

GIANINI, LUCAS NUNES. D.M.A. Integrating the Extended Clarinet: An Exploratory Process for Incorporating Extended Techniques Into Traditional Clarinet Pedagogy. (2022)  
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As the clarinet has evolved, the instrument's capabilities have expanded into new and creative areas of technical, musical, and sonic expression. Modern performers refer to these novel, unconventional uses of the instrument as "extended techniques." These "extended" techniques on the clarinet have been a hot topic of discussion for decades. But even as the wide palette of sounds produced by these techniques has garnered increasing attention from composers, clarinetists themselves often approach these techniques with skepticism.

Performers who have embraced these sounds, however, often claim that the learning of these techniques has not only enabled their ability to play modern works, but also strengthened their fundamentals and widened their options in how they choose to perform standard repertoire. Although we profess modern ideals, our pedagogical approach still relies on the traditions started by pedagogues like Baermann and Klosé, which date to the 18th and 19th centuries respectively. And while traditional teaching methods certainly have their place and need not be replaced, extended techniques provide new tools for teachers who are looking for novel ways to thoroughly and effectively identify and diagnose their students' performance issues.

This study explores some of the pedagogical possibilities inherent within a sampling of clarinet extended techniques. How can these techniques be utilized to strengthen fundamental skills on the clarinet? What are ways in which extended techniques can be applied to more traditional repertoire as a practice tool? How does a working knowledge of modern conventions enhance a student's overall musicianship? This document conducts a review of currently available pedagogical material on the subject, instructs on possible uses for extended techniques for fundamentals practice, and provides a sample guide on how to use these techniques and apply

them to standard works such as Carl Maria von Weber's *Concertino in E-Flat Major, Op. 26* and Johannes Brahms' *Sonata No. 2*. Also included are full transcripts of interviews with renowned clarinet pedagogues Gregory Oakes and Eric Mandat, both of whom are experts on the clarinet's wide range of extended techniques. Specific techniques discussed are: glissando, portamento, and pitch bending; the manipulation of partials and multiphonics; microtones and quarter-tones; flutter tongue; growling and singing while playing; double tongue; slap tongue; and circular breathing. With an open mind and an eye toward exploration, clarinetists everywhere can see their performance and pedagogical practices enhanced by an honest engagement with the instrument's vast network of extended techniques.

INTEGRATING THE EXTENDED CLARINET: AN EXPLORATORY  
PROCESS FOR INCORPORATING EXTENDED TECHNIQUES  
INTO TRADITIONAL CLARINET PEDAGOGY

by

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Approved by

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## DEDICATION

To my parents, Tereza and Martin, who have supported me from the very beginning and given me everything they have without reservation, thank you! And to my girlfriend, Kayla Hall, who has put up with me making weird sounds on the clarinet for well over a decade now, and last, but not least, our dog Fidgett, who occasionally joins in on my practice sessions by singing along or by shoving his head into a bass clarinet bell.

APPROVAL PAGE

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I would also like to thank all the clarinetists who have inspired me over the years to learn as much as possible about the world of extended techniques. A special thanks goes to Eric Mandat and Gregory Oakes, who have generously given their time and wisdom to the interviews in the research portion of this document. Mandat and Oakes have been two of the most influential clarinetists in my own journey and I appreciate everything they do for the world of clarinet.

## TABLE OF CONTENTS

LIST OF FIGURES .....	vii
CHAPTER I: INTRODUCTION.....	1
CHAPTER II: LITERATURE REVIEW- EXTENDED TECHNIQUES IN CLARINET PEDAGOGY.....	6
CHAPTER III: ARGUMENT FOR THE INTEGRATION OF EXTENDED TECHNIQUES INTO CLARINET PEDAGOGY .....	13
CHAPTER IV: A FUNDAMENTAL UNDERSTANDING OF CLARINET ACOUSTICS, TONE, AND TIMBRE .....	17
Clarinet Physics and Acoustics .....	17
Differences Between Tone and Timbre and How We Perceive Them .....	20
CHAPTER V: USING INDIVIDUAL EXTENDED TECHNIQUES TO TEACH FUNDAMENTALS.....	23
Glissando, Portamento, and Pitch Bending.....	23
Embouchure and voicing flexibility .....	24
Smoothing out the break between clarion and altissimo register .....	25
Glissandi to learn voicing across large intervals .....	27
Manipulation of Partial and Multiphonics.....	28
Improvements to uneven sound and intonation across registers .....	29
Improved awareness of tongue position with the “harmonic glissando” .....	31
Finding effective voicing through partial manipulation.....	32
Improving the upper clarion and altissimo registers by removing “grunts,” especially when articulating .....	34
Tonal flexibility through multiphonics.....	38
Microtones and Quarter-Tones.....	40
Finger dexterity .....	41
Intonation Work.....	42
Color Variants and Changes in Response .....	45
Flutter Tongue .....	46
Air Speed, Voicing, and Embouchure Support .....	47

Extending the flutter tongue into the altissimo.....	49
Intensity of phrases and air support through full runs.....	49
Growling and Singing While Playing .....	52
Improvements to Air Support.....	52
Intonation Improvements Through Singing While Playing .....	53
Double Tongue .....	55
Improvements to single-tonguing lightness and tongue position.....	56
Tongue and finger coordination .....	57
Slap Tongue.....	58
Circular Breathing .....	59
CHAPTER VI: SUMMATION .....	61
BIBLIOGRAPHY.....	62
APPENDIX A: A LIST OF RESOURCES FOR LEARNING EXTENDED TECHNIQUES....	67
APPENDIX B: INTERVIEW WITH GREGORY OAKES.....	69
APPENDIX C: INTERVIEW WITH ERIC MANDAT.....	96



## LIST OF FIGURES

Figure 1. Pitch bending exercise #1 .....	24
Figure 2. Pitch bending exercise #2 .....	25
Figure 3. Mouthpiece pitch bending exercise .....	25
Figure 4. Altissimo to clarion pitch bending exercise .....	26
Figure 5. Opening line of John Ireland’s Fantasy Sonata .....	26
Figure 6. Portamento exercise for Fantasy-Sonata opening .....	27
Figure 7. Glissando exercise .....	28
Figure 8. “Bugling” exercise.....	30
Figure 9. "Harmonic glissando" exercise.....	31
Figure 10. Weber Concertino, mm. 38-53 .....	33
Figure 11. Partial manipulation exercise .....	33
Figure 12. Category 1 Multiphonic exercise for fixing “the grunt”.....	35
Figure 13. Weber Concertino, mm. 1-37 .....	36
Figure 14. Multiphonic exercise on clarion B-flat.....	37
Figure 15. Weber Concertino, mm. 73-95 .....	37
Figure 16. Using underblown multiphonics in context.....	38
Figure 17. Brahms Sonata No. 2, movement 1, mm. 22-38 .....	39
Figure 18. “The sag routine” exercise.....	39
Figure 19. GaudyBreak’em exercise #32.....	42
Figure 20. Quarter-tone intonation exercise .....	43
Figure 21. Selection from “Quarter-tone scale” exercise .....	43
Figure 22. G-quarter sharp major scale.....	44
Figure 23. Fingerings for C, C-quarter sharp, and C-slightly flat.....	45

Figure 24. Debussy Premiere Rhapsodie, m. 165 to first note of m. 168 .....	46
Figure 25. Flutter tonguing exercise .....	47
Figure 26. Weber Concertino, mm. 133-154 .....	48
Figure 27. Widor Introduction et Rondo, mm. 53-73 .....	50
Figure 28. Brahms Sonata No. 2, movement 4, mm. 42-55 .....	51
Figure 29. Rose 32 Etudes for Clarinet, opening line to Etude #4 .....	53
Figure 30. Singing while playing exercise #1.....	54
Figure 31. Singing while playing exercise #2.....	54
Figure 32. Double tonguing exercise.....	56
Figure 33. Weber Concertino, mm. 54-72 .....	58

## CHAPTER I: INTRODUCTION

*“In 2021, things that used to be ‘extended’ techniques are now ‘required’ techniques on the clarinet.”*

Robert Spring, DMA (Professor of Clarinet, Arizona State University).<sup>1</sup>

Throughout its history, the clarinet has been an instrument known for its wide dynamic and pitch range and its flexibility in tonal color. The instrument, and the music written for it, has changed significantly since its invention, but the pedagogy surrounding the instrument can sometimes seem stuck in the nineteenth century conservatory model. That is to say, the focus of clarinet education has been on techniques that emphasize orchestral and operatic styles of playing. Some of the hesitancy to evolve our teaching is rightfully due to the apparent success of traditional clarinet pedagogy; why change something that has worked?

The issue is this: over the last century, composers have shifted their compositional demands to focus on timbre and color as compositional elements.<sup>2</sup> As these elements have been explored by composers, the clarinet repertoire has evolved and now requires the performer to possess the ability to perform “extended techniques” such as pitch bending, multiphonics, double tonguing, and microtones. And yet, even with increased demand, extended techniques have remained a mystery to many for a variety of reasons (for example, most of these techniques are not typically found in audition lists for orchestral and military band career paths).

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<sup>1</sup> Andy Hudson et al, *Elements of Contemporary Clarinet Technique: New Etudes for a New Age* (Tecumseh, MI: Conway Publications, 2021), back cover.

<sup>2</sup> Gerald Farmer, *Multiphonics and Other Contemporary Clarinet Techniques* (Rochester, NY: Shall-u-mo Publications, 1982), 1.

The goal of this document is to provide a useful guide for the integration of these extended techniques into traditional clarinet pedagogy. By engaging with this document, performers and educators will have a resource demonstrating that these techniques have a practical purpose outside of simply being used in the context of contemporary music—although, this exploration may also lead them to consider more recent compositions for the clarinet. They may even discover new and effective methods of practicing music of any genre!

The skepticism with which some clarinet pedagogues approach extended techniques is possibly, at least in part, due to the perceived difficulty (real or otherwise) of performing these techniques—a byproduct of each technique's novelty and the extreme complexity that defined much of the clarinet music written from the 1940s through the 1980s when these techniques first came into vogue. The nature of our most common pedagogical repertoire also plays a part; many schools of music primarily focus on a conservatory-style education that prioritizes solo and ensemble music written before the mid-twentieth century—music that rarely utilizes extended techniques. And although new music is constantly being composed at such conservatories, some professors find themselves not engaging with this music due to the increasingly complex demands it places on them and their students.

Furthermore, teachers who are not familiar with extended techniques are far less likely to encourage their students to approach this style of music. Some even believe that these techniques might be harmful to their students' playing, an argument that this document will aim to refute. This can be traced to a lack of understanding of how these sounds are produced, and the tendency of those uninitiated to imagine them impossible with less-than-extreme effort. And while there have been several resources created to aid in the learning of these techniques, authors

of these resources have often chosen to treat extended techniques as something outside the scope of “normal” clarinet playing.

Perhaps one might speculate that the resistance to learning these techniques lies with the term “extended,” which implies something that is beyond the normal sphere of playing, something outside the standard range of sound. This, however, could not be further from the truth. As E. Michael Richards states, “all standard, basic techniques began as ‘new’ techniques, derived from extended techniques of practical performance problems (‘new’ becomes ‘old,’ at least in practice).”<sup>3</sup> The word should, perhaps, be taken more literally: these are literal *extensions* of basic clarinet techniques that exist in conjunction with, not aside from, standard playing techniques. We might even dub them “expanded techniques.”

Though rarely referred to as such, for years clarinetists have used select extended techniques as a form of working on fundamentals. Techniques like the manipulation of overtones on a specific fingering are introduced as a method to work on voicing and a way to eliminate an undertone (also known as a “grunt”). Successful performance of these techniques not only requires a strong set of fundamentals to begin with, but also *improves* those fundamentals as a byproduct of learning them. They can be used to work toward creative solutions—rather than utilizing brute force solutions, extended techniques allow us to work *around* problems.

This document makes no attempt to completely reinvent the tradition of clarinet pedagogy. Rather, the aim is to provide an additional set of tools that allows teachers and performers to diagnose and improve common clarinet playing issues through non-traditional means. These methods have been acquired through years of teaching and experimentation as well

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<sup>3</sup> E. Michael Richards, *The Clarinet of the Twenty-First Century* (Fairport, NY: E&K Pub, 1992), ii.

as discussions with some of the top performers and pedagogues of contemporary music in the United States (full transcripts of interviews with Gregory Oakes and Eric Mandat are provided in Appendix B and C). More specifically, this document provides exercises and examples of how a variety of extended techniques can be used to improve upon fundamentals and particular issues that plague performers as they explore the standard repertoire which would not otherwise engage those modern techniques.

The following extended techniques will be explored:

1. Glissando, portamento, and pitch bending
2. Manipulation of partials and multiphonics
3. Microtones and quarter-tones
4. Flutter tongue
5. Growling and singing while playing
6. Double tongue
7. Slap tongue
8. Circular Breathing

While a brief description of each technique will be discussed, this document will not provide a detailed account of how every single one of these techniques should be taught in the first place; there are already several reliable resources available for this purpose, a list of which is provided in Appendix A. Following the discussion of each technique is a sample guide for how the extended technique might be deployed to aid in the teaching of a piece from the standard repertoire. These pieces include, among others, Carl Maria von Weber's *Concertino in E-Flat Major, Op. 26* and Johannes Brahms' *Clarinet Sonata No. 2, Op. 120 No. 2*, both of which were chosen due to the variety of common performance challenges contained within them. Their

ubiquity and range of expression provides an apt laboratory in which to test the pedagogical application of each technique.

## CHAPTER II: LITERATURE REVIEW- EXTENDED TECHNIQUES IN CLARINET

### PEDAGOGY

Clarinet pedagogy, as it occurs today in the United States, can generally be traced back to teachers such as Heinrich Baermann and Hyacinthe Klosé in the eighteenth and nineteenth centuries, and to Daniel Bonade in the twentieth century. Baermann was highly influential as a proponent of the embouchure formed with the reed on the bottom lip; his method book, colloquially known as the “Baermann Method,” still enjoys much use today. It was for him that Weber wrote his concertos. Klosé was the teacher at the Paris Conservatoire and, together with Louis-Auguste Buffet, is credited with the development of the modern French clarinet; his method book is still highly revered as a teaching tool.

The Paris Conservatoire was originally designed as a training institution for opera musicians, with other orchestral styles becoming the focus as they were canonized. One of the students at the Conservatoire was Daniel Bonade, who studied with Cyrille Rose (a successor to Klosé and composer of several sets of widely popular etudes). After being appointed to the principal clarinet position at the Philadelphia Orchestra and moving to the United States, Bonade went on to teach many other influential performers and teachers, including Robert Marcellus, Mitchell Lurie, and David Weber.

The common link among these performers and pedagogues is their focus on orchestral performance. In this style of playing, especially with the advent of high-quality recording technology, homogeneity of tone, clarity, and focus are of paramount importance. This is possibly a reason why many students of these famed players have gone on to shy away from the



world of extended techniques; simply put, many of these sounds were often highly undesirable in the orchestral sphere and very rarely employed.

Most texts focus on the same principles: basic embouchure building, articulation, tongue and hand position, air support, and reeds/equipment maintenance. Some books, particularly older ones, also include repertoire recommendations and information on how to acquire personal copies of the music. The few books that do mention extended techniques tend to separate these effects as a completely separate (and often secondary) entity to those pillars which define more traditional clarinet playing.

With that said, many pedagogues over the years (and especially recently) have used some forms of extended techniques in their teaching without naming them for what they are. In her 1995 book *Clarinet Warm-Ups: Materials for the Contemporary Clarinetist*, Kelly Burke introduces a series of “harmonic exercises” as a part of a daily warm-up routine.<sup>4</sup> These involve the manipulation of overtones on given fingerings requiring some flexibility in voicing and embouchure. Burke also includes exercises for multiple articulation practice, quarter-tones, and multiphonics that are to be played as extensions of a typical warm-up routine.<sup>5</sup> While these later exercises are useful, they are treated as separate from the more standard warm-ups.

Larry Guy’s *Embouchure Building for Clarinetists: Book I* similarly includes exercises that utilize the manipulation of overtones and the production of multiphonics for the purpose of establishing command of the voicing. Guy, however, only introduces these exercises as a means to eliminate “grunt” at the beginning of the sound.<sup>6</sup>

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<sup>4</sup> Kelly Burke, *Clarinet Warm-Ups: Materials for the Contemporary Clarinetist* (Medfield, MA: Dorn Publications, Inc., 1995), 23-24.

<sup>5</sup> *Ibid.*, 64-72.

<sup>6</sup> Larry Guy, *Embouchure Building for Clarinetists: Book I*, 3rd ed. (Stony Point, NY: Rivernote Press, 2001), 42-43.

In 1978, Paul Durshler published *The Altissimo Register: A Partial Approach*. This book provides fingering charts for altissimo and upper-altissimo notes in relation to their corresponding fundamental (chalumeau and throat tone register) and third partial (clarion register) fingerings. While not an extended technique *per-se*, this is a useful resource for understanding the relationship between different fingerings as a part of the clarinet's overtone series.

David Pino's *The Clarinet and Clarinet Playing* describes several concepts that can be improved through the aid of extended techniques (such as changes in tonal color or timbre),<sup>7</sup> but does not mention them as a tool for this. He does include multiple chapters on multiple-tonguing techniques, though he quickly shoots down the more orthodox idea of any sort of double tonguing that includes articulation not done directly on the reed.<sup>8</sup>

Michelle Gingras discusses the extended technique of growling in her 2011 book *More Clarinet Secrets: 100 Quick Tips for the Advanced Clarinetist*. In addition to providing a brief description of the technique and some resources for the improvement and contextual use of growling, Gingras offers some of the same exercises found later in this document, though she provides no specific explanation for their purpose.<sup>9</sup>

Even books that focus specifically on extended techniques tend to focus on them as something to be practiced in isolation from the standard practice routine. These types of books tend to come in two varieties: 1) compendiums for learning the techniques with composer resources, and 2) etudes for learning these techniques. One of the first such resources was Bruno

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<sup>7</sup> David Pino, *The Clarinet and Clarinet Playing* (New York: C. Scribner's Sons, 1983), 145.

<sup>8</sup> *Ibid.*, 91-105.

<sup>9</sup> Michèle Gingras, *More Clarinet Secrets: 100 Quick Tips for the Advanced Clarinetist* (Lanham, MD: Scarecrow Press), 25.

Bartolozzi's 1967 book *New Sounds for Woodwinds*, which includes instructions for many extended techniques for various woodwind instruments and provides multiphonic fingering suggestions.<sup>10</sup> Much of the information contained within this book is now considered to be outdated due to changes in notation practice and instrument manufacturing innovations,<sup>11</sup> but Bartolozzi's book paved the way for many modern composers (including Eric Mandat) to effectively and musically deploy these techniques in their compositions.<sup>12</sup>

The first comprehensive resource for extended clarinet techniques was Phillip Rehfeldt's *New Directions for Clarinet* (published in 1977 and revised in 1994). This book includes not only a detailed look at nearly every extended technique known for the clarinet, but also includes organized charts with fingerings for multiphonics and microtones. This remains one of the more extensive resources available for clarinet extended techniques to this day, though some of the information has become somewhat outdated thanks to changes in instrument manufacturing (modern bass clarinetists, in particular, have several issues with the multiphonic fingerings outlined in the book).

The next major resource to be published that is still widely available today was Ronald L. Caravan's *Preliminary Exercises & Etudes in Contemporary Techniques for Clarinet: Introductory material for the study of multiphonics, quarter tones, and timbre variation* in 1979. This book was one of the first to provide a series of etudes and exercises (which are still relevant today) designed to teach extended techniques. Each section of the book contains a brief

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<sup>10</sup> Amy M. Humberd, "A Pedagogical Approach for Incorporating Extended Techniques into the Undergraduate Clarinet Curriculum" (DM diss., The Florida State University, 2020), 3, ProQuest (27742921).

<sup>11</sup> *Ibid.*, 3.

<sup>12</sup> Eric Mandat, interview by author, September 26, 2022.

description of a technique and how to perform it, followed by several exercises and etudes that reinforce those ideas.

Gerald Farmer's 1982 *Multiphonics and Other Contemporary Clarinet Techniques* provides an in-depth look at multiphonics. An expansion of his doctoral dissertation, Farmer developed a comprehensive chart of multiphonics and multiphonic trills with various exercises designed to teach the technique. Farmer's book also includes a brief overview of nearly every other clarinet extended technique.

Yet another comprehensive resource is *The Clarinet of the Twenty-First Century* by E. Michael Richards, published in 1992. Similar to Rehfeldt's book, this includes a deep look at various extended techniques and how to perform them. The book is divided into sections that focus on single sounds, multiple sounds, effects, and electronic/synthetic effects.

A more recent addition, Andy Hudson's 2021 *Elements of Contemporary Clarinet Technique* provides performance-quality etudes (written by Roger Zare and Viet Cuong) that each focus on either a singular or a set of techniques; some etudes focus on standard techniques (such as chapters on breath control and slurs), while others focus on individual extended techniques. The final set of etudes combine various techniques in the book. The format of each chapter is modeled after a masterclass, with detailed performance notes for each etude in addition to methods to learn each extended technique. A bass clarinet-focused sequel to this book, *SPACE BASS: Advanced Explorations for Bass Clarinet*, is being prepared for publication as of this writing. Notably, Hudson's book presents extended techniques alongside more traditional techniques and presents them as two sides of the same coin.

Recently, there have also been a number of doctoral dissertations written on the subject of extended techniques. Some focus on a specific technique or piece of music and serve as

reference guides, such as Jack Liang's 2018 dissertation, *Clarinet Multiphonics: A Catalog and Analysis of Their Production Strategies*, which provides an in-depth look at the production of multiphonics through ultrasound imaging. Sarah Watts' 2015 dissertation, *Spectral Immersions: A Comprehensive Guide To The Theory And Practice Of Bass Clarinet Multiphonics*, deals specifically with multiphonics on the bass clarinet and provides the most comprehensive-to-date reference chart for these multiphonics.

Other dissertations focus on the creation of new music to expand the introduction-level repertoire of extended techniques. Examples of these include: Olivia Meadows (2019), *A Program of Study for 21<sup>st</sup> Century Clarinet Techniques Featuring Five New Compositions for Unaccompanied Clarinet*; Luke Ellard (2020), *Bridging the Gap: Introducing Extended Techniques and Contemporary Notation Through Newly Composed Etudes for Clarinet*; Rebecca Danard (2011), *Etudes in Performing Extended Techniques: Twelve Newly-Commissioned Canadian Works for Solo Clarinet*.

Some have chosen to create references to other resources or overall comprehensive resources on extended techniques. Examples include: Caitlin Beare's (2021), *Cultivating the Contemporary Clarinetist: Pedagogical Materials for Extended Clarinet Techniques*; Philip Everall (2016), *A digital resource for navigating extended techniques on bass clarinet*. Others, like Jessica Anne Hall Speak and her 2020 dissertation, *Eric Mandat's Pedagogical Style: Teaching Philosophy, Teaching Techniques, and Teaching Elements Within his Unaccompanied Clarinet Works*, have chosen to write about the teaching style of a particular teacher.

Finally, some dissertations have focused on more pedagogical needs that involve extended techniques. Vanessa Davis, in her 2018 dissertation (*A Concept-Based Pedagogy Approach to Selected Unaccompanied Clarinet Repertoire*), addresses larger musical concepts

that can be learned through specific pieces of contemporary repertoire from middle school all the way through the end of an undergraduate degree in her 2018 dissertation. Amy Humberd has written perhaps the most comprehensive guide yet to teaching extended techniques specifically to undergraduate students in her 2020 dissertation, *A Pedagogical Approach for Incorporating Extended Techniques Into the Undergraduate Clarinet Curriculum*. While both dissertations deal with the topic of various benefits to learning contemporary repertoire to address larger musical issues, and Humberd specifically touches upon the topic of benefits to clarinet fundamentals when learning these techniques, neither dissertation attempts to directly apply extended techniques as a tool for improving the performance of traditional repertoire.

## CHAPTER III: ARGUMENT FOR THE INTEGRATION OF EXTENDED TECHNIQUES INTO CLARINET PEDAGOGY

Though not widespread, the concept of using extended techniques as a tool for strengthening fundamentals is not new - nor is it unique to the clarinet. The benefits of learning these techniques are numerous and, as they become more prevalent in new music, not having a thorough understanding of how to perform these modern techniques and utilize them in context will put players at a disadvantage. Many clarinetists today would agree with the above statement, but few have found a way to incorporate these techniques into their own practice outside of the hyper-specific context of a modern composition which requires those techniques to be used.

