interesting visually as it is aurally.

Baljinder Sekhon is a composer and percussionist whose award winning music ranges from works for full orchestra to electronic music. He has received numerous commissions, most recently from percussionist Michael Burritt, violist John Graham, the Boehmler Foundation, DoublePlay Percussion Duo, and Massimo La Rosa (principal trombonist, The Cleveland Orchestra). Sekhon currently teaches composition and electronic music as a faculty member of the University of South Florida School of Music. He also serves as the instructor for Electronic Music at the Eastman Community Music School where he has designed and implemented a new music technology program.

DMA Lecture Recital

Jonathan Sharp
April 17, 2014, 7:30 P.M.
Singletary Center for the Arts
Concert Hall

Program

Glenn Kotche

Inspirations:

Kecak
Ramayana

Instrumental and Electronic Setup

Performance Considerations

***Monkey Chant* (2006)** **Glenn Kotche**
(b. 1970)

APPENDIX A

Full interview transcript: March, 2014

S – Jonathan Sharp

K – Glenn Kotche

S: You have many published interviews from which I can puzzle-piece together a lot of the information I need. What specific source did you use for the Ramayana epic? There are so many versions of the story. Do you remember what books or resources you used?

K: Yes, I studied several - but the one audio version I kept coming back to is from the Nonesuch Explorer Series called Golden Rain. Also, the movie Baraka has a great Monkey Chant scene in it. I highly recommend checking that out. And I really wonder how it would have turned out if YouTube was around when I wrote the drum kit version. I also read the story. There are several books out there of parts of it (this is only one portion of the Ramayana) or the entire thing.

S: Do you remember where you found the cricket boxes? I've been searching shops online in Chinatown in California and have had no luck. I'd love to know if they are still manufactured and imported to the States.

K: I used to find them in China towns in Chicago, New York City, San Francisco, Bangkok, anywhere. But then only one place in SF carried them and they stopped. I still have about a 2 dozen, but I believe the batteries for the photo-electric cells can be replaced. For those who've never had them, I'm sure they've come up with interesting solutions. It's more about the drone of this quiet bed of sound that the music lies on than the actual cricket chirping for me. I love how it's there prominently at certain parts but then gets buried during high-action sections. I have a recording of night insects from Bali that is a viable substitute. I recently made some recordings of insects high up in the canopy of a rain forest in Costa Rica. Those might work as well. Basically, anything that could be considered "chatter" would work in my opinion.

S: In your performance of Monkey Chant at the Modern Drummer Festival in 2006, you incorporated an animated film. What inspired you to use the film?

K: I'm not sure. I think since the story line is almost in code and not overtly obvious, I thought for that particular performance (to a few thousand drummers - not percussionists really but more drummers) it would help convey the deeper meaning, the

story line, and narrative of the piece. Also, my drum tech, Nathanial Murphy, is an amazing illustrator and we probably concocted the idea over drinks one night to be honest. I only use the film sparingly now though, maybe 25% of the time. I don't like being married to the cues of the film, but I do like how the visual collaborates with the drumming.

S: Some of the prepared drumhead names (The lion's roar, cuica, and friction stick) can be difficult to decipher in the notation key, descriptions, and musical score. I think the main source of confusion lies in the notation key where you write the word "Cuica" followed by "wires" in parentheses. Can you briefly describe each of these three?

K: I would d have to look at the score again. That is actually Colin Campbell's transcription. He was the first to play it other than myself and notated it. I gave him some money afterwards to clean it up and for his time. His version is the one sold on my website. But I use the wires, which are coated with beeswax for better friction, interchangeably with the cuica stick. When it's a more exposed and spacious part musically, I use the stick. But when there is a lot going on, the stick rising up from the head can get in the way. So I use the various wires instead. I usually retract, or tuck away, the stick back into the drum when I'm not using it so I can get around the toms without hitting it. I sometimes have a Remo replacement cuica stick but most often it's a skewer used for food and coated with beeswax with some tape on the very bottom head (inside the drum shell) to keep it from pulling out of the head. For the wires I just use various gauge electric wires rubbed with beeswax.

S: Your performances of Monkey Chant always appear to have an aspect of improvisation. Do you advocate other performers to take liberties in the composition in a similar fashion? Or, did you write the music with the intent that performances will stay strict to the notation?

K: Absolutely players should make it their own. That's the whole point of playing something. You have the written document but then it's up to the performer to translate that and distill it through their own experiences and musical aesthetic to come up with something genuine, moving and hopefully emotional. I try to change it up as much as possible. Although by now, I know what works best and translates well, so I sometimes fall into a pattern of comfort and familiarity (in a good way) that can elicit new and fresh results as well, just by shear confidence and willingness to push further since I know now that I will most likely end up back on my feet.

