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Shifting Slides: The Effect of John Cage's "Solo for Sliding Trombone" (1957-58) On Modern Trombone Literature and Pedagogy

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SHIFTING SLIDES: THE EFFECT OF JOHN CAGE'S "SOLO FOR SLIDING TROMBONE" (1957-58) ON MODERN TROMBONE LITERATURE AND PEDAGOGY

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The undersigned, appointed by the Schwob School of Music at Columbus State University, have examined the Graduate Music Project titled

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Presented by Andrew Michael Shelton

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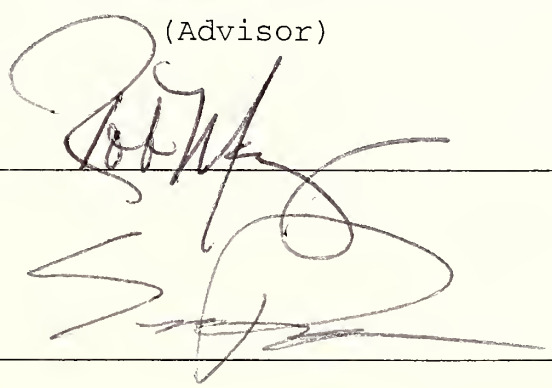

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Abstract

The trombone has a limited history concerning literature and technique development. A turning point for the literature of the trombone was with John Cage's *Solo for Sliding Trombone*. This composition brought about new techniques that would permeate throughout subsequent literature. These new techniques would also impact trombone pedagogy and accepted technique. This paper explains the impact *Solo for Sliding Trombone* had on the development of the instrument including literature and pedagogy.

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The trombone can be found in band halls, orchestral halls, jazz clubs, and even pop concerts. This is in due part to the work of many musicians, particularly those of the 20th century. The instrument, like many others, has developed along with the styles and genres of music during modern times. However, the trombone experienced an unusual progression through its development. From the conception of the trombone in the 1400s until the mid-twentieth century there was relatively little progress and innovation in technique and repertoire. It was not until the wake of the Second World War that John Cage sought to clean the slate of modern music and began to press the possibilities of sound and technique. Cage's compositions created new demands of composers and trombonists alike. New techniques and notational systems were developed as a result of the work of John Cage. This made possible for new avenues of trombone performance and composition. This research will show how John Cage's *Solo for Sliding Trombone* transformed the landscape of trombone technique and literature in the mid-twentieth century. This paper will discuss the history of trombone literature and pedagogy, literature prior to Cage's work, John Cage, *Solo for Sliding Trombone*, literature

influenced by Cage, and how to deal with pedagogical issues resultant of the new extended techniques.

Trombone technique and literature until 1950

Literature plays an integral role in the development of any instrument. With literature that does not challenge musical ability and technique, an instrument and its performers have no driving force to improve and advance. This is a concern that the trombone and trombonists faced for several hundred years. The span of the late 1400s through the mid-twentieth century saw rather little development and curiosity in trombone literature. During this time frame many of the greatest eras in musical history and composition, the Classical (1750-1820) and Romantic (1820-1900), came to pass. This was a time of the greatest compositions in modern history, but of which the trombone was largely left out. When the literature of the trombone is compared to a younger brass instrument, the French horn, during the same time frame there are noticeable discrepancies. The French horn can be found in the compositions of Mozart, Strauss, Rossini, and Beethoven. This lineup of significant composers has many implications including international attention and a level familiarity attached to the literature. There are exceptions for the trombone that include compositions by Camille Saint-Saens and Leopold Mozart but these are rare examples. The trombone

went virtually unrecognized by leading composers during this span of time.

The development of trombone technique has a similar history to that of trombone literature. Trombonists in Europe found themselves doubling voice lines in liturgical settings and playing in small town bands until the early Baroque period. These town bands were known as "alta bands" or loud bands, which included instruments like the cornett, trumpet, shawm, and trombone. The soft instruments like the lute and flute were preferred in intimate and private settings that accompany royal courts, whereas the alta bands were for outdoor public events. The exclusion of the loud instruments from the royal private chambers meant that these early brass players were less respected and compensated (Guion, 2010). The role of the trombone in churches took a similar course. Trombones were used to double voice lines primarily. Giovanni Gabrieli, music director at Saint Mark's Basilica in Venice utilized the trombone in many of his works. In *Sonata pian' e forte* there are multiple trombones in each of two choirs. His music provided for increased technical demands in the player with more melodic material introduced. This move forward was suppressed as the trombone and other brass instruments were slowly replaced in churches by strings and woodwinds. This repression forced the

instrument into a stereotype of lesser artistic and social value. Only in a handful of countries, like Germany, did the trombone have civic duties within the town, which was merely to play during town festivals and to signify the change of the hour (Herbert 2006).

George Friederic Handel began to incorporate the trombone in oratorios in the early 18th century, which acted as a catalyst for other composers like Gluck and Mozart, who put the trombone front and center. After its introduction into oratorios many Parisian composers regularly had trombones in their operas and ballets (Guion, 2010). This set up for the model of the trombone section within operas and orchestras as we know it today.

With this new role in popular operas and orchestras the trombone now required a new component to its existence, pedagogy. This provided another challenge, as there was no formalized method for teaching and learning the instrument. This also meant that the standards for trombone playing were virtually nonexistent. Without standards of practice composers had no idea of the capabilities of the instrument, which in turn deterred them from writing for it technically or melodically.

It was not until the eighteenth century that trombone pedagogy came into being in the form of the conservatory movement, most notably at the Paris Conservatory. With the help

of many skilled trombone soloists and teachers like Antoine Deippo, method books and teaching methods were established. Conservatories also helped to create something new--a growing body of solo literature. The first documented trombone solo was published in 1621, by Giulio Martino Cesare. Only two other known solos remain as evidence of literature of the seventeenth century. Of the eighteenth century only three dedicated trombone solos came about (Guion 2010). French Conservatories assisted in the elimination of the deficiency of trombone solos. With annual solo competitions and degree requirements at the Paris Conservatory, composers were asked to write solo pieces with appropriate difficulty. With these important components in place the trombone should flourish, but it would still take decades longer for the instrument to progress to modern standards.

The technical threshold established at this point in history seems to have limited composers' artistic vision for trombone literature. The only significant innovation from the 18th century until the mid-twentieth century was the increase in tempo, as trombonists and composers discovered that music could be played faster. This advance would provide little help in developing trombone literature.

