

THE UNIVERSITY OF NORTHERN IOWA

Selected Modern Clarinet Techniques:
Multiphonics, Microtones, and Vibrato

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In recent discussions of modern clarinet techniques, scholars seek to show how to produce these techniques and how to explain their notation. Clarinetist E. Michael Richards points out the deficiency of research in this area, when he indicates that today there are only “two generations of texts . . . exist on new clarinet resources;”¹ and considers his own book *The Clarinet of the Twenty-first Century* as the third generation research on modern instrumental techniques since 1977.² I agree with Richards; and I think there is still a need to explain these techniques, especially when one sees the controversies surrounding the production and the notation of these techniques. In this research paper, I will explain three of the most important contemporary clarinet techniques: multiphonics, microtones, and vibrato and discuss the problems of producing and notating these techniques. It is important to understand scholarly research in this area, in order to understand how contemporary clarinetists perform these techniques and how composers apply them to the current contemporary clarinet literature.

The first generation of research of the modern clarinet techniques begins with Bruno Bartolozzi in Milan, when he published his book *New Sounds for Woodwind* during the late 1960s.³ In the *New Grove Dictionary* article it is noted that Bartolozzi represents the “first attempts to catalogue and classify the new techniques.”⁴ However, his book is not especially designed for modern clarinet techniques, and it includes other wind instruments. Thus, the clarinet techniques that are discussed in his book are limited. Also, another issue is that the clarinet techniques in Bartolozzi’s book were written for the B-flat clarinet that is extended to E-

¹ E. Michael Richards, *The Clarinet of the Twenty-first Century* (Library of Birmingham-Southern College, 1992), iv.

² Richards, v.

³ Richards, iv.

⁴ Janet K. Page, et al., “Clarinet,” in *Grove Music Online, Oxford Music Online*, under “The 20th Century,” 3.

flat, which is not common today.⁵ Even though Bartolozzi's book was not specifically designed for modern clarinet techniques, it has a very important role in the research of modern clarinet techniques.

The second generation of research of the modern clarinet techniques spread to America, when Bartolozzi's work influenced American clarinetist William O. Smith⁶ in Italy in the early 1960s.⁷ Clarinetist Ian Mitchell defines Smith as the pioneer of extended clarinet techniques. Mitchell also explains how Smith "was inspired to experiment with them after hearing an early performance of the Berio *Sequenza* by its dedicatee, the Italian flute player Severino Gazzeloni (1919-92)."⁸ Gerald J. Farmer, American clarinetist and who worked on researching extended clarinet techniques, defines Smith as "a central figure in the development of new timbral resources for clarinet, one who has contributed extensively to the jazz field as well as to music in the Western classical tradition."⁹ A British clarinetist and scholar Roger Heaton agrees with Farmer and also identifies Smith as the "great American jazz classical clarinetist."¹⁰ Therefore, given these scholars' comments regarding Smith, it would be correct to say after Bartolozzi's work in Milan, Smith had an important role in the research of contemporary techniques as a second-generation researcher, as well as the honor of being the first American generation researcher.

⁵ Bruno Bartolozzi, *New Sounds for Woodwind*, trans. and ed. Reginald Smith Brindle, 2nd ed. (London: Oxford University Press, 1982).

⁶ William O. Smith was born in 1926, and he is still alive. See the chapter by Ian Mitchell, "William O. Smith-Musical Pioneer: A look at the Work of One of America's Most Inventive Musicians," in *The Versatile Clarinet*, ed. Roger Heaton (NY: Routledge, 2006), 75-84.

⁷ Richards, vii.

⁸ Ian Mitchell, "Toward A Beginning: Thoughts Leading to an Interpretation of Domaines for Solo Clarinet by Pierre Boulez," in *The Versatile Clarinet*, ed. Roger Heaton (NY: Routledge, 2006), 110.

⁹ Gerald J. Farmer, *Multiphonics and Other Contemporary Clarinet Techniques* (Rochester, NY: SHALL-u-mo Publications, 1982), 12.

¹⁰ Roger Heaton, "The Contemporary Clarinet," in *The Cambridge Companion to the Clarinet*, ed. Colin Lawson (Cambridge, NY: Cambridge University Press, 1995), 166.