There are plenty of examples of ways in which non-clarinetists use techniques in their own pedagogy. Flutists, for example, utilize singing while playing in order to learn how to center the sound, and vocalists use techniques such as lip trills as a regular part of their warm-up practice (in a very similar way to how flutter tonguing can be used on the clarinet.)<sup>13</sup> In a 2007 article in *The Double Reed*, bassoonist and composer Michael Burns suggests using a multiphonic and bugling exercise to solve “cracking” issues on the bassoon. He mentions that one of his “favorite teaching techniques is to learn to emulate a student’s problem so that [he] can then determine what causes it and how it can be addressed and fixed.”<sup>14</sup>

F. Gerard Errante stated in his 1976 article in *The Clarinet*, titled “Clarinet Multiphonics- Practical Applications,” that multiphonics which utilize an upper register fingering to get a “split tone” are produced in the same manner as the “undertone” that beginning clarinetists experience

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<sup>13</sup> Gregory Oakes, interview by author, September 22, 2022.

<sup>14</sup> Michael J. Burns, “Response Issues on The Bassoon,” *The Double Reed* 30, no. 4 (2007): 73. [https://michaelburnsbassoon.com/wp-content/uploads/2020/07/Response-issues-on-bsn-DR30\\_4-1.pdf](https://michaelburnsbassoon.com/wp-content/uploads/2020/07/Response-issues-on-bsn-DR30_4-1.pdf)

when first learning those notes.<sup>15</sup> Phillip Rehfeldt, in “Multiphonics for the Clarinet” (in *The Clarinet*, 1973) wrote that “the student who has problems with the glissando will also experience problems with multiphonics—as well as fundamentally playing in tune.”<sup>16</sup> And though he did not call them by name, famous pedagogues like Larry Guy used modified multiphonics exercises in his book *Embouchure Building for Clarinetists: Book I*.<sup>17</sup>

Most extended techniques require some sort of fundamental understanding of sound production that can be transferred to other, more traditional aspects of clarinet performance. Below is a (by no means exhaustive) list of benefits to incorporating extended techniques into more “normal” practice habits.

**1. Larger toolbox of problem-solving skills in practice and performance:**

The learning of extended techniques allows for the possibility of new practice and diagnostic tools that aid in learning skills fundamental to clarinet performance. In many cases this works through the concept of “addition through subtraction.” Extended techniques tend to hyperfocus on a particular skill related to clarinet playing, either through exaggerating that skill or through removing other variables.

For example, multiphonics highlight manipulations of the oral cavity (mostly through voicing and embouchure pressure). If a player is unable to play a particular multiphonic, there may be underlying voicing issues that can be diagnosed through the learning of said multiphonic. Double tonguing, on the other hand, focuses on movements related to the back or middle of the tongue and can be used to remove

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<sup>15</sup> Gerard F. Errante, “Clarinet Multiphonics: Practical Applications,” *The Clarinet* 3, no. 2 (February 1976): 5.

<sup>16</sup> Phillip Rehfeldt, “Multiphonics For Clarinet,” *The Clarinet* 1 (October 1973): 15.

<sup>17</sup> Guy, *Embouchure Building for Clarinetists*, 42.



pressure applied to the tip of the tongue when articulating. Meanwhile, learning slap tonguing can help a student explore their own learning habits and investigative process for correcting their placement of the tongue on the reed for successful articulation.

**2. The concept of “limit-testing” and learning by knowing “what not to do:”**

Knowing how to avoid a problem can be just as valuable as knowing how to do something correctly. Several extended techniques will feel as if one is playing the instrument “wrong” on purpose; by being able to do so on demand, students will have a better understanding of what they should be avoiding in more “traditional” settings. At the same time, students will learn the limits of what is possible on the instrument; for example, learning what amount of air or jaw pressure turns a low note into a multiphonic gives someone a great deal of tonal flexibility in their playing.

**3. Increased finger dexterity and control:**

Techniques like microtonal modifications often involve awkward fingering combinations that stretch the players’ concept of what is possible to play on the instrument. By practicing microtonal patterns (examples of which will be shown in Chapter V), finger dexterity can be improved.

**4. Improved tongue and embouchure awareness and stability:**

Most extended techniques involve some sort of manipulation of the tongue, jaw, or embouchure. The delicate and precise nature of playing multiphonics, for example, requires significant control at a nuanced level, and this flexibility and finesse is likely to transfer to “normal” playing. Techniques like flutter tonguing in

the upper ranges of the clarinet are impossible without stable control of the back of the tongue.

**5. Increased knowledge of fundamental principles of clarinet sound production:**

Manipulating partials within the same fingerings and multiphonics requires some degree of knowledge of how the clarinet mechanically and acoustically functions as an instrument. Microtones are an excellent way for players to understand how pitch is affected by various finger combinations.

**6. Learning these techniques in a lower pressure environment encourages students to seek out repertoire that features them:**

A possible contributor to why some players are skeptical of approaching new music that features extended techniques is that they have a difficult time in conceiving a method to even begin learning these pieces. An increasing number of required excerpt and audition repertoire lists are beginning to include a variety of extended techniques. By introducing these techniques out of context at an earlier time, seeing these techniques “in the wild” will not seem nearly as intimidating.

## CHAPTER IV: A FUNDAMENTAL UNDERSTANDING OF CLARINET ACOUSTICS, TONE, AND TIMBRE

While an in-depth knowledge of acoustics is not necessary for successful clarinet performance, a basic understanding of sound physics, acoustics, and of how the clarinet operates is helpful to provide understanding about and aid in the production of several extended techniques. Some knowledge of the psychology of how we perceive timbre and tone is also beneficial.

### **Clarinet Physics and Acoustics**

“The clarinet is an instrument which utilizes the air column, contained in the tube for its instrument body, as a source of vibrations for musical purposes.”<sup>18</sup> Put simply, when air is blown into the instrument, the reed vibrates, causing the air column inside the instrument to vibrate, which produces sound waves.

As the instrument vibrates, it does so not only as a whole but also in parts, causing multiple frequencies to sound at the same time. These resonating frequencies are known as “overtones” or “harmonics.” The lowest of these frequencies is referred to as the “fundamental,” while the others above it are “partials.” The most prominent of these overtones in a series is what we tend to perceive as a given pitch. Overtones in string and wind instruments are produced as integer ratios to the fundamental, and thus partials are multiples of the fundamental frequency. For example, if the note “A” is vibrating at 440 hertz, the second partial vibrates at twice that rate (880 hertz), the third three times that rate (1320 hertz), the fourth at four times (1760 hertz),

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<sup>18</sup> William H. Stubbins, *The Art of Clarinetistry: The Acoustical Mechanics of the Clarinet as a Basis for the Art of Music Performance* (Ann Arbor, MI: Ann Arbor Publishers, 1965), 47.

and so on. These are the equivalent of an octave, a twelfth, and two octaves. Theoretically, the upper limit of these overtones is indefinite, though for humans they become imperceptible around the tenth partial.<sup>19</sup>

In wind instruments, the air vibrates in a longitudinal direction (that is, from one end of the instrument to the other). In an open pipe, such as a flute, these vibrations reach the open air at the end of the pipe (known as compression) and are then reflected into the pipe back to the opposite end (known as rarefaction).<sup>20</sup> This sound wave is then reflected again, completing the cycle of compression and rarefaction in an open cylinder. For a closed pipe, however, the wave must travel an additional time for this cycle to complete. This is because when the wave hits the closed end, it is reflected back without changing states, and thus must be reflected back an additional time to become a compression wave again and complete a full cycle.<sup>21</sup> This makes the effective length of a closed pipe twice as long as that of an open pipe, which explains why the clarinet only needs half the amount of length to produce the same pitch as a flute (for example, it takes the full length of a standard flute to produce a C, whereas the clarinet only needs about half the instrument to play the same pitch).<sup>22</sup>

A longer tube produces lower pitches, while a shorter tube produces higher pitches. In woodwinds such as the clarinet, the effective length of the tube changes by opening and closing holes and keys with our fingers. The register key acts as a vent that forces the air column to sound at a higher partial, essentially overwriting the fundamental—the first finger acts as a

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<sup>19</sup> Donald A. Hodges and David C. Sebald, *Music in the Human Experience: An Introduction to Music Psychology* (New York: Routledge, 2011), 86.

<sup>20</sup> Stubbins, *The Art of Clarinetistry*, 49.

<sup>21</sup> *Ibid.*, 50-52.

<sup>22</sup> Joe Wolfe, “How Do Woodwind Instruments Work?,” University of New South Wales, <http://newt.phys.unsw.edu.au/jw/woodwind.html>

second register vent for the altissimo notes. In practice, this allows the instrument to play a variety of different notes with minimal modifications to fingerings. In perhaps what is an oversimplification, the higher notes on the clarinet (those of the clarion and altissimo register) are “overblown” fingerings of lower (chalumeau) notes, with some modifications made for pitch correction. It is possible to manipulate the oral cavity to override the bore’s effect on pitch in the same way, allowing the clarinetist to “determine the sounding harmonic of any given fingering” without the need to use of a register vent.<sup>23</sup> This is important to remember as we explore techniques such as multiphonics and ways to change the timbre of the instrument.

Unlike the saxophone and oboe, the clarinet does not overblow the octave when opening a register vent (and though the flute does this through voicing changes, it also overblows the octave as its first practical partial). This is due to the clarinet having a unique combination of features in its construction: it is a cylinder that is closed at one end (no air escapes the instrument from the mouthpiece side). While the flute is also a cylinder, the pipe is open at both ends (the head joint and the foot joint). The oboe and saxophone are both closed at one end but are conical and not cylindrical. This combination means that the instrument only produces odd harmonics in any practical way (the even partials are very faint and not accessible). This is why the instrument plays a twelfth above the fundamental when the register key is pressed instead of an octave (i.e. low A becomes a clarion E). The second register vent—usually activated by removing the left-hand index finger—causes the clarinet to go up to a flat fifth partial (altissimo C#, following the previous example).

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<sup>23</sup> Jack Yi Jing Liang, “Clarinet Multiphonics: A Catalog and Analysis of Their Production Strategies” (DMA diss., Arizona State University, 2018), 10, ProQuest (108007911).

## Differences Between Tone and Timbre and How We Perceive Them

Though often used interchangeably (even in some portions of this document), the terms “timbre” and “tone” technically mean different things. Timbre can be defined as the “psychological quality that allows us to distinguish one instrument from another.”<sup>24</sup> Tone, on the other hand, can be used to describe the difference in sound quality among multiples of the same instrument.

The lack of prominent even overtones is one of the biggest contributing factors to the clarinet’s unique timbre, as the overtone series is not identical from instrument to instrument. According to Hodges, there are three factors related to the overtone series that affect our perception of timbre: first, the number of overtones that occur on an instrument, or even on different notes on the same instrument; second, the frequencies of those overtones; and third, the amplitude of these overtones.<sup>25</sup>

Another factor in determining an instrument’s timbre is its sound envelope. The clarinet and guitar produce extremely similar combinations of overtones, but the two instruments sound completely different<sup>26</sup>. The difference between the two is that the guitar’s sound envelope begins instantly and immediately decays in volume. The clarinet, on the other hand, has a slower response to start and sustains itself until the player chooses to end the sound or runs out of air. Research shows that after removing the “attacks from single tones of various instruments, the timbres were difficult to identify. However, listeners were more easily able to identify

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<sup>24</sup> Hodges, *Music in the Human Experience*, 121.

<sup>25</sup> *Ibid.*, 122.

<sup>26</sup> *Ibid.*, 88.

instruments when Kendall (1986) used similarly altered tones in a musical context by creating a melody with them.”<sup>27</sup>

“As applied to what the instrument produces, [tone quality] may be referred to by such descriptive terms as dull, heavy, dark, bright, light, brilliant, etc.”<sup>28</sup> Thus, the oboe is brighter than the clarinet in timbre due to its higher concentration of upper overtones, and the bassoon can be considered darker due to a higher presence of the fundamental frequency. The contributing factors to tone are essentially the same as for timbre, (number of overtones and concentration of those overtones), but to a smaller degree. Two clarinetists can have vastly different tones, as though they produce roughly the same frequencies, the concentration of these frequencies will still differ to an extent. As the clarinet lacks the presence of even numbered overtones, there is a high degree of variance in tonal possibilities within the instrument. These descriptive terms are, of course, subjective to each person’s unique experience.

Stubbins states that:

musical ears do not disagree too violently with respect to matters of pitch, or intonation, as it is commonly called. Neither is there any particular difficulty in reaching agreement concerning rhythmical subdivisions or dynamic variations. But as to tone quality, its nature, its description, its differences, and its effect, musicians all but become intelligible.<sup>29</sup>

There are simply too many terms to describe tone quality that mean different things to different people. Tone quality is subjective and heavily relies on context; it is difficult to discuss it terms like “good” or “bad” without first considering personal and cultural aesthetic preferences. Rather, various “tone qualities” are simply “different” from one another. Thus, it is

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<sup>27</sup> Ibid., 123.

<sup>28</sup> Stubbins, *The Art of Clarinetistry*, 41.

<sup>29</sup> Ibid., 41.

imperative that as clarinetists strive to be flexible enough to produce a variety of types of tone quality that are suitable to different contexts and musical expressions.



## CHAPTER V: USING INDIVIDUAL EXTENDED TECHNIQUES TO TEACH

### FUNDAMENTALS

#### **Glissando, Portamento, and Pitch Bending**

I see the glissando/portamento as the most common and famous of extended clarinet techniques, thanks in no small part to the opening solo in Gershwin's *Rhapsody in Blue* and its prevalence in jazz. The two techniques are often referenced interchangeably, but they are not the same. The traditional "fingered" glissando is fairly straightforward and requires little practice to perform, as it essentially involves moving across an interval by rapidly fingering through the notes in-between, as if up or down a scale. Depending on the music style the performer can choose the level of clarity in the glissando, whether each note is heard cleanly, or if some notes are "smeared" through an intentional "sloppiness" of the fingers or small adjustment to the voicing.

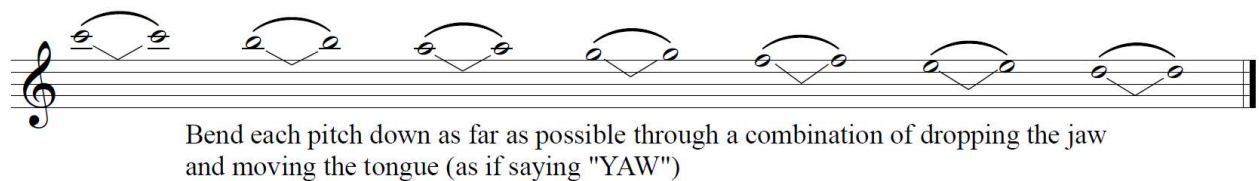
The "portamento" (to use a term borrowed from string pedagogy), on the other hand, involves moving through an interval by sliding through every possible pitch, such as a trombone sliding from one note to another or a string player sliding their finger on a string. (Oftentimes, when modern players mention a "glissando," this is the technique they are referring to; some might make a specific delineation for the "fingered gliss" rather than the portamento). This technique does require some practice to perform properly, as it involves a combination of embouchure and voicing manipulation and very slow finger movements (the fingers slide across the tone-holes instead of their regular pressing and lifting motion). The original solo in *Rhapsody in Blue* is actually notated on the page as a "fingered" glissando although performance practice has been widely established to use the "portamento" glissando for this passage.

Pitch bending is similar to a portamento, but the technique does not necessarily involve a change in fingerings and is instead done almost, if not entirely, through a change in the oral cavity. Of these techniques, the portamento and pitch bends are significantly more useful as pedagogical tools in their ability to smooth out intervals and improve flexibility, though the glissando also has its place. As is the case with most extended techniques, there is an added benefit of an increased understanding of how air support functions on the clarinet. From here forward, when the term “glissando” is used, it refers to the “portamento” glissando, while a “fingered glissando” will be referred to as such.

### **Embouchure and voicing flexibility**

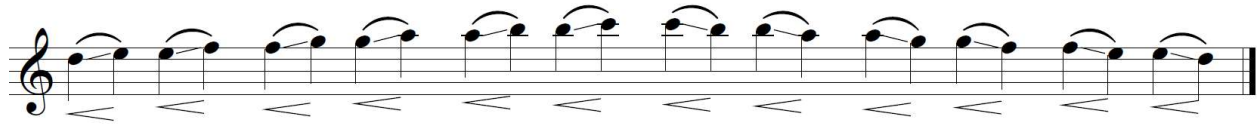
While the clarinet embouchure is usually taught to be a stable, unmoving entity, successful performance often relies on making subtle changes that affect both pitch and tone color. Practicing glissandi, especially between small intervals that require the most manipulation of the oral cavity in order to be effective, is a great way to learn this skill. The following exercise shows how this can be practiced, with the added benefit of being the first step towards being able to perform a longer glissando (such as the one in *Rhapsody in Blue*).

**Figure 1. Pitch bending exercise #1**



The next step is to integrate finger motions into the technique. Here we start with the easier upwards intervals, then move to the slightly more difficult downwards ones.

**Figure 2. Pitch bending exercise #2**



A helpful tip when moving up is to first bend the pitch down by dropping the jaw and moving the tongue down before sliding the fingers. An approach to teaching this is to use the syllables “ee-yah,” with an emphasis on the “y” sound because, for many players, the part of the tongue that articulates the “y” is the same part of the tongue that controls the pitch. Though students often know they need to move the tongue, they may have a hard time figuring out which part of the tongue to manipulate—this should aid them in figuring this out. It can be helpful to start bending the pitch on the mouthpiece alone, starting first with a small range and then gradually increasing that range, as can be seen in the exercise below. The voicing and embouchure changes will be similar to when the instrument is put together, but the extra resistance from having the complete instrument will decrease the level of flexibility that is possible.

**Figure 3. Mouthpiece pitch bending exercise**

Mouthpiece Alone

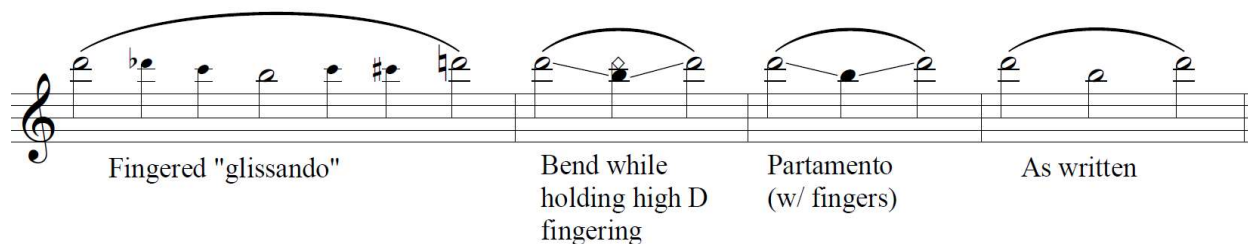
Bend as far as possible      Bend each specific interval

### **Smoothing out the break between clarion and altissimo register**

Register crossings between the clarion and altissimo on the clarinet can be challenging to play without a “break” in the sound as the instrument switches which partial is being activated (the clarion register plays in the third partial, while the altissimo register plays in the fifth or

higher partial). One approach to resolve this issue is to practice moving between these intervals through pitch bends and glissandi. Take the interval between altissimo D and upper clarion B. Start by playing a “fingered” glissando between the two notes. The next step is to bend the D down to a B without any fingering changes, then back up. Then, play a “portamento” glissando, mixing fingers and embouchure motion. Finally, slur between the two notes with no alterations. This interval transition now is likely to be smoother and more accurate and stable in pitch. An example of this can be found below.

**Figure 4. Altissimo to clarion pitch bending exercise**



An application where this concept can be helpful can be found in the opening line of John Ireland’s *Fantasy Sonata*. Here we have several very challenging intervals in a row that must be played not only as smoothly as possible, but also at a soft dynamic.

**Figure 5. Opening line of John Ireland’s *Fantasy Sonata*<sup>30</sup>**



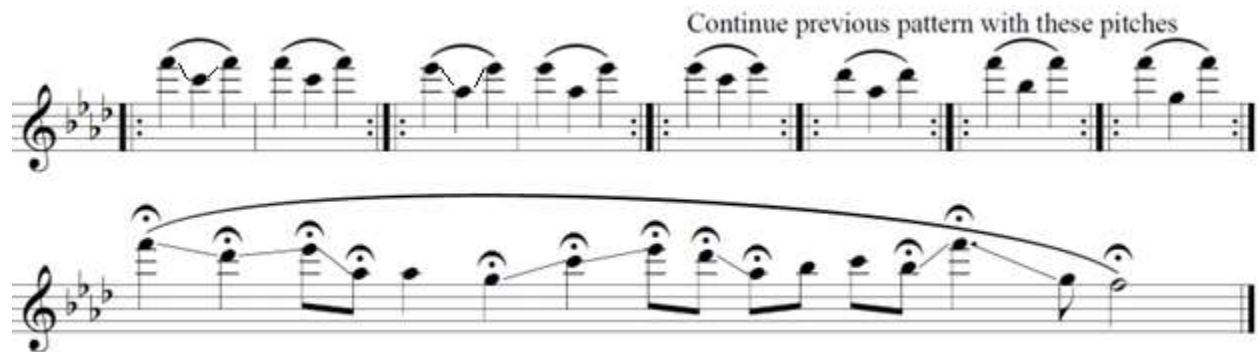
Each of these intervals in this opening can be practiced as seen below. After each interval is practiced individually, we can then combine the series of glissandi into one line, before finally

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<sup>30</sup> John Ireland, *Fantasy-Sonata* (London: Boosey & Hawkes, 1945), 1.

playing the excerpt as written. The most difficult of these intervals is the F to G at the end, which will also require a slight puff of air (such as in the word “he”) to allow the reed to vibrate at a lower partial level.

**Figure 6. Portamento exercise for Fantasy-Sonata opening**



### **Glissandi to learn voicing across large intervals**

One use for glissandi is to improve the response between notes on the clarinet that have vastly different resistances within the same register, especially if the lower note fingering can also be used to play the upper note in a different partial. For example, the downwards interval between long B and clarion G is a common problem for most clarinetists. The issue is that it is possible to play the G while fingering a B if voicing is not in the appropriate position. One way to learn this position is to play the lower note and then play a “fingered” glissando into the upper note focusing on not allowing the voicing to change, then do the same the other direction, as seen in Figure 7. The goal here is to gradually increase the speed of the glissando, eventually playing the interval with no glissando at all.

**Figure 7. Glissando exercise**



Focus on not shifting voicing

### **Manipulation of Partial and Multiphonics**

Nearly every clarinetist has, at some point, performed a multiphonic.<sup>31</sup> When first starting on the instrument, this generally manifests itself as a squeak—specially with young students as the right hand gets introduced and they have a hard time covering holes. Once the clarion register is introduced, multiphonics are often manifested in the form of an undertone. In early band scenarios, when a squeak inevitably happens there is typically some level of embarrassment due to the clarinet emitting an unintentionally loud sound—after all, there are societal pressures to conform and to not stand out, especially as a teen or pre-teen who is just trying to fit in. Teachers and peers might even aggressively discourage these sounds from happening, leading to many performers to avoid the technique altogether for years (or careers) for fear of reprisal.

Some of this anxiety comes from the unsubstantiated idea that playing multiphonics requires some sort of “substantial modification of their current performing habits.”<sup>32</sup> That is, that by learning to produce these sounds, players must completely change the way in which they have approached sound production (i.e. embouchure formation and voicing) on the clarinet for years. Rather, multiphonics are “within the natural function of the clarinet to be able to emit.”<sup>33</sup> There

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<sup>31</sup> Phillip Rehfeldt, *New Directions for Clarinet*, Rev. ed. (Berkeley and Los Angeles: University of California Press, 1994), 41.

<sup>32</sup> Errante, “Clarinet Multiphonics: Practical Applications,” 5.