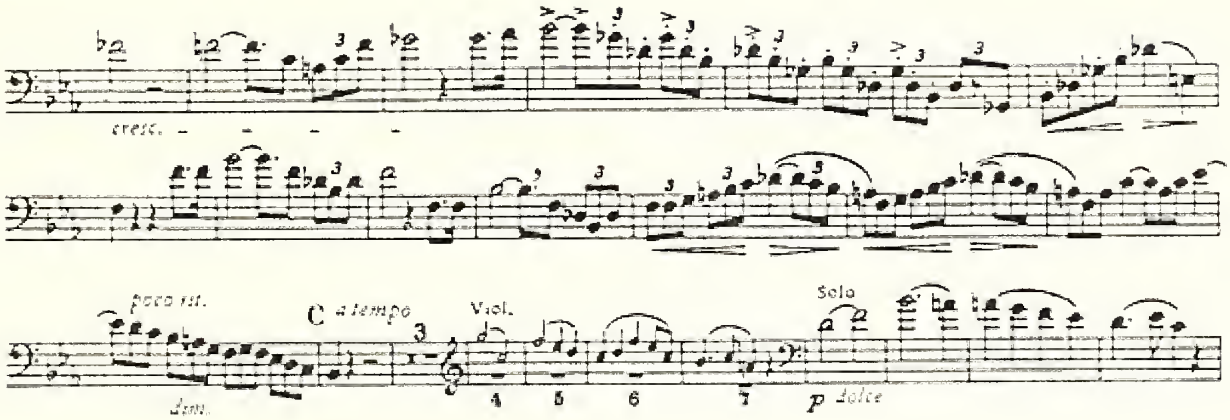
Leading Up To the Shift

The modern trombone concerto as we know it today has its roots in Germany. The Concertino for Trombone (1837) by Ferdinand David was the product of collaboration by one of Europe's legendary trombonists, Carl Traugott Queisser, and composers Felix Mendelssohn and Ferdinand David. Queisser was a famed virtuoso that could allegedly play all instruments ranging from flute to bass trombone, but his specialties were trombone and violin. He was the solo trombonist in the Gewandhaus orchestra, where he performed with concertmaster Ferdinand David under the baton of Felix Mendelssohn. All three musicians conspired together to come up with a concerto to showcase the talents of young Queisser (Lindberg, 2010). Little did these gentlemen know that their product would become a landmark in the trombone's history. Until this point there were no major concertos for the trombone, and from this point it would be decades until Rimsky-Korsakov would write his Concerto for Trombone. The only other major concerto for the instrument in the 19th century was Felix Alexandre Guilmant's *Morceau Symphonique*. In contrast to this limited amount of output, the trumpet had more than triple the amount of literature by this point in time.

As the music scene in the United States shifted from concert halls to traveling bands and outdoor concerts during the turn of the 20th century, groups like the Sousa Band and the Fillmore Band came into fashion. This allowed the trombone to become a more prominent solo instrument. Its popularity peaked with one young man named Arthur Pryor. Pryor got his start in John Phillip Sousa's band in 1892, assuming the solo trombone position from famed trombonist Frank Holton. Holton was noted as relinquishing the chair to Pryor citing that he could not compete with the spry virtuoso (Benjamin, 1999). Pryor made a name for himself playing lovely ballads and blazing showpieces. Many of the showpieces were composed by Pryor himself, and as a result much of the literature of the turn of the century came from him. Pryor's *Blue Bells of Scotland* and *Annie Laurie* are two of the compositions that gave the trombonist a new role—virtuosic soloist. With soaring melodies and light speed variations audiences now saw the trombone as a legitimate solo instrument. While this development was positive for the popularity of the instrument, there remained little progress in the music being composed. While Pryor advanced the popularity and technique of the trombone, composers still operated with the same range and overall technique boundaries. The lower and upper register still had unspoken limitations (See Figure 1 and 2) limiting the trombone from GG to c''.

Figure 1.

Ferdinand David Concertino mm.69-94



mm.207-225

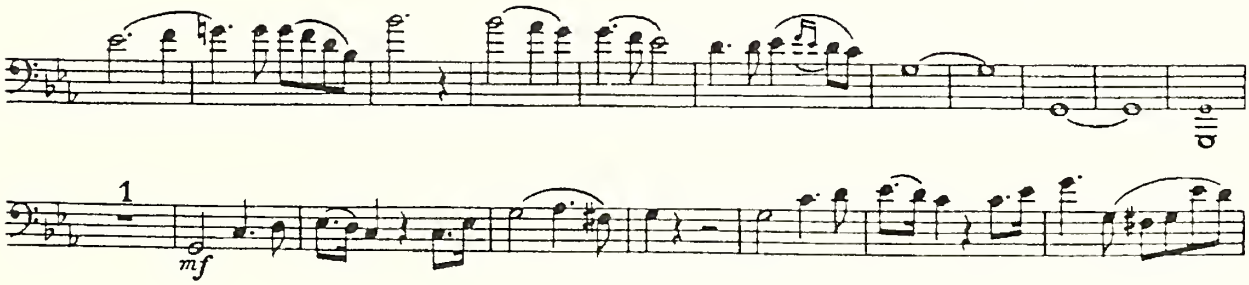
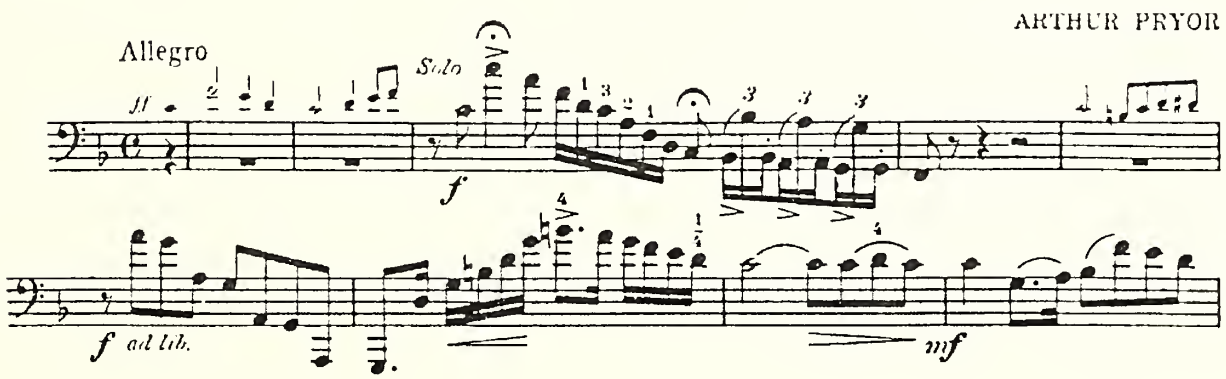


Figure 2.

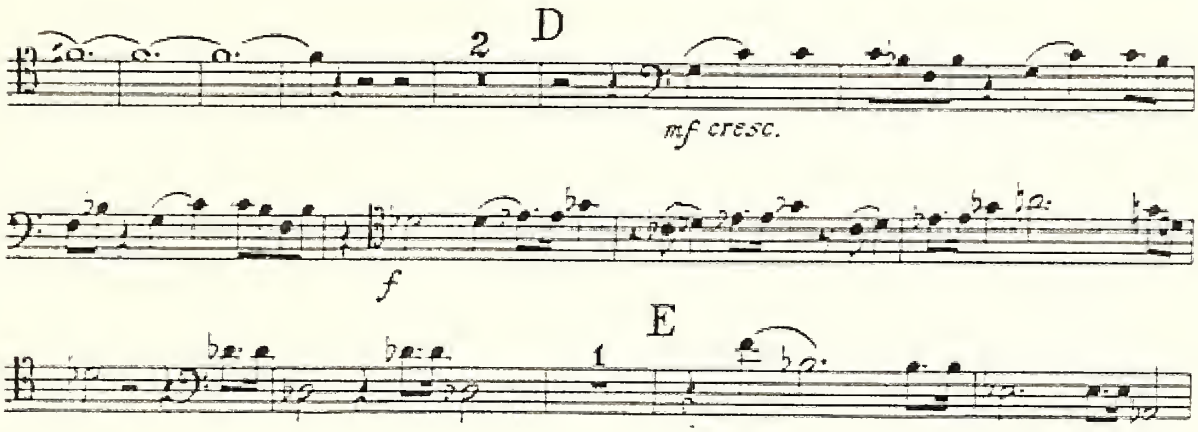
Arthur Pryor Blue Bells of Scotland mm.1-9