Richards asserts that the “second generation of texts on extended clarinet techniques grew up in America in the mid-1970s. The monument of this time is Phillip Rehfeldt’s book *New Directions for Clarinet*.”¹¹ Rehfeldt’s book was first published in 1976.¹² At this time there were other contributors to this research in addition to Rehfeldt in America. Farmer lists scholars such as Ronald Caravan, F. Gerard Errante, Gerald Farmer, Lawrence Singer, William O. Smith, and John Heiss, who had developed contemporary techniques, and contributed to the research of these techniques.¹³ Rehfeldt’s revised second edition that was published in 1994 is still one of the most recent sources about extending clarinet techniques in America and around the world. Heaton considers Rehfeldt’s *New Directions for Clarinet* as “the best book on clarinet techniques.”¹⁴ I agree with Heaton that Rehfeldt’s book is an excellent source today especially because of its annotated reference. However, there will be more contributors and researchers in this area, especially when one sees the contradictions of performing and notation applications of the contemporary clarinet techniques among the composers and scholars.

Along with historical background information about the research into contemporary clarinet techniques, it is necessary to establish a general definition for them, before focusing on the selected modern clarinet techniques. It would be correct to define all of these contemporary clarinet techniques as sound innovations. These sound innovations are limitless for the experimental artists. Farmer mostly focuses on “multiphonics,” and describes nearly twenty additional techniques that are considered contemporary: “microtones,” “vibrato,” “glissando,” “portamento,” “pitch bends,” “timbre trills,” “harmonics,” “flutter-tongue,” “smorzato,” “reverse envelope of attack and decay,” “subtone,” “muted sounds,” “slap tongue,” “air sounds,”

¹¹ Richards, v.

¹² Phillip Rehfeldt, *New Directions for Clarinet* (Berkeley: University of California Press, 1994).

¹³ Farmer, 6.

¹⁴ Heaton, 172. Rehfeldt’s book also gives valuable information about Smith and his works in Appendix A, 95-121.

“mouthpiece alone,” “lip buzz,” “extended range,” “percussive effects,” “time-line,” and “proportional notation.”¹⁵ Heaton also describes some sounds or techniques such as “mouthpiece alone; mouthpiece on the lower joint of the instrument . . . ; blowing across the barrel . . . ; hitting the barrel with the palm of the hand . . . ; [and] “muting.”¹⁶ As their names suggest, all of these techniques are the products of experimenting with the sound that comes from the clarinet. However, this study will focus on the ones that are the most common modern clarinet techniques: multiphonics, microtones, and vibrato. Each of these techniques has an important role in the evolution of the advanced clarinetist’s unique performing style. They are the best examples to show the need of research in this area, especially when one sees the controversies of performing and the notation applications of these techniques.

Multiphonics

Multiphonics is the technique of playing more than one pitch at the same time. It can be achieved either by the use of vocal sounds sung by the player, while he or she is playing another note. It can also be achieved by using different combinations of fingering positions that produces more than one pitch at a time. Performing these sounds is considered difficult, when one wants to obtain multiple sounds from a monophonic instrument that was not designed especially for that purpose. This situation challenges performers to search for or create new combinations of fingerings along with different ways of notating them. For example, Richards finds nearly 463 multiple sounds,¹⁷ but this number varies among other scholars’ research. To obtain multiple sounds from the clarinet, clarinetists have to change their usual playing technique, using different mouth positions, various ways of using breath pressure such as playing and singing at the same

¹⁵ Farmer, 130.

¹⁶ Heaton, 171.

¹⁷ Rehfeldt, 196.

time, and using unfamiliar fingerings. This is another challenge for performers and directs them to experiment with new methods of performing techniques to produce multiple sounds.

The multiple-sounds technique for clarinet evolves from the creative musicians who experiment often and expand their performing capabilities; today scholars consider it one of the most important contemporary clarinet techniques. In a *New Grove Dictionary* article, it is noted that “the pioneering in multiphonics was done by a number of players but particularly important was the contribution of the clarinetist Detalmo Corneti, working with Bartolozzi (using a clarinet extended to e-flat).”¹⁸ The experimentation that started with Corneti has spread around the world. For example, composer Antonio G. Barata cites more than forty scholarly written sources about multiphonics, and gives annotations for each of them.¹⁹ Thus, Barata points out the scholarly attention to this technique.

The definition of multiphonics technique differs from scholar to scholar. Farmer says that there are several other terms used synonymously such as “polyphonics,” “multiple sonorities,” “multiple sounds,” and “chords;” however, he adds that “the terms ‘double stops,’ ‘overtones,’ and ‘harmonics,’ . . . occasionally appeared in early articles on the topic, do not adequately describe the new technique.”²⁰ Thus, Farmer indicates the confusion of the terminology between the scholars. The double stop or chord terms are associated mostly with string or keyboard instruments. It is important to avoid using these terms to indicate the difference of multiple sounds that the clarinet creates. Clarinet multiple sounds differ from a simple piano chord acoustically and also by the various dynamic levels of its each sound. Thus, it is obvious to see from Farmer’s observation that even naming this technique causes controversies among scholars.