<sup>33</sup> Lawrence Singer, “Multiphonic Possibilities of The Clarinet,” *American Music Teacher* 24, no. 3 (January 1975): 14, <https://www.jstor.org/stable/43533910>.

is also the incorrect belief that the production of multiphonics requires some sort of special equipment; the truth, as Rehfeldt states, is that “equipment that produces multiphonics generally also works well for ‘normal’ playing.”<sup>34</sup> Instead of discouraging this technique, we should recognize its important place within clarinet playing and its many uses as a pedagogical tool.

The production of multiphonics involves the manipulation of the acoustic properties of the clarinet to produce two or more pitches at the same time. It is essentially a manipulation of the harmonic series produced by the combination of specific fingers and a modification of the oral cavity, airstream, or embouchure. It is also possible to isolate specific partials on any particular fingering through the same manipulations, which can be a useful exercise on its own to develop flexibility. Thus, this chapter will include exercises that involve both the manipulation of individual partials and multiphonics. Two main types of multiphonics are possible: those created by voicing changes on standard fingerings, and those created by voicing changes in addition to non-standard cross fingerings (thus creating two different effective tube lengths).<sup>35</sup>

Clarinetist, composer, and teacher Eric Mandat divides multiphonics into four categories with respect to fingerings: “1) normal upper partial fingerings, 2) normal lower partial fingerings (not restricted to first partial), 3) fingerings utilizing a substitute register key or keys, and 4) fingerings which are a combination of upper first and lower third partial fingerings.”<sup>36</sup> Each of these categories has specific pedagogical uses, with some being more useful than others.

### **Improvements to uneven sound and intonation across registers**

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<sup>34</sup> Rehfeldt, *New Directions for Clarinet*, 43.

<sup>35</sup> Liang, “Clarinet Multiphonics,” 11.

<sup>36</sup> Eric P. Mandat, “Expanding Timbral: Flexibility Through Multiphonics,” *The Clarinet* 16, no. 3 (May-June 1989): 27.

The clarinet's physical design inherently creates problems with uneven sound and intonation across registers. As the clarinet only produces odd harmonics in any usable way, the feel of resistance created by blowing into the instrument can change rather drastically when changing registers, particularly between the upper chalumeau and clarion registers (e.g., throat B-flat to long B), though this also affects the altissimo register. The back pressure causes some players to (probably subconsciously) drop their tongues to get rid of some of the resistance, which typically causes the pitch to sag. The player then tries to compensate for this by biting or firming up the embouchure, thereby raising the pitch and "pinching" the sound (i.e., causing it become thinner and brighter). This combination of under-voicing and over-biting might also manifest itself as an undertone at higher ranges or as a reduction in response speed on those notes.

The following "bugling" exercise is particularly helpful in solving this fundamentals problem, as it requires the player to be able to play in each register without the use of the register key. This exercise is also an excellent introduction to the tongue motion required for performing multiphonics. This exercise can be introduced either with the instrument as normal or by covering the bell (typically by covering the bell with the calf crossed over the other leg, or by inserting a swab into it). The stopped bell version is much easier and is thus recommended.

**Figure 8. "Bugling" exercise**



Cover bell using leg. Use clarion long B fingering throughout.

The exercise above will sound muffled and buzzy, and the backpressure should feel rather strong. By changing the shape of the oral cavity through voicing, different partials in the



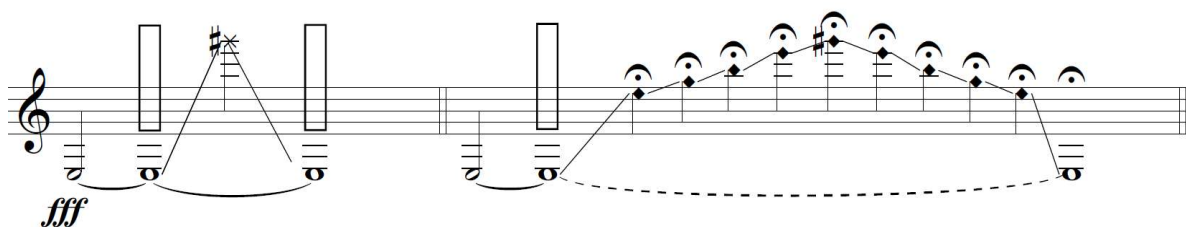
overtone series can be activated. Only the tongue should move here, and embouchure movement should be kept to a minimum. Once the exercise is mastered with the bell covered, it should be attempted without a cover (the produced pitches will be lower, but the intervals will be roughly the same). This exercise can be performed on any starting note of the chalumeau register of the instrument, but it is more difficult the higher you go, as the number of partials that are easily accessible is reduced by shortening the effective length of the clarinet.

After doing this exercise for some time, this student should be able to more accurately voice the upper register notes, allowing the jaw and throat to relax and reducing issues of excess biting. This opens the sound and lowers the pitch, allowing for smoother intervals—especially across registers. A beneficial side-effect is that the student will also likely have much stronger support to their sound, as it is nearly impossible to successfully perform the “bugling” exercise without proper breath support.

### **Improved awareness of tongue position with the “harmonic glissando”**

Oftentimes a student is simply not aware of what their tongue is doing, which makes teaching certain concepts difficult. This becomes especially relevant when introducing upper altissimo notes, multiphonics, multiple tonguing, or when trying to explain voicing in general. Practicing the following exercise can be helpful in this case.

**Figure 9. "Harmonic glissando" exercise**



This technique is known as the “harmonic glissando;” it is also often referred to as “throat harmonics” or, most commonly, “spectral multiphonics.” This exercise involves playing a low E *very* loudly and producing an overblown multiphonic (what Mandat calls “category 2”).<sup>37</sup> This is done by dropping the jaw and moving the front-middle portion of the tongue closer to the tip of the reed, thus moving the tip of the tongue further down and the back of the tongue further up. This multiphonic contains various identifiable pitches and has a sound that can be described as “harsh” or “distorted” by some.

Once the student can do this reliably, they can start experimenting with their voicing during the multiphonic, which will cause different pitches to be emphasized at any given time. The tongue motion here is very similar to the tongue motion during the above “bugling” exercise, but the change is much more gradual. If done effectively, the low E will sustain while a glissando of partials will be produced above. With enough practice, it is possible to create “checkpoints” within the harmonic glissando, as shown in the second half of the exercise.

### **Finding effective voicing through partial manipulation.**

An issue appearing in a significant amount of repertoire involves passages with large, descending intervals that are also slurred. For example, in the main theme of Weber’s *Concertino*, voicing needs to allow both the upper and lower notes to speak and match in timbre.

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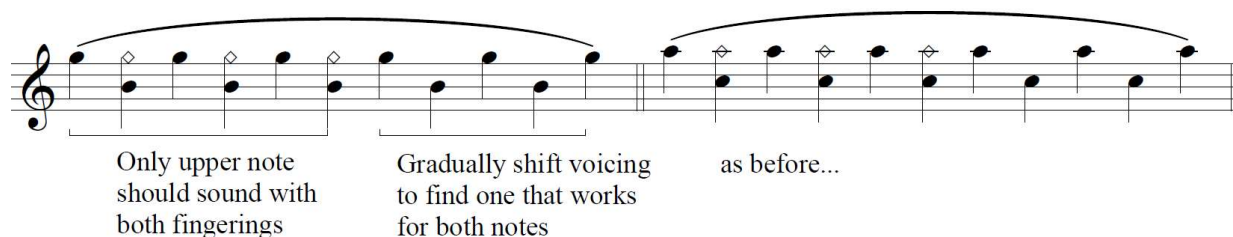
<sup>37</sup> Ibid., 27.

Figure 10. Weber Concertino, mm. 38-53<sup>38</sup>



One way to practice this is to play an upper note and slur down to another fingering that keeps the same sounding note playing on a different partial (in Figure 11, for example, a third partial G moves to a fifth partial G). These partial exercises will allow the player to discover how far they can move their voicing without causing the note to crack. While the exact notes played in the context of Weber are not exactly the same as in the following exercise, the voicing should be similar enough that a smoother slur will be possible without any voicing and embouchure manipulation.

Figure 11. Partial manipulation exercise



<sup>38</sup> Carl Maria von Weber, *Concertino in E-flat Major, Op. 26* (Berlin: Robert Lienau, n.d.), 1.

## **Improving the upper clarion and altissimo registers by removing “grunts,” especially when articulating**

Notes in the upper clarion of the clarinet have notoriously poor response compared to the corresponding fundamentals, especially on the A clarinet. As Gregory Oakes states, this is a weakness of the polycylindrical design of the clarinet, as the position of the register key is a compromise that is not ideal for nearly any note on the instrument.<sup>39</sup> A common side effect of this is that these notes, particularly in the clarion F to C range, have a “grunt,” or undertone to them, especially during articulated passages. The primary cause for this is low voicing, as the air does not move fast enough to force the reed to vibrate at the intended speed; thus the note begins at a lower partial and then moves to the correct one after a short time. It is also possible to cause this problem by keeping the tongue too high of a position—an important caveat to consider.<sup>40</sup>

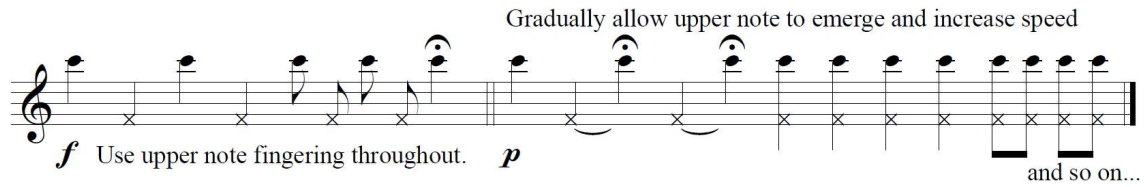
The traditional solution to this is to constantly remind students to keep their voicing high (close to the shape of the vowel “e”) while playing long-tones in that range, then moving to introduce articulation without changing that voicing. A student might find success in removing the undertone during long tones, but as soon as articulation is introduced the grunt returns. Another approach is to use category 1 multiphonics (underblown multiphonics) in order to learn, essentially, what not to do.

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<sup>39</sup> Gregory Oakes, interview by author, September 22, 2022.

<sup>40</sup> Howard Klug, “Clarinet Pedagogy,” *The Clarinet* 14, no. 3 (Spring 1987): 13.

**Figure 12. Category 1 Multiphonic exercise for fixing “the grunt”**



The goal of the above exercise is to become familiar with what causes the undertone in the first place.<sup>41</sup> Start by playing a clarion C with as clear a sound as possible. Then, while keeping the same fingering down (including the register key) and regardless of success in producing a clear first note, purposely play the undertone as loud as possible by dropping the jaw and changing the tongue to a low position (closer to an “aw”). Alternate between the two pitches several times, starting slowly and gradually speeding up.

Once comfortable with producing both pitches individually, the next step is to be able to play the actual multiphonic immediately, and without preparation. Repeat this process with the other upper clarion and altissimo notes. In addition to aiding in the removal of a grunt, this exercise will also improve response, clarity, and focus in the upper clarion and altissimo registers of the clarinet, as “when the student plays these altissimo tones without the use of a register vent, it [...] makes the notes harder to reach and forces the tongue to work harder than it normally would have to,”<sup>42</sup> thus making the normal playing feel easy by comparison.

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<sup>41</sup> Larry Guy. “The Articulation Quest Continues: Developing Tongue Sensitivity,” *The Clarinet* 38, no. 3 (June 2011): 26.

<sup>42</sup> Jeremy Wohletz. “Using Multiphonics to Help Clarinet Students in the Altissimo Range,” *NACWPI Journal* 61, no. 2 (Winter 2012): 18.

Figure 13. Weber Concertino, mm. 1-37<sup>43</sup>

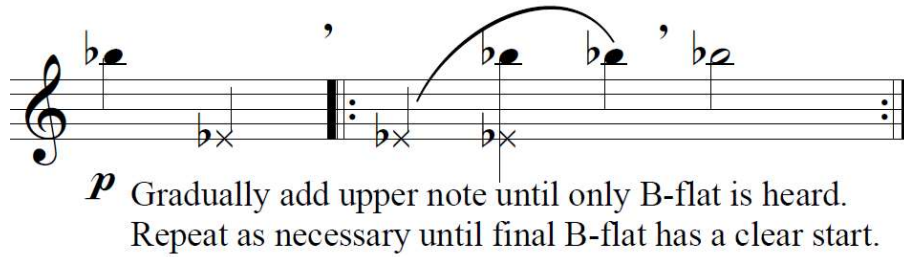


A well-known example of grunting occurs in the early moments of Weber's *Concertino in E-flat Major* (Figure 13). The opening B-flat in m. 10 exists in the middle of the clarinet's typical grunting range, especially at the soft dynamic that is required here. This problem is generally caused by voicing and air pressure issues, where the air is simply not moving fast enough to allow the note to respond clearly right away. The traditional solution to this problem is to have a student play the opening B-flat as loudly as possible and then diminuendo down to a soft dynamic with as little change as possible to the oral cavity. That solution attempts to resolve grunting by first doing something that is more likely to work and then trying to emulate it. Using the multiphonic exercise in Figure 14 attacks this problem by learning the root causes that cause a grunt: a combination of low voicing, low air pressure, and biting.

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<sup>43</sup> Weber, *Concertino*, 1.

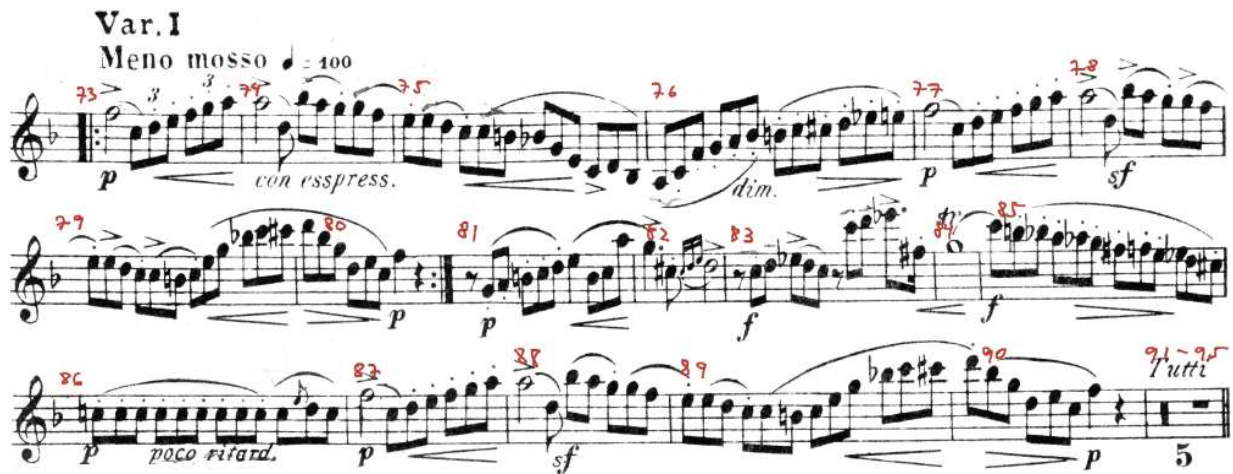
Figure 14. Multiphonic exercise on clarinet B-flat



*p* Gradually add upper note until only B-flat is heard.  
Repeat as necessary until final B-flat has a clear start.

Grunting can be an issue in several other sections of the *Concertino* as well. The first variation of the theme, for example, is a veritable minefield for grunts due to its range and articulation pattern. While this is typically resolved through alternation of slurring and tonguing, a modified version of the exercise found in Figure 14 may more directly approach the issue but teaching a player what *not to do*. An example of this modified exercise can be seen below in Figure 16.

Figure 15. Weber *Concertino*, mm. 73-95<sup>44</sup>



Var. I  
Meno mosso ♩ = 100

73 *p* *con esspress.* 74 75 76 77 78 *dim.* *p* *sf*

79 80 81 82 83 84 85 *p* *p* *f* *f*

86 87 88 89 90 91-95 *poco ritard.* *p* *sf* *p* *Tutti* 5

<sup>44</sup> Weber, *Concertino*, 2

**Figure 16. Using underblown multiphonics in context**

The image shows a musical score in 4/4 time, featuring a treble clef and a key signature of one flat (B-flat). The score is divided into three measures, each containing a half note followed by a triplet of eighth notes. The first measure is annotated with the instruction "Use upper note fingerings Only sound lower notes" and shows a half note on G4 and a triplet of eighth notes on F4, G4, and A4. The second measure is annotated with "Use upper note fingerings Sound both notes" and shows a half note on G4 and a triplet of eighth notes on G4, A4, and Bb4. The third measure is annotated with "Use upper note fingerings Sound both notes" and shows a half note on G4 and a triplet of eighth notes on G4, A4, and Bb4. Each measure has a dynamic marking of *p* (piano) and a breath mark (>) above the first note. The notes are marked with fingerings: 3 for the first note of the triplet and 2 for the second and third notes. The notes are also marked with asterisks (\*) to indicate specific fingerings or techniques.

### **Tonal flexibility through multiphonics**

I believe that a weakness of many players in the digital age is that of tonal homogeneity. The availability of compressed sound and “perfect” recordings has changed the way many players perceive tone. It is well-known that the clarinet has distinct tonal qualities across its wide range (dark in the chalumeau, clear in the clarion, bright in the altissimo). Though it is a worthwhile goal to make these regions of the instrument more even in color, especially in certain settings, too often this leads players to become inflexible and limits their ability to push their sound in a different direction.

Singer states that the term “multiphonic” is “*not* synonymous with ‘chord:’ woodwind multiphonics do not actually sound like chords played on a string instrument, as each individual multiphonic has a different timbre and a different intensity for each of its tones.”<sup>45</sup> This is incredibly useful when learning how to play with different tonal colors. As Mandat states, “timbral flexibility is effected [sic] through subtle changes in embouchure pressure and configuration, tongue position and air pressure. Such changes are essential to the production of multiphonics.”<sup>46</sup> Mandat provides a great example of this type of exercise in an article he wrote

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<sup>45</sup> Singer, “Multiphonic Possibilities of The Clarinet,” 14.

<sup>46</sup> Mandat, “Expanding Timbral,” 27.

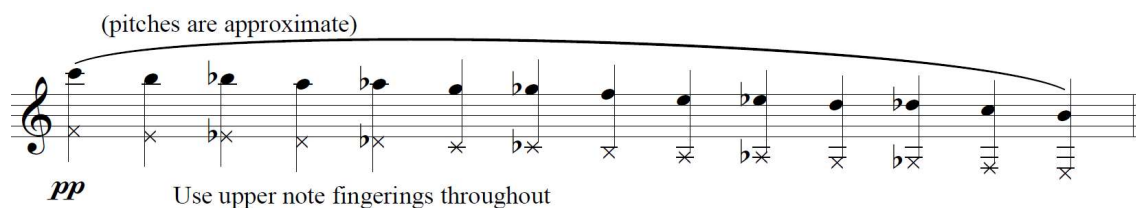


for *The Clarinet* in 1989. The Brahms Sonata excerpt, as well as the “sag routine” exercise he references in the article, are both shown below:

**Figure 17. Brahms Sonata No. 2, movement 1, mm. 22-38<sup>47</sup>**



**Figure 18. “The sag routine” exercise**



Try this exercise: Do the sag routine as above beginning with the third partial high C fingering; when both pitches are sounding, descend chromatically to G, carefully noting the changes that are occurring in voicing as you descend; once you reach G, proceed directly to the sotto voce section in the Brahms [F Major Sonata] at measure 22, while maintaining the same air and embouchure, as for the third partial G. [...]

You now have a sotto voce timbre. If you don't like that much defocusing, simply maintain the feel from the E/A-flat or F/A multiphonic. Now do the exercise in reverse [...] to get the feel for how to change timbre when coming out of the sotto voce section in measures 36 and 37.<sup>48</sup>

<sup>47</sup> Johannes Brahms, *Clarinet Sonata No. 2, Op. 120 No. 2* (Berlin: N. Simrock, 1895), 1.

<sup>48</sup> Mandat, “Expanding Timbral,” 28.

“The sag routine” exercise is played by lowering the tongue and reducing air pressure as one fingers through the top notes shown. These category 1 multiphonics should be played at a very soft dynamic, as they typically only work well at these volumes. Note that maintaining each dyad becomes increasingly more difficult and requires more precision as the range drops.

As the player gets more accustomed to these kinds of exercises and these subtle voicing and embouchure changes, they may become much more capable of (and willing to) make color changes in their performances. This allows them to truly display their own voice and character in musical performances.

### **Microtones and Quarter-Tones**

The Euro-centric Western world has come to generally accept the division of the octave as a system of twelve pitches. These pitches, however, are not the only notes that are possible in music. The number of possible pitches within an octave is, theoretically, infinite. The pitches that fall between the conventional Western twelve notes are known as “microtones.” Though often used interchangeably, “quarter-tones” are specifically a subset of microtones that land precisely in the half-way point between a half-step interval.

Though the clarinet is designed to produce its most clear-sounding tones within the bounds of the twelve-tone system, microtones are playable through modified fingerings without the need for much, if any embouchure manipulation (although, often more air pressure is required).<sup>49</sup> Therefore, learning and teaching the technique is generally straightforward, with the difficulty coming from the awkwardness of some microtonal fingerings that can make one feel as

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<sup>49</sup> Hudson et al, *Elements of Contemporary Clarinet Technique*, 25.

if they are relearning the clarinet from scratch, as well as a reprogramming of the ear as it relates to intonation.

Unfortunately, there is no way to achieve a true quarter-tone interval in certain ranges of the clarinet (mainly the notes that involve pinky keys in the lower joint of the instrument), so in this case we use approximations. There have been attempts to create a true quarter-tone clarinet, but those have generally been impractical until a promising recent development in this department that has come from a collaboration between clarinetist Gregory Oakes and instrument repair expert Wolfgang Lohff. They have modified the lower joint of the clarinet with additional keys (controlled by the thumb and right pinky finger) to allow for the missing quarter-tones without changing the rest of the instrument. A separate lower-joint with this modification will be introduced to the open market in the coming years.

Outside of music that is written specifically with microtones in mind, there are three general uses for this technique in teaching the clarinet. The first and most obvious is to “increase dexterity of finger motions.”<sup>50</sup> The second is to improve the ear as it relates to relative pitch. Finally, knowledge of microtonal fingerings is useful in learning the various fingering options available to produce different tonal colors on the clarinet.

### **Finger dexterity**

When first starting to play microtonal music, it can feel as if one is relearning how to play the clarinet for the first time. This is due to the complex and often awkward nature of some microtonal fingerings and the unusual notation that is often used in this style of music (which is similar to tablature notation guitarists are familiar with). Because of their nature, working

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<sup>50</sup> Tim Fitzgerald and Jon Goodman, *GaudyBreak'em: A Quarter-Tone Technique Companion*, GremlinsDuo (Self-Published, 2014), 2.

through finger motions between microtones can be extremely helpful in developing finger dexterity and flexibility. Tim Fitzgerald and Jon Goodman's book *GaudyBreak'em: A Quarter-Tone Technique Companion* is an excellent resource for exercises that involve moving through close intervals that oftentimes involve opposing motion of several fingers simultaneously. The name of the book itself is a play on the famous collection of technical etudes by Paul Jeanjean, *Vade-Mecum du Clarinettiste*. Below is an example of these exercises.

Figure 19. GaudyBreak'em exercise #32<sup>51</sup>

The figure shows three staves of music for exercise #32. The first staff is marked with a box containing '32' and an asterisk. Above the first staff are three fingering diagrams. The first diagram shows fingers R and A on notes Bb and B, with a trill symbol over B. The second diagram shows fingers R and A on notes Bb and B, with a trill symbol over B. The third diagram shows finger R on note Bb, with a trill symbol over Bb and a note E below. Text instructions state: 'Use Thumb to Play Trill Bb and Trill Bb. Rest Bell on Knee.' The first staff has dynamics *sf* and *< sf >*. The second staff has a diagram with fingers R and A on notes Bb and B, and text 'Use LH C#'. The third staff has dynamics *sf* and *< sf >*.

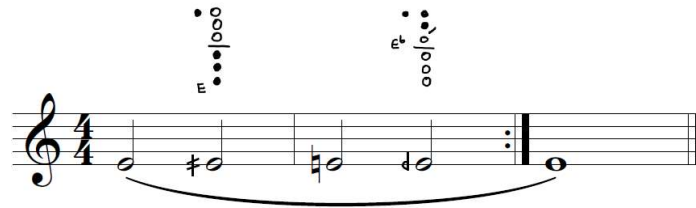
### Intonation Work

Microtones work exceptionally well as a form of ear-training, particularly as it applies to half steps. A common issue with students is that they often have difficulty in determining which

<sup>51</sup> Ibid., 18.