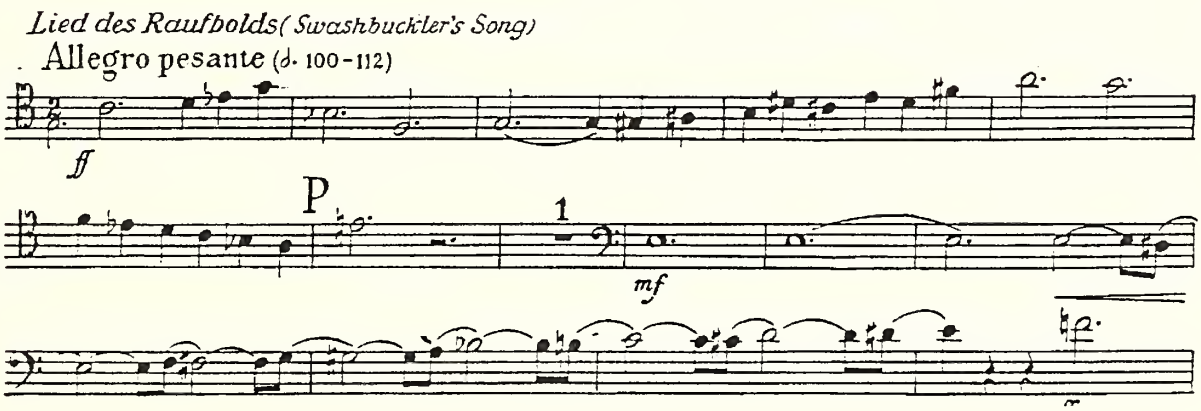
Into the 1940s the only aspect of trombone literature that was expanding was its harmonic language. Paul Hindemith's Sonata for Trombone and Piano (1942) not only provided the trombone with its first sonata with piano, but also provided the instrument with a work that utilized some of the modern theoretical techniques of composition (Thompson, 52). Hindemith's Sonata did not give way to the standard romantic view of solo writing, instead it took to the more impressionistic style of Ravel or Debussy. The solo contains many chromatic harmonies and the use of a disconnected solo line instead of the flowing Romantic harmony and melody (See Figure 3). As the exploration of tonality and style continued, the extension of the instruments voice and sound possibilities did not.

Figure 3.

Paul Hindemith Sonata movement I, mm.31-48



Movement III, mm.1-15

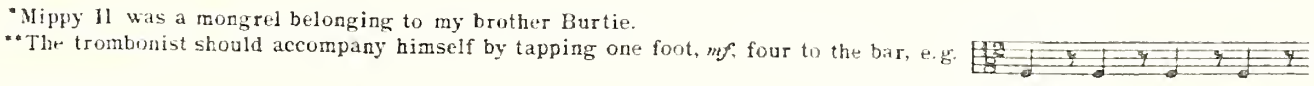


It was not until 1948 when Leonard Bernstein wrote a piece in honor of his brother's deceased dog that trombone literature would have a spark of creativity. *Elegy for Mippy II* was written for solo trombone in honor of Bertie Bernstein's "mongrel" dog Mippy. Bernstein calls for the trombonist to "accompany himself by tapping one foot, *mf*, four to the bar", as to mimic the tail of Mippy slapping the floor (Bernstein, 1950). As this may seem rather elementary or humorous this was a giant leap for trombone literature. This provided for the introduction of a theatre—type piece as well as the incorporation of jazz into the classical solo literature. Eugéne Bozza incorporated blues themes and rhythms into his *Ballad* (1944) and well as *New Orleans* (1962), but these brief elusions fall short in comparison to the jazz influence of *Elegy for Mippy II*. Bernstein endeavored to mimic the improvisatory style of a big band trombonist. This piece also introduced the idea of having performance instructions, which will be used often in years to come (See Figure 4). Prior to this point jazz solos were left for the bandstand and classic solos for the concert hall. Bernstein took some of the first steps to bridge the divide between the two idioms. Jazz trombonists of the early twentieth century developed a new sound concept and implemented new techniques. Jazz trombonists introduced the smaller, brighter sound of the instrument by using small-bore instruments. These trombonists also began to

implement such newer techniques as the "shake" into literature. Flutter tonguing and the "growl" also crept into the jazz vocabulary. The use of mutes, such as plunger, straight mute, and cup mute were also being used in the jazz movement. These new techniques and sounds were available, but it would not be until John Cage that they fully matriculated into classical trombone solo literature.

Figure 4.

Leonard Bernstein Elegy for Mippy II



John Cage: Ignition Point

As the 20th century began so did a discontent with the modern human state. In accordance with history this discontent was felt and amplified in the writings and works of artists. Two world wars, the Great Depression, and a "police action" in Korea had thrown young Americans into disbelief of what 'normal' and 'correct' were. The reaction could be seen in the abstract paintings of Jackson Pollock and in the music of Arnold Schoenberg, who set out to display the chaos that was felt but at the same time operate within boundaries. Pollock's boundaries were inside the border of the canvas and Schoenberg established his boundaries with his new method of musical composition, the tone row.

Schoenberg's tone rows were composed of all 12 tones that make up an equal tempered octave. These tones can be chosen at any order but not be repeated. This row of 12 tones must be stated in its entirety before another form of the row appears. Rows can be inverted and manipulated providing numerous ways to state the row. This was in direct opposition to the tonal system that used chords made of triads that moved in progressions, where the vertical was favored over the linear. Though this music sounded disorderly to some listeners; in reality, it

contained a highly structured framework. This concept would spur the minds of a new generation of composers.

A composition student of Schoenberg was John Cage (1912-92). Cage found himself dissatisfied with modern conventions of music as well as the new serialism trends of Schoenberg and others. Cage believed that music needed not be constrained by any manner of harmonic structure. Instead, Cage developed a method of structure based on rhythmic patterns in the 1930s. In his composition *First Construction (in Metal)* (1939) Cage used 16 measure phrasing patterns of 4+3+2+3+4 and 16 measures of rhythmic patterns of 4+3+2+3+4, which makes the structure of the whole the same as the parts (Chilton 2007). This "square-root form" created a rhythmic structure independent of any other musical aspect, including harmony, the basis of western classical music (Chilton 2007). Cage felt that music as he knew it was made up of sounds and silence, not predetermined tones in a row or chord progressions. Cage placed more importance on duration than harmony. He writes, "The Rhythmic structure could be expressed with any sounds including noise… or as stillness". Cage stated that sound has four characteristics: pitch, timbre, loudness, and duration. Of these four elements duration is the only element that contains both sound and silence and thus "is Correct" (Chilton, 2007). The focus of sound and how one gets

from sound to sound gave a new spin on how music was to be conceived. 4'33'' (1952) was the first and most popular of Cage's utilization of silence (Chilton, 2007). The piece had sounds not produced by the performer(s) but instead relied on the audience and ambient noise to create the sound. Cage was now further diverting conventions of music away from the tonal basis to that of sound and silence.

