

A COMMISSIONING AND RECORDING PROJECT OF NEW WORKS FOR SAXOPHONE
FOCUSED ON EXTENDED TECHNIQUES

by

SHAWNA CHRISTINA PENNOCK

(Under the Direction of Connie Frigo)

ABSTRACT

This commissioning and recording project contains new works for the saxophone focused on extended techniques. This document serves as a guide for saxophone teachers and students looking for new pieces to teach or perform that include extended techniques. These works were pedagogically created to be accessible to the saxophonist who is interested in learning or improving upon their ability to perform the following five extended techniques: altissimo, slap tongue, microtonality, multiphonics, and vocalizing. Seven composers, listed in alphabetical order in this document and on the CD, Corey Dundee, Kathryn Koopman, Samuel Lipman, Joel Love, Shawna Pennock, Alan Theisen, and David Vess, were given musical guidelines on how to utilize each extended technique within their compositions. These guidelines suggest limitations for using each technique to ensure the composers create accessible pieces for saxophonists interested in learning and applying these various techniques into repertoire. The result was a collection of pieces with varying degrees of difficulty. Some pieces are appropriate for a younger undergraduate saxophonist (Koopman, Lipman, Pennock), and some are appropriate for an advanced undergraduate or graduate saxophonist (Theisen, Love, Dundee, Vess). The American Band College Music Grading Chart was used to designate a difficulty level to each piece based

on its meter, time signature, note/rest value, and rhythm. This document contains summaries of the pieces, brief information about each composer, and a discussion of the musical guidelines given to the composers for each extended technique followed by examples of the musical guidelines utilized within each piece.

INDEX WORDS: Saxophone, recording, extended techniques, altissimo, slap tongue, microtonality, multiphonics, vocalizing, Corey Dundee, Kathryn Koopman, Samuel Lipman, Joel Love, Shawna Pennock, Alan Theisen, David Vess

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DEDICATION

This dissertation CD project is dedicated to my first saxophone teacher Robin Ciccotelli. Her kindness, enthusiasm, and knowledge of the saxophone kept me studying with her for 7 years. I still have her personal copy of *High Tones for the Saxophone* by Eugene Rousseau and a cassette tape of classical saxophone recordings she let me borrow in 2003. There are so many people that are responsible for my development as a musician, but she was my first saxophone hero.

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Connie Frigo
Brandon Quarles

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To my friends and family, especially my mom Sheri, thank you so much for supporting me through this very long journey.

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF PIECES ON CD	xi
CHAPTER	
1 INTRODUCTION	1
Compositions	2
<i>acoustic duality (à la Descartes)</i> by Corey Dundee	3
<i>Riparian</i> by Kathryn Koopman	5
<i>Birds of Paradise</i> by Samuel Lipman	7
<i>Fledglings</i> by Joel Love	8
<i>Dolphin Catches Stingray</i> by Shawna Pennock	9
<i>Ricochet</i> by Alan Theisen	11
<i>...swaying, wooden scars...</i> by David Vess	13
Conclusion	14
2 EXTENDED TECHNIQUES AND MUSICAL GUIDELINES	15
Altissimo	15
Slap Tongue	19

Microtones	24
Multiphonics	28
Vocalizing	33
Conclusion	39
BIBLIOGRAPHY	40

LIST OF TABLES

	Page
Table 1: Table of Pieces Rated by Difficulty Level	2

LIST OF FIGURES

	Page
Figure 1: Kathryn Koopman, <i>Riparian</i> , mm. 31-34	17
Figure 2: Kathryn Koopman, <i>Riparian</i> , mm. 37-40	18
Figure 3: Kathryn Koopman, <i>Riparian</i> , mm. 79-80	18
Figure 4: Samuel Lipman, <i>Birds of Paradise</i> , “Love Denied,” m. 79	19
Figure 5: David Vess, <i>...swaying, wooden scars...</i> , mm. 1-10.....	21
Figure 6: Shawna Pennock, <i>Dolphin Catches Stingray</i> , “Dolphin,” mm. 1-18.....	21
Figure 7: Alan Theisen, <i>Ricochet</i> , mm. 178-190	22
Figure 8: Joel Love, <i>Fledglings</i> , “Raucous,” m. 24.....	22
Figure 9: Shawna Pennock, <i>Dolphin Catches Stingray</i> , “Dolphin Meets Stingray,” mm. 10-12. .	23
Figure 10: Alan Theisen, <i>Ricochet</i> , mm. 258-260	23
Figure 11: Shawna Pennock, <i>Dolphin Catches Stingray</i> , “Dolphin,” mm. 18-20.....	25
Figure 12: Shawna Pennock, <i>Dolphin Catches Stingray</i> , “Dolphin,” mm. 37-38.....	26
Figure 13: Joel Love, <i>Fledglings</i> , “Raucous,” m. 7	26
Figure 14: Joel Love, <i>Fledglings</i> , “Raucous,” mm. 50-55	27
Figure 15: David Vess, <i>...swaying, wooden scars...</i> , mm. 149-150.....	29
Figure 16: Samuel Lipman, <i>Birds of Paradise</i> , “Mating Dance,” m. 52	30
Figure 17: Shawna Pennock, <i>Dolphin Catches Stingray</i> , “Stingray,” mm. 7-8	30
Figure 18: Joel Love, <i>Fledglings</i> , “Raucous,” mm. 42-45	31
Figure 19: Joel Love, <i>Fledglings</i> , “Alone in the Winter,” mm. 2-4	31

Figure 20: Joel Love, <i>Fledglings</i> , “Alone in the Winter,” mm. 5-6	32
Figure 21: Joel Love, <i>Fledglings</i> , “Alone in the Winter,” m. 25.....	32
Figure 22: Joel Love, <i>Fledglings</i> , “Alone in the Winter,” mm. 33-37	32
Figure 23: Joel Love, <i>Fledglings</i> , “A Distant Memory,” mm. 26-27.....	33
Figure 24: Joel Love, <i>Fledglings</i> , “A Distant Memory,” mm. 41-43.....	33
Figure 25: Corey Dundee, <i>acoustic duality (à la Descartes)</i> Section A, system 1.....	34
Figure 26: Corey Dundee, <i>acoustic duality (à la Descartes)</i> Section A, system 3.....	35
Figure 27: Corey Dundee, <i>acoustic duality (à la Descartes)</i> Section B, system 1	35
Figure 28: Corey Dundee, <i>acoustic duality (à la Descartes)</i> Section B, system 3.....	35
Figure 29: Corey Dundee, <i>acoustic duality (à la Descartes)</i> Section B, system 4.....	36
Figure 30: Corey Dundee, <i>acoustic duality (à la Descartes)</i> Section B, system 2.....	36
Figure 31: Corey Dundee, <i>acoustic duality (à la Descartes)</i> Section C, system 1	37
Figure 32: Corey Dundee, <i>acoustic duality (à la Descartes)</i> Section C, system 3.....	37
Figure 33: Corey Dundee, <i>acoustic duality (à la Descartes)</i> Section C, system 4.....	38

LIST OF PIECES ON CD

- | | |
|--|------------------------------|
| 01) <i>acoustic duality (à la Descartes)</i> | Corey Dundee
(b. 1993) |
| 02) <i>Riparian</i> | Kathryn Koopman
(b. 1995) |
| <i>Birds of Paradise</i> | Samuel Lipman
(b. 1973) |
| 03) “Mating Dance” | |
| 04) “Love Denied” | |
| <i>Fledglings</i> | Joel Love
(b. 1982) |
| 05) “Raucous” | |
| 06) “Alone in the Winter” | |
| 07) “A Distant Memory” | |
| 08) <i>Dolphin Catches Stingray</i> | Shawna Pennock
(b. 1987) |
| 09) <i>Ricochet</i> | Alan Theisen
(b. 1981) |
| 10) <i>...swaying, wooden scars...</i> | David Vess
(b. 1991) |

CHAPTER 1: INTRODUCTION

For this project I recorded a CD of seven new works for the saxophone family, all of which include extended techniques. I commissioned six of the pieces and composed one piece myself. There is at least one piece written for each member of the standard saxophone family (soprano, alto, tenor, and baritone). In addition to utilizing different saxophones, different ensembles were also included. There are three unaccompanied pieces for soprano saxophone, baritone saxophone, and tenor saxophone: *Birds of Paradise* by Samuel Lipman, *Dolphin Catches Stingray* by Shawna Pennock, and *acoustic duality (à la Descartes)* by Corey Dundee). The other four pieces were written for an array of duo instrumentations. There are two pieces for alto saxophone and piano (*Fledglings* by Joel Love and *Ricochet* by Alan Theisen), one piece for two alto saxophones (*...swaying, wooden scars...* by David Vess), and one piece for alto saxophone and violin (*Riparian* by Kathryn Koopman).