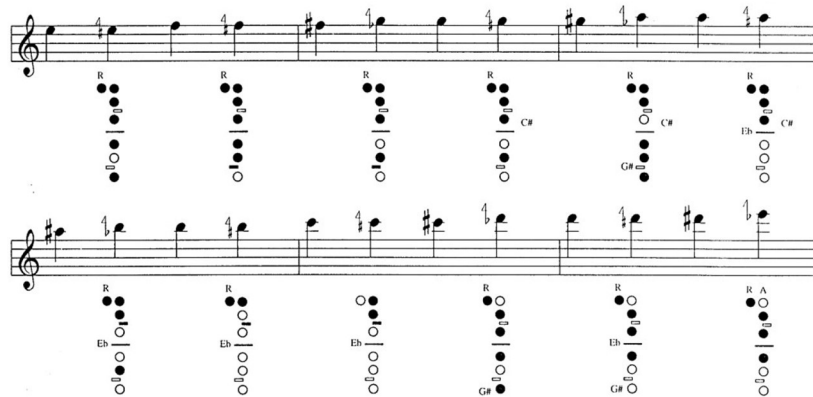
direction to move a pitch if it is only slightly out of tune. A useful exercise for training this ability is the following:

**Figure 20. Quarter-tone intonation exercise**



The goal of the exercise is to focus on the main central pitch and then to use the upper and lower microtonal neighbors to hear that pitch with only slight pitch alterations. This has the added benefit of teaching a student possible fingering variations for when a note needs to be slightly altered for tuning purposes. A variant of this exercise involves playing a quarter-tone chromatic scale. By doing this, a player will learn just how wide a half-step truly is. A sample excerpt from Kelly Burke’s *Clarinet Warm-Ups: Materials for the Contemporary Clarinetist* is shown below.

**Figure 21. Selection from “Quarter-tone scale” exercise<sup>52</sup>**



<sup>52</sup> Burke, *Clarinet Warm-Ups*, 68.

Another useful exercise for improving the ears is to play what Goodman and Fitzgerald call “quarter-tone major scales.” These are major scales that are offset by a quarter tone, so they should sound like a major scale in terms of intervals but will use entirely different fingerings. This exercise is especially helpful when playing the corresponding major scale in alternation with the quarter tone scale. An example is shown below.

**Figure 22. G-quarter sharp major scale<sup>53</sup>**

Quarter-Tone Major Scales Tim Fitzgerald & Jon Goodman

(.) D optional - tuning varies  
 \* use right hand thumb  
 ~ slide pinky

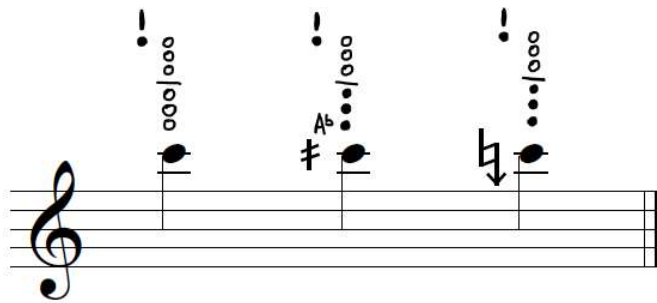
August 2014

<sup>53</sup> Fitzgerald and Goodman, *GaudyBreak'em*, 46.

## Color Variants and Changes in Response

Another helpful use for quarter tones is to introduce students to fingering variants that change the timbre of a note. Nearly all microtonal fingerings will change the color of the note in addition to the pitch, with some dulling the sound and others brightening it. An example of this is the difference between the C above the staff and its quarter-sharp variant (example below). The pitch change is noticeable, but we can make the pitch-change nearly imperceptible by slightly modifying this fingering (through removing the Ab/Eb key); this has only a slightly different (lower) pitch, but a darker color and is easier to play at softer dynamics.

**Figure 23. Fingerings for C, C-quarter sharp, and C-slightly flat**



An application of this concept is to use an alternate fingering for the D-flat on the following passage of Debussy’s *Premiere Rhapsodie*. While the passage is very playable with the standard fingerings, if one wants to create additional contrast on the softer arpeggios, they can use a fingering for one of the many microtones near the D-flat to change the color and response of the first note. While not typically seen as a microtonal fingering, the “side D-flat” fingering (a high C fingering with the two added side keys on the right, which alters pitch very slightly) is a great option here—especially on the softer gestures.

Figure 24. Debussy *Première Rhapsodie*, m. 165 to first note of m. 168<sup>54</sup>



### Flutter Tongue

Flutter tonguing is one of the most common extended techniques in the repertoire, only rivaled by the glissando. There are two generally accepted methods of flutter tonguing: by using the tip (or in rare cases, the middle) of the tongue, and by using the uvula. While both sound remarkably similar, uvular flutter tonguing is for all intents and purposes more akin to “growling,” so we will limit our discussion to the tongue-specific technique here.

The sensation of flutter tonguing is akin to that of “rolling” the R syllable, as is common with the Spanish language. For those unable to roll their Rs, a good technique is to say “Ta-Da” very quickly in succession; once that motion is comfortable, tense the cheeks slightly on the “Da” syllable and blow air at the same time. At this point it’s just a matter of learning how to sustain the sound, which involves trying to keep the tip of the tongue up while the air forces it to bounce back down repeatedly. This can be particularly difficult for native English speakers, as this consonant does not exist in the language, but with practice just about anyone is able to do it. Once the rolling of Rs is mastered, transferring the technique to the clarinet is fairly straightforward, with most players able to perform the technique after a few attempts without

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<sup>54</sup> Claude Debussy, *Première Rhapsodie* (Paris: Durand & Cie., 1910), 4.



much explanation other than “blow while rolling an R.” Overcoming some of the hurdles with this technique is a great way to learn clarinet fundamentals.

### **Air Speed, Voicing, and Embouchure Support**

The biggest hurdle many clarinetists encounter when learning how to flutter tongue is the sheer amount of air required for the technique. In order to keep the tongue from “getting stuck” when flutter tonguing, the air must keep moving at a constant rate. Complicating things, if the tongue is too low or the embouchure is not supportive, the pitch will drop significantly even with a successful flutter, and the player will not be able to play beyond the lower range of the instrument. As many of these issues are emblematic of other problems with fundamentals, flutter tongue can be a very useful practice and teaching tool.

If a student is struggling with the all-too-common issue of just not putting enough air through the instrument, try having the student play the following exercise:

**Figure 25. Flutter tonguing exercise**

*ff pp*

Continue pattern until..

Expand range over time...

The goal of this exercise is to keep the volume and intensity of the flutter consistent throughout the range, as well as keeping the pitch consistent with and without fluttering. If a student is able to flutter the full two-octave scale but the pitch is dropping, it is very likely that the back of the tongue is dropping during the fluttering motion, or the embouchure has become

too loose. If the student is having a hard time getting an intense fluttering sound that is consistent, especially across the break, their embouchure is likely far too tight.

After mastering this exercise at a loud dynamic, students should attempt to play this as quietly as possible. Predictably, most students will have a much harder time flutter tonguing at a soft dynamic than a loud one. The key here is to keep up the *intensity* of air throughout the flutter, even at low volumes. If they are able to play this exercise at a soft dynamic, improvement will be noticed in tone quality when playing soft passages.

As an example, take the “Lento” from Weber’s *Concertino* (Figure 26). This slow section is surprisingly difficult to play properly because of the low range and wide dynamic contrast. The typical problem students find is that these low notes tend to be spread in sound and out of tune. Flutter tonguing through this section while making sure that the pitch does not drop can aid in identifying low voicing or an overly loose embouchure.

**Figure 26. Weber Concertino, mm. 133-154<sup>55</sup>**

The image shows a musical score for Weber's Concertino, measures 133-154. The score is written in two staves. The top staff is marked "Lento" and "Solo" in red. The tempo is indicated as "Lento" with a quarter note equal to 63 (♩ = 63). The key signature is one flat (B-flat). The score includes dynamic markings such as *f*, *p*, and *pp*. The bottom staff continues the piece with measures 146-154, including a double bar line at the end. The score is annotated with red numbers above the notes, indicating measure numbers: 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, and 154. There are also red markings above measures 134 and 135, which are part of the "Solo" section.

<sup>55</sup> Weber, *Concertino*, 2.

### **Extending the flutter tongue into the altissimo**

Students who can perform the F Major exercise in Figure 25 with ease should begin attempting to increase their range to the third octave and beyond, adding to the exercise as needed. Most clarinetists will discover that getting above a clarion A or B can be rather difficult without fine control of the tongue muscles. The key to flutter tonguing in the altissimo range is the vertical position of the middle of the tongue and the horizontal position of the tip of the tongue in relation to the reed. Moving the middle of the tongue up and the tip of the tongue towards the tip of the reed will increase air speed and focus, allowing the flutter effect to occur even in the extreme ranges (it is even possible to flutter up into upper altissimo notes such as C and C# once one masters this!).

As the student plays their scale into the altissimo range with flutter, instruct them to keep their voicing and embouchure support the same when not flutter tonguing. Pitch and focus will quickly improve, and tone quality will be much more even if the student is able to keep the same intensity of air and flutter throughout the whole range of the instrument.

### **Intensity of phrases and air support through full runs**

One of the most common issues with clarinetists, particularly younger players with strong technique, is that they will play fast moving passages that sound uneven even if their fingers are moving at the correct time. Their phrasing may also sound expressively flat, with a lack of direction and the middle notes of a run being especially dull. This is perhaps where flutter tonguing can be of greatest use in more standard repertoire applications. Take, for example, the following passage from Widor's *Introduction et Rondo*.

Figure 27. Widor Introduction et Rondo, mm. 53-73<sup>56</sup>



There are three primary difficulties with this passage. First, the runs are fast, so it is very easy for individual notes, especially in the middle of each beat, to get lost. Second, the passage is typically played with an overall diminuendo towards the altissimo F, a range that can be challenging to play at soft dynamics without producing a grunt. Finally, the leaps from the throat tone notes to the clarion range in the second half of the passage can be problematic to play quietly. Practicing this section while flutter tonguing will fix the fundamental cause for all of these issues: an inconsistency in air intensity, voicing, and embouchure support throughout a wide range of the instrument.

Another example where flutter tonguing could be used for this purpose would be in the third movement of Brahms' second Clarinet Sonata. The section where the clarinet and piano play in phase with each other (excerpt below) suffers from many of the same issues as the Widor, but with shorter, more frequent runs. It is easy to let the air intensity drop when moving back and forth around throat tones and towards the ends of each run. As with the Widor, these are also played at a soft dynamic, so being able to perform this passage at an even volume with flutter

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<sup>56</sup> Charles Marie Widor, *Introduction et Rondo*, Op. 72 (Paris: Heugel & Cie., 1898), 1.

tongue will help the clarinetist understand the level of support required to both even out the phrases and to smooth out the intervals. Of special note here is the run towards the end that starts on a high E (four measures from the end of the excerpt). Being able to start this note with a flutter should help with any response issues here when playing the passage normally.

**Figure 28. Brahms Sonata No. 2, movement 4, mm. 42-55<sup>57</sup>**

The image displays a musical score for Brahms' Sonata No. 2, movement 4, measures 42-55. The score is written for a single melodic line on a treble clef staff. It begins with a dynamic marking of *p* and the tempo/style marking *grazioso*. The music consists of six staves of notation. The first staff shows the beginning of the passage with a *p* dynamic and *grazioso* marking. The second and third staves continue the melodic line with various articulations and slurs. The fourth staff features a *p* dynamic marking. The fifth staff includes a *dol.* (dolce) marking. The sixth and final staff concludes the passage with dynamic markings of *fp* and *p*.

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<sup>57</sup> Brahms, *Sonata No. 2*, 6-7.

## **Growling and Singing While Playing**

“Growling” involves playing the clarinet while vibrating the back of the throat in some way as to disrupt the air. This is typically achieved by humming at the same time as blowing into the clarinet. The closer the hummed pitch to the note being played, the more intense the distortion. Growling is often used as a substitute for flutter tonguing when one is not yet able to successfully or consistently perform that technique, but while the two techniques do sound similar, they are not exactly the same effect.

If the humming volume is increased and the pitch is more defined, then it is possible to “sing” while playing at the same time. This is a separate technique from growling but is performed in essentially the same manner, with the main difference being precision and air intensity. Much like with growling, the main clarinet pitch is distorted; an interesting side effect is that when certain intervals are hummed, it is possible to attain a “difference tone” in between them due to the way the harmonic frequencies interact.

Growling is a common technique that is seen in much of the standard twentieth-century repertoire. In jazz, the technique was popularized by players such as Benny Goodman in the swing era and more “traditional” jazz players like Ken Peplowski and Evan Christopher. Singing while playing, on the other hand, is fairly rare, and is usually reserved for unaccompanied solo pieces that feature the technique. Growling can be useful as a practice tool for improving air support and consistency. Singing while playing has the additional benefit of helping with ear training and improving intonation.

### **Improvements to Air Support**

When learning to growl, the first thing a student would notice is how much air the technique requires. This is exacerbated by taking the technique a step further into singing while

playing. Not only does one need to push out enough air to make the instrument function, but they also need enough air to support a singing voice at the same time.

While flutter tonguing has a similar application—and is likely the better option for slurred passages—growling can be done while articulating, which allows it to be used in a wider variety of passages. For example, the following passage from the popular fourth etude from Cyrille Rose’s *32 Etudes* often suffers from the issue of students backing off the air in the middle of repeated articulated passages (such as in beats three and four of the first measure). Students also tend to back off the air at the ends of slurred beats (such as in beat one), which causes the first articulated note of the next beat to be weaker than it should be. These issues can be improved by growling through the passage, then playing again without growling but keeping the support from the abdominal muscles the same.

**Figure 29. Rose 32 Etudes for Clarinet, opening line to Etude #4<sup>58</sup>**



### **Intonation Improvements Through Singing While Playing**

The difficulty of this technique comes from the need to balance the voice and playing pitches, which is much easier said than done. For this to work properly, the voice must be extremely loud (it will feel like yelling through the instrument) and the playing must be relatively quiet. A good way to practice the technique is to literally try yelling through the instrument for some time without playing, and then gradually add a bit of embouchure pressure and air until both notes come out. The goal is not to focus on the tone quality of the clarinet

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<sup>58</sup> Cyrille Rose, *32 Etudes for Clarinet* (New York: Carl Fisher, 1913), 5.

playing or the singing, but rather to balance the two so that both notes are equally audible. The following exercise can be used for this (can be transposed to a comfortable singing key).

**Figure 30. Singing while playing exercise #1**

Sing (Transpose to a comfortable key as needed)

Play *f*

*p*

As this exercise is mastered, special attention should be paid to the relative intonation between the singing and playing pitch. A more advanced exercise appears in Figure 31 (again, this can be transposed for comfort).

**Figure 31. Singing while playing exercise #2**

Sing (Transpose to a comfortable key as needed)

Play *f*

*p*

Singing while playing can be incorporated into any repertoire being practiced, especially in sections that work with a consistent pedal tone. The idea is the same as playing with an external drone: to listen for and “feel” relative pitch inconsistencies. The difference here is that the drone is being created internally; the focus should be on keeping the droning note consistent. That is, if the pitch of the drone begins to change, it is likely that the airflow is changing in some way as the passage is being played. This exercise is not a perfect substitute for playing with an



external drone, but it does address many of the same issues, while also addressing others that the external drone cannot. Nonetheless, it is a useful tool to use alongside it.

### **Double Tongue**

Typical tonguing technique involves placing the tip of the tongue onto the tip of the reed to interrupt its vibration. While this is all that is needed for most of the traditional repertoire, there is a limit to how fast the tongue can move for most players. Past this limit (which is different for everyone), players typically struggle and will often need to add slurs to the music to make it playable (Beethoven's Fourth Symphony includes a short, but famous example of this). In some passages and situations, double tonguing can make things significantly easier.

Double tonguing is one of the more practical extended techniques to learn for every-day playing. It entails the use of a second contact point against the roof of the mouth, more proximal to the base of the tongue, in conjunction with the tip to interrupt the airstream. An effective explanation of this motion is that it is similar to saying the syllables "tee-kee" or "doo-goo" or "dee-gee" (different syllables are useful for different ranges). There are quite a few challenges with this, namely the fact that the second contact point does not actually touch the reed and that this part of the tongue is unlikely to be strong enough when first learning the technique to perform it effectively. Below is a progressive exercise for learning double tonguing (Figure 32). As the technique becomes familiar, the next goal should be to extend the range. It can be helpful to alternate beginning the exercise with both the "tee" and "kee" syllables in order to train the tongue muscles.<sup>59</sup>

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<sup>59</sup> Hudson, *Elements of Contemporary Clarinet Technique*, 94.

Though double tonguing itself is a valid goal, even for standard repertoire, there are other ways in which double tonguing can be useful even when playing repertoire that does not demand it.

**Figure 32. Double tonguing exercise<sup>60</sup>**



### **Improvements to single-tonguing lightness and tongue position**

The primary causes for a harsh and heavy articulation are not tonguing with the tip of the tongue (such as when “anchor” tonguing), striking the reed for too long and too hard, moving the back of the tongue while moving the tip, and of course, not using enough air. Thankfully, it is

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<sup>60</sup>Exercise by Andy Hudson, expanded from *Elements of Contemporary Clarinet Technique*.

nearly impossible to successfully double tongue with any sort of consistency if one has a heavy single articulation. If a student has significant issues with heavy articulation and all other options have already been exhausted, having a student learn how to double tongue could improve their single tongue dramatically and provide the necessary margin for them to find success in their articulated repertoire. This is especially effective if using the “doo goo” or “dee gee” syllable approach to double tonguing (which tends to be more effective in lower ranges), as it utilizes the least amount of tongue motion.

### **Tongue and finger coordination**

Oftentimes when a student complains about tonguing speed in a passage, the issue is rooted in problems with accuracy rather than velocity. In many cases, the tongue and fingers are not coordinated; the natural assumption is that the tongue is moving too slowly, or the fingers are too fast, though it is also possible that the tongue is moving steadily and the fingers unevenly. Double tonguing indirectly fixes this problem in two ways. First and foremost, when we first learn to double tongue, we are typically much more aware of our tongue and finger coordination and tend to practice much more slowly. And second, since the tip of the tongue only applies to every other note, it ends up *feeling* as if the fingers are allowed to move slower. The introduction of double tonguing can allow the fingers and articulation to be better matched. Take the following example from Weber’s *Concertino*:

Figure 33. Weber Concertino, mm. 54-72<sup>61</sup>



The fast articulation required for m. 64 and m. 67 tends to be a common concern amongst students. The short-term solution is to add slurs to the passage, but this is undesirable and should only be used as a last resort. A more long-term solution is to teach the student to double tongue this passage. Of course, in actual performance the student should not need to double tongue something at this speed. In fact, double tonguing here is probably going to sound worse than single tonguing due to its nature to sound uneven. However, double tonguing can aid in learning where to place the tip of the tongue and should allow for a lighter articulation. It should also help the student learn to slow their fingers and/or tongue down some, as the real root cause of the issue here is typically a lack of coordination between the tongue and fingers.

### Slap Tongue

One of the more elusive extended techniques for clarinetists, slap tonguing is a percussive form of articulation that can take quite some time to learn and master. It involves the creation of a vacuum between the tongue and reed, then a quick downwards release with a very small puff of

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<sup>61</sup> Weber, *Concertino*, 1.

air that causes the reed to forcefully hit back against the mouthpiece, thus creating the “slap” sound. While most of us take years to learn this technique, some developing players unintentionally slap or quasi-slap every note without understanding why, or how they are accomplishing that. For these players, learning how to slap intentionally can allow them to gain significant insight into what they are doing.

The typical cause for this issue is a very aggressive “anchor tongue,” where the tip of the tongue stays anchored behind the bottom front teeth and the middle of the tongue is what makes contact with the reed. While there are a few professional players who have had success with anchor tonguing, most clarinetists will find that this method of articulation is sluggish and produces the quasi-slap effect that sounds like a pop. Since slap tonguing is essentially a more intense version of anchor tonguing, learning how to slap tongue purposely would essentially teach the student “what not to do” in a normal scenario.

### **Circular Breathing**

Circular breathing is a once rare technique that seems to be gaining popularity with clarinetists these days. While the concept seems difficult at first, the technique itself is something that most players should be able to grasp with some practice. The general process for performing the technique is as follows:

1. While blowing lung air, puff cheeks to store air.
2. Use the cheek muscles to push air into the instrument.
3. At the same time, breathe in through the nose.
4. Transition back to blowing air from the lungs.

After convincing the brain that this is possible to begin with, most players will encounter difficulty between steps three and four. There will typically be a “break” in the sound and the

pitch will likely drop considerably. The key to successful practicing of circular breathing is to practice it on moving notes with low resistance such as a trill between throat tones or the first five notes of a C Major scale. Learning this on moving notes is important, as the movement will “hide” some of the demoralizing drop in sound quality that is likely to occur for some time until the technique is mastered. Another popular practice technique is to blow into a straw in a cup half-filled with water; the goal in that case is to keep the bubbles going consistently.

Though circular breathing is not particularly effective as a diagnostic tool in clarinet pedagogy, there are a few benefits to learning the technique that indirectly improve other aspects of clarinet playing. The first benefit is the ability to maintain longer phrases. Too often wind players find themselves in a situation where they must break a phrase in order to take a breath. While this can be done in a musical way, the ability to circular breathe opens up a new path that was not previously available. Furthermore, Gregory Oakes claims that just knowing that the possibility of circular breathing exists as an option will allow players to even attempt a longer phrase in the first place.<sup>62</sup>

The other main benefit to learning circular breathing is in its inherent ability to “work out” the cheek muscles. These muscles are an important component of clarinet embouchure that often gets ignored. According to Eric Mandat, circular breathing is also important in teaching players about how to control the embouchure and cheek muscles in significant ways.<sup>63</sup>

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<sup>62</sup> Gregory Oakes, interview by author, September 22, 2022.

<sup>63</sup> Eric Mandat, interview by author, September 26, 2022.

## CHAPTER VI: SUMMATION

As seen throughout this document, there are many uses for extended techniques outside of the effects they create. While these techniques are certainly worth learning for their own sake, they have been underutilized as teaching and learning tools for traditional repertoire. The goal here is not to completely revamp traditional teaching methods: those practices have become tradition for a reason and should not be ignored or jettisoned. Rather, it should be acknowledged that there are many musical situations where traditional methods may be supplemented and aided by these extra tools; for modern students, these traditional methods may not be enough.

Yes, playing many of these extended techniques in the first place requires a certain level of understanding clarinet fundamentals, but that is exactly the point! It is not uncommon for clarinetists to potentially “forget” their fundamentals while playing difficult passages in more traditional styles. By practicing standard repertoire using techniques that, by their very nature, require strong fundamental skills, this repertoire will be able to shine brighter.

Just as important is the ability of extended techniques to teach a player *what not to do*. In many cases extended techniques are produced by taking the standard way of playing too far or by “playing poorly.” Extended techniques may also serve as a way of limit-testing. How far can a player take a certain color before the sound “breaks?” If one boxes themselves into “proper” ways of playing and ignores the vast ecosystem of extended techniques afforded by the clarinet, those limits may never be discovered.