John Cage began as a student composer in the western classical tradition. He then moved away from this and began to collaborate with dancers and dance companies like that of the Cornish School (Chilton, 2007). In these early dance compositions, Cage developed the orchestration and instrumentation techniques that he would use in many of his later compositions. Having little budget and cramped space for instrumentation he made use of percussion instruments and later the prepared piano (Pritchett, 1993). The prepared piano was made up of a normal piano with metallic objects placed at strategic points along the wires. This created a dampening effect when certain notes were played as well as a different timbre (Pritchett, 1993). This discovery of the prepared piano would transfer into many of his later compositions. The possibilities that he created with the prepared piano would drive his curiosity for other instruments.

Cage's next phase of exploration would center on his fascination with Eastern philosophies, in particular the principle of Zen. His study of Zen led him to the concept of non—intentional composition (Chilton, 2007). The method of composing took prejudice out of the work, and would come to be known as chance composition. Using coin tosses or rolling of dice Cage would put events of sound and silence in order. Other examples of his chance music included composing for radios tuned to specific frequencies. Even though the radio called for specific tunings there was no way to predict what type of station operated on that frequency or if there was a station at all. Cage developed another technique known as indeterminacy, which allowed the performer freedom in interpretation (Pritchett, 1993). Cage made a distinction between chance and indeterminacy in that chance has open compositional methods and a fixed score, while indeterminacy has a fixed compositional style but openly interpreted score. Indeterminacy would be the method for one of Cage's larger works, Concert for Piano and Orchestra (1957-58).

Concert for Piano and Orchestra is where the study of the avant-garde movement as well as the expansion of trombone literature and technique begins. Deliberately entitled "Concert" this piece was meant to be a departure from the traditional

concerto and instead place importance on the individual performers (Pritchett, 1993). In addition to its importance with the trombone this composition alters the significance of the conductor's role. Cage did not buy into the hierarchy of conductor, soloist, and performer; instead he thought that an ensemble was made of individuals acting as soloists who in turn bring the ensemble into being (Nicholls, 2002). Another beneficial outcome of this composition was the use of chance composition that resulted in many varying notational systems. The piano part contained the majority of these different notations, in total 84 different types (Pritchett, 1993). Instrumentation for Concert for Piano and Orchestra was for a smaller orchestra, only seven strings, flute/alto flute/piccolo, clarinet, bassoon/saxophone, trumpet, trombone, and tuba. With this set instrumentation there could be any number of performers, as well as any one or more performers playing any portions together or alone (Cage, 1957). In all parts there is no clef, only a staff, as note interpretation was left to the performer. Cage does however provide the performers with many detailed instructions for interpretation and performance. One such instruction allows the performer to play any portion of the piece with or without other performers and their parts. With this instruction we get the origins of *Solo for Sliding Trombone* (1957-58).

Solo for Sliding Trombone (1957-58)

To fully grasp the impact of this composition it is beneficial to look to a quote from the first professional American avant-garde trombonist, Stuart Dempster, "The *Solo* may be the first truly avant-garde piece for trombone; certainly it is the first piece for trombone of an avant-garde nature to receive any sort of fame" (Dempster, 1979). From first glance at the score and preliminary instructions one may notice that the performer has dual roles, performer and composer. Most of the decisions of the work are left to the performer, a grave departure from previous works that require strict performance practice in Western art music traditions. The notion that each performance can and must be unique is part of why this piece is so ground breaking for the trombone.

The process in which Cage composed *Solo for Sliding Trombone* also lends itself to a new wave of trombone literature. This piece was not conceived as wholly "classical", popular, avant-garde, or jazz composition; it was a mesh of all. Cage combined all these ideals into one work, not simply putting a taste or influence here or there. Similar to Bernstein's *Elegy for Mippy II* the piece has a significant influence from jazz trombonists. Before composing it Cage sought out a leading jazz trombonist of the era to assist in his new creation, Frank Rehak

(Dempster, 1979). Frank Rehak was a popular trombonist in the Los Angeles studio scene as well as touring with many famous big bands like Gene Krupa and Woody Herman. Cage felt that he would need special collaboration to make this piece so unique. In their first meeting they discussed and experimented with such sounds as without mouthpiece, without slide, without tuning slide, glass over bell, inhalation, exhalation, circular breathing, double stops (multiphonics), and so on (Dempster, 1979). This act collaboration would be the basis for the experimental writing as well as a key feature of future trombone literature. Previous conventions in place allowed for the composer to write within the limits of present accepted ability and not to request anything new. It was at the turn of the 20th century that Arthur Pryor expanded range and technique, but with no need for collaboration as Pryor was a trombonist himself. The idea of collaboration that Cage pioneered in this work would set up for much of the literature that would ensue in the coming decades.

Analysis of *Solo for Sliding Trombone*

In stark contrast to any trombone literature written before 1957 *Solo* provides new notation and demands new techniques. The first step in understanding this new type of literature is to read the instructions given by Cage. In the case of *Solo for Sliding Trombone* there are eight paragraphs to read and interpret. Information provided explained what note shapes and sizes meant, where to start and stop, what symbols mean, and so forth. This in itself was a foreign concept, in that previous literature at most had tempo or stylistic indications.

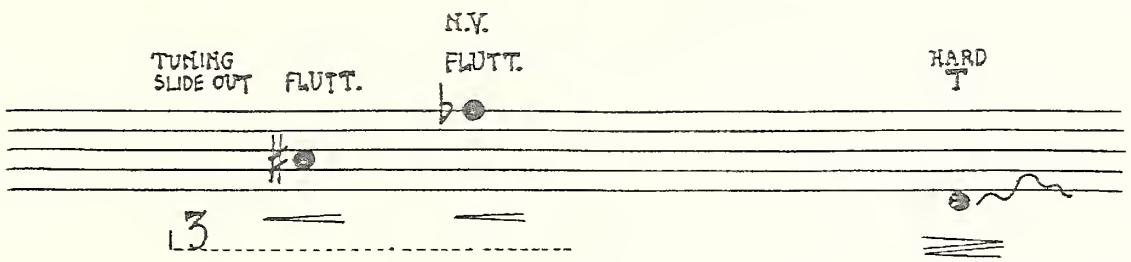
The intention of this paper is to uncover the new techniques made available to the trombonist with this composition from John Cage. While *Solo for Sliding Trombone* demanded many new techniques of the trombonist, it also contains many new compositional and scoring techniques that would alter the landscape of not only trombone literature, but western classical tradition overall.

Solo has no clef, key signature, or time signature (See Figure 5) which in itself is a remarkable departure from the norm. Solo, orchestral, band, and jazz literature is commonly written in the standard tonal tradition, which includes clef, key, and time signature. Each page has five systems and each system's time length is variable, in accordance with the

performer's wishes. Cage brought his method of indeterminacy to this work. The score is set up so that it has a fixed compositional style but can, and should, be played any number of ways.

Figure 5.