BIBLIOGRAPHY

Print Media

Bandem, Madé, and Fredrik E. DeBoer. *From Kaja to Kelod: Balinese Dance in Transition*. New York: Oxford University Press, 1995. pp. 128-131.

Brockington, John. *The Sanskrit Epics*. The Netherlands: Koninklijke Brill, 1998.

Dibia, I Wayan. *Kecak: The Vocal Chant of Bali.* Bali: Hartanto Art Books, 1996.

Dibia, I Wayan, and Rucina Ballinger. *Balinese Dance, Drama and Music: A Guide to the Performing Arts of Bali*. Singapore: Periplus Editions, 2004.

McPhee, Colin. "The Five-Tone Gamelan Music of Bali" *The Musical Quarterly* 35, no. 2 (1949): 250-281.

Narayan, R. K. *The Ramayana: A Shortened Modern Prose Version of the Indian Epic*. New York: The Viking Press, 1972.

Picard, Michel. "Cultural Tourism in Bali: Cultural Performances as Tourist Attraction" *Indonesia* 49 (1990): 37-74.

Vitale, Wayne. "Balinese music breaks the five-tone barrier: new composition for seven-tone gamelan." *Perspectives of New Music* 40, no. 1 (2002): 5-69.

Non-print Media

Century Spring Corp. “Extension Springs.”
http://www.centuryspring.com/Products/extension.php
(accessed February 10, 2014)

———. “Extension Spring (Long Length) E-17.”
http://www.centuryspring.com/Store/item_detail.php?StockNumber=E-17
(accessed February 10, 2014)

———. “Extension Spring (Long Length) E-18.”
http://www.centuryspring.com/Store/item_detail.php?StockNumber=E-18
(accessed February 10, 2014)

———. “Extension Spring (Long Length) SS4-32.”
http://www.centuryspring.com/Store/item_detail.php?StockNumber=SS4-32
(accessed February 10, 2014)

Dawson, Michael. “Glenn Kotche: Painting The Sky Blue Sky.” *Modern Drummer.com* (June 15, 2007). https://www.moderndrummer.com/site/2007/06/glenn-kotche-2/#.UxtIDvldW8B

Gallagher, Michael. *Creative Practice Primer* (blog).
http://experimentalnetwork.wordpress.com/creative-practice-primer-2/creative-practice-primer-techniques-and-technologies-contact-microphones/

Good American Collective, The. “In Rhythm With…Glen Kotche.” Last modified June 17, 2012. http://thegoodamericancollective.blogspot.com.br/2012/06/in-rhythm-with-glen-kotche-of-wilco.html

Gumiela, Josh. *GumiElectronic* (blog). Last modified April 25, 2011.
http://gumielectronic.net/?p=934

Carnegie Hall. “Glenn Kotche and Victoire.”
http://www.carnegiehall.org/Calendar/2014/2/22/0600/PM/Glenn-Kotche-and-Victoire/ (accessed March 6, 2014)

Kotche, Glenn. “Interview.” *Modern Drummer Festival 2006*, DVD. Hudson Music, LLC/Modern Drummer Publications Inc., 2007.

Kotche, Glenn. "About," on Glenn Kotche's official website, Last modified February 5, 2014, http://glennkotche.com/about

Kotche, Glenn. *Mobile*. Nonesuch Records 7559-799272-4, 2006, compact disc.

Leggett, Steve. "Glenn Kotche." *Artist Direct*. http://www.artistdirect.com/artist/bio/glenn-kotche/619677#QYcFyqvVCwwW68RO.99 (accessed March 6, 2014).

Lewiston, David. *Bali: Gamelan & Kecak*. Explorer Series: Indonesia. Nonesuch Records, 5617128, 1989, compact disc.