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## APPENDIX A: A LIST OF RESOURCES FOR LEARNING EXTENDED TECHNIQUES

### **Reference Guides**

Bruno Bartolozzi (1967) - *New Sounds for Woodwinds*

Caitlin Beare (2021) [Dissertation] - *Cultivating the Contemporary Clarinetist: Pedagogical Materials for Extended Clarinet Techniques*

Gerald Farmer (1982) - *Multiphonics and other Contemporary Clarinet Techniques*

Tim Fitzgerald and Jon Goodman (2014) - *GaudyBreak'em: A Quarter-Tone Technique Companion*

Jack Liang (2018) [Dissertation] - *Clarinet Multiphonics: A Catalog and Analysis of Their Production Strategies*

Phillip Rehfeldt (1977, ed. 1994) - *New Directions for Clarinet*

E. Michael Richards (1992) - *The Clarinet of the Twenty-First Century*

### **Etudes for learning extended techniques**

Ronald L. Caravan (1979) - *Preliminary Exercises & Etudes in Contemporary Techniques for Clarinet: Introductory material for the study of multiphonics, quarter tones, and timbre variation*

Rebecca Danard (2011) [Dissertation] - *Etudes in Performing Extended Techniques: Twelve Newly-Commissioned Canadian Works for Solo Clarinet*

Luke Ellard (2020) [Dissertation] - *Bridging the Gap: Introducing Extended Techniques and Contemporary Notation Through Newly Composed Etudes for Clarinet*

Andy Hudson & Roger Zare (with Viet Cuong) (2021) - *Elements of Contemporary Clarinet Technique*

Olivia Meadows (2019) [Dissertation] - *A Program of Study for 21<sup>st</sup> Century Clarinet Techniques Featuring Five New Compositions for Unaccompanied Clarinet*

### **Bass Clarinet specific resources**

Philip Everall (2016) [Dissertation] - *A digital resource for navigating extended techniques on bass clarinet*

Andy Hudson & Roger Zare (with Jason Alder) (2022) - *SPACE BASS: Advanced Explorations for Bass Clarinet*

Sarah Watts (2015) [Dissertation and book formats] - *Spectral Immersions: A Comprehensive Guide To The Theory And Practice Of Bass Clarinet Multiphonics*

### **Pedagogical studies**

Vanessa A. Davis (2018) [Dissertation] - *A Concept-Based Pedagogy Approach to Selected Unaccompanied Clarinet Repertoire*

Amy M. Humberd (2020) [Dissertation] - *A Pedagogical Approach for Incorporating Extended Techniques Into the Undergraduate Clarinet Curriculum*

Jessica Anne Hall Speak (2020) [Dissertation] - *Eric Mandat's Pedagogical Style: Teaching Philosophy, Teaching Techniques, and Teaching Elements Within his Unaccompanied Clarinet Works*

### **Web resources and reference materials**

Jason Alder (soprano and bass clarinet quarter tone fingering charts) - <https://www.jasonalder.com/resources/>

Heather Roche's Blog (includes several posts about learning specific techniques) - <https://heatherroche.net/>

Gregory Oakes Website (a catalog of multiphonic and microtonal fingerings) - <https://www.gregoryoakes.com/multiphonics/index.php>

## APPENDIX B: INTERVIEW WITH GREGORY OAKES

### Full transcript of interview conducted by author on 9/22/22

**Lucas Gianini (LG):** How long have you been playing clarinet?

**Gregory Oakes (GO):** I have been playing clarinet for 41 years.

**LG:** Okay, that's a while!

**GO:** It's a bit!

**LG:** Yeah, that's about twice as long as I have, which explains a lot... you know, you're very good! And how long have you been teaching out of that time?

**GO:** I first started teaching when I was sixteen, private lessons, so that's been thirty five years that I've been teaching. But I started teaching at the university level in 2003.

**LG:** Okay, and that goes into my next question: most of the students you work with these days are university level, right?

**GO:** Almost exclusively. The few students that are not in the university are usually people who are on their way to that kind of study.

**LG:** Yeah. So mostly, you know, more serious performers, that kind of deal.

**GO:** Pre-professional people.

**LG:** And how long have you been... you're at Iowa, right?

**GO:** Iowa State University. I've been teaching there since 2008.

**LG:** Awesome! So, when you're teaching... I know your performance history is a lot of contemporary music; that's what you're known for. And I know you play other music as well, but as far as teaching, do you usually teach mostly more standard repertoire? Or do you teach a significant amount of more contemporary style music?

**GO:** I always start with more traditional repertoire, mostly because the elements of phrasing and musicality that we want to have are present in all of those things, and in a sense, the more contemporary things we have still build upon those experiences. And so before I want somebody to be doing something that has a lot of extended techniques, I want to make sure that they're using those techniques in a musical way and not just sort of in a catalog of *gee-whiz* stuff where the technique *is* the interest. I always see those as being a way to access the musicality, but not the substance by itself. And so, for me it's very important that someone already has a well-developed sense of musicality and stylistic interpretation before they begin putting in anything more unusual.

**LG:** Oh, that's awesome. That's similar to how I feel, I guess. I do wish a lot of teachers would start more contemporary styles of music earlier than they do, because a lot of times people don't even encounter those until they get to their masters.

**GO:** That certainly is true, and I'm always sure that people get outside of the pure tonal world very quickly. And so, I do have people learning, say, Stravinsky, pretty early on, so that they're experiencing something—especially unaccompanied music, because unaccompanied music does put all the onus of music making on the individual, and so they're not relying on an accompanist to do that with them. They have that responsibility for creating all the interests, which, as we know, is a lot more challenging in ways, but also pretty exciting, too. And so, there are ways to start understanding this approach to what we're doing with new music, even before things get really technically challenging.

**LG:** Yeah, that makes a lot of sense to me. I think part of the issue is that a lot of the music that includes extended techniques tends to be pretty difficult. The composers just kind of assume that if you can do extended techniques, you're advanced to begin with. And there's not a lot of... I guess there's a bit of a niche that hasn't been filled yet, with extended techniques where it's like... it's designed for younger players that are just being introduced to that.

**GO:** When I'm thinking about extended techniques, one of the first things that comes to my mind is multiphonics, because it is the first of the really extended techniques that I teach other than circular breathing. And in a sense, I teach the foundations to multiphonics before they even know that they're learning that. When I'm talking about understanding voicing, and understanding harmonics. I'll do harmonic voicing exercises and get people thinking in harmonic—I talk outside of the chalumeau, clarion, and altissimo world. And I start talking very soon about first partial, third partial, fifth partial notes, so that they're understanding that, and then what they're doing to create those things. There's a joke in my studio where we don't use the word “squeak.” We only talk about “unintentional upper partial harmonics.”

**LG:** Love that!

**GO:** They start to get people thinking, like, what are the sounds that you're making, because the clarinet is making the sounds that you're specifically telling it to with your actions. And so, when I first talk about multiphonics, I say “guess what, you've already played your first multiphonic, you didn't even know it!” Think about the first G in the Mozart *Clarinet Concerto* [vocalizes the sound a slow responding note]. It's like, there it is! And I'll play that and then I'll really emphasize the first and third partials together, and say, “you hear both of those... now we're really used to hearing that first partial, and we get so accustomed to that, we don't even understand that what we're doing is creating two partials at the same time.” And really, multiphonics is just being more precise with how we do that and how we interface and create that. And really, understanding how to create multiphonics is a much clearer way to understand how you want to create “uniphonics,” right? You want to be able to play a high G in pianissimo? You have to have the same understanding that you do for making a multiphonic in order to make that happen, because if you're biting and doing all kinds of weird stuff, that note is never going to come out the way you want it.



**LG:** That's amazing. That actually goes into one of the questions that I was going to ask you about later. But that's actually—that's basically one of the chapters that I've written so far! So, one of the ways that I talk about using multiphonics—we'll kind of skip around a little bit here—I talk about how even in books like, you know, these old school pedagogy books that are teaching you, like from the sixties and twenties and forties...

**GO:** The Ronald Caravan books?

**LG:** Yeah! But you know, even non-extended technique books!

**GO:** Oh, yes!

**LG:** Like, the regular books. One of the exercises that actually gets talked about in there: the partials exercise to figure out how to remove grunting.

**GO:** Yep.

**LG:** That's one of the things I talk about, which is that, to me, one of the best ways to learn how to remove the undertone is to basically learn what not to do—which to me that's basically what extended techniques are—it's like learning how to play “wrong,” but on purpose.

**GO:** Yeah, right! And that actually goes into an exercise that I do. You know, so much of the time, people will focus their energies on “here's how I want to make sure that you don't do this.” But if you better understand what you're doing—so when people talk about “oh, the grunt! And you want to avoid that”—say: “well, why don't we do the extreme of that? Play that G from the beginning of the Mozart. Only voice it down so you're only getting the first partial. What do you have to do to create that?” *Feel* how it creates a different sound when you come up into a third partial. What is everything in between, you know?”

People are just saying “Oh, don't grunt,” as opposed to exactly, you know, what's the first partial? What's the third partial? So, where is that dividing line and how do you feel that? You give people a much clearer understanding of where those dividing lines are, and how they're creating those as opposed to just saying, “that's a bad sound, don't ever do that.” People can learn multiphonics, and actually never perform it ever, and still have it help their orchestral playing

**LG:** Yeah, yeah, that's great! So, I guess we'll get back to that multiphonics talk here in just a minute. So, when did you first start working on extended techniques as a performer? Not necessarily as a teacher, but when did your first start playing around with them?

**GO:** Sure. I was interested really early on, and when I was in high school, I first heard Eric Mandat play the *Folk Songs*, and the piece was only two years old at that point. And I heard him play it, and I was absolutely blown away! I had no idea clarinet could do that kind of thing, and I decided right then—I was 17 years old, and I said I'm going to do that! I love this! And so, it was around that time, also, that I had seen a masterclass with Charles Neidich about circular breathing, and so I had started doing that. So, I think I got on board—a little obsessive about this—perhaps earlier than some people because I was just so excited by a combination both of the sounds I was hearing, and also of just the new possibilities: things that were that just... I

want to be able to do these unusual things, too! And so, circular breathing was one that I worked on very early.

And then, when I went to Michigan State University, my teacher there, Elsa Ludewig-Verdehr, was very much into new music, and every year there was a new music recital that you had the studio do, and that was the first time I played one of Eric's pieces. I played the *Tricolor Capers*, which has a bunch of things in there. You know, multiphonics and quarter tones, and harmonics. And that was really my first foray into that.

For a little while in my professional career, I took a little bit of a different angle, and I really was specializing in orchestral things. But the extended techniques and all of that was always still part of my musical diet really.

**LG:** Yeah, you know, it's amazing to say that. I think I'm finding, as I talk to people, that a lot of people get inspired to get into this kind of sound world in a similar way, where they hear someone playing it... they're going "Oh, my God, I did not know the clarinet could do that..." And you know, you can either take that two ways, right? You take that as the "Oh, that that's not right" way and shy away from it, or you can take it from the—which is the way you do seem to have done and the way I did it—which was like "all right I got to figure out how to do that, because that sounds cool!"

And for me, I remember the exact recital. It was my first year of college, my first semester of college, and I think I was like twenty at this point—I started a little late—and I heard Anthony Taylor playing two pieces. I heard him playing *Gryphon* by Theresa Martin, which was just like, oh man, you know all these microtonal shifts and all these tonal colors and all that stuff, that's cool! And then I heard him playing Evan Ziporyn's *Four Impersonations*—both pieces that I ended up doing!

Those are my first two pieces that I did in this style of music, and that's also how I got introduced. It was just like, "okay, how do I do this? All right." And I found that... the way I figured it out was that I actually had to go and do it. I couldn't just ask someone how to do it. For most extended techniques, in my experience, you really have to actually *do* them, or just play around and see if you do it by accident. You're like "okay, I just did it, so I know it's possible."

**GO:** That's right, well, and actually, now that I think about it, my experience with learning the glissando was a similar thing. That was something I was really excited by and obsessed with learning. This was even earlier than maybe these other experiences and I also didn't know anybody who could do it, and I met like one student who could do it. And I'm like "how are you doing that?" And he's like "I don't know."

**LG:** Yeah, I'm going to start an Instagram series where I do pieces incorrectly, like orchestral excerpts, I think. Everyone's doing Gershwin this week for some reason, so I'm going to do... this is Gershwin if the conductor tells you to play it, but like a little bit longer... take your time with the glissando. And I'm just going to do the *longest* glissando I can possibly do.

**GO:** Circular breath in the middle!

**LG:** Yeah, that's a good idea! If I can figure that out. That's a hard one to circular breathe through!

**GO:** Yeah, that's true.

**LG:** But yeah, I mean that's such an interesting thing. It does seem like most people that I know that have gotten into this world of contemporary music started by hearing someone else. And then they went home and said "okay, how do I do this." And you said... you know, is there a particular piece that was the very first piece you played?

**GO:** So, the very first piece I played was the *Tricolor Capers*.

**LG:** Oh man! You went for one of the hardest ones right away!

**GO:** I didn't know! Also, it was like "here, we'll have you do this," and I'm like, "cool let's do that." I already had the music for *Folks Songs*. I had bought it when I heard Eric do the piece, and I knew that I wasn't yet able to play that. So Elsa said, "well, this looks like more of an on ramp," and I was really lucky in that time that Eric came a couple times to campus at Michigan State, and so I was able to get to know him.

**LG:** And you studied with him for a little bit, right?

**GO:** I had done some stuff not formally. I never, you know, studied in a regular way with him, but I did take lessons with him a few different times on his music. He's very generous with his time and energy. So I would love to have said that I had been a student of his. but you know I was certainly... I've always considered him a mentor and inspiration. But no formal specific studies with him

**LG:** And it's fun that you mentioned *Folk Songs* because it turned out that, you know, eventually your recording of that would be probably one of the more well-known recordings of that piece. It's actually the recording that I modeled when I played the fluting movement. I was listening to you a lot because I was listening to you play and I'm just going "okay, how can I get fluting to be that clear?" Because if it's not that clear then it's not really good enough, it needs to be that clear, and if it's possible I'm going to figure it out.

**GO:** Of course! Well, and you do it so beautifully. I have to say that I feel a special affinity to someone else who loves fluting, because that was the thing about *Folk Songs* that made me say "this is mind expanding." And every time... I used to perform that piece everywhere I could go, and I would love it because I would play it for clarinetists and then, you know, the next half hour in the hall people would be messing around trying to do the same thing. I was just doing that, in fact, with a student yesterday who was working on tricolor capers, and you know, I was talking to her about the fourth movement of *Folk Songs*, and all these things. And I think that it really does open up a new world of possibilities when people see and hear that. And for me, like you're describing, I wanted it to really not only be a "oh, you can make a sound that way," but to have it be beautiful, and transformative and have people be like "oh, I'm not even sure what I'm listening to right now." That's what I wanted it to be.

**LG:** That's my favorite one: "Okay I don't know what I just heard, but that's cool!" You know, that's my approach.

**GO:** Yes, yes.

**LG:** So, you're familiar with, I'm assuming, pretty much all of the extended of techniques, and I know you're pretty accomplished, at least ones I've heard you do. I'm assuming growling, and singing and playing, that's a pretty common one.

**GO:** Yeah, yeah, those are really frequent. In fact, the singing and playing, you know, there's that one movement of the *Folk Songs* in it too, but another piece that I performed a lot at one point is by Ken Ueno, *I screamed at the sea until notes swelled up, and my voice became the resonant noise of the sea*. It's a long title!

**LG:** That's a very accurate... I'm assuming that one explains the piece really well.

**GO:** As Ken described it, the title is its own program note! And that one has some very involved singing where the voice really—you actually have an amplified voice to bring it up to the prominence of the clarinet. And the two parts are very.. they are a little bit more partnered. And actually, I was really excited when Gleb Kanasevich also recorded that piece.

**LG:** Oh, he's incredible.

**GO:** Because okay, it's not just a piece written for me, but I think it's actually really powerful, and it uses the voice in a little bit more meaningful way. Sometimes when it's singing and playing, the voice is, like you said, like growling, it's almost like you'll sing any pitch. It's kind of like the, you know, the bad old days, the 1960s and 70s pieces where they just had like, "play a multiphonic," and it's now become a little bit more... a little bit more finesse is involved.

**LG:** Yeah, there's only two pieces I've ever done that... well I've worked on *Folk Songs*, I've never performed it, but I've done two pieces on bass clarinet that required that technique. And I'm actually recording Andy Hudson's book that's coming up—he's doing a bass clarinet book now. So I'm recording one of the singing and playing movements for him, for a little advertising. I've done *Partial Truths* by Evan Ziporyn; I've done a lot of Evan Ziporyn music, I like a lot of his stuff.

**GO:** That's an awesome piece!

**LG:** Yeah, and I've done *Tsmindao Ghmerto*, which is the other one that's just... that one kind of hurts your throat a little bit when you're singing and playing. When you're teaching these—you know, we'll go through each technique here—but when, especially with growling and singing and playing, what are some of the particular difficulties that you've encountered when you're trying to either learn them, or when you're teaching these? I guess teaching them primarily, like, what are the biggest difficulties?

**GO:** Sure. Teaching them, really, I'm just kind of leading people through the same steps that I had done myself earlier. I find the biggest challenge with singing and playing, for me, was that I had a very developed breath support, and baby vocal cords, and so I was able to push a lot of air

and then my vocal cords weren't up to it. And so, I actually spent some time talking with some vocal colleagues about some warm-ups, and some exercises, and some things to do to develop, and I actually spent some time developing some vocal prowess, so I wasn't injuring myself. You talk about, you know, hurting, it's possible to tax your vocal cords to a point where you actually create some damage, and that's not something that I wanted. And so, that's a big one for me.

Another one is that when people are playing, a lot of times they're so used to the open throat that engaging the vocal cords while they're playing, for certain people, becomes really hard to do. That is actually an impediment, you know, because when people think about singing it actually conflicts with what their idea of blowing is. Sometimes I end up rebranding that as humming because, if you think about humming, it's a closed system [hums], but singing [sings an "ah" in the same pitch as the hum] ... people have a different conceptualization of that. And so, we get to this idea of humming and so that usually is helpful. And I'll start with just some unison humming exercises where they're humming the same notes that they're playing, and that also gets to be a question of who the person is, what their vocal range is. And, you know, finding the notes that work for them. Some people have a very narrow vocal range, and so that that in itself is its own thing, trying to figure out "does your vocal range match up with what the piece is?"

**LG:** Have you found that—and this is just me, my own experience—have you found that most of the music that has been written for singing and playing seems to have been written with male voices in mind?

**GO:** Yeah, it has been.

**LG:** Have you found it to be a challenge with female performers, in their voices being higher?

**GO:** It's a problem, because some of these pieces, you know, they're really in... I mentioned this piece by Ken Ueno... I happen to have a rather large vocal range, and he wrote that for my vocal range. And so the low notes are like baritone voice [sings a very low note], and the highest ones are [sings a very high note], you know, and to be able to get that whole range. Honestly, when he wrote the piece for me, I didn't imagine that there would necessarily be anyone else who would have that range, and so, fortunately there are allowances for octave equivalents that oftentimes will create the same kind of sound. And so that's been what we've done in like, you know, Eric's pieces, for example.

**LG:** Yeah, and have you found any—there's a question I was going to ask later on, but I guess it'll make more sense to just keep this within each technique—have you found any ways that you use these techniques? With singing and playing, have you found any particular way to use this when you're teaching non... have you ever used this in a piece of music that isn't doesn't have that technique in it as a way to teach in some way?

**GO:** Well, that's an interesting thing that you bring up. Flute players do this all the time in pedagogy: singing the note at the same time to kind of help find the resonance for that note, and that's a little bit more established pedagogy in the flute world—that you'll sing a unison. I've found that when I do that it does sometimes help to center a little bit of the focus. I have this idea in the abstract that I would like to use that with students for some pedagogy, but realistically, by the time somebody gets to the point that that they have learned the singing playing stuff, if

they're studying with me, they've really already gotten that kind of concept working for them. So, I have it in my mind as an idea of a way, perhaps that would be something to use with somebody who's maybe a more advanced student who hasn't necessarily found all of their resonances just the way that they want, and that might be a really good, sort of therapeutic thing.

If someone were like me when I was going into my master's degree. I have to say that my tone quality was not particularly well developed... It had some major issues with the way that I was creating sounds, and so I was kind of a late bloomer in terms of having a sound that would fit well in an orchestral context. And so yeah, I hadn't developed a very good sense of where my tongue position was. I was actually more proficient with multiphonics than I was with just creating the sounds that I wanted.

And you know, I kind of make an analogy in my mind to children who learn multiple languages. It happens if somebody, as a child, you know, under the age of 8, is learning more than one language, that language acquisition happens more slowly. But then, by the time that they're fluent in two or three languages, or whatever they're doing, then they really do have that solid mastery, and I kind of feel like my process with tone development was that way, because now I feel like I understand exactly how to make the sounds that I want. It's not just like "I'll set it, and then I just here's how I play." I really do understand the components for myself, and so that might be something that you're discovering for yourself as well.

**LG:** Yeah, and that's kind of saying, like, a long-term approach versus a short-term approach, where, you know, it takes longer to learn it, but in a longer span you will find that you've learned more. if you take your time learning both things. One of the things that I found that—I, again, haven't really done a whole lot of this yet—but one of the things I was thinking about with singing and playing is basically as an ear training technique where you're trying to identify intervals.

**GO:** Yeah.

**LG:** I have it in here, you know, maybe you can use it instead of—it doesn't quite work this way—but in lieu of a drone on a tuner. Instead of putting a drone on a tuner, you can do it with your voice. But it does get in the way of voicing sometimes with that kind of thing, so it's more of an ear training approach than a producing a beautiful tone approach.

**GO:** True. Well, there's an interesting thing that I now realize for myself. I do not have perfect pitch, but I can sing a note, you know, and play it unison right away, because I understand what that note feels like, and so in that sense sometimes I can figure out what a pitch is from doing that. I used to be a jazz player and I would be able to hear a note and match it on the instrument, but I wouldn't necessarily hear a note and know what the name of the note was.

**LG:** Yeah, I have a similar thing. I do not have perfect pitch and I am not a proficient... I can't really do that well with matching... but I usually do pretty well in terms of... I can generally recall notes in pieces I've played before in the correct pitch.

**GO:** Yup, yup.

**LG:** Like, if I wanted to play the *Tsmindao Ghmerto* again [sings opening sung notes of the piece], I know what the pitches are. And I do find that that's a really helpful tool for me with that technique. And so, keeping along, another thing that I found is that in order to get this technique going, it takes a crap-ton of air. Like here, you're yelling through that instrument. And so, this is to me—especially growling, because growling is, you know, to me I consider singing and playing and growling to be essentially the same technique, except that growling is indefinite—I use growling and then the next technique we'll talk about here, fluttering, in the same regard, which is air support. And if I have passages where I need to learn how to support through an entire passage, I find that growling especially... and I can't really do articulated passages this way with flutter tonguing... so I use growling for those. So that's my use, but with flutter tonguing, which is really almost not considered an extended technique anymore...

**GO:** Yeah, it's in Mahler. I mean I guess, you know, it is extended beyond what some people do. I guess the only reason you'd call it extended is because say, Robert Marcellus didn't really do it. Or maybe he did in Mahler, I don't know.

**LG:** Yea I consider anything that's not part of just blowing into the instrument and fingering a single note... I consider all those extended techniques.

**GO:** Yeah, you're right. I would call flutter tonguing an extended technique. And actually that's an interesting one, isn't it? I would have to say that that was actually my first extended technique that I played, now that we're thinking about this, because I remember... I'd been playing the clarinet for like a month, and I remember just playing, like kids do, and I remember going into my first teacher and I'm like "hey, look what I figured out!" [makes a fluttering sound] And that brings up an interesting question about flutter tongue, because there's a few different ways to do it, aren't there? I do it with the front of the tongue like the Spanish style.

**LG:** That's what I do as well.

**GO:** Yeah, but I know there's some people who do it with the middle of their tongue, you know, like the German or...

**LG:** Yeah, I've tried that... that one's hard, and I found that people that do that have a much easier time doing it higher.

**GO:** Right, because it doesn't root... it doesn't require you to flatten out the tongue.

**LG:** Yeah, it doesn't do a shifting of the tongue position. And then there's the people that do it with the uvula. Is that what it's called?

**GO:** Yeah, exactly, exactly. The glottal. And that's something that I've seen people do. That one is hard for me, that one always feels painful. And actually, every time I model it, I end up getting a sore throat.

**LG:** Yeah, to me, well, that's basically just growling, but more painful, so I don't do that one, but yeah, I know people that do that one as well. But with flutter tonguing... so, is there any... I guess a difficulty with this one that I personally found is that some people just don't know how to roll their Rs.