The goal was to create a resource for saxophonists who are searching for pieces that include extended techniques, through the commissioned works, this document and the accompanying compact disc. These pieces can serve as supplemental tools for the saxophonist learning extended techniques because they were created with pedagogical musical guidelines that I created for the composers to follow while incorporating extended techniques into their pieces. These guidelines were intended to help the composers use the extended techniques at a level suitable for a saxophonist just beginning to play extended techniques, although several pieces are at an advanced level. I developed this list of guidelines through my study of method books and

my own observations as a teacher and a performer of these extended techniques. Chapter 1 covers a brief discussion of the particulars of each piece. Chapter 2 covers the extended techniques included in this project, the musical guidelines developed and examples of realized guidelines within each piece.

Compositions

In the following section I will introduce each piece written for this project. I will include the title, composer, year piece was written, duration, ensemble, extended techniques used, and difficulty level, followed by an explanation of the title, pedagogical goals of the piece, a brief background of composer, and a summary of the piece.

Piece	Meter	Tempo	Note/Rest value	Rhythm	Extra Points	Final Average
<i>acoustic duality (à la Descartes)</i>	3	3	3	4	+4	4.25
<i>Riparian</i>	1	1	2	2	0	1.5
<i>Birds of Paradise</i>	1	2	3	4	+1	2.75
<i>Fledglings</i>	4	3	4	5	+1	4.25
<i>Dolphin Catches Stingray</i>	1	1	1	1	+1	1.25
<i>Ricochet</i>	4	4	4	4	0	4
<i>...swaying, wooden scars...</i>	4	3	3	3	0	3.25

Table 1: Table of Pieces Rated by Difficulty Level

The project yielded pieces with an array of difficulty levels. Using the American Band College Music Grading Chart, each piece was rated, 1-5, 1 being the easiest and 5 being the most

difficult, based on the criteria in the four categories of meter, tempo, note/rest value, and rhythm.¹ Also, before averaging the scores extra points were added to the total score if an extended technique was used extensively in a piece. To create the final average for each piece I added the values determined for meter, tempo, note/rest value, rhythm, and extra points before dividing the sum by four, $((\text{meter} + \text{tempo} + \text{note/rest value} + \text{rhythm} + \text{extra points})/4 = \text{final average})$. For example when calculating the final average for *acoustic duality (à la Descartes)* by Corey Dundee the following equation was used, $((3 + 3 + 3 + 4 + 4)/4 = 4.25)$. Based on these final averages, some pieces are suitable for the saxophonist beginning to learn extended techniques (Koopman, Lipman, Pennock), and some are best suited for a more advanced saxophonist (Dundee, Love, Theisen, Vess). See Table 1 above for a summary of values assigned and final average for each piece.

The pieces are ordered alphabetically based on last name of the composer.

- 1) *acoustic duality (à la Descartes)* Corey Dundee
- 2) *Riparian* Kathryn Koopman
- 3) *Birds of Paradise* Samuel Lipman
- 4) *Fledglings* Joel Love
- 5) *Dolphin Catches Stingray* Shawna Pennock
- 6) *Ricochet* Alan Theisen
- 7) *...swaying, wooden scars...* David Vess

***acoustic duality (à la Descartes)* by Corey Dundee**

Composer: Corey Dundee (b. 1993)
Year: 2016
Duration: 8:00

¹ American Band College Music Grading Chart. 2006. The Bandworld Website. Accessed April 15,

Ensemble: tenor saxophone

Extended techniques: vocalizing

Difficulty level: 4.25

acoustic duality (à la Descartes) is an unaccompanied piece written for tenor saxophone. The only extended technique used in this work is vocalizing, and this is used throughout the piece. My goal for *acoustic duality (à la Descartes)* is to create a piece that is centered on the different ways of vocalizing while playing the saxophone.

Dundee lives in Ann Arbor, MI, where he is pursuing a D.M.A. in Composition at the University of Michigan. He previously attended the University of Southern California (M.M. Composition) and Indiana University (B.M. degrees in Composition and Saxophone Performance).

The piece is divided into three sections. In Section A, the saxophonist plays a tone on the instrument followed by singing that same pitch. This section is very subdued, and development of the idea takes place gradually. At first, there is one note for the voice to repeat, and then there are two different notes to repeat in the middle of the section. Section B continues to use the voice as a response to small groups of up to five saxophone pitches, but it also introduces the use of vocalizing on a sustained single pitch while the saxophone produces a moving line. Section C introduces the technique of vocalizing while playing moving pitches in parallel motion as well as playing one pitch on the saxophone with a moving vocal line. Parallel motion occurs in intervals of an octave, perfect fifth, and major third throughout section C. As the vocalizing becomes more involved, the energy of the piece picks up intensity until the ending. The ending introduces voice crossing between the saxophone and vocal line in a recap of the opening melodic fragment.

The difficulty level of this piece was determined to be a 4.25. Four extra points were added because of the extensive amount of vocalizing utilized. These extra points are justified due

the difficulty involved in learning to produce the technique correctly. The saxophonist must already possess a certain level of vocalizing skill to practice any part of the piece. Therefore, the saxophonist should be able to hum consistently while creating a different pitch through the saxophone before learning this piece. Vocalizing is used extensively through out the piece forcing the saxophonist to engage their vocal chords for a long period of time. This causes fatigue and stamina must be built gradually. It is difficult to create specific intervals by vocalizing while producing saxophone pitches. This is due to the difference between singing normally and vocalizing while blowing air through a saxophone. The saxophonist must raise the vocalized pitch in order to create the correct interval between vocalizing and the saxophone pitch. Vocalizing with a saxophone is closer to humming than regular singing. When a saxophonist is vocalizing, the extra air used to produce the saxophone pitch causes the vocalized pitch to go flat. The saxophonist must compensate to raise the pitch. This means the physical sensations of singing and vocalizing a pitch to create an interval with the saxophone are different. For example, while vocalizing a concert A the saxophonist's voice will feel higher than if they were singing a concert A. The challenges of learning how to vocalize warrant the four extra points allotted for difficulty.

***Riparian* by Kathryn Koopman**

Composer:	Kathryn Koopman (b. 1995)
Year:	2017
Duration:	7:00
Ensemble:	alto saxophone and violin
Extended techniques:	altissimo
Difficulty level:	1.5

“Riparian” is defined as relating to or living or located on the bank of a natural watercourse (such as a river) or sometimes of a lake or a tidewater.”² The goal of *Riparian* is for the saxophonist to produce the altissimo range with good intonation, even tone, and correct voicing. For the saxophonist, this piece should be used as a stepping stone into altissimo. The saxophone part moves from the normal range of the instrument (up to F-sharp6) into the altissimo register (G6 and above).

Koopman is currently teaching band in Georgia. She attended the University of Georgia (B.M. Music Education and Composition).

The piece opens with a saxophone solo, which is eventually joined in measure 9 by delicate harmonics on the violin. The violin enters in measure 17, with full volume, taking over the melody. The violin and saxophone send the melody back and forth leading to the big arrival point in measure 40. Measures 40-47 are a broader section, which includes romantic portamento in the violin. Measures 47-68 see a texture change of feathered beaming and wiry playing on the bridge of the violin while the saxophonist imitates string ricochet. There are also intense tremolos for both instruments. Measures 68-81 use a smoother texture with glissandos, and calmer tremolos than before. *Riparian* concludes with a return to the original texture, but breathy, with some air in the tone.