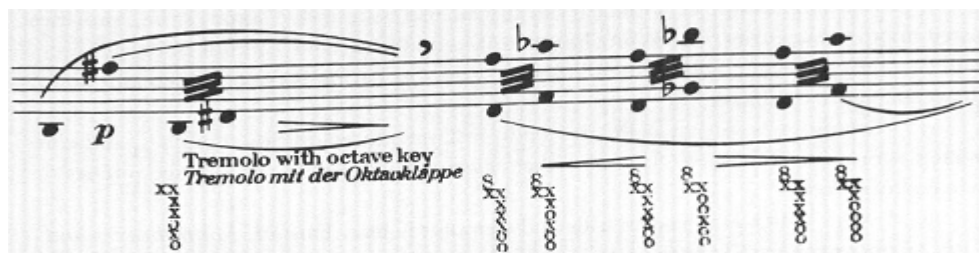
¹⁸ Jane, K. Page, 3.

¹⁹ Antonio G. Barata, “Sources of Information on Woodwind Multiphonics: An Annotated Bibliography,” *Perspectives of New Music* 26, no. 1 (Winter, 1988), <http://www.jstor.org/stable/833328> (accessed February 11, 2010).

²⁰ Farmer, 1.

Producing multiphonics is problematic and sometimes depends on the capacities of the performer. There are notation problems; for instance, the composer cannot always predict what kind of fingering patterns he or she should notate on the music that best fits the performer. Sometimes composers choose not to indicate these fingerings, leaving this problem to the performers. However, with the help of research into these techniques, indicating the fingering patterns has started to become common practice for many composers. *A variation for Solo Clarinet* (Ex.1) by the composer William O. Smith shows the two-note multiple sound tremolos. The composer chooses to provide some fingering positions in this case. It is also noteworthy that Smith chooses to show the closed finger positions with the “x” symbol. However, most of the composers indicate these finger positions by the black and round holes. One such type of fingering position example can be seen in the appendix of this paper. This situation is also another example of contradiction between the scholars and the composers on the notation application practice.

Example 1. William O. Smith, *Variations for Solo Clarinet*.²¹



To deal with these notation application problems, scholars continue to create different kinds of fingering charts, and categorize them to help both the performer and the composer. However, these fingering charts are not stable and differ from scholar to scholar. Farmer points out an important problem for performers as he describes the multiphonic fingering charts. He says that “it is not always possible to predict the exact pitch of content of a multiphonic with a

²¹ William O. Smith, *Variations for Solo Clarinet* (London: Universal Edition, 1967), cited in Rehfeldt, 55.

given fingering.”²² What Farmer means is that these fingerings can only give ideas on how to produce these effects. They do not guarantee the producing of the exact sound that the composer desires. It is all up to the performers’ capabilities to be able to select the right fingerings and produce them successfully.

American composer Gardner Read also points out the problems of notating these multiphonics in music: “First, the composer must know what structures are possible on the various wind instruments and, second, he must know how to indicate clearly the required fingering patterns.”²³ Thus, Read principally emphasizes that it is important for a composer to know the mechanism of the instrument, and the various fingering charts. Agreeing with Read, composers should provide these fingering positions to guide the performer. However, not all of the composers indicate them in their music; either they create their own notation applications or leave it to the performers to figure out the appropriate fingerings that best fits to him or her. *Anaktoria* (Ex.2) by the composer Iannis Xenakis does not show any fingering position indications. Also, in contrast to Example 1, Xenakis chooses to provide two staves to show the octave range differences between the lowest note and the other upper two notes in these three-note multiple sound patterns. The contradictions of notation of multiple sounds between the composers are obvious when one compares the two musical examples. Therefore, I believe in expanding the research area on notation practices is necessary to gain a common notation practice that will be accepted universally.

Example 2. Iannis Xenakis, *Anaktoria*.²⁴

²² Farmer, 6.

²³ Gardner Read, “Extending the Tonal Resources of Wind Instruments: Some Contemporary Techniques,” *Music Educators Journal* 63, no. 1 (September, 1976): 55, <http://www.jstor.org/stable/3395077> (accessed February 11, 2010).

²⁴ Iannis Xenakis, *Anaktoria* (Paris: Musique Contemporaine, 1971), cited in Rehfeldt, 47.