**GO:** In part. This one's very hard for me because I'd give an example of teaching tone, because I went through the whole, you know, like from the lowest valley of bad tone, all the way up through all the different strata of figuring out... I feel like I understand a lot about what makes clarinet tone because I had to follow that path. With flutter tonguing, I've just always been able to do it and so it's the thing that I feel like perhaps I have the least understanding of. I feel like there are exercises that people do—basically speech therapy for languages like Spanish, that involve the rolled R—that people do to kind of trip the tongue into doing the “trah” [makes a rolled R sound] that, you know, getting that to happen. But people who haven't done that already, or haven't figured out, that that seems to be really challenging. I have yet to find a good, solid, reliable pedagogy that works for everyone.

**LG:** For me, usually when I have... whenever I have friends that need to learn how to do it... the people that have the hardest are native English speakers, honestly, because that sound doesn't exist in English... and some people come to me of saying “oh, it's a genetic thing you know, some people can't roll their Rs,” and I'm like, “no, everybody in Latin America can do it.”

**GO:** [nodding] There are people who have easier and harder times, no different from people who in English have a hard time making the hard R sound. This was actually... I remember my brother doing some therapy, because he did the “au” [describing a soft R sound], you know, learning the position of the tongue, learning how to figure this out. And it's not genetic, it's just habituation. But it is habituation, and I think a lot of it is deciding whether you want to work on it and figure it out or not.

Now, in the case of “can you speak the language?” That becomes more important. Can you make this particular sound on the clarinet? Some people will look for a reason to say “ah, well, I can't.”

**LG:** Yeah, some people just give up really quickly, and then for me it's interesting, too, because, as it comes to flutter tonguing itself... so I took a lesson with Michael Yoshimi a few years ago. It was an online lesson during when they were doing the Maestro Festival thing, and he had me flutter tonguing through the—I was playing the Bach *Chromatic Fantasy*—and he's like, can you flutter tongue through this passage to see if we can get it more even? And I'm like, “sure, let me try it.” And then I'm like, “oh, I can't flutter tongue above a clarion A.” And for me that was a pretty eye-opening moment, because he did it. And I'm like, “all right, how did he do that?” And what I found is that learning how to flutter tongue up high developed my embouchure in ways I never had it develop before. My embouchure and my voicing became so much more stable after learning how to do this. And now, I mean, I can flutter tongue into the upper altissimo fairly easy, but when I was first learning, I'm just like “what is going on?”

I did find that doing flutter tonguing and flutter tonguing through passages is something I do very often now, because, number one, it makes me slow down! And it makes me blow through the middle of runs, because what usually happens is that thing that you learn when you're in middle school, “just do the beginning of the run and the end of the run, and the middle is not that important.” Yeah, sure, it works great when you're in middle school and high school, but when you get into playing more “serious” music you're just like, “okay, I need to actually have some clarity on this technique, and you have to blow through the middle a lot.” So that's what I've been using flutter tonguing for.



**GO:** That's cool. I hadn't heard about using that, that's a really cool idea.

**LG:** Yeah, I learned that one from Michael Yoshimi! I will give him credit for that all day. It's been great for me. Well, moving on, double tonguing.

**GO:** Okay.

**LG:** Which is a bit mysterious to a lot of people. But I think everybody knows it's possible but very few people can do it on clarinet.

**GO:** Isn't that interesting? Very few people do it mostly because we don't learn it in that formative time that we're learning everything else. Now there is something that I have a suspicion that has a lot to do with people's single tongue. For me, I guess I'm rather fortunate that my single tongue is rather fast; and so, I've been trying to teach myself to double tongue, mostly because I feel like it would be really a cool thing to do in certain circumstances, but I, you know... for all the orchestral things I've had, I don't ever need it, I can just single tongue.

The people who double tongue really, especially well... it's a really cool sounding effect, and it's exciting and, you know, all those dramatic things like that. And I sometimes wonder when they developed doing that. I'm not exactly sure. but it's something that, of course, brass players and flute players all do. My brother, who is a bassoonist, interestingly enough, also, doesn't really double tongue. He mostly single tongues, even though bassoonists typically do.

**LG:** Yeah, I've found that double reed players can double tongue pretty well too. It's just saxophone and clarinet, they have a hard time, I guess, just because of the way the instrument goes in our mouth, and the resistance that you get.

**GO:** And I think, as much as anything, it's just a pedagogy. With clarinet it's hard because of the arc of the tongue that we have, but people do it really well and have a great sound.

**LG:** Yeah, I have not figured out how to do it up high yet. I can double tongue pretty well in the chalumeau register, throat tones, pretty clearly, and then once I cross the break, especially as I get into the middle clarion, the back of the tongue moves a little bit too much the tone's just not there. But apparently I just need to keep doing it.

**GO:** That seems to be the wisdom. I have discovered one thing about my playing, and there was kind of an insight that I had when I was a student. I could single tongue up to a certain speed, and then I would stop, but then I could also single tongue, much faster. Like, I can single tongue to like 112, and then 144, you know, again for sixteenth notes, and above. But in between was much harder and I started to realize what was going on, as I was doing a kind of reciprocal single tongue. So, it was always touching the reed, but it was not the same motion. [demonstrates tongue motion on reed with fingers]

**LG:** You know, I was reading David Pino's book and he describes what he called, I think, lateral double tonguing [this was, perhaps, "vertical" instead] in it, where he talks... it's like on the reed double tonguing, which is, you know... he basically does this, and then this [shows motion on the reed with hands, where both tip and middle of the tongue touch the reed].

**GO:** Oh, okay.

**LG:** Instead of instead of the tip going “doo-goo,”

**GO:** Instead of the airstream “Ka,” right?

**LG:** Yeah. And well, that makes sense. I tried doing it and I was just... it is not really necessary, I don't think, for me. I think I'll just stick to my... I'll learn how to do the more standard double tonguing, because I think I have more applications for it. I've talked to people that do lateral double tonguing as well, where they'll do this [motions a side-to-side motion with hands]. That one seems like you'll get in the way a lot more. I've tried that one... I feel like I'm going to cut my tongue open if I try doing that.

**GO:** Yeah, I don't know that I could do it. I mean, I'd have to play it, but it doesn't seem like I could do that faster. That's what I always run into; I haven't done it as much in my regular practicing recently, but I was, for a while, working on this double tonguing stuff, and the difficulty was that it was hard to feel like I was getting it more reliable and faster than my single tonguing. And so I had to ask myself “what am I going to do with this?”

**LG:** And so, when you're teaching double tonguing, what are your... I'm guessing, you know, you have students that come to you and they're like “how do I do it?” What are the biggest difficulties with it that you've encountered?

**GO:** What I notice is that people have a hard time making it an explosive enough “Ka.” And so the thing that I've really focused on is actually, instead of going at a “ta-ka ta-ka ta-ka” attack, where the “ka” is always really weak, is getting to reverse it. You “ka-ta ka-ta ka-ta ka-ta ka-ta.”

**LG:** Okay, so put them on the beat, interesting.

**GO:** It's easier, there's even a word to go with it: “kitty.” “kitty kitty kitty kitty kitty.” So, then they're focusing more on the “ka”, you know, subconsciously to get this and the “ta” is something that's already more familiar. So, that doesn't get weakened.

**LG:** Oh, yeah, that makes sense. And have you... I mean, I don't know how often you would try to... do you ever do double tonguing, like, do you ever tell a student to “practice this double tongued,” maybe even if it's a passage that doesn't need to be double tongued? I mean, I don't know how often people do that.

**GO:** I don't. Mostly I don't have I don't have students... I've had some in the past who are really excited about learning double tonguing. It's not something that I say “hey, we're going to do this now” given all the other things that I'm having them do. So I never send people off and say “hey, figure this out and then, you use it.”

**LG:** I guess the only reason you would teach it, usually, would be if someone brings in some rep that requires it, or if they just want to learn how to do it.

**GO:** Right, right Yeah, it's been a couple years since the last time I had somebody who was really excited about it. She did a lot of work on her own and then I ended up having her talk to the studio about it.

**LG:** So, one of the things I had thought about, and I'm wondering your thoughts on this because I do find that as I've learned how to double tongue, my single tongue got a little bit more clear because I had to think a lot more about where my tongue was going. Like, where the tip of my tongue was going. And I also find sometimes I'll be practicing passages, and even though my double tonguing is not great, I'll practice it double tongued, even if I don't intend on double tonguing it. Because usually my issue, and you don't need to agree with this... my issue is not usually one of speed when it comes to tonguing. My issue is almost always coordination and it's usually my fingers and my tongue are just not together.

**GO:** It's like most people's. Yeah, when most people are blaming the tongue, the tongue is very... it's doing a single thing over and over again [demonstrates tongue motion with fingers]. But the fingers are a whole variety of different motions and different fingers. And so it would make sense that if the two are not aligned, that the variable fingers, rather than the consistent tongue, are to blame. And so, when people think they're working on tonguing, they really are doing something with the fingers

**LG:** And in my experience almost always my fingers almost always just move faster than my tongue does... No, no... the other way around. Sometimes, not always, but sometimes it's like my tongue is actually moving faster than my fingers. And because I'm considering "oh, I got to tongue fast, so I guess I need to," and I tongue too fast, and my fingers are moving in time. One of the things I put in here is this idea of practicing a passage double tongued as a way... Number one, you're going to slow yourself down, and that's usually the best remedy for anything—just slow down. But it also does cause me, when I do things like this, it does force me to just think about where's the tip of my tongue going, is the back of my tongue... is it shifting? Because even when you're double tonguing you're trying to shift the back as little as possible, in order to get that voicing right. So that has been my thoughts on it, I don't know how you feel about it.

**GO:** Yeah, I love the idea of that. I don't do that mostly because I... probably because my own inexperience with double tonguing just makes it not be on the front of my mind. And students not having worked on it. But I love the idea of using that perspective, and in that increased awareness to help with what one is doing. So that sounds really cool.

**LG:** Yeah, so then, let's talk about the most mysterious technique in the clarinet, slap tonguing, which is my calling card. That's the thing, you know, I'm slowly becoming known for... that and fluting now. But with slap tonguing, this one I've had a bit of difficulty finding ways where it's like... where's this pedagogically useful? I thought of one way. So have you thought of anything where slap tonguing might be useful in any way? Or you know, obviously teaching it is a nightmare because it's such a weird thing.

**GO:** Well, it's so hard to conceptualize. I think that the thing that's most useful for that is teaching someone how to be investigative in their own process, because it is so nonlinear. Understanding all the different parts of it, and you had these little windows [makes a popping sound with tongue, as if slapping], and first getting them to it, and then transferring that over to

the reed. And then, suddenly, even if they're able to get the hard palette really clearly, the reed doesn't work that way. Then starting to understand that without the air behind it, it doesn't really have the same sound. And starting to put all of those little components of slap tongue really is, like you said, it's such a mysterious kind of thing, and something that's whole it's so hard to convey the feeling of it.

I think it's because the other ones leave more clues. Like, if you're talking about voicing, you can hear the voicing. Okay, well, that's getting a first partial harmonic. So, there's a very clear thing you can do with this. Slap tongue doesn't have as many obvious things for it. And I suppose fluting is a little bit that same way, you know. You find that it's not there, it's not there, it's not there [showing different angles that the clarinet would be place on the mouth for fluting], and finding just that right place where the edge is a football, and you get that sound in how you work with the aperture. I suppose maybe that has more in common with that.

**LG:** Yeah and it's funny you mentioned fluting because fluting is the one technique that I know how to do that I left out of this whole process because I could not find a... You know, it's a very cool technique, and it's really useful for doing those pieces, but I couldn't think of a way to make an argument that, oh, this might be useful pedagogically.

**GO:** Because you're altering the instrument. And the reasons you're doing it for really are actually quite different from the standard way of interacting with the reed. So it's, again, interesting, mostly in this idea of perhaps changing the perspective of just blow and kind of don't think about it. You know, this idea of opening up all the variables and the possibilities and thinking about that; that's a little bit more abstract. And also, it can be quite frustrating and I don't know that everyone loves the feeling of frustration. I actually kind of like that. I like puzzles. I like something that's like... it's possible and I don't know how to do it, yet I love that path.

**LG:** That's usually my mentality, which can be a double-edged sword because sometimes it means that I'm going to be doing some stuff really poorly for a while. But that was the case with slap tonguing for me, because that was a two-year process for me.

**GO:** Yeah, I remember. I know that Andy was talking about, when he was doing some stuff in Egypt, there were people who just picked up slap tonguing right away, which was impressive to me because the people that I've talked to, everyone has said it's been a long process.

**LG:** What I've found is that now I know how to teach it, because after I learned how to do it really well—now that I know the process—really I can teach it a lot better than people that tried to teach it to be in the past, because they kind of could just do it.

**GO:** That's harder, yeah, it's like my situation with the flutter tongue. If you can just do it's harder, but if you've *really* worked your way through it—I'd love it if, at a different time we don't have to take time now, but I'd love to know what your techniques are for teaching it. I'm always curious to know what has worked for other people.

**LG:** I'll tell you what I told Andy, which was basically “bite a little bit!” But once you can get the slap going, to get some pitch you have to bite a little bit. So, the thing I thought about with this, and I really didn't think there was much use for this, so I thought about a friend of mine that

just is not really playing clarinet anymore. But she came around, and she was a habitual, not on purpose slap tonguer.

**GO:** Ah yeah, I've heard those.

**LG:** You know, there's not many of them around, but some people just come in ... they came in and they played their Mendelssohn *Scherzo* all slapped! And I'm like, "that's really impressive but it's not... it's not right," you know. It's not what you want. And I thought about this, slap tonguing is glorified anchor tonguing. It's a really, really aggressive anchor tongue, and so I figured if someone does have an issue with anchor tongue, getting them to purposely do a more aggressive slap to teach them what not to do. I think slap tonguing is definitely one of those "here's what not to do" techniques.

**GO:** Yeah, yeah.

**LG:** And yeah, that's kind of the use I found for it, which is if you find someone that's slaps not on purpose, I get them to slap on purpose and do a really loud, aggressive slap, so they at least know this is what's causing it. Of course there's better remedies for fixing that, you know, like tickle tonguing—that kind of stuff does wonders in that regard—but I found that it's like, oh, well it's a cool effect, so don't forget how to do it. So, let's teach you how to do it really well so you know kind of the direction you're going. You're just doing something in between.

**GO:** Yeah, it's a great idea, I love that. I've heard the unintentional slap tonguers, but they've never been students of mine.

**LG:** Yeah, this wasn't a student of mine, this was a friend of mine, but this was just something I definitely worked with her a lot because we were just like, all right we got to figure this out. We can't have slap tongue with Mendelssohn, that doesn't work.

**GO:** Yeah.

**LG:** Just a couple more of these, I guess. We have the glissando, which again, it's another one that's like, is it really an extent technique at this point? I mean, after Gershwin wrote it in, it's like everybody can do it.

**GO:** It's on orchestral auditions now, so one has to ask what is the definition of "extended." Certainly, that and flutter tongue... Those are my gateway extended techniques! People are like "I don't like to do these things!" Do you want to get a principal job in an orchestra? Because you have to do these two.

**LG:** Well, and glissando is the first one that I usually have kids asking me about; that and fluttering tonguing are the two that are like, "how do you do that, because that's a cool sound."

**GO:** Yeah, they're like "we're playing *Blue Shades* in band" and like, "aha! Yes!"

**LG:** Yes, right?

**GO:** But I love the fact that the glissando is making them more aware of all the different components of sound that are happening because, you know, there's tongue position, there's also throat and embouchure, and you know, how you can have this happen and not just be going down to the lower harmonics. It's actually a really effective illustration of the complexity of the system.

**LG:** Yeah, and then I guess there is the difference between glissando and portamento; there's a technical difference, even those two are used interchangeably.

**GO:** I'm not sure if I would do anything different.

**LG:** Because for me, when I say glissando, it's more of a fingered thing, if I'm being more specific. I guess that they're more technical definitions, even though again, I use these terms interchangeably... but actually, I pretty much never use "portamento" because I think the word sounds strange.

**GO:** It's more of a string term, isn't it? I suppose you're correct about those definitions, although realistically I'm not imagining that I would... I mean it's true, you do have places where they are really fingered kind of things like in the orchestra this week, we're doing *An American in Paris*, this is the section [sings section he is referring to]. You're more likely to do that in a case like that, where it goes across the break really quickly, where the portamento just wouldn't...

**LG:** Yeah, you're also not going to do a portamento across the break, that's just not really feasible. It's possible, not easily.

**GO:** Not easily. It doesn't really work.

**LG:** Yeah, I like using... and to the same extent, because they both involve a lot of the same voicing and embouchure control, just pitch bending in general. I guess to me they're really excellent ways to teach voicing and to teach air support as well, because you cannot gliss with weak air.

**GO:** Right, right! Yeah, you have to be blowing a lot, and you have to know exactly what's going on inside of all this [points to mouth].

**LG:** And also, thinking from a singer's approach, right, when they do these wide intervals. They might do a slight gliss thing with their voice. And even though we teach clarinet as a stable... you know, don't change voicing from this note to this note, there's a little bit of that, and I find that when you do, say... I'm thinking on the Weber, you know that section where you're doing C to C a couple of times.

**GO:** Yeah.

**LG:** [sings the section being referred to] You have that stuff. And I'm just like, alright, well, what if you gliss from that C to that C to figure out where that voicing is, and then you can do without it, because I find that there's two issues usually to happen with that. It's lack of air support, and the voicing just doesn't end up where it needs to be.

**GO:** Right and being able to memorize the feeling of where that voicing is... so, first you can kind of slide up to this, you know where along that continuum it is, so that when you do it without it, you still know exactly how to place that.

**LG:** And usually the case is that people, because you know when we teach we're like "high voicing, high voicing, high voicing!" And what ends up happening is that high C ends up being really, really, really sharp. And so people will oftentimes over-voice, when it's a situation like this, or they will under voice, and they get a grunt. And so the gliss will kind of get you... if you can gliss and then get that note up to a very precise pitch, okay, this is where that pitch is, and you can figure out that voicing. So that's kind of the uses I found for that. Is there anything else that you might use a glissando for? I don't know how often you might use it outside of...

**GO:** Yeah, I have to say what I just noticed that... it's not something that I use as a diagnostic or a specific exercise, it's much more part of a well-rounded understanding of how everything works together kind of thing. After someone has spent some time working on glissando they're a little bit better acquainted with all of the voicing and things like that. So it's less of a prescriptive thing, and more of a developmental thing.

**LG:** And that leads us into the one that you're probably most knowledgeable of, which would be multiphonics and manipulating in partials within the instrument. This is another one where I use... I know we talked a lot about multiphonics already, but say someone has that issue between, you know, clarion G and B, where the B always wants to jump up to that G. Well, you know, that's essentially manipulating partials within the instrument, but it's not on purpose. Can you find the voicing where you can get a G on both fingerings, and then can you find the voicing where your voicing doesn't really need to change and will work for both notes? Like, if you have a passage that requires you going between those two a lot, which, surprisingly enough, I was looking through the Weber—I used the Weber as a huge example of all this stuff in this document—but as I was looking at it, I was like "oh, that happens a lot in Weber!" You're doing a lot of these fingerings like G to B or A to C—a lot of these where it's like within two notes that it can technically exist within different partials.

**GO:** Yeah.

**LG:** But do you use multiphonics more... because I know you talked about it as a developmental process thing... Do you use multiphonics more diagnostically as well, or no?

**GO:** I do, I do! That one I do use as a more of a prescriptive kind of tool, and especially, you know, students that are in that process of sort of unlearning the lip pressure way that they had used to make upper third partial and fifth partial notes speak, and I'm trying to help them understand how to do the voicing. What's going to happen is they'll move the lip down further on the reed, where they can no longer use that pressure, and then invariably their voicing won't be high enough, and so those notes will have some of the lower harmonics in them.

What I'll do is start by having them voice them all the way down, so, for example, you've got like a third partial of the harmonic A, and then I'll have them voice that down to where they're just hearing that D. And then I'll gradually have them bring that up, and then find that balance point. Sometimes, finding that balance point can be even more indicative of where to voice the third

partial. Once you find that—because there's a few different things that go into that, I've noticed. It's not only how high the tongue is, but the shape of the tongue and also the corners, and how the front of the embouchure is working

**LG:** And there is a certain amount of lip pressure that you have to be flexible with.

**GO:** Yeah, I've found that what it does is it helps people understand the foundation of all the front of the embouchure and how that is going to help to make everything else respond the way that that one would want it to.

**LG:** And when you're introducing multiphonics, do you ever have—because this is how I introduce them a lot of times to people that have never done a multiphonics before... number one, I just tell them to do the one with low G and you lift up the middle finger, because that's like the easiest multiphonic on the instrument. But say they're trying to do an overblown multiphonic, like where you're getting the upper partials out of a lower fingering, those can be pretty challenging and when you haven't done them before. And so one of the ways I do it—you ever do the bugling exercise with the bell on the leg? I mean, you've played Mandat's pieces, so you've...

**GO:** That's right, right. *The Jungle*.

**LG:** But I find that one is like... okay, so you want to learn how to do multiphonics, and you want to learn how to do all these manipulations? That's the exercise you do to figure out... okay, can you play *Taps* with this? Can you play, you know, all these things with it by just manipulating your voicing and not changing the fingering?

**GO:** And I have to say, before even I do the fingered multiphonics, I actually do have them just do the voicing between the first and third, or third and fifth partials to start to find those tipping points where it will go between them, and then try to stay in the middle, finding those balance—because the fingerings... the fingerings make them happen. But in a sense, what we really want to do is understand how we're creating that ourselves rather than letting the acoustics of those particular notes create it for us.

First of all, I actually spend some time doing this harmonic exercise on the third partial, where you play the C, and then you take off the register key and go down chromatically. Most of the time when people do that for the first time, you know somewhere around the F is when it dips back down... sort of my final exam for that is if you can finger the low E then just come straight in on a B with no preparation and no register key. That's when you really, really understand how to voice the third partial harmonic.

**LG:** Do you find the G/D fingering... I find that one to be the most difficult one. For some reason, getting that third partial D on that fingering without the register key is so hard.

**GO:** It is hard! Well, yeah that's true, but I find that the E/B is even harder!

**LG:** Interesting.



**GO:** The full length of the tube; that one really wants to split a little bit. If you notice, if you listen carefully, students, even when they're just playing a regular middle of the staff B third partial harmonic, they will get a little bit of that split even with the register key. And so, if you really... It's basically understanding exactly how to voice that particular note. When people can get that really clearly, then when we add the register key, it's absolutely secure.

**LG:** And do you ever use that—we'll talk a little bit about grunting exercises—one of the ways I like to do it is have people, say they're playing a lot in that, you know, that awful range on the clarinet, F to A, or F to B, where everything just wants to grunt if you're not really careful. And well, how about we do some articulated exercises? But we're going to purposely get all of these as multiphonics.

**GO:** Yeah, I will do that kind of thing as well. I actually usually don't do the articulations because I want to separate out the components. Almost everybody, if they're getting those grunts with articulations, they're moving their tongue too much, and I want to make sure we're not overlapping the skills. And so yeah, but that F to B range is problematic for two reasons: one, because we're getting into an area where the voicing is more specific; and two, it's also acoustically the Achilles Heel of the polycylindrical instrument where it goes from necking down to going back out.

**LG:** And you're playing... are you playing the Tradition now? [referring to the Buffet "Tradition" clarinet model]

**GO:** I am.

**LG:** Does that make that easier? Because I know the bore is a little different, it's not as polycylindrical.

**GO:** It's not *as*, but it's about the same kind of idea. I mean, on my quarter tone clarinet, that's an R-13, and easily go between them, and you know, I play the Tradition B-flat. My A clarinet is an R-13. I feel like the Tradition is, for me, just a particularly nicely selected and really well balanced R-13. It feels very similar to me.

**LG:** Yeah. And so, the quarter tone clarinet thing actually brings us to quarter tones and micro tones and that kind of stuff. Because you are, you know, probably the—now you're definitely, like, the foremost expert on quarter tones due to the invention that you kind of brought forth, that is this essentially new instrument. Which, you know, people have tried doing quarter tone clarinets before, but I think this version is probably the only one that's been practical.

**GO:** It seems like it, because it doesn't try to reinvent the whole thing. It allows us to use what already worked, and it just adds to the places that were literally not possible.

**LG:** Yeah, the places that were impossible, and that I kind of wish I had it now, because I'm playing a piece in November that has these quarter tones in it that are not possible. I guess I'm just going to really loosen up the jaw and get it out of tune? Bad writing? Okay, cool.