The difficulty level of this piece was determined to be 1.5. The slow moving melodies allow the saxophonists adequate time to prepare for production of altissimo pitches. Meter is a simple 4/4 and 2/4. The musical lines in the piece without altissimo and the ensemble

² riparian. 2018. In *Merriam-Webster.com*. Retrieved January 25, 2018, from <https://www.merriam-webster.com/dictionary/ricochet>

requirements with the violinist are suitable for younger undergraduates. The rhythms are simple with occasional triplet figures and feathered beamings.

***Birds of Paradise* by Samuel Lipman**

Movements:	“Mating Dance” “Love Denied”
Composer:	Samuel Lipman (b. 1973)
Year:	2016
Duration:	10:00
Ensemble:	soprano saxophone
Extended techniques:	altissimo, microtonality, multiphonics, and vocalizing
Difficulty level:	2.75

Birds of Paradise has two movements “Mating Dance” and “Love Denied.” “Mating Dance” “conjures up the wild calls of birds, perhaps peacocks at play.” “Love Denied” plays on the idea of a lover scorned, presenting both the frustration of the jilted lover, the sadness that accompanies rejection, and the eventual recovery and regaining of confidence.”³ The pedagogical goal of *Birds of Paradise* is to create a piece for soprano saxophone that utilizes as many extended techniques as possible.

Lipman lives in Austin, TX, and is currently Composer-In-Residence and Lecturer in Musical Aesthetics at the University of Texas at Austin. He attended the University of Texas at Austin (B.M. and M.M. in Composition).

The first movement “Mating Dance” is an energetic display of multiphonics, microtonality, and extra fingering notation, which requires a very flexible embouchure. The composer states, “By employing alternative fingerings and multiphonic techniques, this

³ Lipman, Samuel. *Birds of Paradise*, Sydney, Australia. Inner Urge Music. 2016.

movement presents a menagerie of colors, from the single instrument.”⁴ The second movement “Love Denied” “is built on two separate layers of thematic material,”⁵ and includes altissimo and vocalizing. To conclude the piece, the first movement’s energetic snippets return as part of the second movement.

The difficulty level of this piece was determined to be a 2.75. While there are many sections of quick moving melodic lines, the use of extended techniques is not extensive within the piece. They occur often enough to give an introductory experience of each technique to the saxophonist. The meters are simple 3/4, 4/4, and 5/4. There are some advanced rhythms in the piece but tempo stays below 120 beats per minute. An extra point was given to the total score before the average was found to account for the difficulty in reading the extra notation written above the staff notating alternative fingerings.

***Fledglings* by Joel Love**

Movements:	“Raucous” “Alone in the Winter” “A Distant Memory”
Composer:	Joel Love (b. 1982)
Year:	2017
Duration:	10:00
Ensemble:	alto saxophone and piano
Extended techniques:	slap tongue, microtonality, multiphonics
Difficulty level:	4.25

The title *Fledglings* refers to the young saxophonist trying multiphonics for the first time, much like a young bird, or fledgling, leaving the nest and learning to fly for the first time. My

⁴ Lipman Program notes, 2.

⁵ Lipman Program notes, 2.

goal for *Fledglings* is to allow the saxophonist ample time to prepare to play multiphonics within the piece.

Love attended the University of Texas at Austin (D.M.A. Composition), The University of Houston (M.M. Composition), and Lamar University (B.M. Composition). He lives in Houston, TX, where he teaches music at Houston Community College's Southwest location in Stafford, TX.

The first movement, “Raucous,” is rhythmically driving and makes extensive use of microtones and multiphonics with the occasional slap tongue. There are also sections in the piano part where the pianist must strike the strings inside the piano, as well as pluck them. The second movement, “Alone in the Winter,” paints a picture of a lost person drifting through a snowstorm. In this movement the saxophonist must control subtle emergences and retreats of multiphonics against the backdrop of slow moving, crystalline chords. In the third movement, “A Distant Memory,” multiphonics are used in conjunction with slow moving chords in the piano. Both saxophone multiphonics and the slow-moving chords in the piano eventually give way to a sweet, yet fragmented melody that quickly disappears back into the ether of multiphonics and slow-moving chords.

The difficulty level of this piece was determined to be 4.25. Some of the multiphonics used are unstable and difficult to control. Ensemble with the piano can be challenging in the second and third movements due to advanced rhythms and challenging meters. An extra point was added to the total score before finding the average score to account for the extensive use of multiphonics within the piece.

***Dolphin Catches Stingray* by Shawna Pennock**

Movements: “Ocean”
 “Dolphin”

	“Stingray”
	“Dolphin Meets Stingray”
Composer:	Shawna Pennock (b. 1987)
Year:	2017
Duration:	6:30
Ensemble:	baritone saxophone
Extended techniques:	slap tongue, microtonality, multiphonics, and vocalizing
Difficulty level:	1.25

Dolphin Catches Stingray is programmatic and depicts an interaction between a dolphin and a stingray based on a true story. My goal for *Dolphin Catches Stingray* was to provide the saxophonist an introduction to playing microtonal music. The “tonic” of the piece is an A- $\frac{1}{4}$ sharp. The rest of the tones are all quarter tones and when combined with the tonic, A- $\frac{1}{4}$ sharp, the piece sounds like it has been written within conventional western tonality. The aural outlier doesn’t occur until a “normal” note is introduced in measure 18 of “Dolphin.” The piece flips the saxophonist’s perception of quarter tones and normal tones, the latter sounding out of place rather than the quarter tones.

During the creation of this document I was a Doctoral student of saxophone at the University of Georgia living in Athens, GA. My degrees are from University of North Carolina School of the Arts (M.M. Saxophone Performance and Professional Artist Certificate) and The University of Iowa (B.M. Saxophone Performance).

The first section entitled “Ocean” contains the least number of microtonal notes and extended techniques. There are two microtonal notes, A- $\frac{1}{4}$ sharp and F- $\frac{1}{4}$ sharp surrounded by normal diatonic notes. One multiphonic is used, which is multiphonic 1, based on low D, from

the Netti and Weiss collection of multiphonics for baritone saxophone.⁶ This section is very spacious and open in texture. It is very slow moving. The second section, “Dolphin,” makes use of microtonal tones, slap tongue, and vocalizing. It is a rhythmic section with a waltz feel. The third section, “Stingray,” makes use of microtonal notes and multiphonics. It is the slowest section of the piece. The fourth section “Dolphin Meets Stingray” is the portion of the piece where all extended techniques and motives come together in a development. The use of extended techniques becomes increasingly denser in this section using microtonal tones, multiphonics, vocalizing, and slap tongue. After the development in “Dolphin Meets Stingray” the piece returns to “Ocean” to end the piece.

The difficulty level of this piece was determined to be 1.25. The tempo is slow, allowing time to prepare for proper execution of each technique. The rhythms are beginner level at quarter notes and half notes. There are only five microtonal notes and three multiphonics used in the piece. The saxophonist can focus on a limited number of microtonal notes and multiphonics while learning this piece, thus making it a suitable introduction to microtonality and multiphonics. An extra point was added to the total score before finding the average to account for the extensive use of slap tongue in the piece.

***Ricochet* by Alan Theisen**

Composer:	Alan Theisen (b. 1981)
Year:	2016
Duration:	10:00
Ensemble:	alto saxophone and piano
Extended techniques:	slap tongue
Difficulty level:	4

The goal of *Ricochet* is to showcase a variety of articulations including slap tongue.

⁶ Weiss, Marcus and Giorgio Netti. *The Techniques of Saxophone Playing*. Kassel, Germany: Barenreiter, 2010. 107.

The word ricochet means “a glancing rebound.”⁷ The use of many different articulations and slap tongue creates the ricochet effect within this piece.

Theisen lives in Weaver, NC, and is Associate Professor of Music at Mars Hill University where he coordinates the music theory/composition curriculum. He attended Florida State University (Ph.D. Music Theory and Composition) and the University of Southern Mississippi (B.M. Music History and M.M. Music Theory).