John Cage Solo for Sliding Trombone First system

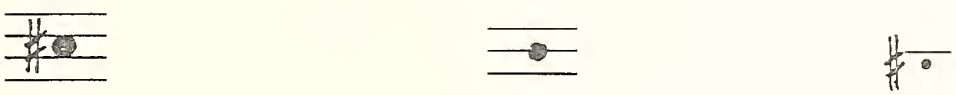


In regards to rhythm Cage gives three classifications of note length: small note head, medium mote head, and large note head. A small note head could be played short in duration, a medium note head medium in duration, and a large note head long in duration (Cage, 1957). Cage also adds a second layer onto his note head classification. Instead of having rhythm and dynamics completely separate from each other he combines the two with instructions for note head size. Not only does note head size relate to rhythm duration is also relates to volume. A small note head could mean *pianississimo, pianissimo*, or *piano*. A medium note head could mean *mezzo piano* or *mezzo forte*. A large note head could mean *forte, fortissimo*, or *fortissisimo* (See

Figure 6) (Cage, 1957). These many options allow for each performer to choose the interpretation of each note head, whether dynamic or rhythmic, and again ensures a unique performance. In contrast to Figures 1, 2, and 3 notice the distinction of and traditional construction of dynamics and rhythm.

Figure 6.

John Cage Solo for Sliding Trombone Note heads



Length and intensity of crescendos and decrescendos are also left to the performer. A combination crescendo and decrescendo mark is given when performer has total control or dynamic contrast (See Figure 7).

Figure 7.

John Cage Solo for Sliding Trombone Dynamic markings

Cage indicates that all notes are separate from one another. Each note should be preceded and followed by silence. This highlights a contrast with traditional methods of composition, especially that of the not so distant Romantic

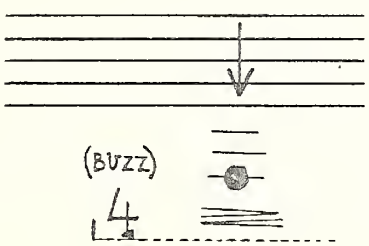
period where long flowing melodies were preferred. The idea of sound and silence versus harmonic progression permeates this composition. Cage would in turn influence subsequent composers by demonstrating how sound and lack there of can be as important as tonality. Luciano Berio and Jacob Druckman would experiment in the following decade with more complex sounds and more scripted silences.

Another new idiom that *Solo* introduces is the extensive use of mutes. The use of brass mutes dates to Claudio Monteverdi's opera L'Orfeo (1607) with the call for "Clarino con tre trombe sordine", or that "all the trumpets should be muted" (Cassone 2009). The use of mutes in orchestral literature would continue for hundreds of years but only yield two primary mutes, the straight mute and cup mute. During the jazz age of the 1920s, 1930s, and 1940s a more diverse sounding mute collection was developed. The solo tone mute, buzz-wah mute, wah-wah mute, bucket mute, derby hat, and plunger were all conceived within the ever more complex color palate of jazz composers. With this palate of mutes available solo literature only made use of two, the straight mute and cup mute, which had been used for hundreds of years. Cage would bring the buzz-wah mute, plunger, and derby hat into the classical trombone literature. A dotted line under the staff indicates when to start and stop use of mute (See

Figure 8). The mutes were also numbered one through five. Numbers one and three may be chosen freely, number 2 is a plunger, number four is a mute that produces a buzz, and number five is a derby hat. An addendum to the introduction of mutes into solo literature was the necessity to learn how to play these mutes, which in turn means that a new facet of trombone technique and pedagogy is the mastery of mute playing.

Figure 8.

John Cage Solo for Sliding Trombone mute indication



The new sounds and techniques that came from the collaboration of Cage and Rehak would be the basis for a paradigm shift in trombone literature. Just as Cage found new ways to evoke sound from the piano he would also do so for the trombone. Some of these techniques had been used in situations like jazz improvisation but never taken seriously by Western art music composers. These sounds were not considered to be part of the proper repertory of tones for the instrument and thus were not included in classical literature being composed.

Looking closer at the new techniques used in *Solo for Sliding Trombone* one can see that almost every facet of sound production from the instrument and performer has been utilized (See Table 1). In contrast, classical trombone literature composed up to 1957 contains very few examples of extended techniques (See Table 2).

Table 1.

Extended Techniques in Solo for Sliding Trombone

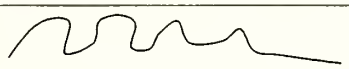
Technique	**Abbreviation**
Tuning slide out	Tuning slide out
Flutter tongue	Flutt.
Free glissando	
Mouthpiece in bell	
Spit valve open	SP.
Breathy attack	Breath
Buzz with mouthpiece only	Buzz
Buzz with lips only	Buzz
Buzzing into a conch shell	Conch
Slide played into jar	In Jar
Mouthpiece played into bell flare	Mouthpiece In Bell
Plunger Mute	Plunger
Play on Slide section only	Slide Disconnected/Without Bell
No vibrato	N.V.
Hard/soft tongue	Hard T/Soft T
Make a barking noise	Bark
Use mute (numbered 1-5) 1: Performer's choice 2: Plunger 3: Performer's choice 4: Mute that produces a buzz 5: Hat	1, 2, 3, 4, or 5
Microtonal slide (placement or glissando)	
Trill	Trill
Double/Triple tongue	// or ///
Vibrato	Slide, lip, or combination (Included in instructions)
No Vibrato	N.V.

Table 2.

Extended techniques used in selected accepted trombone literature prior to 1957 (Thompson 2004).

Technique	**Composer/Composition**
Tapping foot to accompany	-L. Bernstein/*Elegy for Mippy II*
Trill	-B. Croce-Spinelli/*Solo de concours* -E. Reiche/*Concert Piece No. 2* -G. Ropartz/*Piece en mi bemol mineur* -G. Jacob/*Concerto*
Multiple Tonguing	-M. de Jong/*Morceau de Concertstuck* -V. Blazhevich/*Concerto No. 10 in F Major* -F. Martin/*Ballade*
Complex Meter(s)	-O. Luening/*Sonata* -V. Blazhevich/*Concerto No. 10 in F Major* -R. Sanders/*Sonata in Eb* -J. Casterede/*En Noir et Rouge* -J. Casterede/*Sonatine*
Flutter Tongue	-P. Bonneau/*Fantasie concertante* -A. Pryor/*Whistler and His Dog* -D. Milhaud/*Concertino d'hiver*
Glissando	-A. Pryor/*Whistler and His Dog* -T. Serly/*Concerto* -E. Bloch/*Symphony* -F. Martin/*Ballade* -D. Milhaud/*Concertino d'hiver* -K. Serocki/*Concerto for Trombone and Orchestra*

Upon examination of the extended techniques used in selected accepted trombone literature prior to 1957 it should be noted that while there were several composers that utilized some extended techniques there was little variance or expansion. Of the literature surveyed there were only six extended techniques implemented (tapping foot, trill, multiple tonguing, complex meter(s), flutter tongue, *glissando*). The alarming aspect to such a limited amount of extended techniques is the correlation to hundreds of years of the same standards and limitations to trombone playing. John Cage not only brought an end to this grind in innovation, he provided the springboard for a new generation of trombone playing and teaching.

The extended techniques in *Solo* require the performer of many new methods of sound production. While some may see this solo as a conglomeration of nonsense, to properly execute there must be understanding of the composer and compositional method. This composition is built upon a new ideal, where sound and silence assume the role that harmony once had, and was meant to be taken seriously, just as previous masterworks of trombone literature. Buzzing the mouthpiece inside the bell once was outside the serious realm of trombone technique, Cage now incorporates it into *Solo* and requires that it must be executed with poise and exactness not clumsiness and distraction. Many of

these techniques and sounds, such as barking or buzzing with lips only could be viewed as gimmicks, to evoke a laugh not for serious thought or aesthetic value. The sounds called for do not sound as resonant and full as the normal tone of an instrument. As performers began to see the artistic value of avant-garde literature these new sound possibilities were seen in a new light. With a refreshed vision of extended techniques trombonists' began to require methods for learning and performing them. Just as years earlier there was the necessity of method books outlining execution procedures as well as teachers dedicated to the specialization of teaching extended techniques. With the works of John Cage and others to come there would be the birth of a new generation of trombone teachers and performers.