**GO:** Yeah... we all know how that works... that's exactly the thing. And then for the lower ones you just...

**LG:** It just won't work. I might put my clarinet bell on my knee a little bit, you know. Get that pitch to lower. But I'm not going to try that hard... It's fast!

**GO:** Yeah, that's right. Ultimately, it's just not practical.

**LG:** But yeah, with quarter tones and micro tones—and I consider them essentially the same ideas, just quarter tones are specific sects of microtones. With microtonality, when you're teaching these, I mean let's go into what are the difficulties in teaching them and learning them? And, you know, what are the benefits to learning them? That kind of idea.

**GO:** Sure. I think the challenge with that is that, when we first play the instrument, we get told “put down these fingers, and then this note comes up.” We get very used to that and we don't necessarily recognize that the ideation of the sound before we make it is an important part of it. We're so used to these twelve notes on the piano being parts of most music that we listen to, that we forget that that is not a physical property. It's a social and arbitrary construct. We were so familiar with it that then, when we play that on the clarinet, that lines up with what we already expect.

Then, when people are dividing the octave in 24 parts, the hardest part is getting people to be able to hear and predict and understand what notes they're about to be playing. They will, at first, want to voice things to one of the notes that they are already familiar with. So, they can do the fingering. But knowing and hearing and saying here's what that's supposed to sound like, here's an F-quarter-sharp... it's not an F-sharp and it's not an F and knowing that's actually probably the biggest challenge.

And it's actually one of the things that I really enjoy teaching because it helps people become a little bit more specific with their intonation. I have to say I'm not a huge fan of a lot of the fake fingerings on the clarinet, because people like, “oh, it goes by so fast you don't hear it.” Some of those fingerings...

**LG:** You can definitely hear it sometimes!

**GO:** Well, especially if you calibrate your ear this way. They go from “it's a little bit flat,” to “it's a wrong note.” It's like, “well it's a flat C-sharp;” Like, it's a C-quarter-sharp, it's not the right note! It's a different note. And so, when that happens then for me now, it's no longer... my ear hears it differently. And so, now I hear that as a quarter tone rather than, you know, an out of tune, you know, one of these other twelve notes. And that's a good thing because it refines someone's sense of intonation. Basically, by teaching quarter tones here already, you're telling them, like, here is a level of acceptability. but like before you had twice as much buffer, really.

**LG:** Yeah, I'm glad you mentioned the intonation aspect of it as well, because I've had, for example, several Indian students, and they come in and some of them—not all of them, but some of them, especially the older ones—are familiar with the Indian classical music, and in that style of music the scale is divided into even more than twenty-four.

**GO:** It's an interesting thing about that scale, because it starts out with the steps that actually go right along with the same things that we have in the major scale: “Sa, Re, Ga, Ma, Pa, Dha, Ni, Sa.” This is Carnatic music, anyway. But then the shruti... there's *so* many possibilities, and it's

actually a different idea from just divisions of the octave, because they're sort of different calibrations of that, and being able to hear all of those kinds of delineations, I think, is something that we don't get used to doing in classical music, including, for that matter, the kinds of intonation things that string players do.

String players talk about just intonation, and I have a colleague, a violinist colleague from the festival where I teach in Cortona, Italy, who is so into just intonation. He knows about these proportions, and how to tune these different chords based on that. He played for a while in the Jack Quartet. He was a founding member of that group, and they did a lot of work with, among other composers, Georg Friedrich Haas, and they had done these things that were very, very specific to these just intonation intervals. And the development that they, as a group, had of their sense of intonation via these proportions is just beautiful and impressive, and beyond what we ever do on clarinet simply because our instruments don't have that capacity. String has this nearly unlimited possibility of intonation, and we have quite a limitation by comparison.

**LG:** Especially when we need to move the pitch up.

**GO:** Really, we can only do it by moving to another note and coming back down.

**LG:** I've found that as I've practiced these quarter tones and stuff like that... Well, one of my favorite exercises that I've ever done—I think the Richard's book has this, *The Clarinet of the Twenty-First Century*, and then also Tim Fitzgerald and Jon Goodman; they have a book called *GaudyBreak'em*, which is quarter-tone exercises. At the end they have all twelve major scales, but they're offset by a quarter tone, which is a really, really cool exercise. With these I've found that as I practice these, the fingerings are nearly impossible, so you're becoming incredibly flexible with what fingerings you're able to do. Your fingers just become more used to doing all these really awkward passages as you practice this. But also, your ears become more accustomed to thinking more about intervallic relationships versus “this fingering versus this fingering.”

**GO:** Yeah, right. And this was something that I played around with when I first had my quarter tone clarinet, because I thought, “well now, how do I learn how to play this thing?” And my first thought was like, “oh, I can play all these major scales!” And then I thought, “well, wait a second, why am I overlaying this old model on this new instrument?” So, I actually created a set of brand-new kinds of exercises for an instrument that could play twenty four divisions of the octave. So, rather than talking about major scales, which themselves are a construct on a different model, I built some things around things like neutral thirds, you know, which is the interval that is larger than a minor third, and smaller than a major third. And so, then I made some kinds of exercises around that, and then things like large fourths.

**LG:** I remember you posting some videos about this when you were stuck in quarantine and you couldn't play that clarinet in the festival. And you know, that's one of the reasons I'm excited for—I remember talking to Wolfgang and hearing about how the clarinet... that joint will eventually be sold as a standalone thing. I'm excited for that. I don't know when I'll be able to purchase that, but I'm excited for that because that will really open up a lot of possibilities, I think, for the instrument.

But yeah, to me, just being able to learn... and also, another thing is I also became a lot better at just knowing what different fingers do to different... to the pitch of the instrument. And that has allowed me to create a far wider range of colors that I didn't think about before, like, say, I want to play this note, and I have a C-sharp but a C-sharp and a D-flat are not the same note. So, if I want this to be a D-flat, not a C-sharp—say, for example, if I'm playing like the Debussy *Premiere Rhapsody*, and at the end you have those scales, the double flat scales... the arpeggios and stuff like that... so when I do these, just the D-flat scales or whatever it is, I'll do the regular fingerings.

But what if I, instead, do a different fingering for the first note of this other one, because I want to emphasize the fact that this scale is lower. And I don't know if that's the correct approach for that or not right, but that is an option that opens up to you as you become accustomed to those fingerings. And now you can make musical choices with that.

**GO:** And that is an interesting idea, isn't it? And that gets one that you can interact with, and say what is the composer's language? Where you know. Where are they looking at this? Does the composer make a difference in their mind between D-flat and C-sharp? Now, you're talking about the just intonation world about that kind of thing.

**LG:** Well, and when you think about Debussy, I mean, he could have written that as an A7, you know... he could have written that as an A7 arpeggio and not as a B-double-flat 7.

**GO:** That's an interesting question, right?

**LG:** Then, the last technique I want to talk about here is—unless you want to add anything else about quarter tones—circular breathing, which is one that I have not found a lot of pedagogical use for. But I do find that it is... there's two techniques that I think every clarinetist should just know, because they're the most practical, which is circular breathing and double tonguing. I think those are the ones that are the most useful, and everyone wishes they'd learned them, but then they never do. Circular breathing, especially, is one that I use *all* the time.

**GO:** Me too.

**LG:** Even sometimes not on purpose. I'm just like, “all right, oh, I'm running out of air, time to circular breathe.”

**GO:** I find that even being able to circular breathe gives you the confidence to make a longer phrase, even without taking the breath. Knowing you could gives you that peace to just stretch it out. And I actually teach circular breathing to my studio. That is something that I do every year—I start off the year, one of the first master classes, teaching circular breathing and helping people get started with that, because I feel the same way, that it's really a valuable skill and probably more applicable than some of the other ones.

**LG:** Yeah, and you can use it in any style of music, and especially like, honestly, some of these older pieces. If you're doing transcriptions, you know, if you're playing Bach or something, it becomes even more valuable, because when these pieces are written without the clarinet in mind, it becomes even more valuable as a tool, because now you don't have to worry about breaking that phrasing to take a breath.

**GO:** Yeah, right.

**LG:** I just haven't quite found the use... it like, learning circular breathing to me is a skill that is incredibly valuable, but I have not found a use that would make... would it improve another aspect of clarinet playing?

**GO:** I think it does. I think it allows you to make phrases based on the music, and not based on your body's need to inhale. It allows you to say, like, where does this phrase really go? Debussy is a perfect example of that, you know. [singing the first melodic theme from *Premiere Rhapsody*], right? We take those breaths in there but [sings it again in a different way without the breath]. Then, we can connect it together the way that's written. You know, something like Debussy or Schumann *Fantasy Pieces*, they're famously difficult to get through.

**LG:** Yeah, the Schumann is really hard for me. It's in A clarinet, and it's just that playing anything on the A clarinet is a challenge!

**GO:** Yeah, it can be! It can be! You know, but indeed, that [sings a melody from the Schumann], you know, and then it goes straight on through! And then [sings an even longer phrase that continues into another]. There's no place where the music says "stop and inhale here."

**LG:** When you are teaching circular breathing, do you teach it primarily on moving notes? Or do you teach it like... do you start with it on moving notes, or do you start it on a singular tone?

**GO:** I start with it on... once they've gotten movement down and are familiar with it, I start with it on trills.

**LG:** Ok, yeah, that's what I do as well. It hides the pitch drop!

**GO:** Basically, what we need to do, what we're really doing, we're protecting ourselves from our critical mind. The part that says, "no, bad!" Getting ourselves used to it, like, just play, experiment, and don't make judgments. I think that what we're oftentimes trying to do is finding ways to remove that judgment.

**LG:** Alright. Well, then, I guess I only have a couple more questions for you. So, thinking about all these extended techniques, is there any particular order that you think is most effective for teaching extended techniques? Or do you find that you just kind of go with them as they come up? Or as the student might ask?

**GO:** I had never put them into a specific codified order, mostly because students come in with different things. I end up finding that the multiphonic thing is the most useful one, because so many students have issues with harmonic things, and it's so prevalent and it's so central to what they need to be able to play the instrument.

**LG:** That's why that one is the biggest chapter in the document right now!

**GO:** Good! I'm glad you feel the same way! I find that one to be the most applicable, especially if someone's like, "I'm never going to play contemporary music." Maybe not, but do you want to

play Mozart really well? This will help. I find that one to be the biggest one that I would advocate that people use for sure.

**LG:** And I even find that, you know a lot of times people say they don't want to do it because the ears aren't attuned to it. And then, once they start doing it, they start finding that stuff kind of cool, and it opens up that door, you know, "oh, maybe I do want to play a piece like this, because now I get it"—before the first time you hear it, unless you're me or you, I guess. But a lot of people, they'll hear it, and they're like, "oh, this is too weird for me."

**GO:** That's an interesting... you know, I was just talking a second ago about judgment and our critic and stuff like this. This idea of what is something supposed to sound like. I think a lot of that has to do with some, maybe early childhood ideas about how we interact with the world.

**LG:** For me, you know, I grew up in Brazil when I was younger, and so the kinds of music that I was exposed to when I was younger is very different. My first memory of really experiencing classical music was me dancing to Tchaikovsky in my grandma's living room. I think it was *Swan Lake*. It was the first piece of classical music that I really remember, the intro to *Swan Lake*, that oboe solo.

I also grew up listening to more popular forms of music, even when I was in high school. I really didn't do a whole lot of classical music... I was around the underground rock scene in South Carolina. So, it was a very different experience. For me, when I came to college, and I was hearing all these things that people were like "oh, this is so weird!" I'm like, "what? This is just kind of metal. It's not that weird." I guess the cultural aspect of this is really interesting, where introducing these techniques early on would open up the door for people to be interested in it later in life as well.

**GO:** True, yeah.

**LG:** Well, so the way the document is structured is... I go through a little bit of historical analysis and what people have done with extended techniques; and then I go through each one of these techniques we talked about, and here's what you could use this for... here's uses for this. And then I end up with a case study kind of situation where I go through the Weber *Concertino*, because I find the Weber *Concertino* to be one of those ideal college audition pieces that everybody will learn at some point probably if you play the clarinet. And if you want to audition for college, it showcases a little bit of everything. And it has *a lot* of problems in it. So, when did you first become familiar with the *Concertino*?

**GO:** Sophomore year of high school.

**LG:** Sophomore year of high school, okay. And why was it introduced to you? Was it just like, here's the next piece you're ready for?

**GO:** Yeah, I had a teacher who was like, "okay, here's what you're going to do," and I was preparing it for a concerto competition that I was playing with the band. It was the first Weber piece that many of us ever play, right?

**LG:** And for a lot of people, like my case, it was the first "serious" piece I ever played.

**GO:** Yeah, as I think about that, that might be the case for me, too. I think there were some other things I had played, too, but that... certainly it was all around that same kind of time. And I love all the stylistic contrast that it offers, and the sort of vocal tradition that allows us to get into. So that we can maybe get away from some of the band tradition stuff that dominates many clarinetists.

**LG:** When do you find yourself teaching the piece a lot? Even at the college level?

**GO:** I don't find myself teaching it as much, mostly because a lot of students have already done it. And what I notice... if you introduce something that somebody has already done, when they play that they'll bring in their habits from before. And if they've done an embouchure revamp then they'll play something they played before and they play with their old embouchure.

**LG:** Yeah, I find that I have a rule of about 5 years, where I don't redo pieces again for about 5 years, because I find that I always have my old habits in there when I try to do them again.

**GO:** I will introduce it to somebody. If they haven't played it before, I'll certainly use it, because it's a compact way to get all of those operatic traditions in and some technical hurdles that are really good to address. I have a student who's working on it right now. And so, I do occasionally, but it's not very common. I feel like that sometimes I'll do the *Grand Duo* more often because very few high school students play that.

**LG:** I've never done the *Grand Duo*.

**GO:** Yeah, I didn't play it until much later. Maybe it's more effective as a concert piece... it's not a transcription of an orchestral accompaniment, it's actually written for piano. So, that might be one that I would use, and still has a lot of the same lessons to offer us.

**LG:** And what do you find are some of the really "trap" spots, you know? What are the pitfall spots of the Weber *Concertino* for you because I have a few in mind.

**GO:** The very first note! The very first note!

**LG:** That is the first one that comes to mind!

**GO:** Everyone gets freaked out about playing that B-flat softly. and that's my example there, like you know, there's your multiphonic. Let's just play that, let's really get it down to only the first partial. Okay, now change it, bring it up to the third partial. What are you doing? Are you putting—you know, sometimes in the process they'll end up getting the first and the fifth partial, and not the third, because they're biting. And then like "okay, listen to that, what's going on here?" And it's a great chance for them to start actually listening to themselves in a very critical way, like not in the mean way, but just an analytical way... to understand... make an association between "here's the sound" and "here's what's creating that sound."

And then the other thing is all the articulations, you know. So much of the articulations we learn in a weird way, and sometimes from well-intentioned, but perhaps misinformed the sources. You know, people were talking about attacking a note, and tongue that hard, and all these things that you hear.

**LG:** It's usually the band director that was a brass player...

**GO:** Right, it's a pedagogy... that's basically a false cognate with another instrument, yes. And so, what we end up doing is we'll end up learning some of these different things. It's an opportunity to start to really transcend the notation. That's what I find, you know, like [sings allegro section of theme from the *Concertino*]. That's really string technique, operatic kind of thing. Oh, wait! I'm singing Rossini... never mind...

**LG:** No no no, that's right! That was right! That's the second half of the theme.

**GO:** Oh, okay! For a second I thought I was singing Rossini!

**LG:** They're very similar patterns!

**GO:** But anyway, that kind of stuff, you know [sings tongue scale from theme]. People do really weird things!

**LG:** That's actually where I use double tonguing.

**GO:** Yeah, that makes sense!

**LG:** Yeah, because that's usually where the tongue really tightens up a lot. People just, like, "oh, got to tongue fast," and then your tongue just becomes rock hard because you try to control it. And usually my response to people is like, "how do you tongue so fast?" Well, I don't control it. I stop trying to control it.

**GO:** Yeah, that's it. Focus on the air and not on the tongue.

**LG:** Yeah, focus on the air and the fingers. And that's what the double tonguing does for me when I'm practicing. That kind of stuff forces me to focus on the coordination aspect, and not on the attack aspect of the tongue. I also start thinking about—it helps me realize that I'm releasing the tongue versus attacking with it.

**GO:** Yes! That's exactly the part that we talk about with that, too. Yes, for sure. This idea of the tongue pulling back rather than coming forward to create the sound.

**LG:** Oddly enough I find, to me, whenever I perform this piece, the hardest thing for me is actually that really slow section in the middle.

**GO:** Oh, interesting!

**LG:** It's just getting those accents just right, you know [sings the section being referred to]. Getting that without causing the voicing to just become super wide, and so the sound just kind of spreads. So, for me, at the point where I am now, the technique is not going to be that big an issue. I mean, it's still not easy... it's not an easy piece by means, but it's not like... you know, I can do the technique now. And so, for me, when I'm thinking musically, how can I do this without getting my tone... getting my tone color to stay within that acceptable orchestral side of things. That's where... I practice that section flutter tongued.



**GO:** How interesting!

**LG:** Because that forces the air and the embouchure to stay really focused.

**GO:** This is something that vocal teachers do too, you know when they're doing warmups [does a lip trill].

**LG:** I forgot that was a thing!

**GO:** It reduces the tension in the throat. This is one of the exercises that I learned for vocal things, you know, learning to make these sounds without creating tension. And so the [lip trills again], it helps people to engage with that in a very relaxed way. So, in a sense your flutter tongue has a good support in vocal technique as well.

**LG:** Oh, that's good! That's good to know. Well, do you have anything else you want to add to any of this or any kind of—I don't want to take up too much more of your time here.

**GO:** I think we actually covered a good swath of stuff in our conversation.

**LG:** Yeah, I wanted to get as much out of you as I could here.

**GO:** Yeah, happy... and of course, at any point, I mean, as you're writing, if there's any follow-up I'm happy to... just let me know!

## APPENDIX C: INTERVIEW WITH ERIC MANDAT

### **Full transcript of interview conducted by author on 9/26/22**

**Lucas Gianini (LG):** I have a few questions for you, and basically what I want to ask about is in general, where you teach extended techniques; ways that you use them in your pedagogy and ask you a little bit about the Weber Concertino at the end, because then that's a like a case study that I did at the end of the dissertation. I'm going to keep it fairly informal, just kind of talk about how you feel, how these techniques might be useful in pedagogy, and how they might be useful in your regular everyday playing outside of just playing music that you wrote, or in that style of music. I'll start with some questions about you in general.

First question: How long have you been playing the clarinet?

**Eric Mandat (EM):** I've been playing clarinet for 56 years.

**LG:** That's a lengthy time! And how long have you been teaching out of that?

**EM:** I've been teaching ever since, really, the beginning of my undergraduate years, so I've had private students since 1975, so that's almost 50 years.

**LG:** And at that point did you teach mostly younger students?

**EM:** Yes.

**LG:** And then these days, what level of student do you mostly work with? Is it mostly college students, I assume?

**EM:** Mostly college age people. I've worked with a lot of high school age people and some non-traditional or community members, adult learners.

**LG:** Okay, so you take the whole gamut of students. And when you teach, what do you teach mostly as far as repertoire choices? Do you stick mostly to more standard repertoire choices? Or do you teach a significant amount of more contemporary style?

**EM:** Yeah, I guess that depends on level. But yeah, more often than not, certainly with the undergraduates, I teach traditional rep a lot, and with graduate students I still teach a fair amount of traditional rep, especially things that they may have missed during their undergrad; and then more modern stuff for adventurous high school students or... and the college students as well.

**LG:** Yeah, and how do you define standard traditional repertoire? Because at this point I mean, even your stuff is starting to become fairly standard out there.

**EM:** Yeah, if I'm making a definition of standard repertoire, it's that music which uses the clarinet in traditional ways, playing traditional single notes, and, you know, non-microtonal stuff.

**LG:** Okay, So basically non extended technique, music.

**EM:** Yep!

**LG:** Yeah, that's generally how I define that as well. I try to separate contemporary and extended because those aren't—a lot of people kind of equate the two— they assume all contemporary music has all these extended techniques, and it's like, that's not entirely true. There's a lot of contemporary music out there that's pretty straightforward, like as far as how you're going to actually play it.

And so, as far as extended techniques, you're one of the people that really popularized them in your compositions, but as far as a performer, when did you start exploring these techniques and working on them?

**EM:** Pretty much during my undergraduate, maybe my sophomore year of undergraduate. I discovered some books in the library, and a couple of pieces that had multiphonics in them. So, I had to learn more.

**LG:** What were some of those books, if you don't mind me asking?

**EM:** Well, the Bruno Bartolozzi *New Sounds for Woodwinds* was kind of the only book for clarinetists specifically that was out there. There were a couple of flute books, and I looked at those as well. And then on my own, I started exploring some other fingerings. I had encountered a couple of pieces in high school that had kind of “special” fingerings in a couple of places for cool sounding notes. And so, I continued those experiments when I found multiphonics in undergrad.

**LG:** Yeah, so I guess that would have been around the period that Rehfeldt came out with his book as well, right? Like, that's a giant bible of extended techniques.

**EM:** Yeah, his book came out while I was an undergrad, and it was just kind of fresh off the presses, and he was an interviewee for the clarinet job at North Texas, that Jim Gillespie ultimately got—and so obviously I played for him— I played Bill Smith's *Variants* for him and we got to be good friends; and he lives fairly close to where my wife grew up, so when I would go back visit with her family, then I would take side trips up to Redlands and see him on those occasions. So, I had a pretty close connection with him during those early years of his book.

**LG:** Yeah, did you take part at all in his... when they edited the book? I think it was 1994.

**EM:** Yes! Yes, a number of my pieces are listed in there as examples throughout the book of various things.

**LG:** Yeah, that book is so good! There's just so much stuff in there. It's like, literally, if you want to learn how to do an extended technique... that was, for a while, THE reference guide. Now there's a few others that I know; there have been a few dissertations recently that have really, really gone into that, but I think, as far as reference materials... I think E. Michael Richard's book, those are probably the two biggest ones that I can think of. And Ronald Caravan's book was also pretty big on that.

**EM:** Yeah, and his studies are still great! They're great examples of how to feel resistance on the instrument and deal with it, and it's really nice.

**LG:** Yeah, so that leads us into talking about some of the talking about feeling, and how the instrument changes as you're doing these techniques. We'll kind of go through each one of these one by one, and I'll just ask how you learn these. Later, I'll ask you if there's any specific order that you kind of went into them and how you teach them. But basically, I want to ask you what are some of the challenges with these, as far as learning them and teaching them? When might you introduce these to students and why you have the students learn these techniques in the first place, if not just, "hey, here's a piece of music that has this thing, and you should probably learn how to do it if you want to play it!" And then what are some of the uses that you might find yourself using these techniques for outside of playing music that uses the techniques?

So, I know you do a lot of stuff with multiphonics—I actually cite one of your articles in my paper—we'll start growling and singing and playing. I kind of consider them to be a bit of the same technique, but slightly different. What are your thoughts on that technique?

**EM:** What people find out early on is that it's very hard to get the clarinet sound when you are singing and you're trying to balance that. That's usually the initial problem that most people have. So, it ends up meaning that you have to just push harder, you air. I think it is kind of the biggest thing. Yeah, that's the biggest thing for me is making people feel "pushing harder."

**LG:** Yeah, my experience with singing and playing especially is... it always feels like I'm yelling into the instrument for a pretty quiet dynamic.

**EM:** Yeah, yeah! It's like whatever the first sound that comes out of the instrument, if it's a clarinet sound it's hard to get the vocals going, and if it's a vocal sound it's hard to get the clarinet going.

**LG:** Yeah, you have to figure out. Last year I played the Evan Ziporyn *Tsmindao Ghmerto*, the bass clarinet one, and I've worked on *Folks Songs* a good bit as well have never performed it unfortunately, but I've worked on pretty much all the movements; and every time I do it, it's like you have to get both the voice and the sound started at the same time, otherwise it's really, really tricky! I remember when I also did *Partial Truths* by Ziporyn and there is a section where you have to do these multiphonics that lead straight into this vocalization that emerges out of the multiphonic, and that was just... it took me so long to figure out how to get that to happen without, you know, destroying my throat.

But in general, I guess you would say... so when you're using these, do you ever use... I guess growling is just undefined pitch, right, in terms of singing and playing? Do you ever use it when teaching other things? I guess it is pushing air?