Section A (measures 1-57), labeled “Allegro con malizia,” introduces pitched slap tongue and various accents in an upbeat quick-paced opening. Section B (measures 58-78) is a stark contrast to section A with a much slower tempo featuring connected melodic lines with legato tonguing. A’ (measures 79-148) returns to the original A section’s energy and pace. Section C (measures 149-162) is the slowest section of the piece. Within this section, accented tonguing in the low register and rapid tonguing in the upper register are combined. A’’ (measures 163-220), which is labeled “Giocoso; quasi tempo primo ma poi mosso and funky (Hommage a Gyorgy Ligeti),” is the fastest section of the piece and introduces extended passages of pitched slap tongue. The final section, section D (measures 221-239), uses very rapid tonguing during feathered beaming and combines the smoothness of section B with the accented tonguing of section C, while A’’’ (measures 240-310) combines the extended techniques of slap tongue, flutter tongue, and growling with rapid tonguing to end the piece in the spirit of the opening section malizia.

The difficulty level of this piece was determined to be a 4. The use of extended techniques is not extensive. The main challenge will be tempo. The saxophonist must have a

⁷ ricochet. 2018. In *Merriam-Webster.com*. Retrieved January 25, 2018, from <https://www.merriam-webster.com/dictionary/ricochet>

developed technique to maintain proper tempos. The saxophonist should have experience playing scales above 152 evenly, and with control before attempting to learn this piece. There are simple compound rhythms throughout the piece at tempos of 156 -160 beats per minute. These tempos also make ensemble with pianist more of a challenge. There are large intervals throughout the piece that require a student to understand air management and use of oral cavity to support the leaps with control.

...swaying, wooden scars... by David Vess

Composer:	David Vess (b. 1991)
Year:	2017
Duration:	13:30
Ensemble:	alto saxophone and alto saxophone
Extended techniques:	altissimo, slap tongue, microtonality, multiphonics, and vocalizing
Difficulty level:	3.25

The title depicts an image of many trees that for Vess look like many scars on top of each other. Vess says,

I've always thought that leafless trees look scarred for some reason, and also look like scars in the surrounding environment. The growth and organic nature of trees made sense in terms of theme and variations form, as if the trunk is the theme and the branches are the variations. That's why the piece has the form it does, I wanted to create a tree if you will.⁸

The goal of *...swaying, wooden scars...* is to create a piece where the saxophonist can learn to produce extended techniques together with another saxophonist.

Vess is a Boston-based composer, improviser and musician. He attended the Boston Conservatory (Professional Studies Certificate and M.M. in Composition) and the University of North Carolina School of the Arts (B.M. Tuba Performance).

⁸ D. Vess (personal communication, January 6, 2018).

The first part of Vess' piece, "Variation I: Tongues, Clicking, Ticking," utilizes air sounds, pitched slaps, key clicks and flutter tongue. It is a sparse section with a loudest dynamic of *mp*. "Variation II: Speed and Wailing" includes the use of glissandos and growling. "Variation III: Fifths and Seconds" is an exercise on tuning parallel open fifths while playing in the altissimo register. "Theme: Hymn and Distortion" is filled with tonal harmonies that eventually morph into a microtonal section with flutter tongue, along with multiphonics. "Variation IV: Rhythm and Ma" includes slap tongue, key clicks and air sound, like "Variation I," but with a thicker texture to conclude the piece.

The difficulty level of this piece was determined to be 3.25. The extended techniques all occur in sections of slower tempos. This allows more time for the saxophonist to prepare to execute the extended techniques correctly. There are melodic lines at faster tempos leading into the altissimo range that require the saxophonist to have facile and even technique, from a regimented discipline of scales and patterns. There are also sections using the altissimo register where the player's altissimo must be perfectly in tune. This will prove challenging. The extended techniques are used sparingly but enough to give an introduction of all five extended techniques to the saxophonist.

Conclusion

Each composer used these extended techniques creatively in their compositions to form individual works of art. Their own compositional styles and language are apparent in their pieces, including the way they used each extended technique. The following chapter will discuss the guidelines and how they were realized within the pieces.

CHAPTER 2: EXTENDED TECHNIQUES AND MUSICAL GUIDELINES

In order to guide the creation of works with a pedagogical focus on extended techniques, I requested the composers choose from five extended techniques (altissimo, slap tongue, microtonality, multiphonics, and vocalizing) for their compositions. Composers could choose to utilize one or more of the techniques listed. In the following chapter, within each extended technique subheading, I will share the method books I consulted to form my musical guidelines, followed by a discussion of the guidelines for incorporating the individual techniques and how they help guide the composer to utilizing them correctly. Finally, I will showcase the examples of the guidelines realized within the pieces.

Altissimo

I studied and based my musical guidelines for altissimo on the following method books: Rosemary Lang, *Beginning Studies in the Altissimo Register*,⁹ Eugene Rousseau, *Saxophone High Tones*,¹⁰ Sigurd Rascher, *Top Tones for the Saxophone*¹¹, and Denise C. Dabney and Donald Sinta, *Voicing: An Approach to the Saxophone's Third Register*.¹²

In the altissimo register, the fingerings are more technically demanding, in part because they are new, and learning altissimo production relies heavily on “physical-acoustic memory.”¹³

⁹ Lang, Rosemary, *Beginning Studies in the Altissimo Register*. Indianapolis: Lang Music Publications. 1988.

¹⁰ Rousseau, Eugene. *Saxophone High Tones*. Saint Louis: MMB Music, Inc, 2002.

¹¹ Rascher, Sigurd M. *Top Tones for the Saxophone*. New York: Carl Fischer. 1983.

¹² Sinta, Donald J. and Denise C. Dabney. *Voicing: An approach to the Saxophone's Third Register*. Radford, VA: Sintafest. 1992.

¹³ Weiss, 33.

To help the performer develop their skills in this technique, I gave the following guidelines to composers for using the altissimo register in their works:

- Range: use altissimo notes G6, G-sharp6, A6, A-sharp6, B6.
- Volume: use dynamics *mf* and louder.
- Use octave intervals that include an altissimo note.
- Lead slow-moving melodic lines into the altissimo range.

Altissimo Musical Guideline: Range- Use altissimo notes G6, G-sharp6, A6, A-sharp6, B6

The intent of this guideline is to restrict the amount of altissimo notes the composers used in a piece, therefore restricting the range. Three pieces realized the altissimo musical range guideline in their compositions: *Riparian: ...swaying, wooden scars...*: and *Birds of Paradise*. The highest note in *Riparian* is G-sharp6, and, it occurs in measure 34. *...swaying, wooden scars...* tops out its range on G-sharp6, too, while *Birds of Paradise*'s highest note is G6. All three of these pieces follow the guideline by not using notes above B6.

Altissimo Musical Guideline: Volume- Use dynamics *mf* and louder.

The intent of this guideline is to ensure the composer uses a suitable dynamic level for a saxophonist that is new to altissimo, to produce an altissimo note with good tone and pitch. It is easier for younger the saxophonist to play altissimo at a louder dynamic level when first learning to produce the technique. One piece used this guideline, *Riparian* pairs altissimo notes with *mf* or *f* dynamic levels. The *mf* occurs in measure 34 during a G-sharp6 while the *f* occurs in measure 40 during a G6. These dynamic levels make altissimo production a little easier for the saxophonist.

Altissimo Musical Guideline: Use octave intervals that include an altissimo note.

The intent of this guideline is to help the composer create musical events that allow the saxophonist to tune the altissimo notes by first referencing the lower octave. This guideline realized in the piece will provide the saxophonist chance to develop their physical acoustic memory, and to use their aural skills to play the altissimo note in tune with the note preceding it. One piece realized this guideline; in measure 34 of *Riparian* there is an octave interval that includes an altissimo note, G-sharp6. See Figure 1 below.