Resultant Literature and Pedagogy

After the emergence of John Cage in trombone repertoire there was significant change in literature and pedagogy. The decade following *Solo for Sliding Trombone* is when the core of avant-garde literature comes to fruition. Composers like Luciano Berio who had been experimenting for a number of years wrote a solo for unaccompanied trombone in 1966, which would again push the boundaries of trombone playing. There would be eleven major avant-garde solos written for the trombone in the two decades following Cage's work, which would carry the influence of *Solo*, even to present day.

One of the most notable of avant-garde trombone solos is Luciano Berio's *Sequenza V* (1966) for trombone. This composition is a tour de force of extended techniques that build upon those in *Solo for Sliding Trombone*. There are many similarities in *Solo for Sliding Trombone* and *Sequenza V*. Like Cage, Berio gives a full page of instructions for the performer. As with *Solo* note heads have different meanings and have to be interpreted as such. Dynamics are graded by numbers, and there is a separate line below the staff that dictates the use of plunger mute, reminiscent of *Solo*. Cage introduced the separate spoken voice in *Solo* with the call of the performer to "bark". Berio takes this further with the development of vowel sounds with the

letters u, i, and e. The trombonist is also asked frequently to use multiphonics (playing and singing at the same time).

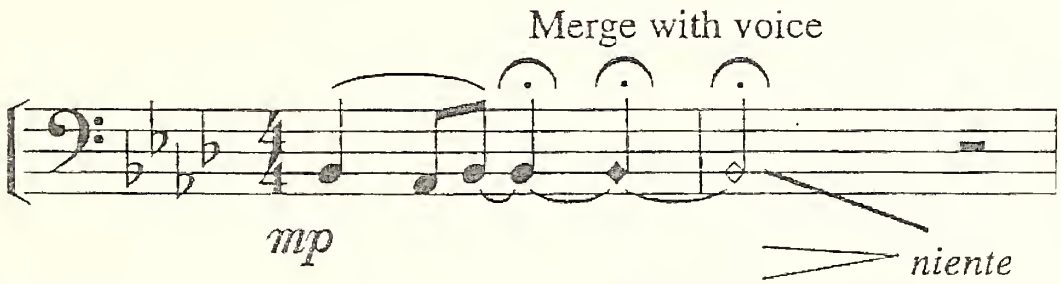
Collaboration is another key innovation that is carried over from Cage to Berio. Just as Cage sought out the help of trombonist Frank Rehak, Berio was assisted by two of the leading avant-garde trombonists of the time: Stuart Dempster and Vinko Globokar. This collaboration with Berio lead to the implementation of vowel sounds, multiphonics, notation, and programming. Without collaboration, neither of the two compositions would have reached their full potential. Restricted of first hand knowledge of idiosyncrasies of the instrument, composers would not understand the possibilities. This could result in an unplayable composition or, as so many times before, a composition that fails to progress the technical demands of the instrument.

Brad Edwards' Blue Wolf (1997)

The modern incantation of Cage's work can be seen in Brad Edwards' *Blue Wolf* (1997). This piece again has precise instructions for execution, but maintains a more tonal center. In keeping with traditional compositional techniques the piece has a clef, key, and time signature. The avant-garde influence in *Blue Wolf* is in the incorporation of multiphonics, and playing with tuning slide removed (See Figure 9). Just as Cage had the performer disassemble the instrument and play only the slide or bell section, Edwards has the performer take the F-attachment slide out for the entirety of the piece. This requires the performer to learn new slide positions when playing through the F-attachment side of the instrument, as this alters the length of the instrument. Edwards also asks for a "Doppler" glissando that is played on the F-attachment side of the instrument (Figure 10). This "Doppler" glissando incorporates indeterminate pitches to create the illusion of the rising and falling of pitch due to moving objects (Edwards, 1999). This composition is a descendant of many different eras of literature. It is directly tied with the avant-garde movement of Cage, containing many extended techniques, it has a strong blues influence, and has the tonality and construction of a traditional trombone solo.

Figure 9.

Brad Edwards Blue Wolf mm.1-2



m.10

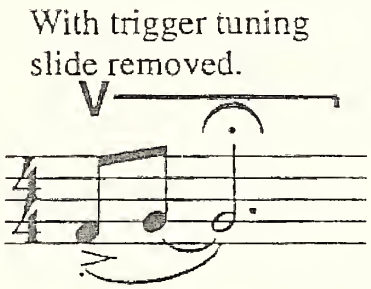
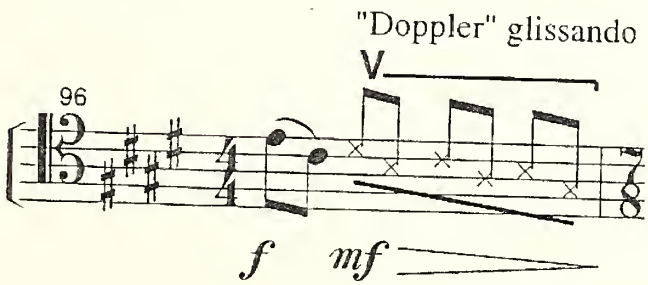


Figure 10.

Brad Edwards Blue Wolf m.96



The impact of the new extended techniques found in *Solo for Sliding Trombone* was also felt in trombone pedagogy. Until the late 1950s many of the standard method books for trombone were the same as those used and developed decades prior. The celebrated methods of Joseph Jean Baptiste Laurent Arban and Vladislav Blazhevich were a standard method of study, but contained dated information. These texts contain studies and information that is prudent to all trombonists but is lacking in explanations of modern extended techniques. In response to this problem there were several new methods devoted solely to the teaching of extended techniques. Such studies include Stuart Dempster's treatise on modern technique, *The Modern Trombone: A Definition of Its Idioms* (1979) and David Baker's *Contemporary Techniques for the Trombone* (1974). Both of these studies explain and take the reader through many of the techniques encountered in avant-garde music.

Teaching Extended Techniques

Trombone teachers and college professors also had to retool after the mid twentieth century. Avant-garde literature was introduced into the trombone repertory through several steps; professionals like Dempster performed these pieces and students and teachers brought them into studios. With teachers and professors performing and teaching this material this meant that they must understand it and be able to perform the required techniques. This cycle caused a revolution in trombone playing in that teachers and students were learning new material at the same time, greatly increasing interest in the avant-garde movement. As students studied more avant-garde solos so did teachers, and as more teachers performed these solos more students wished to learn them. This resulted in performance of such solos on student and faculty recitals. As young composers heard these performances more interest was generated in the possibilities of this sound and style. These composers used the new ideas to create works with these new sounds and techniques in mind. In a survey by David Guion (See Figure 11) of recital repertory (1972-1978) of professionals, graduate students, and undergrad students many avant-garde compositions were being performed (Guion, 1997). Of the total 45 listed, eight were avant-garde and included extended techniques. The solos from

this list that do not include extended techniques are those written prior to 1957. This sharp rise in interest of avant-garde literature in the years following Cage's composition is what led to the development of modern trombone literature and technique.