The second way of producing multiple sounds is using vocal sounds sung by the player. Singing into the instrument is also a challenging technique for performers, while he or she is playing another note simultaneously. Read warns composers about the voice range differences of female and male performers, if the composer desires to use this type of multiple sounds on the clarinet.²⁵ Ronald L. Caravan, who is a second generation American researcher on contemporary clarinet techniques, also warns composers about the range differences of male and female voices. He finds the solution of this problem to transpose the sung pitches in cases when a male singer cannot sing higher and female singer cannot sing lower pitches.²⁶ Caravan also emphasizes the importance of the sound balance in this two-part multiphonics writing,²⁷ and he points out the difficulty in balancing them. He says that “the sung part is usually not loud enough.”²⁸ Thus, he advises composers to write these vocal pitches in a different staff and to avoid writing loud dynamics since vocal pitches cannot be as loud as the instrument pitches, especially in higher registers.²⁹ It is important to note here that Richards and Rehfeldt do not categorize this type of multiple sounds under the multiphonics technique and give very little information about them in comparison with Caravan. This is another area that merits further research.

Categorizing the different types of multiphonics is helpful for both composers and clarinetists. Clarinetist Gary Steven Dranch classifies Rehfeldt’s categorization of multiphonics

²⁵ Read, “Extending the Tonal Resources,” 55.

²⁶ Ronald L. Caravan, “Extensions of Technique for Clarinet and Saxophone” (DMA diss., Eastman School of Music, University of Rochester, 1974), 3.

²⁷ The notation examples of this type of multiphonics can be seen in the appendix part of the paper.

²⁸ Caravan, 6.

²⁹ Caravan, 4.

into four groups: “three voices, full sonority,” “two voices, soft dynamics,” “combination tones that produce ‘beats’,” and “one or more upper harmonics combined with low fundamental.”³⁰

We see that Rehfeldt’s categorization is based on the characteristics of the multiphonics, such as dynamic levels and the number of pitches used. However, Farmer categorizes the multiphonic fingerings according to the performing conditions of the players and in a less complicated way than Rehfeldt does, using just two categories. Multiphonics that are in the first group have less complicated fingerings, but require changing the traditional way of blowing the air through the clarinet by using unusual mouth positions, different degrees of lip and air pressure, whereas the second group of multiphonics has more complex fingerings but requires less manipulation of the traditional playing.³¹ Caravan uses exactly the same categorization of multiphonics as Farmer.

He chooses to focus on the second categorization that requires less distortion of normal traditional playing. In addition, he discourages the composer from using the first type that requires more distortion of normal playing.³² Richards categorizes these sounds according to the sound dynamics range both by explaining the characteristics of each sound and the difficulty of producing them. He says that he limits his study on the fingering combinations “to those that are most easily produced by clarinetists with more close set-ups.”³³ Richards also agrees that Caravan chooses to focus his research area on the second type of multiphonics that he considers “most reliable in performance” and that requires less distortion of traditional clarinet playing.³⁴

Therefore, we see that categorizing multiple sounds is a helpful device to define them. It enables scholars to limit their study areas. However, the contradictions in the notation of these sounds, as

³⁰ Gary Steven Dranch, “A Performer’s Approach to New Demands in Selected Contemporary Clarinet Compositions” (DMA. diss., University of Illinois, 1981), 45.

³¹ Farmer, 7.

³² Caravan, 15.

³³ Richards, 189.

³⁴ Ibid.

we saw in the musical examples 1 and 2, signify that there is still room to expand their research area.

Microtones

Microtones or quarter-tones are the second modern clarinet technique that will be discussed in this paper. The clarinet was not designed to produce these sounds, and it is a similar challenge as multiple sounds. Farmer's definition of microtones is "intervals smaller than the semitone (one half of a whole tone) of the tempered chromatic scale."³⁵ The challenge of producing these techniques is these sounds are different in their scope and more difficult to produce than the equal-tempered, Western classical art music. In equal-tempered music, the whole tone was divided only into two semitones, and semitone was considered the smallest note value of this system. On the other hand, microtones are small values that evolve from the possibilities of dividing the semitone into many values, and could be, for example, one tenth or one third values of a semitone but mostly quarter-tones. That is the reason the technique is also used interchangeably as quarter-tones. Thus, notating these sounds became the primary challenge for scholars and composers that forced them to seek different kinds of notation methods and symbols.

Microtonal music evolves from ancient Greek and Asian modal music. The form of this type of monophonic music is linear, melody-based, and suggesting a more horizontal structure. Opposite of this logic, Western music is a polyphonic and harmony-based system in which musical structures can be visualized mostly vertically. As a person from Turkey, a half Asian and half-Western country, who has experienced Asian music's melodic richness, I believe that there is no way of exactly notating all of these microtones on paper. These sounds can only be learned

³⁵ Farmer, 131.

by ear and by imitating the masters. However, according to the music theorist George Witman and clarinetist Richards, Western music treats these sounds and notates them with an “equal tempered” way, so they can have more universal musical language.³⁶ The challenge for scholars is to be able to notate as many of the possible microtones that the clarinet is able to produce. I agree with Witman and Richards, who believe in creating a universal musical language, especially when I see the effort made to create microtone fingering charts along by using various microtone accidentals as an aid to the composers and performers. However, there is a need for more research on microtones to be able to build a universal musical language concept.