Meet the Composer. "Glenn Kotche: Sound Possibilities." December 2, 2010. https://www.youtube.com/watch?v=F3iGfkxy5KM

Prodyne Incorporated. "Fruit Nest™ Expansion Fruit Basket." http://prodyne.com/index.php/catalog/product/view/31/3 (accessed March 2, 2014)

Promark Drumsticks. "PROMARK: Glenn Kotche on the new Promark." *YouTube.* December 10, 2013. http://www.youtube.com/watch?v=sIOA5sPxb_Y

Sengpiel Audio. "Conversion of Intervals." Last modified February 28, 2014. www.sengpielaudio.com/calculator-centsratio.htm

Valmiki Ramayana. "Book Six – Yuddha Kanda." Last modified September, 2009. http://www.valmikiramayan.net/yuddha_kanda_contents.html

Yamaha Corporation. "Club Jordan." http://usa.yamaha.com/product_archive/drums/club_jordan/?mode=model (accessed March 3, 2014)

VITA

EDUCATION

University of Illinois at Urbana-Champaign, Urbana, IL
Masters of Music Degree in Percussion Performance, May 2011
Primary Instructors: William Moersch, Ricardo Flores

Morehead State University, Morehead, KY (Summa Cumm Laude)
Bachelor of Music Degree in Percussion Performance, December 2008
Primary Instructors: Frank Oddis, Dr. Brian Mason

Additional Study: Bret Kuhn (marching percussion), Ellis Hampton (marching percussion), Joe DeMarco (orchestral percussion), Robert Griffin (concert percussion), Kyle Forstoff (World Percussion)

PROFESSIONAL APPOINTMENTS

Lecturer of Percussion, Morehead State University, Morehead, KY, Fall 2013 - present
Director of Percussion, Central Kentucky Youth Orchestras, Lexington, KY, Fall 2013 – present
Marching Percussion Instructor/Marching Band Instructor, Lafayette High School, Lexington, KY, Spring 2012 - present
Private Percussion Teacher for "Mastering Musicianship" private lesson program, Lafayette High School, Lexington KY, Spring 2012 - present
Percussion Assistant and Adjudicator for the Central Kentucky Youth Orchestra, Lexington, KY, Spring 2012- Spring 2013
Sabbatical Replacement for Professor of Percussion, University of Kentucky, Lexington, KY, Spring 2013
Shelby Valley High School Marching Band (Pikeville, KY)
Percussion Writing and Arranging, July 2008-August 2009
Morehead State University Marching Band (Morehead, KY)
Select Percussion Arranging, 2006-2008
Grant County High School Marching Band (Dry Ridge, KY)
Marching Percussion Instructor, July 2007- August 2007
George Rogers Clark High School Band (Winchester, KY)
Marching Percussion Instructor, July 2006-August 2007
Western Hills High School (Frankfort, KY)

Marching Percussion Instructor, July 2003-August 2004

PERFORMANCE EXPERIENCE

Cave Run Symphony Orchestra
- Principle Timpanist (Spring 2014)
Blue Steel Caribbean Ensemble
– Percussionist (Spring 2012 - Fall 2013)
Lexington Philharmonic Orchestra, (Fall 2011 - present)
- Extra Section Percussion
Pink Martini, Dec. 2011
- Extra Percussionist
Boston Pops Orchestra, Oct. 2011
- Extra Percussionist
Sinfonia Da Camera (Spring 2010 - Spring 2011)
- Extra Section Percussion
Champaign-Urbana Symphony Orchestra (Fall 2009 - Spring 2011)
- Extra Section Percussion

INTERNATIONAL INVITATIONS/PERFORMANCES

Ensemble Performance - Percussive Arts Society International Convention, UK Chamber Percussion Group and Percussion Ensemble, Indianapolis, IN, November 2012
Ensemble Performance – MSU Symphony Band, Denia, Seville, and Valencia Spain, May 2008
Solo Performance – MSU Percussion Ensemble soloist, Denia, Seville, and Valencia Spain, May 2008

NATIONAL INVITATIONS/PERFORMANCES

Solo Performance – Studio 300 Digital Art and Music Festival, Transylvania University, Lexington, KY, September 2012
Solo Performance – North American Brass Band Association, Charleston, WV, Morehead State University Percussion Ensemble, Spring 2004

REGIONAL INVITATIONS/PERFORMANCES

Performance – Percussion soloist with the Kentucky Bach Choir, Lexington, KY, February 2014
Adjudicator – KMEA Marching Band Competition, Campbell County High School,

September 2013

Masterclass – Battery and Front Ensemble Techniques for the Marching Percussion Section, Harlan County High School, Harlan, KY, Fall 2013

Masterclass – Techniques for the Marching Percussion Battery Section, Lafayette High School, Lexington, KY, Fall 2013

Workshop – Morehead State University's Summer Arts Academy, Morehead, KY, June 2013

Solo Performance, Clinic, Concerto Performance – Campbell County High School, Alexandria, KY, Spring 2012

Masterclass – Orchestration and Arranging for Percussion Instruments, University of Kentucky, Lexington, KY, March 2012