Figure 11.

Recital Repertoire of the Trombone as Shown by Programs Published by the International Trombone Association (Through May 1978) (Guion, 1997) (P-Professional, D-Doctoral, M-Masters, U-Undergraduate)

No.	Piece	P	D	M	U	Total
1	Hindemith/Sonata	6	1	2	8	17
2	Serocki/Sonatina	5	1	6	5	17
3	Adler/Canto II	2	2	1	5	10
4	Brown, J.E./Impromptu	5	1	0	4	10
5	Casterede/Sonatine	4	1	4	1	10
6	Wagenseil/Concerto	4	2	2	2	10
7	Wilder/Sonata for bass trombone	3	2	1	4	10
8	Cesare/La hieronyma	4	2	2	1	9
9	George/Concerto	3	3	1	2	9
10	Stevens/Sonata	6	1	1	1	9
11	Tomasi/Concerto	3	3	0	3	9
12	Berio/Sequenza V	3	2	0	3	8
13	Bernstein/Elegy for Mippy II	4	0	1	3	8
14	Casterede/Fantasie concertante	2	1	1	3	8
15	Larsson/Concertino	3	0	1	4	8
16	White/Sonata	2	2	0	4	8
17	Albrechtsberger/Concerto	2	1	1	3	7
18	Davison/Sonata	4	0	1	2	7

19	Krenek/Five pieces	3	3	0	1	7
20	McCarty/Sonata	2	1	0	4	7
21	Muller/Praeludium, chorale, variations, and fugue	1	0	1	5	7
22	Saint Saens/Cavatine	3	1	1	2	7
23	Schütz/Fili mi Absalon	2	3	0	2	7
24	Schwartz/Options I	4	0	1	2	7
25	Stevens/Sonatina	0	3	2	2	7
26	Blacher/Divertimento	3	2	0	1	6
27	Bozza/Three pieces	2	0	2	2	6
28	Creston/Fantasy	4	0	0	2	6
29	Druckman/Animus I	4	1	0	1	6
30	Hartley/Sonata concertante	2	1	1	2	6
31	Marini/Sonata	2	1	0	3	6
32	Monaco/Sonata	0	1	1	4	6
33	Ross/Prelude, fugue, and big apple	4	1	0	1	6
34	Biber/Sonata a 3	2	1	1	1	5
35	Fux/Alma redemptoris Mater	1	3	1	0	5
36	Childs/Sonata	2	0	0	3	5
37	David/Concertino	3	1	1	0	5
38	De Jong/Aanraking	1	1	0	3	5
39	Defaye/Deux danses	3	0	1	1	5
40	Grøndahl/Concerto	2	1	1	1	5
41	Hartley/Sonata breve	2	1	0	2	5
42	Payne/Concert suite	4	0	1	0	5
43	Persichetti/Serenade no. 6	3	1	0	1	5
44	Pryor/Thoughts of Love	4	0	0	1	5
45	Sulek/Sonata	5	0	0	0	5

The direct impact within trombone studios was also significant. Now trombonists did not only have to learn the standard fundamentals of the instrument they also had to grasp the extended techniques being used. These techniques had effects on not only advanced undergraduate trombonists but also advanced high school level performers. Extended techniques began to appear in more solos as well as more band and orchestral literature.

The initial hurdle to clear when attempting to learn extended techniques is mastering basic technique. Basic technique includes characteristic tone, articulation, rhythm, slide technique, and range. These must be mastered before any attempt at extended techniques can be made. Stuart Dempster (1979) writes:

> Traditional technique cannot be ignored, since it is mandatory in order to learn and master new techniques; learning and mastering new techniques enhance and define more clearly traditional techniques. The old and new, so seemingly separate, are actually inseparable and, in the long run, complementary, even if in the short run this seems not to be the case (p. 1).

Dempster goes on to cite that he discovered what he thought to be a new technique, or sound, with the Australian Aboriginal

didjeridu. The didjeridu is made of a hollowed out tree trunk and has characteristics similar to a brass instrument. To play this instrument one buzzes the lips and vocalizes different vowel sounds and pitches, similar to the manner in which multiphonics are produced on brass instruments. What he thought was a new sound turned out to be a concept thousands of years old (Dempster, 1979).

When teaching these techniques the teacher must understand that much of what the student has accomplished up to this point was done primarily through tactile trail and error experimentation (Gardner, 1983). When a student is told to initially play an instrument he or she has to experiment with mouthpiece placement, breath, and pitch recognition. Even as the student progresses this method remains the same, it is just that there are smaller, finer adjustments to make. Auditory learning also takes place during the fundamental stages of learning an instrument. A student must learn to match pitch and tone with others. The auditory element is expanded upon with extended techniques (Gardner, 1983). Students will be asked to sing while playing, execute microtones, and make sounds that are uncharacteristic of the normal tones of the instrument. The teacher must take into account that if a student is not an auditory learner the grasp of extended techniques will take

somewhat longer than other students that are auditory learners. In this case much more experimentation will be needed for success.

Multiphonics

When a student is beginning to learn extended techniques he or she should consult one of the sources mentioned earlier like Stuart Dempster's (1979) text outlining and explaining many of the techniques one will encounter. However, it will be up to the student and teacher to unravel these techniques and make them work for the individual. If a student is beginning to learn multiphonics, or vocalizing while playing, there are a certain fundamentals that need to be in place. A student must have a characteristic tone, be able to sing and match pitch, and be able to control the vocal chords and embouchure separately. If a student can not match pitch with his voice, this must be the first step. The teacher should begin by having the student slowly discover their voice and how to control it. Sirens ranging from high to low and simple scale figures can help with the initial control of the voice. After the student has control of his voice the next step is to have them play and sing. A good first introduction into this is to have the student play a mid range note such as an f and vocalize anything as they are playing. It can be any note in any range, as the most difficult

part of multiphonics is getting used to the experience of playing and singing at the same time. This is a difficult concept because from the first days with the instrument the student was most likely told to open up the throat and allow only the lips to vibrate. Now the student has to allow both the lips and vocal folds vibrate. This in itself can cause another problem, allowing the vocal folds activate when the student is not using multiphonics, which again shows the difficulty of learning this technique. After the student has experimented with vocalizing and playing it is now time to create intervals, which again call upon auditory skills. The teacher should have the student play a B-flat and vocalize an f creating a perfect fifth. This interval is one of the easiest to produce and tune, which makes it a great place to start. Have the student move down chromatically to A and vocalize an e, and then to A-flat, and so on downward chromatically. Once the student has control of the perfect fifth-interval have them move to the octave and repeat the exercise. The next step in multiphonics is to be able to move the voice and embouchure independently. Have the student drone a B-flat and vocalize an f and then move the voice down and then up finding the intervals. Repeat the process but have them drone the voice and move the pitch on the instrument. The final step in learning multiphonics is to be able to move the voice and embouchure in opposite directions. When learning

exercises for moving in opposite direction remain in the same register as previous exercises, have the student drone an A-flat and vocalize an e-flat. Once this interval is established have them move the A-flat to an A and the e-flat to a d creating a perfect fourth, another relatively easy interval. These preliminary exercises cover the initial mastery of multiphonics, but will need to then be transferred into different registers. The student's own vocal range will also have a bearing on how high or low he or she will be able to produce multiphonics. The exercises are referenced in the Appendix under "Student Study Exercises".