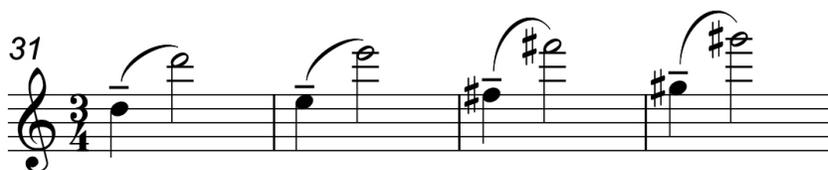


Figure 1. Kathryn Koopman, *Riparian*, mm. 31-34

This octave leap to G-sharp3 will help guide the student to playing the altissimo note in tune with the preceding G-sharp2.

Altissimo Musical Guideline: Lead slow moving melodic lines into the altissimo range.

The intent of this guideline is to ensure the composer provides extra time in the music for the saxophonist to change fingerings and make necessary embouchure adjustments to produce an altissimo note. Altissimo fingerings can be difficult to learn so extra time can be helpful when moving from notes within the normal range to notes within the altissimo range. Two pieces realized this guideline: *Riparian*, and *Birds of Paradise*.

Riparian has two examples of this guideline realized. The first occurrence is in measures 39 and 40 where the melody leads to an altissimo G-sharp6 and G6. The tempo at the beginning of the example is quarter note = 73, but going into measure 40, a *rallentando* slows the tempo to quarter note = 66. The *rallentando* allows the saxophonist to broaden time while adjusting their

oral cavity for the altissimo G-sharp6 at the end of measure 39 and G6 in measure 40. See the bottom staff in Figure 2 below.

Figure 2. Kathryn Koopman, *Riparian*, mm. 37-40

In *Riparian*, the second occurrence of a slow-moving melodic line into altissimo is in measures 79 and 80. The melody leads to G6. The lengths of notes in the melody are half notes, which gives enough time to adjust oral cavity and prepare to change fingerings. See the bottom line in Figure 3 below.

Figure 3. Kathryn Koopman, *Riparian*, mm. 79-80

In *Birds of Paradise*, the melodic line leads into altissimo in measure 79. The melody leads to G just like in *Riparian*. The note preceding the G is a half note, which allows for enough time to adjust oral cavity and prepare to change fingerings. See Figure 4 below.

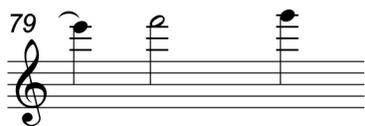


Figure 4. Samuel Lipman, *Birds of Paradise*, “Love Denied,” m. 79

These musical guidelines ensure the composer created adequate time for the saxophonists to change fingers for complicated and new fingerings required to produce altissimo notes within their pieces. They also restrict the range of notes available to a select few (G6, G-sharp6, A6, A-sharp6, B6), ensure a suitable dynamic level for producing an altissimo note with good tone, intonation, and create musical events that allow the saxophonist to tune the altissimo notes with the lower octave. These guidelines when realized in the music will aid in the development of physical-acoustic memory when performed by the saxophonist.

Slap Tongue

There are no method books devoted entirely to slap tongue technique but there are authors that include a chapter about the technique in their publication. I found the following books helpful for creating my slap tongue musical guidelines. Netti and Weiss discuss practice techniques for learning to slap tongue.¹⁴ In *Paradigms I, 10 Graded Compositions Using Contemporary Techniques*, Ronald L. Caravan includes slap tongue in one of his compositions.¹⁵ In Nathan Nabb’s chapter about slap tongue he includes steps to learn slap tongue, and exercises to develop the technique.¹⁶

Due to the difficulty of switching between slap tongue and regular articulation, I developed the following musical guidelines for the composers to use in their compositions:

¹⁴ Weiss, 149.

¹⁵ Caravan, *Paradigms* 15-16.

¹⁶ Nabb, Nathan. *The Contemporary Saxophonist: A Pedagogical and Historical Perspective*, diss. Northwestern University, Evanston, IL, 2008. p. 8-21.

- Isolate slap-tongued notes from all other types of notes.
- Gradually decrease space between slap-tongued notes and regular notes.

Slap tongue musical guideline: Isolate slap-tongued notes from all other types of notes.

The intent of this guideline was to ensure the composer created opportunity to execute slap-tongued notes without having to worry about regular articulation in their piece. Four pieces realized this guideline in their compositions: *...swaying*, *wooden scars...*, *Dolphin Catches Stingray*, *Ricochet*, and *Fledglings*.

...swaying, *wooden scars...* includes isolated slap-tongued notes from measures 1 to 10 in both parts. Slap-tongued notes are consistently grouped together with rests or air sounds surrounding them. Whether surrounded by rests or air sound, the slap-tongued notes are not surrounded by a musical event that involves the tongue. This is to isolate the slap-tongued notes from normal notes that would involve the tongue. See Figure 5 on the following page.

Dolphin Catches Stingray utilizes this guideline in the section titled “Dolphin.” Every note within this 44-measure section is slap-tongued. This continuity in articulation allows the saxophonist to gain experience properly executing a slap tongue without having to go back and forth between slaps and normal articulation. See Figure 6 on the following page.

Ricochet includes this guideline in the section titled “Giocoso; quasi tempo primo ma piu mosso and funky (Hommage a Gyorgy Ligeti).” Just like in *Dolphin Catches Stingray*, there is a whole section where the only articulation is slap tongue. Once again, this continuity in articulation allows the saxophonist to focus on perfecting their slap tongue technique without having to focus on regular articulation. See Figure 7 on page 22.

1 slap + air sound p p mf p mf p mf p

5 mf p mf n p mf n

8 pppp mf mp mp pppp pp n mp mf mp 3

Figure 5. David Vess, *...swaying, wooden scars...*, mm. 1-10

1 + + + + + + + + + + Voice

10 + + + + + + + + + + Voice

Figure 6. Shawna Pennock, *Dolphin Catches Stingray*, "Dolphin," mm. 1-18

15
178 *Very loud slap,
but with not much tone*

182

185

ff

pp

ff

Figure 7. Alan Theisen, *Ricochet*, mm. 178-190

Fledglings includes this guideline in movement one, titled “Raucous.” There is only one instance of slap tongue in “Raucous” and it occurs in measure 24. It is an open slap tongue with rests surrounding it. This is another instance of slap-tongued notes being isolated away from all other articulations so the saxophonist can focus on production of the technique. See Figure 8 below.

24

open
slap

Figure 8. Joel Love, *Fledglings*, “Raucous,” m. 24

Slap tongue musical guideline: Gradually decrease space between slap-tongued notes and regular notes.

The intent of this guideline was to ensure the composer had created moments that push the saxophonist to advance further in their technique by increasing the difficulty level of the slap tongue gradually throughout the piece. The saxophonist will continue to gain speed in switching

between regular notes and slap-tongued notes when this guideline is utilized. Two pieces realized this guideline: *Dolphin Catches Stingray*, and *Ricochet*.

In the “Dolphin” section of *Dolphin Catches Stingray* there are completely isolated sections of slap tongue. In the following section, “Dolphin Meets Stingray,” the slap-tongued note is surrounded by other articulations. For example, measure 11 of the section “Dolphin Meets Stingray” features a slap-tongued note surrounded by a multiphonic, and a quarter-tone half note. There is no rest surrounding the slap-tongued note. During this section of the piece the saxophonist has very little time to set up for the technique. For comparison, see Figure 5 above for the beginning of section “Dolphin” and Figure 9 below for an excerpt from section “Dolphin Meets Stingray.”



Figure 9. Shawna Pennock, *Dolphin Catches Stingray*, “Dolphin Meets Stingray,” mm. 10-12

Ricochet also moves from a completely isolated section of slap-tongued notes into a section of slap-tongued notes surrounded by normal articulated notes. Once again there is no time to set up for the technique as there was previously in the piece. The saxophonist must be able to switch between regular and slap-tongued notes with ease. See Figure 10 below.



Figure 10. Alan Theisen, *Ricochet*, mm. 258-260

These slap tongue musical guidelines ensure the composer created opportunities for the gradual acclimation of switching between slap tongue and regular articulation as well as time to prepare for the open or pitched slap tongue within their piece. Like the physical requirements of altissimo, the physical requirements to produce a slap tongue are difficult and foreign to a saxophonist that is new to the technique and requires more time to produce the movement correctly in the beginning of learning. This is why repetition of the slap tongue is preferred over switching back and forth between normal articulation and slap tongue. This allows the saxophonist to practice the physical production uninterrupted and repeatedly within the piece.