SELECTED ENSEMBLES

The Kollective Percussion Group (Winter 2012)
University of Kentucky (Fall 2011-Fall 2013)
- Symphony Orchestra, Contemporary Music Ensemble, Percussion Ensemble, Chamber Percussion Group, Steel Band, African/Brazilian Percussion Ensemble
University of Illinois at Urbana-Champaign (Fall 2009–Spring 2011)
- Steel Band, African Drum Ensemble, Percussion Ensemble, Symphony Orchestra
Percussive Arts Society's Intercollegiate Kentucky Honor's Percussion Ensemble
- Performer (2008, 2012)
The Cavaliers Drum and Bugle Corps, Rosemont, IL (2005)
Golden Eagle Fife and Drum Corps (2005)
Morehead State University (2003-2008)
- Symphony Band, Concert Band, Varsity Band, Marching Band, Percussion Ensemble, Steel band, African Drum Ensemble, University Chorus

DEGREE RECITALS

Doctoral Lecture Recital, University of Kentucky, April 2014
Doctoral Chamber Recital, University of Kentucky, March 2013
Doctoral Solo Recital, University of Kentucky, April 2012
Masters Recital, University of Illinois, April 2011
Senior Recital, Morehead State University, December 2008
Junior Recital, Morehead State University, April 2008

RECORDINGS

The Kollective Percussion Group, Lexington, KY
- The Percussion Works of Warren Benson, December 2012

Sinfonia Da Camera, Urbana, IL
- "George Walker: Great American Orchestral Works. Vol. 3", album released February 1, 2012

The University of Kentucky, Lexington, KY
- Symphony Orchestra – Thomas Pasatieri's "Symphony", Fall 2011

COMMISSIONS/PREMIERS

World Premiere – Anders Åstrand's Till Brandon fran Anders, Lexington, KY, December 2012

Regional Premiere – Mei-Fang Lin's Flux for Solo Marimba and Electronic Soundscape, September 2012

World Premiere – Ben Wahlund's Sextet, University of Kentucky, Lexington, KY, November 2011

World Premiere – Glenn Kotche's Drumkit Quartet #51: Lexington Realization, University of Kentucky, Lexington, KY, November 2011

World Premiere – Joseph Tompkins' Blue Burn, University of Kentucky, Lexington, KY, November 2011

World Premiere - Thomas Pasatieri's "Symphony", University of Kentucky, Lexington, KY, September 2011

US Premiere – Kjell Sampkof's Solo Piece for Snare Drum, Champaign, IL, April 2011

Commission – Alejandro Viñao's Book of Grooves for Two Marimbas, Fall 2010 (commission consortium)

ARRANGING AND WRITING EXPERIENCE

Lafayette High School Marching Band (Lexington, KY)
Percussion Arranging, Fall 2012-Fall 2013

Shelby Valley High School Marching Band (Pikeville, KY)
Percussion Writing and Arranging, July 2008-August 2009

Morehead State University Marching Band (Morehead, KY)
Select Percussion Arranging, 2006-2008

Grant County High School Marching Band (Dry Ridge, KY)
Percussion Arranging, July 2007- August 2007

George Rogers Clark High School Band (Winchester, KY)
Percussion Writer and Arranger, July 2006-August 2007

Western Hills High School (Frankfort, KY)

Percussion Writing and Arranger for Marching Band, July 2003-August 2004
Percussion Writing for Percussion Ensemble, Spring 2003

PROFESSIONAL AFFILIATIONS

Society for Electroacoustic Music in the United States (SEAMUS), 2013 - present
University of Kentucky Percussion Society, 2011 - present
Percussive Arts Society (PAS), 2002 – present
- Kentucky Chapter, Member, 2011 - present
- CPC Mentoring Day Participant (2011)

HONORS/AWARDS

The University of Kentucky, Lexington, KY
- Performer, Showcase Concert, Percussive Arts Society International Convention, UK Chamber Percussion Group and Percussion Ensemble, Indianapolis, IN, November 2012

Cavaliers Drum and Bugle Corps
- Member, 2nd Place, DCI Division 1 World Championships, 2005
- 2nd Place Percussion Section, DCI Division 1 World Championships, 2005

Morehead State University, Morehead KY
- Summa Cumme Laude graduated honors, 2008
- Member, Collegiate Marching Competition, Percussive Arts Society International Convention, MSU
- Indoor Marching Percussion Ensemble, Louisville, KY, November 2003
- MSU Department of Music Chair's List, 2008
- Phi Kappa Phi Honor Society membership, 2006-2008
- MSU Dean's List, Fall 2003-Fall 2008