**EM:** Yeah... not much. There's some other things I would use more for pushing air, ways of feeling increased resistance and pushing against it.

**LG:** Okay, and what about... so, a similar sounding technique, I guess, would be flutter tonguing, which is performed differently, but a lot of people actually end up growling when they

can't flutter tongue. What is the difficulty there? What are the uses and challenges of that technique?

**EM:** Yeah, the biggest challenge is keeping the front part of the tongue close enough to the front of your mouth to be able to keep the clarinet sound going. A lot of people, if they're flutter tonguing, it's very high movement and farther back in the mouth, and that will collapse the clarinet sound pretty quickly.

**LG:** Yeah. Do you find yourself... you know when I've only recently—and by recently, I mean the last few years—figured out how to flutter tongue into the altissimo. Then, you know, upper-altissimo and all that stuff, and for a while I could do it... I've always been able to flutter tongue; some people just take it up naturally.

**EM:** Yeah.

**LG:** But I found that after I started learning how to do it up higher, elements in voicing and embouchure support just got better for me. Is that something you agree with?

**EM:** Yes, absolutely! When we're playing higher, generally our tongue position is higher and a little more forward, and to be able to flutter tongue, that position is a good placement for the tongue, for general flutter tonguing anywhere on the instrument. So that's a good way to do it.

**LG:** Okay, Yeah. And I also, you know, it also helps to learn how to not drop the pitch. I guess when you're fluttering... that was my issue for a while, and that's I think what I figured out is that if I figure out to not drop the pitch when fluttering my tongue is actually in the right place. If my pitch... it used to be that my pitch would basically drop like half a step almost when I would flutter.

And what about—we'll keep the tonguing theme here for a second—so what about double tonguing, do you ever do anything with that one?

**EM:** I do. Again, sort of a decent command of single tonguing, I think it's kind of a prerequisite... just the process of being able to tongue with tongue on the reed and fairly close position, that's important, I think. Then the double tonguing is really just a matter of pushing more air and letting the tongue relax a little more for me.

**LG:** And do you ever find yourself practicing things double tongued that you could single tongue at all?

**EM:** Oh, yes, a lot, and I encourage it for people who say they don't double tongue, but they can do a little burst of two or three notes.

**LG:** Yeah, and what's the purpose of that?

**EM:** The purpose is to keep from making the sound too singular in a single tongue context. So, if somebody's tonguing, you know, *William Tell* or something...

**LG:** I'm playing that this week!

**EM:** Yeah, you know, it can sound kind of clunky if one is single tonguing and thinking individual bursts, for each one of those notes, so to have something that's kind of a ricochet effect, like a drumstick on the head—[sings the tonguing effect on Rossini's *William Tell*]—helps the tongue stay light and the air move forward, and that's not always the case when we're singing single tonguing. We're not always doing that, or some people have challenges with that.

**LG:** Ok, yeah! I'm wondering where you think about... so one of the things that I kind of use double tonguing for my own practicing—I'm wondering how you feel about this—I find that usually the issue for me, when it comes to articulation, is that my fingers and my tongue just don't coordinate and the double tonguing, because I can't do it as well single tonguing, it forces me to think more, and I guess slow down a little bit, and it forces my fingers to move more accurately with what the rhythm is of the tongue. Have you ever done any of that?

**EM:** Oh yeah, I tell people that our tongues are inherently slower than our fingers, but inherently also more accurate, and even than the fingers. So, if they get a tonguing flow going that's the best thing, then it's really a matter of just, like, not trying to adjust the tongue for the finger, but adjust the fingers for the tongue.

**LG:** And just out of curiosity, how do you get people to tongue up higher? Because that's been my struggle lately.

**EM:** Double tonguing?

**LG:** Yeah, double tonguing past your lower clarion. I can double tongue pretty comfortably up to the throat tones, and then as soon as I cross that break it's a challenge.

**EM:** It's very, very tough. I do it more as a slow rise kind of thing as opposed to trying to start right on those notes on upper notes as a tonguing thing, because it's usually... frustrating, to say the least! But a little like, little, short scale bursts, and then just gradually moving up and actually starting in the fundamental register and moving up, and ultimately you can get a few notes in the altissimo double tongued if you're starting from below. It's a lot easier that way.

**LG:** Yeah, that's the one extended technique that just still mystifies me a little bit—I can do the others pretty well. And speaking of that I guess, slap tonguing. I know you do it... you have an interesting slap technique... your slapping technique is very different from mine. Have you been able to think of any use for that, outside of, you know, "this sounds cool in a piece!" Is there any kind of pedagogical use for slap tonguing? That's a tricky one.

**EM:** Yeah, it's a good question. I don't believe there's something that's universally applicable on the clarinet. I think it's valuable as a basic technique on the lower clarinets—the bigger mouthpiece clarinets—because it encourages us to *dig* in a little bit more on the reed, and we can get that feeling, and that that helps oftentimes when, you know, when we're trying to knock out a low note without fracking it. Those who are clarinetists do that all the time, and I think part of it has to do with the fact that we tend to be so light with our tonguing.

**LG:** It's like when I play *Press Release*, and I find it so much easier to slap that piece than to not slap it. Getting that high to low range and not cracking that note.

**EM:** Yeah, same problem with me.

**LG:** Other than the fact that that piece is, you know, generally way too hard! But okay, so now we're going to move on to the technique that you've really, really helped push out there: multiphonics! I can think of tons of uses for this, but what do you feel like... how do you approach teaching multiphonics, and how do you approach their use, and their function as far as general knowing about the clarinet.

**EM:** Well, there's several aspects of that. Multiphonics, particularly three of the four categories—actually all the four categories—they help with voicing a lot generally and help us understand higher voicing and getting a sound placed inside your mouth like a third partial a fifth partial kind of sound... or higher in, you know, placed *in* your mouth. And then it's really just a matter of air and embouchure pressure that can allow the low note to come in. It helps us understand acoustically how the instrument works; the relationship between one register and another, and how you access those registers, and how the different register keys work to make that happen; and how our own voicing... I mean we can hold our voicing—it's the classic practice that most people do that really is a multiphonic practice: playing upper clarion notes and then taking the register key off and then trying to hold it. And then, you know, working yourself down the scale to try and keep your tongue position high. That's all kind of prelude to multiphonics.

**LG:** Yeah, I actually include... so, I found a few really old methods. I can't Remember which one specifically, but I mean like things back to like the 1950s and 60s, where people are talking about getting rid of the grunt and things like that, that undertone, and they taught... they basically do the multiphonic exercise where you do the underblown category of multiphonics. But they don't call it that! They're like, "No! We must not say that this is a multiphonic, because that is... that is the enemy, you know, we must keep things pure!"

**EM:** But it helps us understand where those that balance occurs, and as we access those multiphonics going down the chromatic scale and the third partial series, we recognize how the voicing changes in order to be able to maintain the low note and how activating the register key kind of sets that high note in in motion pretty well. It also helps us recognize what if we have a low, voicing, low-ish voicing, how we can bring those lower notes into the mix. Yeah, so we just get a much more fine-tuned understanding of the range of positions that we can have that will affect the sound, traditional sound.

**LG:** Yeah, one thing I found really interesting reading—this is an old article you wrote for the clarinet, I think it was, like, 1987 or something like this, you know. this is a long time ago—and one of the things I really, *really* stuck with me from that article is your use of different multiphonics to figure out color changes. And you talk about the Brahms and how you can go down... if you play it with the voicing that you use for the multiphonic with an A, it is going to sound very different than if you play with the voicing of the multiphonic for a G. They're very different tonal colors and that can be achieved through manipulating the oral cavity in a way. Do you still find yourself teaching that way, or has that changed over the years?

**EM:** Yes, I still do. I like that whole thing a lot, having people learn about different color possibilities through playing multiphonics and finding places to be in their mouth that are not—

find in their air pressure—that are not sort of like this standard, one place only, because that's... it's a common teaching approach is to put the horn in your mouth, turn on the gas, wiggle the fingers, and everything is good! But it's so subtle, and so interactive and interdependent, and things are changing, but we haven't really had a lot of training in beginning and intermediate playing that explores that.

**LG:** And that is something that I really appreciate about your playing. When I was hearing you a few weeks ago, and I've heard you many times before, but that is something that I do find that you do really well. You're able to utilize many different colors of the clarinet, so it doesn't... like you always sound like *you*, but there is this wider palette that you have than a lot of players that tend to just kind of homogenize their sound in a way that it always sounds like that very pure, beautiful sound. And you don't necessarily always want that. That's also something you mentioned when you were giving a master class, like a kind of limit testing, a little bit of how far can you push a sound before it goes past where you want it to be. And you never figure that out unless you experiment with these things.

**EM:** Yeah, I agree. I like that feeling of finding out where too far is, or really, really not enough. And then you've kind of defined for yourself the boundaries, and you want to like, expand them as much as possible when you find them.

**LG:** And do you find that different equipment really changes a lot of that? Or is that going to be more based on personal? [Points to embouchure muscles]

**EM:** It's more on physiology. How the body is built. Because the instrument operates really the same way. There are some subtle differences from one instrument to another for sure, and from different kinds of setup, some mouthpieces or barrels, that kind of stuff. But in my practice there haven't been insurmountable issues. I can't say, you know, "I put on so-and-so's barrel and I can't play a multiphonic." I just have to do things a little differently.

**LG:** Yeah, so I guess we can go on to one of these other... There are three more techniques that I want to talk about. I guess I'll put these into the same category: glissando and portamento. They're basically—they're used interchangeably most of the time, although they're by all technical means not the same thing. What are your thoughts on that technique?

**EM:** Because dropping the pitch generally means dropping the tongue position, it's subsequently opening up the oral cavity, which means the pitch is going to go down, and it's going to go down more noticeably in the upper register. But the problem is that as you open up the cavity it's going to reduce the air pressure, so you have to compensate for that by putting just more volume of air in again. So, it's like some of those other techniques like the flutter tonguing or singing, you actually have to blow three times as loud to maintain a glissando downward as you're kind of going from the traditional pitch downward.

**LG:** Do you teach glissando... Do you teach it downwards, first or upwards first?

**EM:** Downwards.

**LG:** Because everyone wants to do the Gershwin glissando!



**EM:** Right! Yeah, I teach downwards first.

**LG:** Yeah, I was just telling Greg the other day: I'm going to start an Instagram series where I play orchestral excerpts, but wrong. You know, like I'll do Gershwin but I'll do the longest glissando possible... I'll *really* milk that thing! Or like, I was doing... I just played the Mozart *Gran Partita*, I just played a little bit of that, and I was playing the basset horn part, and turns out you can flute the soprano pitches pretty well from the finale! So, I wonder how many members of the clarinet community I can really, really get to hate me if I do that!

Yeah, I find that with glissando in particular, I find it to be a really useful voicing practice similar to working on multiphonics because the amount of tongue and embouchure control you have to have to have a really smooth portamento from note to note... it is really different from your standard playing, and I find that all of a sudden, if I—especially on the altissimo to clarion register—I know this an exercise Deborah Bish likes a lot, which is glissing down, bending those altissimo notes down to the clarion as I wait to figure out the voice in between the two registers and really smooth out that register crossing.

**EM:** Yeah, that's good!

**LG:** And what about... so micro tones and quarter tones. Your music really, really pushes heavy on this technique in particular. Do you find yourself... You know, I found myself just getting better at the clarinet after I started playing music with this technique in it. Why do you think that is, or do you think that?

**EM:** Yeah, I agree. I think we get better on our technique. It's hard for us who've been playing a long time to remember what it feels like... what it felt like when we were first playing clarinet and we went from all those short notes like open G and A, to suddenly long B natural or C, the note felt like it was 10 times stiffer, and we had this hard time pushing, and so we were told, you know, support and blow. And then you'd get them out, and they came out better, and then we found that that was... we got you used to that feeling, and then we could cross a register without feeling too different one note to the next. But as a point of fact, we have actually just gotten really good at subtle changes with our traditional playing, because every note feels a little different—every other note. But after you know, so many years of playing we've learned a little bit how to deal with them.

With microtonal fingerings, obviously because the fingerings weren't initially thought up as the "best sound" kind of things, there's going to be a more defined difference in resistance from one note to a next, or a traditional note to a microtonal note, most of the time. And so, what that's helping us do is gain again, more fluency being able to shift our resistances. You know, it depends on the context of the music of course, but at least we recognize how we can deal with the way the clarinet shifts its resistance; and we've done that a whole bunch, you know, even just like going across the clarion to altissimo register, you know.

A lot of people grunted those high Ds in the first place, or like C to E, the E would never come out, and then they learned how to change and make adjustments, so that they could slur back and forth easily. And then, after a while those adjustments started feeling so natural that people

forgot that they were making adjustments. It's the same with microtones. Just now it is suddenly a more well-defined level initially.

**LG:** It's interesting to say that, because a lot of traditional pedagogy, is about—at least in my experience—has been about playing the clarinet with a singular embouchure and voicing, even though later on they're like, “Oh, never mind we kind of lied about that!” But you know, when you're first starting out they're like, “yeah play the whole thing with one voicing and one embouchure.” And I do that in my own teaching too because that's... I guess, yeah, we really do make those changes, but it doesn't feel like it, because we don't notice them.

**EM:** Yeah, and I mean, I think it makes a lot of sense to not inundate somebody right off the bat with all these weird subtleties that they have to do. Just tell them you got to blow harder and keep that consistent and then you'll be there all the time and that's good. And then later, you can say, “but watch, you can actually do this!”

**LG:** I love the moment where you can tell a student that you've been lying to them for years!

**EM:** Right!

**LG:** One of the uses I've thought about for quarter tones in particular, but microtones in general... they, for me, have really changed how I look at pitch and they've really helped me train my ears. Especially... I have this book by two of your students Jon Goodman and Tim Fitzgerald... I have the book they wrote, and they are in there—and I think Caravan has, or Richards has that in his book as well, I can't remember which one—but it's like quarter-tones, like major scales that are shifted by a quarter-tone. And all of a sudden you're thinking... I mean yeah the fingerings suck, but, you're not thinking about “Oh, is this the right fingering?” I was thinking of the pitch relationships... “is this actually what a whole step sounds like?” I couldn't really rely on my tuner anymore.

**EM:** Yeah, it's true, for me and I think for others to do that kind of work on microtones. Their ear gets stronger. Again, you know, the clarinet does not play perfectly in tune! It's up to us to make plenty of adjustments along the way on the regular notes and again, we've gotten really good at making those adjustments, so that we could play our throat A perfectly in tune and our low F sounds better, and all those things and when we're playing quarter tones those fingerings aren't perfect, either, but we can *make* them better by listening and making those same kinds of adjustments we do on all the other notes we play.

**LG:** But I also find myself, all of a sudden, I'm just like “oh, I just need to make this note a little sharper?” And I just know, well, this finger will actually do that for me after I started working with my quarter-tones. It really helped me understand better what each different finger and key... what their function is in terms of what it does to the air inside the instrument.

So, are there any other things about any of these techniques that you're thinking of, before I move on to the last one?

**EM:** No, that's it. They're just more overt expressions of all that subtle kind of adjustment stuff we've been doing our whole playing lives.

**LG:** So, the last one and this to me is the toughest one, but probably the most useful technique to learn: circular breathing, right? But it's the toughest one for me to come up with because I've actually been able to find some uses for all of these other techniques for pedagogical purposes. Circular breathing has been a tough one, and I had talked to Greg about this a little bit, and he mentioned one of his uses for it, but for you, you know, what do you find to be really useful about learning circular breathing? You know, the challenges behind it and that kind of deal?

**EM:** Yeah, a couple of things... one of the good things about circular breathing is to recognize the difference between the different muscle groups in the face, and that these close to the mouthpiece lip muscles and how they can really tell the story, you know, as far as the sound—basic sound itself—and you can gain flexibility here in the sides [points to cheek muscles]. That will allow you to change color if you want, or not even, if this is very firm. So, you learn about the differentiation of muscle groups, I think, in the face, in a really strong way... it's not just, you know, clamp down and hold it. But these, close to the mouthpiece muscles really do the work to keep the sound happening. And then once we find that we recognize we have so much more flexibility in other parts of our face. I think that's good for lots of things.

**LG:** Yeah, the thing he had mentioned was it's very useful when all of a sudden you don't have to worry about the breath as a phrasing thing, and it helps you think about phrasing in a different way.

**EM:** Yeah.

**LG:** Because that limitation is just kind of gone, or in a way, it also places some other limitations, because you have to plan when you're going to circular breathe because some ranges just don't work well for circular breathing. I'm playing a piece right now—that is nearly impossible, for me... you know, there's eighteen pages of just straight playing and I'm like, “okay, well, where am I going to breathe through this? Where is the circular breathing going to happen?” I guess I have to do it during these slurred sections, because I can circular breathe while tonguing, but not fast. And I don't really want to do it up high if I can avoid it. So, I'm really having to plan that out and I guess it does make me think about how I'm practicing this music in a very different way.

So, is there... When you are teaching any of these techniques we talked about, is there a particular order that you tend to focus on first? Or are there few that you think are more useful than others?

**EM:** It depends a little bit on where a person is. I think if a person, especially if their sort of general voicing is low, and they're having trouble in the altissimo, multiphonics is a place I'll go. You know, the second and third category multiphonics is a place I'll go with them to try to hold those upper pitches without the register key, stuff like that. I think, for people who are very, very tight in their playing I think things like flutter tonguing and glissando are good ways to help them recognize they can let go a little bit.

**LG:** By that same vein, do you consider vibrato an extended technique? I know pretty much just not really. I mean it's pushing it even calling flutter tonguing and glissando extended techniques these days, but they kind of are.

**EM:** Yeah, you know, I use vibrato in my own compositions in a special way. Certain types of vibrato. But generally I think that's personal aesthetics. I use primarily a jaw type of vibrato almost exclusively in my own playing, and I think it's valuable for a certain kind of sound, a certain kind of warmth being connected with vocalists or vocal like things. I think accessing vibrato is really good.

**LG:** Do you... and you kind of answered this already, it depends on the student, but do you introduce things like, you know, these extended techniques... Do you ever shy away from those with a younger student? Or do you go with, once you think they need it and they're ready, that's when you kind of go for it?

**EM:** Yeah, most of the time, and especially younger students, I mean like junior high age, they're always willing to make funny sounds.

**LG:** I always tell my sixth graders "Oh, that's really cool, you're just playing a multiphonic! You didn't do it on purpose but that's very cool!"

**EM:** Right, and usually if they do make a mistake, I'll have them play it again. Play the mistake again and try and go back and forth between good and bad playing. So, in a sense, that's training those same kinds of basic tongue position relationships that some of my multiphonics prep exercises, more advanced ones, do the same kind of thing.

**LG:** Do you agree with my explanation of extended techniques as just playing the clarinet kind of wrong?

**EM:** Yeah, from a traditional standpoint. But it's actually... it's really, really playing the clarinet to the instrument's fullest potential!

**LG:** Okay, that's an amazing way to put it! Because I like to talk about... when I explain multiphonics, basically what you're doing is you're abusing the acoustics of the instrument to your advantage.

**EM:** Yeah, not really abuse, it's what's in there, you know! It's the way that it's built!

**LG:** Yeah, it is designed to do that. Just it wasn't really what it was designed for, but it's there you know. it will do it. You can't do it if it wasn't possible!

**EM:** That's right. It's possible, that means it's there!

**LG:** Yeah man, that's a beautiful way to put that. So, last little set of questions here. This has to do with the Weber *Concertino*, because what I've done is took... the way this document is structured is I go through, you know, your literature review kind of situation; I talk about all these books and all this stuff; then I go through each of these techniques we talked about. And, okay, here is generally how you learned that—there's already a lot of resources for learning how to play these techniques, look at those—but, okay here's generally how the technique is performed, and here is some uses for it in more traditional pedagogy, where you can actually strengthen your fundamentals by learning these techniques and even incorporating them into standard rep as a practice tool.

I use flutter tonguing, for example, as a way of like, “okay, here, you can even-out this run” in terms of sound by flutter tonguing this passage. I use Widor... those sextuplet runs. If you do those flutter tongued, you're going to find that you're actually going to be able to hear the middle notes, instead of just the first note of every sextuplet.

With the Weber, so I went through it in sections. You're not going to be able to use every single extended technique in this, but here's some of the ways that extended techniques can be introduced as a practice tool for this piece. So well, first question: when did you first encounter Weber, the *Concertino* in particular?

**EM:** It was surprisingly late. I don't think I ever worked on the Weber when I was taking lessons pre-college. So, it was sometime during my college years, and I probably was not even officially taught it. I just discovered that it existed.

**LG:** I guess that is kind of late, because a lot of... that was my college audition piece, and I usually tell people that if you want a piece that showcases everything you can do as a high schooler, yeah Weber *Concertino* is great if you're ready for it, of course! And I've taught it many times to students at the college level, but I haven't taught it to too many high schoolers. I probably should. I think I've taught it to a few.

**EM:** I've taught it to some high schoolers, but I never learned it... I never was taught that piece myself.

**LG:** Interesting. And when do you... do you think that piece is particularly... is there best time to really introduce a piece like that? Maybe not necessarily this piece, but a piece of that style to students.

**EM:** Yeah, I think any time they have a basic command of, you know, their scales, and their arpeggios, and are gaining a musical sense, it's a good time to do it. I'm okay with people playing above their skill level as they're learning stuff growing up, because if they do choose to go into music, they're going to play all those pieces a hundred times so, they'll get many options... opportunities to go for it again. And so, why not have a taste of it, as you're kind of practically available and are able to do it? And you know, certain things can be altered. Some of the articulation passages, or tempos, things... those can be altered to match the player.

**LG:** Well, what do you think are—you don't have to give me many—but what do you think are the big pitfalls in that piece in terms of, what are the first things you're going to encounter? You're like, “Oh, crap! This is hard!” And things that you might be able to help with learning some kind of extended techniques and things like that?

**EM:** I think the idea of basic phrasing is hard. Even just in the theme, because you see this short note, with a rest after it, in the middle of the phrase. It's very easy to just sort of stop playing and that's a very typical thing. So, I think basic phrasing and understanding, you know, shapes of notes is really hard in the very beginning. Some of those, you know, the twisty things, turns, and wide leaps are so hard early on for a lot of people. And then, of course, the finale has got tough stuff, and it has a lot to do with articulation. Tough stuff, usually.

**LG:** Yeah, I found that to me, the first thing, and every time I play this piece, or every time I'm teaching it, the first thing that I always have to work on is—and I use multiphonics for this—is that very first note.

**EM:** Oh yeah, brutal.

**LG:** It's like, how do you play this B-flat without, you know, also playing an E flat at the same time? Or I guess it would come out as an E?

**EM:** Well with the register key on it's pretty high. It's like a G-flat, but yeah it's still... definitely, very hard.

**LG:** Well, do you have any other comments about any of this, or do you have any questions from you regarding any of the stuff I'm kind of working with?

**EM:** Yeah, I don't think so. It sounds like it's a great project. I'm really glad you're doing it.

**LG:** Yeah, you know, what I noticed was that everybody loves... there's been a ton of dissertations about extended techniques in the last few years, and there have been—you know, actually there have been dissertations about your teaching in particular. I think it was Jessica Speak that did that one. But you know, there's tons of books about it, but everybody always seems to kind of relegate extended techniques as their own thing. And in a way I get that, but I'm trying to find a way to... I've never been a fan of the term “extended technique,” because it does imply that it is separate. You can also look at it as, you're literally taking the regular technique, and you're extending it into more.

**EM:** Do you have a good name for it? Because I know I have issues with that too.

**LG:** Right now, honestly, I don't. I think, “extend techniques” for all intents and purposes of saying the techniques is the way we're calling them right, but maybe not extended techniques. Maybe something like, you know, oh God, “explorational” techniques, or “augmented” techniques, or something like that. Something that implies that it is a part of the instrument. But it isn't something we should shy away from because I think so many people shy away from doing music that includes these techniques because they're frankly just scared that it's going to make their regular playing worse, and it won't. It really will make your regular playing better. You just have to kind of stick with it a little bit.

But yeah, thank you so much for your time! I know you have a rehearsal or something coming up right?

**EM:** I got a couple of students later this afternoon, but that's good.

**LG:** So yeah, again, thank you so much for your time I will keep you updated on this!