Performing these sounds was difficult, especially since the clarinet was not designed to produce them. As a solution, scholars thus came up with the invention of a microtonal clarinet.³⁷ Musicologist Pamela Weston identifies Artur Holás as the first clarinetist to use the microtonal clarinet.³⁸ As the use of this clarinet is not still common today the focus of the scholars turned to the notation practice of the microtones. Hába is an important figure who is considered the pioneer of microtone techniques today.³⁹ His former student Whitman notes that “Alois Hába published his book *New Harmony*, showing the notational systems of microtones in 1920.”⁴⁰ Besides Hába, all of the two generations of scholars in America that were mentioned at the beginning of the paper researched notation systems of microtones in some degree. Richards who has done valuable work on microtone technique, criticizes the previous research before him:

³⁶ George Whitman, *Introduction to Microtonal Music: For Composers and Instrumentalists in Conventional and Electronic Media* (London: Breitkopf & Hartel, 1970), 1; Richards, 62.

³⁷ Oscar Kroll, *The Clarinet*, rev., with a Repertory by Diethard Riehm; trans. Hilda Morris (NY: Taplinger Publishing Company, 1965), 45.

³⁸ Pamela Weston, “Players and Composers,” in *The Cambridge Companion to the Clarinet*, ed. Colin Lawson (Cambridge; N.Y.: Cambridge University Press, 1995), 100.

³⁹ Alois Hába (1893-1973) was a Czech composer, theorist, and the pioneer of the quarter tones in Western art music. For more information see also Jiří Vysloužil, “Hába, Alois,” in *Grove Music Online, Oxford Music Online*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/12113> accessed March 10, 2010.

⁴⁰ Whitman, 4.

Studies by Rehfeldt, Caravan and Bartolozzi offer fine introductions, but do not present important details. Phillip Rehfeldt's charts include some awkward microtones that are technically impossible in most contexts . . . or that involve non-conventional finger patterns; these problems are not sufficiently described for composers (or clarinetists). In addition, these microtones are not adequately compared according to pitch; they are merely grouped as alternate fingerings for quarter or eight-tone intervals. . . . In general, all of these documents merely touch the surface with regard to both microtones and descriptive information.⁴¹

Here as we see, Richards obviously points out the deficient research on notation practices of microtones, when he indicates the problems in fingering charts need to be described for composers or clarinetists.⁴²

Farmer defines two ways of producing microtones; one way is using "alternate fingerings," and the second way is making adjustments to the embouchure, tongue, and throat. He finds using the fingerings as "the most accurate way of producing microtones."⁴³ Richards also uses nearly the same definition as Farmer's and chooses to focus his research on producing microtones by fingerings. He considers the use of fingerings method as "the most universally accurate with regard to pitch."⁴⁴ The fingering charts that are discovered by scholars⁴⁵ are very useful, as they provide endless choices for the performer to obtain reliability of the pitch. However, Richards thinks that learning these fingerings can be challenging for performers and says, "For the performer, learning these fingerings is similar to learning a new, related instrument; many of them involve unconventional or unfamiliar finger patterns."⁴⁶ Thus, he points out the attention to the difficulty of performing microtones.

⁴¹ Richards, 59.

⁴² Ibid.

⁴³ Farmer, 131.

⁴⁴ Richards, 59.

⁴⁵ There are different fingering charts available in Rehfeldt, 22-40; and Rehfeldt's Appendix B-Eric Mandat's chart, 123-124; Farmer, 41-129; Richards, 79-123; Caravan, 136-156. Whitman's chart is based on 100 divisions or cents to a tempered semi-tone, Whitman, 1.

⁴⁶ Richards, 58.

Contradictions in microtonal notation among composers can be seen in the following two musical examples. In the work *Current for Clarinet and Piano* (Ex.3), the composer Larry Austin exemplifies the application of microtones technique by a unique notation. In addition to indicating the fingerings below the notes, the composer chooses to symbolize the pitch differences of microtones by half-black and half-white notes rather than using microtone accidentals. According to Farmer's notation symbols for categorizing microtones, if the black side of the note is placed down it indicates lower, and if it is placed up, it indicates the higher microtonal pitches, as shown in Example 3.⁴⁷

Example 3. Larry Austin, *Current for Clarinet and Piano*.⁴⁸



Trio for Clarinet, Cello, and Piano (Example 4) by the composer Barney Childs differs from the previous example by not employing the microtonal fingering patterns. Also, another difference is that the composer chooses to use the microtonal accidentals along with the arrows.