Microtones

I consulted two sources when creating the microtone musical guidelines. Netti and Weiss offer full fingering charts for soprano, alto, tenor, and baritone saxophones as well as a list of practice tips.¹⁷ There is also a lengthy description by Caravan on how important the performer's interval discrimination is while learning microtones.

The most important consideration is the refinement of the performer's interval discrimination. One must be able to hear and imagine the interval of a quarter tone accurately enough to be able to adjust the tone production for intonation purposes. The player will have to be prepared to temper pitch frequently.¹⁸

It is very important for performers to focus on interval discrimination when learning to play microtonal music. Deviating away from standard microtonal fingerings may be necessary based on the intonation of the individual's instrument. If a performer lacks this ability to hear the correct interval, they will be unable to choose the correct fingering and will end up playing the incorrect intonation for a microtone. I gave the following microtonal musical guidelines to the composers to utilize in their compositions:

¹⁷ Weiss, 17-32.

¹⁸ Caravan, Ronald. *Preliminary Exercises & Etudes In Contemporary Techniques for Saxophone*. Medfield, PA: Dorn Publications. 1980, p. 9.

- Use microtones that reside within a half-step from the previous normal tone and return to previous normal tone.
- Use microtones in a recurring pattern.

Microtone musical guideline: Use microtones that reside within the interval of a half-step from the previous normal tone and return to previous normal tone following the microtone.

The first guideline will help ensure the composers create music where the saxophonist can easily discern the difference between microtones and regular notes. By keeping the microtone within a half-step from the previous note the saxophonist will be more easily able to hear the different interval created between the previous note and the microtone. Conversely, if the microtone was a M7 away from the previous note, it may not be as easily discernible to the saxophonist because its reference pitch is further away. By keeping the intervals close the saxophonist will more easily be able to discern the different pitches microtonal music can explore. Two of the pieces realized this technique: *Dolphin Catches Stingray* and *Fledglings*.

Dolphin Catches Stingray uses a variation of this guideline but due to the switching of roles between the microtone and normal note. Since the tonic of the piece is already a microtonal note, the normal note, which follows is within a half-step of the microtonal note. Even though the roles of normal and microtonal notes are reversed, the intent is still the same, and the ability to adjust to different fingerings can still be achieved. In measure 18, A- $\frac{1}{4}$ sharp is followed by A, which returns to A- $\frac{1}{4}$ sharp immediately. See Figure 11 below. This three-note pattern also occurs in “Dolphin,” measures 22, 28, and 34. See Figure 11 below.



Figure 11. Shawna Pennock, *Dolphin Catches Stingray*, “Dolphin,” mm. 18-20

In measure 37 A- $\frac{1}{4}$ sharp is followed by B, which then moves to A before returning to the original note A- $\frac{1}{4}$ sharp. This four-note fragment is a slight exception to the rule due to the tonic not returning immediately after the first departure note. This example shows two notes in-between the original note. However, they are within the interval size of a half step from the original A- $\frac{1}{4}$ sharp. See Figure 12 below.



Figure 12. Shawna Pennock, *Dolphin Catches Stingray*, “Dolphin,” mm. 37-38

The movement “Raucous” from the piece *Fledglings* also uses side-stepping with some of its microtones. In measure 7 the main note is F but is stepped away to F- $\frac{1}{4}$ sharp and F- $\frac{1}{4}$ flat, but always returns to F. This allows the saxophonist to more easily solidify the new fingerings for F- $\frac{1}{4}$ sharp and F- $\frac{1}{4}$ flat easier. See Figure 13 below.



Figure 13. Joel Love, *Fledglings*, “Raucous,” m. 7

This side-stepping also takes place in measures 50 to 55 in the same movement of *Fledglings* as the previous example. Each measure begins on a normal note and side steps to a microtonal note before returning to the normal note again. See Figure 14 below.

The image shows two staves of musical notation. The first staff, labeled '50', contains four measures of music in 4/4 time. It features a sequence of notes with microtones, indicated by small vertical lines above the note heads. The second staff, labeled '53', contains four measures of music. It begins with a dynamic marking 'ff' and ends with a 'ff' marking accompanied by a hairpin symbol. The music continues the microtonal pattern from the first staff.

Figure 14. Joel Love, *Fledglings*, “Raucous,” mm. 50-55

Microtone musical guideline: Use microtones in a recurring pattern.

The intent of this guideline was to ensure the composers used microtones in a recurring pattern where the saxophonist can easily discern the difference between microtones and regular notes. This repetitive pattern also facilitates the learning of microtonal fingerings by putting the microtonal note next to the note in which the new fingering is based. *Fledglings* used microtones in a recurring pattern in the same section as mentioned in example 14, measures 49 to 54. The pattern is initiated in measure 49 with the F-flat, F- $\frac{1}{4}$ flat, F-flat, and F-flat an octave higher. This four-note pattern begins to rise by a half step in measure 50 and continues until measure 54. See Figure 14 above.

When creating these musical guidelines, I focused on using interval discrimination to aid in the learning of microtones within the pieces. The first and second guidelines mentioned above will help ensure the composers created music with microtones in it that would be more easily discernably different to the ears of the saxophonist. By keeping the microtone within a half-step from the previous note the saxophonist will be more easily able to hear the different interval created between the previous note and the microtone.

Multiphonics

In this project the term multiphonic is limited to designating moments when the resonance of the air column is altered so that two or more tones are rendered rather than just one. The other way of producing multiple tones simultaneously is discussed in the extended technique section “vocalizing.” The multiphonics in this project were produced by manipulating embouchure, oral cavity, air speed, or using unconventional fingerings.

There is a plethora of sources discussing multiphonics. Some resources that offer exercises to aid in beginning acquisition of the technique that I found helpful are Ronald Caravan’s *Preliminary Exercises & Etudes in Contemporary Techniques for Saxophone*,¹⁹ and Nabb’s dissertation. Caravan offers eleven pages of exercises and four etudes to begin study of multiphonics.²⁰ Nabb discusses the pitch-separation method of learning a multiphonic.²¹ This method is simply isolating each individual pitch by adjusting one’s embouchure, oral cavity, and air speed, while holding down the fingering for the full multiphonic.

Due to the delicate and individual needs from the embouchure, oral cavity, air support, and fingerings to produce a multiphonic, the following musical guidelines were generated for the composers to utilize:

- Use multiphonics connected to threshold tones.²²
- Use multiphonics by first producing the fundamental pitch. Then attempt to produce the remaining pitches by adjusting the air and tongue position accordingly.

¹⁹ Caravan.

²⁰ Caravan, 25-36, 44-47.

²¹ Nabb, 100-101.

²² Threshold tones are “partials of the multiphonic with which one can enter or exit that multiphonic.” (Weiss, 66) They are the tones that can be isolated while holding down the fingering for the multiphonic.

Multiphonic musical guideline: Use multiphonics preceded by threshold tones.

This guideline builds upon the pitch-separation method. This guideline ensures the composer produces musical events in their piece that will help a saxophonist learn to correctly produce a multiphonic. As the saxophonist isolates the threshold tone and then moves into the multiphonic, they gain physical acoustic memory, as well as flexibility of the embouchure. Every multiphonic requires a very specific embouchure and oral cavity. Isolating the threshold tone and moving into the multiphonic will help them gain a sense of the correct embouchure position to produce the multiphonic. Three pieces realized this guideline: *...swaying, wooden scars...*, *Birds of Paradise*, and *Dolphin Catches Stingray*.

...swaying, wooden scars... uses a threshold tone to lead to the multiphonic in measure 139 in Alto 1. The C- $\frac{1}{4}$ flat is slurred into the multiphonic in measure 140. To achieve the C- $\frac{1}{4}$ flat while holding down the fingering for the full multiphonic requires manipulation of the oral cavity and embouchure. The saxophonist learns how to control the multiphonic by achieving a threshold tone. See Figure 15 below.