Example 4. Barney Childs, *Trio for Clarinet, Cello, and Piano*.⁴⁹



⁴⁷ Farmer, 132.

⁴⁸ Larry Austin, *Current for Clarinet and Piano* (CA: Composer Performer Edition, 1964), cited in Rehfeldt, 16.

⁴⁹ Barney Childs, *Trio for Clarinet, Cello, and Piano* (Newhall, CA: Basheve Music, 1975), cited in Rehfeldt, 18.

It is obvious that there is a vast discrepancy in notation practices of the composers within these two musical examples. It is also important to note that Farmer's categorization of microtone symbols⁵⁰ is the broadest according to Rehfeldt's and Caravan's categorization. Richards also mentions them in his research,⁵¹ but not as extensively as Farmer. Microtonal accidentals indicate the pitch, but not how to produce them as fingering patterns. They are as necessary as the fingering positions in the notation applications of microtonal music. Microtone accidentals or symbols⁵² are as important devices as the microtone fingering charts in creating a universal notation concept; they should be standardized and categorized to avoid controversies among the performers and composers.

Vibrato

Vibrato is another important modern clarinet technique. It is a tonal effect in music deriving from modulations in amplitude or frequency of the pitch. However, there are controversies in performing and defining this technique. Regarding the definition of vibrato, Richards points out terminology confusion. He says that "the confusion exists in method books, and among clarinetists, because the method of production is often used to describe vibrato, rather than the type of sound."⁵³ Thus, he indicates that the scholars or performers might choose to use names such as lip vibrato, diaphragm vibrato, jaw vibrato, breath vibrato, or key vibrato according to the ways of producing it, rather than of the type of the sound. Richards focuses attention more on the types of the vibrato sound rather than its performance practice. Knowing

⁵⁰ See the appendix for Farmer's microtone symbols.

⁵¹ Richards, 62.

⁵² See the appendix for microtone accidentals.

⁵³ Richards, 219.

the types of sound description of vibrato might help performers or composers to avoid confusion regarding vibrato terminology.

There are two types of vibrato sound, and Farmer explains them; “The vibrato on the clarinet is a fluctuation or pulsation of a tone produced by either lowering or raising the pitch (called pitch vibrato) or by decreasing and increasing the amplitude (called amplitude vibrato).”⁵⁴ With regard to producing these two types of vibrato, Farmer says that “the pitch vibrato usually requires manipulation of the jaw or lip, while amplitude vibrato requires breath, diaphragm, or throat manipulation.”⁵⁵ In addition to Farmer, these two sound types of vibrato are also described and named as “amplitude vibrato” and “pitch vibrato” by Richards, as well as by scholar Paul Drushler.⁵⁶ Even though Rehfeldt and Caravan mention these two types of vibrato sound, they do not name them as amplitude or pitch vibrato. This situation also indicates the lack of common terminology and even contradictions between scholars. In addition to these two types of vibrato, in one of his articles musicologist Nicholas J. Valenziano mentions the “key vibrato which is produced by trilling an indicated key.”⁵⁷ For a similar type of vibrato, Read also credits the “finger vibrato,” that is “achieved by closing one or more of the lower holes of the instrument with a trill movement according to the fingerings given below the pitches.”⁵⁸ However, not all of the scholars classify the finger type of vibrato or key vibrato under the category of vibrato. Therefore, it is clear to see the ambiguity between these scholars, which indicates that there is still need for research and enlightenment in this area.

⁵⁴ Farmer, 133.

⁵⁵ Ibid.

⁵⁶ Paul Drushler, “The Clarinet Vibrato,” (March, 1978): 279-281, in *Woodwind Anthology: A Compendium of Woodwind Articles from The Instrumentalist* vol.2 (Illinois: The Instrumentalist Publishing Company, 1992); Richards, 219.

⁵⁷ Nicholas J. Valenziano, “Contemporary Notational Symbols and Performance Techniques for the Clarinet,” (March, 1977): 267, in *Woodwind Anthology: A Compendium of Woodwind Articles from The Instrumentalist* vol.2 (Illinois: The Instrumentalist Publishing Company, 1992).

⁵⁸ Gardner Read, *Compendium of Modern Instrumental Techniques* (Westport: Greenwood Press, 1993), 145.