Figure 15. David Vess, *...swaying, wooden scars...*, mm. 139-140

Birds of Paradise utilizes threshold tones in a connected chain of threshold tones and multiphonics. This chain happens in measure 52 of the first movement “Mating Dance.” Here the same multiphonic is preceded by two different threshold tones. The first threshold tone is D- $\frac{1}{8}$ sharp, and the second time, the threshold tone is a C. A different oral cavity and embouchure is necessary to achieve these two threshold tones successfully. Then, for the saxophonist to move

from the threshold tone to the multiphonic forces them to gain familiarity and a better understanding of the multiphonic. See Figure 16 below.



Figure 16. Samuel Lipman, *Birds of Paradise*, “Mating Dance,” m. 52

Dolphin Catches Stingray connects threshold tones to their respective multiphonics within section “Stingray.” In measures 7 to 8, threshold tone, C- $\frac{1}{4}$ sharp, leads to the multiphonic and also follows the multiphonic. Once again, the saxophonist will gain flexibility of embouchure through isolating the threshold tone of the multiphonic in measure 8. (In measures 14 to 15 the same threshold tone leads into the same multiphonic that is in measures 7-8.) See Figure 17 below.



Figure 17. Shawna Pennock, *Dolphin Catches Stingray*, “Stingray,” mm. 7-8

Multiphonic musical guideline: Use multiphonics by first producing the fundamental pitch. Then attempt to produce the remaining pitches by adjusting the air and tongue position accordingly.

The second guideline follows the same idea of isolating a pitch and then moving one’s embouchure to the correct position to produce the multiphonic. This guideline ensures the composer will create musical events that will help the saxophonist gain skill in producing multiphonics. The saxophonist must adjust their embouchure and oral cavity very minutely in

order for the full multiphonic to develop successfully from the fundamental pitch. Learning how to do these minute adjustments will give the saxophonist a greater skill in producing these multiphonics.

In the first movement of *Fledglings*, “Raucous,” this guideline was utilized in measure 42. The saxophonist begins by playing only the bottom tone E- $\frac{1}{8}$ flat and gradually adds the other 2 tones of the multiphonic, E- $\frac{1}{8}$ sharp, and B- $\frac{1}{8}$ sharp. See Figure 18 below.

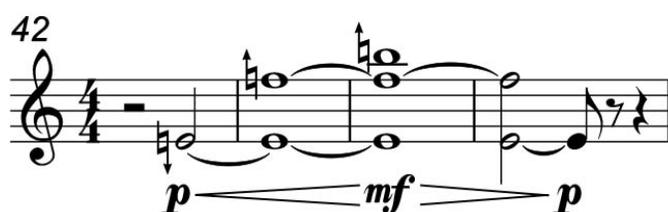


Figure 18. Joel Love, *Fledglings*, “Raucous,” mm 42-45

In *Fledglings* “Alone in the Winter,” this guideline was realized in measures 2-4, 5-7, 25, 33, 38-40, and 54-57. Measures 2-4, 38-40, and 54-57 all have the same multiphonic which can be seen in the example below. The C- $\frac{1}{4}$ sharp begins to sound while the (E-sharp) $\frac{1}{8}$ flat and the D- $\frac{1}{4}$ sharp gradually begin to sound as well before diminishing away to leave only the C- $\frac{1}{4}$ sharp. See Figure 19 below.



Figure 19. Joel Love, *Fledglings*, “Alone in the Winter,” mm. 2-4

Measures 5-6 have a multiphonic where the B- $\frac{1}{4}$ sharp gradually adds an A-flat. See Figure 20 below.

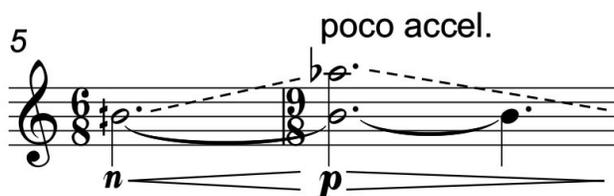


Figure 20. Joel Love, *Fledglings*, “Alone in the Winter,” mm. 5-6

Measure 25 has a multiphonic that begins on an A- $\frac{1}{8}$ sharp and gradually adds the (A-flat) $\frac{1}{8}$ flat.

See Figure 21 below.



Figure 21. Joel Love, *Fledglings*, “Alone in the Winter,” m. 25

Measures 33-37 have a multiphonic that begins on the bottom tone E- $\frac{1}{8}$ flat and gradually adds the second tone, F- $\frac{1}{8}$ sharp. This multiphonic also occurs in movement “A Distant Memory” measure 55. See Figure 22 below.

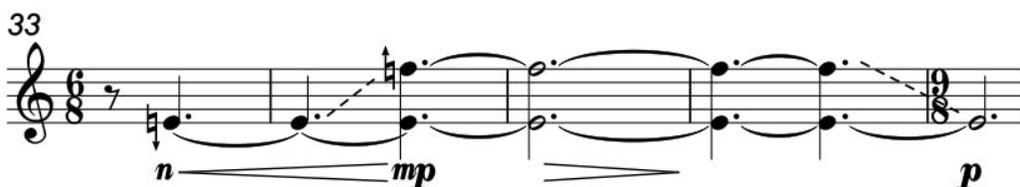


Figure 22. Joel Love, *Fledglings*, “Alone in the Winter,” mm. 33-37

In *Fledglings* “A Distant Memory,” this guideline is realized in measures 26-27 and 41.

In measure 26-27 the A- $\frac{1}{8}$ sharp begins to sound and gradually the (B-flat) $\frac{1}{8}$ flat sounds as well before receding back to only the A- $\frac{1}{8}$ sharp sounding. This multiphonic also occurs in measure 53 of this movement. See Figure 23 below.



Figure 23. Joel Love, *Fledglings*, “A Distant Memory,” mm. 26-27

In measure 41, the A-1/8 sharp sounds before the C and B-1/8 flat simultaneously begin to sound. See Figure 24 below.

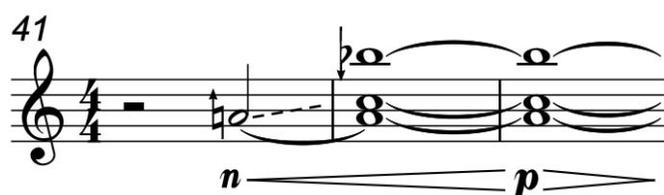


Figure 24. Joel Love, *Fledglings*, “A Distant Memory,” mm. 41-43

These guidelines help to ensure the composers used the multiphonics to create musical events within the music to learn proper production of the multiphonic. The first and second guidelines build upon the pitch separation method. By isolating the threshold tone or the fundamental pitch before moving into the multiphonic, the saxophonist develops their physical acoustic memory, as well as flexibility of the embouchure. Every multiphonic requires a very specific embouchure and oral cavity. Isolating the threshold tone and moving into the multiphonic will help them gain a sense of the correct position to produce the multiphonic.

Vocalizing

Netti and Weiss note that the sound of singing while playing resembles more of a buzzing in the throat and head area.²³ They also give practice tips for the technique and examples of how previous composers have notated the technique in their own pieces. Caravan also includes tips,

²³ Weiss, 182.

and exercises for learning how to vocalize.²⁴ Nabb offers “four simple steps” to learn to vocalize in his dissertation and includes a couple of exercises to develop the technique.²⁵ Based on these sources, I gave the following vocalizing musical guidelines to the composers to utilize in their compositions:

- Use solo voice to reproduce same pitch as solo saxophone.
- Use a single voice pitch with many different pitches on saxophone.
- Use parallel motion between voice and saxophone.

Vocalizing musical guideline: Use solo voice to reproduce same pitch as solo saxophone.

The first guideline ensures the composer includes a couple of moments in the piece for the saxophonist to get comfortable using just their voice to reproduce a same pitch as solo saxophone before using their voice at the same time as the saxophone. The intent of this guideline is to help the saxophonist improve their vocal production abilities before they begin vocalizing at the same time as playing the saxophone. One piece utilized this guideline: *acoustic duality (à la Descartes)*.

In *acoustic duality (à la Descartes)*, this guideline is realized frequently in Sections A and B. At first, the voice repeats one note. This occurs in Section A, systems 1, 2, 4, and 5. In Figure 25 below, from Section A, system 1, the A played in the saxophone is vocalized for one and one-half beats before returning to being played on the saxophone. See Figure 25 below.



Figure 25. Corey Dundee, *acoustic duality (à la Descartes)*, Section A, system 1

²⁴ Caravan, 40.

²⁵ Nabb, 97-99.

The voice responds to small groups of up to five saxophone tones in section A: system 3, Section B: systems 1, 2, 3, 4, 5, and 6. The voice responds to groups of two notes in Section A: system 3 and Section B: systems 1 and 5. An example will be given from Section A: system 3 with C-sharp and D-sharp on the saxophone repeated by vocalizing after an eighth rest in a triplet. See Figure 26 below.



Figure 26. Corey Dundee, *acoustic duality (à la Descartes)*, Section A, system 3

The voice responds to groups of three notes in Section B: system 1, 3, and 5-6. System 1, B, B-flat, C are vocalized after they are played on the saxophone. See Figure 27 below.



Figure 27. Corey Dundee, *acoustic duality (à la Descartes)*, Section B, system 1

The voice responds to groups of four notes in Section B: system 3. In section B: system 3, the notes C-sharp, A, F, and B are vocalized after being played on the saxophone. See Figure 28 below.



Figure 28. Corey Dundee, *acoustic duality (à la Descartes)*, Section B, system 3

Vocalizing music guideline: Use parallel motion between voice and saxophone.

The third guideline ensures the composer includes passages where the voice and saxophone move together. The intent behind this guideline is that the saxophone line will help the saxophonist guide their voice in tune along with the saxophone line. This will help the saxophonist gain flexibility in vocalizing. This guideline was utilized in *acoustic duality (a la Descartes)* in Section C. Parallel motion occurs in intervals of an octave, perfect fifth, and major third. Parallel motion in octave intervals occurs in Section C: system 1. In this figure the vocalized notes are the higher note in the interval. See Figure 31 below.

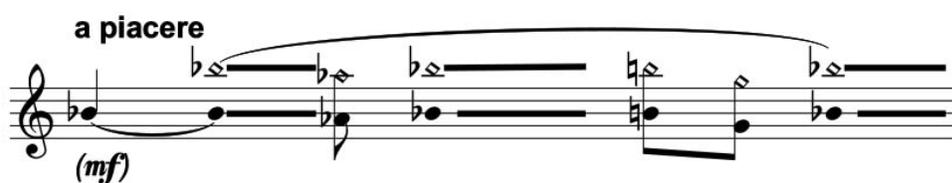


Figure 31. Corey Dundee, *acoustic duality (à la Descartes)*, Section C, system 1

Parallel motion in intervals of a fifth occur in Section C: system 3. In this example the vocalized notes are the lower note in the interval. See Figure 32 below.



Figure 32. Corey Dundee, *acoustic duality (à la Descartes)*, Section C, system 3

Parallel motion in intervals of a third occur in Section C: system 4. In this example the vocalized notes are the higher notes in the interval. See Figure 33 below.

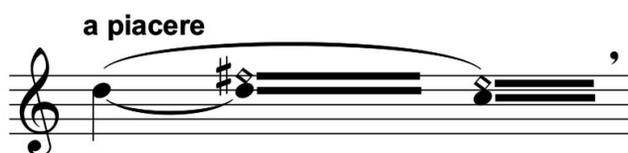


Figure 33. Corey Dundee, *acoustic duality (à la Descartes)*, Section C, system 4

Having different intervals between notes moving in parallel motion helps the saxophonist learn to feel the difference in their embouchure between different intervals. Each interval feels and sounds different and it is important for the saxophonist learning to vocalize to internalize these differences to develop skill in producing the technique. For example, vocalizing and playing a perfect fifth will sound very calm with no beating of the sound waves as it is a perfect interval. It will also feel very easy to control because the reed will vibrate normally. However, vocalizing and playing a minor seventh will not sound or feel as calm as a perfect fifth. There will be beating of the sound waves and the reed will vibrate more violently due to this beating. This violent vibration can be difficult for the embouchure to control and feels very different from the normal vibration the embouchure experiences from the reed during a perfect fifth. Saxophonists will also feel a difference between vocalizing the top note, or the bottom note of an interval. Generally, vocalizing the top note while the saxophone generates the bottom notes is easier.

These guidelines helped to ensure the composers included step-by-step musical events that allow the saxophonist to gain skill in vocalizing. The first guideline ensures the composers included a couple of moments for the saxophonist to get comfortable using just their voice before using their voice at the same time as playing the saxophone. The second guideline ensures the composer included passages where the voice is still on one note while playing notes on the saxophone. The third guideline ensures the composer includes passages where the voice and

saxophone move together. These guidelines all have the intent to not let the composer overwhelm the saxophonist with intense two-part harmonies in their music but provide slow moving, skill-building passages that will enhance the saxophonist's vocalizing abilities.

Conclusion

As intended, this commissioning and recording project provides seven new works for saxophone focused on the five extended techniques of altissimo, slap tongue, microtones, multiphonics, and vocalizing. During the commissioning process, the composers were given musical guidelines to follow to incorporate their choice of the respective extended techniques into their compositions. These guidelines allowed some degree of control over how the extended techniques were utilized in each piece, although control was not placed upon the overall level of difficulty of the piece nor on the specific extended techniques they were required to use. This resulted in seven pieces of varying degrees of difficulty, each using different extended techniques in unique ways, and all created with the pedagogical purpose of assisting undergraduate and graduate saxophonists in learning and successfully executing the skill or outcome intended by each guideline. The CD and accompanying document form a valuable resource for any saxophone teacher seeking new works for their students that focus on extended techniques and any saxophone student wishing to gain skill learning and properly executing one or more of these five extended techniques. The CD also features a piece written for each member of the standard saxophone family – soprano, alto, tenor, baritone.

BIBLIOGRAPHY

- Ashton, Don. "In The Twentieth Century" In *The Cambridge Companion to the Saxophone*, edited by Richard Ingham. 20 - 36. New York: Cambridge University Press, 1998.
- Caravan, Ronald. *Paradigms I*. Medfield, PA: Dorn Publications, 1976.
- _____. *Paradigms II*. Medfield, PA: Dorn Publications, 1988.
- _____. *Preliminary Exercises & Etudes in Contemporary Techniques for Saxophone*. Medfield, PA: Dorn Publications, 1980.
- Charbonneau, Christopher. *A Recording and Commissioning Project Aimed at Developing New Repertoire for Pre-College and Early-College Saxophonists Focused on the Early Applications of Extended Techniques*, diss. Arizona State University, Tempe, AZ, 2015.
- Cottrell, Stephen. *The Saxophone*. The Yale Musical Instrument Series. London: Yale University Press, 2012.
- Delangle, Claude and Jean-Denis Michat. "The Contemporary Saxophone." In *The Cambridge Companion to the Saxophone*, translated by Peter Nichols. edited by Richard Ingham. 161 - 185. New York: Cambridge University Press, 1998.
- Lang, Rosemary. *Beginning Studies in the Altissimo Register*. Indianapolis: Lang Music Publications, 1988.
- Nabb, Nathan. *The Contemporary Saxophonist: A Pedagogical and Historical Perspective*, diss. Northwestern University, Evanston, IL, 2008.
- Rousseau, Eugene. *Saxophone High Tones*. Saint Louis: MMB Music, Inc., 2002.
- Sinta, Donald J. and Denise C. Dabney. *Voicing: An Approach to the Saxophone's Third Register*. Radford, VA: Sintafest, 1992.
- Teal, Larry. *The Art of Saxophone Playing*. Secaucus, NJ: Summy-Bichard, 1963.
- Weiss, Marcus and Giorgio Netti. *The Techniques of Saxophone Playing*. Kassel, Germany: Barenreiter, 2010.