Another controversy between the scholars regards the performance practice of vibrato, and in deciding which type of vibrato to use on the clarinet. Richards points out a controversy between the scholars, when he notes that “Rehfeldt says that jaw vibrato is more common than amplitude vibrato in practice, while Drushler claims the opposite to be true!”⁵⁹ He also agrees with Rehfeldt and gives reasons why the common practice should be the pitch vibrato. He believes that pitch vibrato is richer in sound, when amplitude vibrato is limited in sound potential. He says that it is possible to control “the depth of the vibrato (how wide the pitch range is above and below the primary pitch) and the speed of the vibrato (how many cycles in time).”⁶⁰ Rehfeldt also explains the depth and the speed of the vibrato. In addition, he makes an observation that “breath vibrato” which is amplitude vibrato is generally preferred for flute, oboe, and bassoon but not on single-reed instruments such as clarinet.⁶¹ Caravan makes the same observation as Rehfeldt does and indicates that single reed instruments usually use pitch vibrato.⁶² Rehfeldt credits that the vibrato was used by other wind instruments as a “natural part of their tone,” and “traditionally not on clarinet.”⁶³ However, there is still ambiguity of preference of using or not using the vibrato for normal playing.

The use of vibrato technique in clarinet has been controversial among performers, composers, and scholars for decades. Whether classical clarinetists should use the vibrato or not was a discussion point that began in the 1970s and which continues today. George Seltzer says, “Fifty years from now we may have a definitive answer to the question, ‘Should Clarinetists Use

⁵⁹ Richards, 219.

⁶⁰ Ibid., 219.

⁶¹ Rehfeldt, 62.

⁶² Caravan, 200.

⁶³ Rehfeldt, 62.

Vibrato?”⁶⁴ Two decades after Seltzer, Victor Bordo published an article asking a similar question: “why does the classically trained clarinetist seldom use vibrato? Jazz clarinetists Buddy de Franco, Benny Goodman, Artie Shaw, and Woody Herman have all used it. . . . Why don’t classical players follow suit?”⁶⁵ Today, it is still controversial among the players whether to use vibrato as part of their normal playing; it is sometimes an individual taste or style preference. Another researcher, F. Geoffrey Rendall, gives his opinion about using vibrato, and reports that “it is more suited to wind instruments of tenuous or stringy tone, the flute or oboe, than to the clarinet with its complex and highly charged harmonic texture.”⁶⁶ The English musicologist Robert T. Phillip also documents that, “vibrato, which is an important factor in the history of oboe- and flute- playing in the first half of the twentieth century, is rarely mentioned by writers on the clarinet during this period.”⁶⁷ However, Seltzer’s question has an answer today. Most of the contemporary composers consider vibrato as one of the extended clarinet techniques, and apply it to their compositions with well indicated notation symbols. Richards says that “since most clarinetists today do not employ vibrato, it would be best for composers to notate it when desired.”⁶⁸ What Richards indicates is the importance of notation practices, since vibrato is usually considered as an effect that employed to specific areas in the music. Therefore, expanding the research area on the clarinet vibrato becomes crucial for scholars and composers.

⁶⁴ George Seltzer, “Should Clarinetists Use Vibrato?” (December, 1970): 186-187, in *Woodwind Anthology: A Compendium of Woodwind Articles from The Instrumentalist* vol.2 (Illinois: The Instrumentalist Publishing Company, 1992).

⁶⁵ Victor Bordo, “What’s the Fuss About Clarinet Vibrato?” (October, 1989): 419, in *Woodwind Anthology: A Compendium of Woodwind Articles from The Instrumentalist* vol.2 (Illinois: The Instrumentalist Publishing Company, 1992).

⁶⁶ F. Geoffrey Rendall, *The Clarinet: Some Notes upon its History and Construction* (London: W.W. Norton, 1971), 40-41.

⁶⁷ Robert T. Philip, *Early Recordings and Musical Style: Changing Tastes in Instrumental Performance, 1900-1950* (Cambridge: Cambridge University Press, 1992), 128.

⁶⁸ Richards, 221.

The application of the vibrato in contemporary compositions is often specified clearly by the use of the various vibrato signs.⁶⁹ Read explains the notation of this technique and says that “contemporary composers are usually quite specific in designating the complete absence of woodwind vibrato or, contra wise, an exaggerated vibrato- both for coloristic reasons.”⁷⁰ I think Rehfeldt’s “measured vibrato” heading best defines vibrato application concept in modern music.⁷¹ In *Sensations for Clarinet and Tape* (Ex.5) Burton Beerman shows the application of vibrato symbols, with specific and clear indication of vibrato note by note.

Example 5. Burton Beerman, *Sensations for Clarinet and Tape*.⁷²



Exposure for Bb clarinet or bass clarinet (Ex.6) by Jim Fox also shows the application of vibrato symbols. The waves on the lines indicate the amount of density or flexibility on the modulation of pitch frequency, which are the speed and the depth of the vibrato. They are the graphical definitions of the action. We see here how specific and clear are the indications of the composer. We understand the concept of the notation practice of the contemporary music composer. The characteristic of this concept is defining explicitly the exact place of vibrato by symbols, so the result becomes measured and controlled vibrato. Therefore, the challenge for the performer is to be able to play the notes with these exact indications.

Example 6. Jim Fox, *Exposure for Bb clarinet or bass clarinet*.⁷³

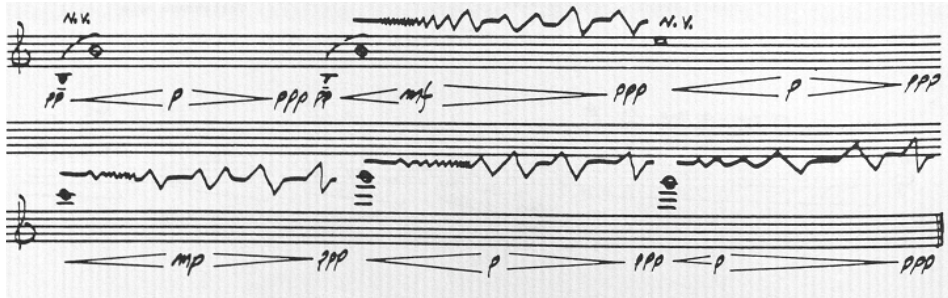
⁶⁹ See also appendix for vibrato symbols.

⁷⁰ Read, *Compendium of Modern Instrumental Techniques*, 144.

⁷¹ Rehfeldt, 62.

⁷² Burton Beerman, *Sensations for Clarinet and Tape* (Champaign, IL: Media Press, 1976), cited in Rehfeldt, 62.

⁷³ Jim Fox, *Exposure for Bb clarinet or bass clarinet* (Mentone, CA: MillCreekPublications, 1990), cited in Rehfeldt, 62.

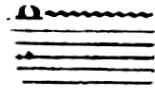

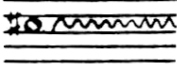
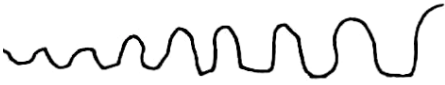




In conclusion, I believe that notation application and research of these techniques will develop by the progression of the clarinet mechanism. I also believe that it is important to the advanced clarinetists to know and explore these techniques in order to create their own playing styles. It is crucial for the player and the composer to observe each technique and to always blend them with their own experiences using the research that has been done and still continues by various scholars in this area. The three selected modern clarinet techniques that are discussed through this paper demonstrate the controversies involved in notation and performance practice. Therefore, they are the solid proof of the deficiency of research on the contemporary clarinet techniques. They still need to be explained and researched by scholars to gain a universal musical understanding.

Appendix








Symbols of Selected Modern Clarinet Techniques

Vibrato⁷⁴

























<p><i>Key vibr. (slow)</i></p> 	<p>Key vibrato. While playing written note, trill a right hand key.</p>
	<p>Key vibrato. Trill key indicated by small note.</p>
<p>m. v.</p>	<p>Molto vibrato.</p>
<p>wide vibrato</p> 	<p>Vibrato which is to be varied from narrow to wide.</p>
	<p>Wide vibrato.</p>
	<p>Vibrato which is to be varied from narrow to wide to narrow.</p>
<p>s v.</p>	<p>Senza vibrato.</p>
<p>N.V.</p> 	<p>Non-vibrato.</p>

⁷⁴Valenziano, 262-270.

Microtones or Quarter-tones⁷⁵

	Quasi quarter-tone. Note to be bent up or down.
  	Quarter-tone sharp.
	Three-quarters of a tone sharp.
 	Quarter-tone flat.

Gerald J. Farmer's Microtone Symbols⁷⁶

Microtonally lower	Microtonally higher
-b	+b
	
	
	
	
	
	
	
	
	
	
	
	
$\frac{1}{2}$ step flat	$\frac{1}{2}$ step sharp
slightly below natural	slightly above natural

⁷⁵ Valenziano, 262-270.

⁷⁶ Farmer, 132.

Multiple Sounds⁷⁷

Multiple sounds with fingerings.

Growl while playing.

Hum while playing.

or

⁷⁷ Valenziano, 262-270.

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