Glissando

Another technique that goes beyond normal playing expectations is the *glissando*. At first thought many trombonists and non-trombonists would think that performing a *glissando* is simple, "just move the slide and make noise, that's a *glissando*." Unfortunately *glissandi* are not that simple. As with multiphonics the student must have the fundamentals of tone, articulation, range, rhythm, and slide technique before attempting to master the gamut of *glissandi* available. *Glissandi* are on one harmonic partial and occur when the slide is moved in constant motion down or up that partial without disturbance of air or articulation. *Glissandi* require control of air stream and

embouchure to maintain a correct tone throughout. Other *glissandi* are possible which include the harmonic *glissando*, or "overtone rip" (Cage, 1979) as Cage refers to it. The harmonic *glissando* happens when the trombonist moves the slide down or up, without disturbance in air stream or articulation, moving across harmonic partials. This creates a "ripping" sound similar to that of a French Horn rip or a *glissando* on the harp, which is more rough sounding than a same-partial *glissando*.

Teaching *glissandi* is far simpler than teaching multiphonics, as most trombone players are attracted to the trombone in part because of its ability to *glissando*. If a student has not discovered a *glissando* the teacher should have him start on f and move the slide to sixth position without stopping the note or lessening the air stream. This should produce a basic *glissando*. Have him then transfer this to different harmonic partials, both higher and lower (See Appendix). After the basic *glissando* is comfortable then move on to harmonic *glissandos*. To begin learning harmonic *glissandos* have the student start again on f and move to a, and back down (slide positions 1, 2, 1) without articulating or stopping the air stream. This should produce a slur. Next, the student should start on f again, move to a and then to c and back down (slide positions 1, 2, 3, 2, 1) again without stopping the air stream

or articulating. Increase the speed of the slide action and there will be a harmonic *glissando*. Add notes above and change beginning notes to supplement. As students advance so will their need for greater control of *glissandos*. Trombonists need to be able to perform *glissandos* in all registers and dynamics. They will also need to place emphasis at different points of the *glissando* according to what the style of music calls for (See Appendix).

Other extended techniques call for similar methods of teaching and learning, always relying on a strong set of fundamentals before attempting. The avant-garde movement and Cage's *Solo for Sliding Trombone* provided for the trombone a new set of techniques and thus new methods needed for teaching them. Teachers had to develop new methods to teach techniques that had never been seen before, which resulted in new pedagogical material for the trombone. These factors contribute to the advancement of trombone technique and pedagogy.

Conclusion

The trombone, a fixture in the musical world, has endured a fascinating lifespan. From its roots, dating from the fifteenth century, until the mid-twentieth century there were little developments in trombone literature and technique. As other instruments enjoyed literature from leading composers like Mozart and Beethoven the trombone scuttled along with only a handful of notable solos. This lack of literature permeated into the pedagogy of trombone. Trombone technique remained very much the same for hundreds of years as the instrument itself did not change and composers felt uninformed or uninterested in the instrument (Herbert 2006). With technique at a standstill there was very little need for professional trombone teachers. This lack of interest and knowledge began to lessen as the twentieth century approached. Arthur Pryor gave the trombone numerous new works and began to expand technique. Leonard Bernstein infused jazz into the classical literature with *Elegy for Mippy II*. These events led up to John Cage's *Solo for Sliding Trombone*, which brought an end to the drought of new trombone technique and literature. *Solo for Sliding Trombone* was collaboration between performer and composer that culminated in the development of many new techniques and a fresh compositional style that would result in copious solos written for the instrument. Cage's work and ideas can still be seen in present literature and felt in trombone studios world-wide. *Solo for*

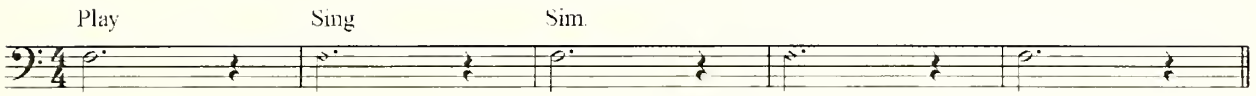
Sliding Trombone revived the trombone and acted as a catalyst for the future.

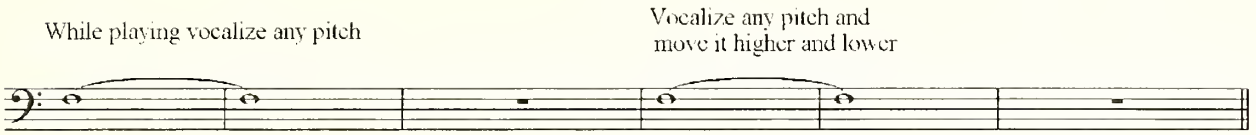
Appendix

Student Study Exercises

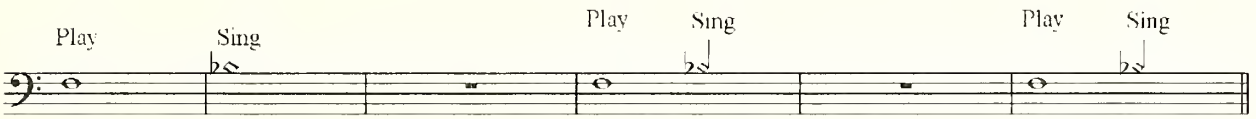
Multiphonics Exercises
Study No. 1

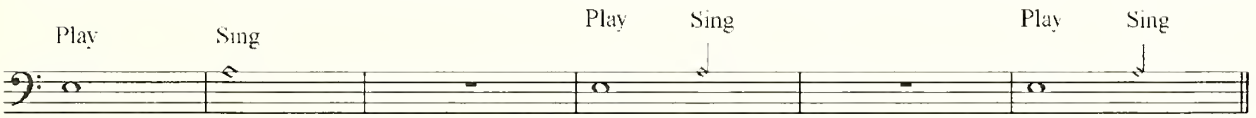
Match Pitch

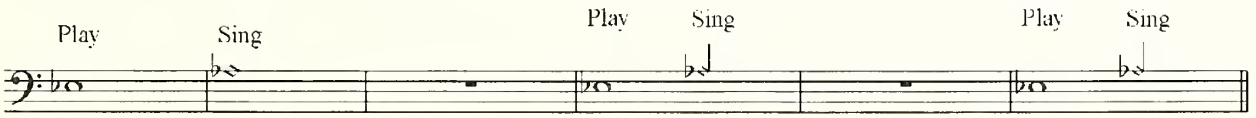


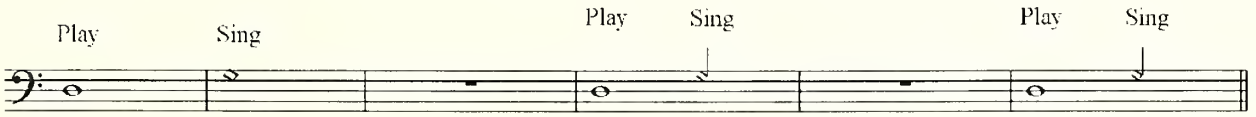


Multiphonics with the P4 Interval

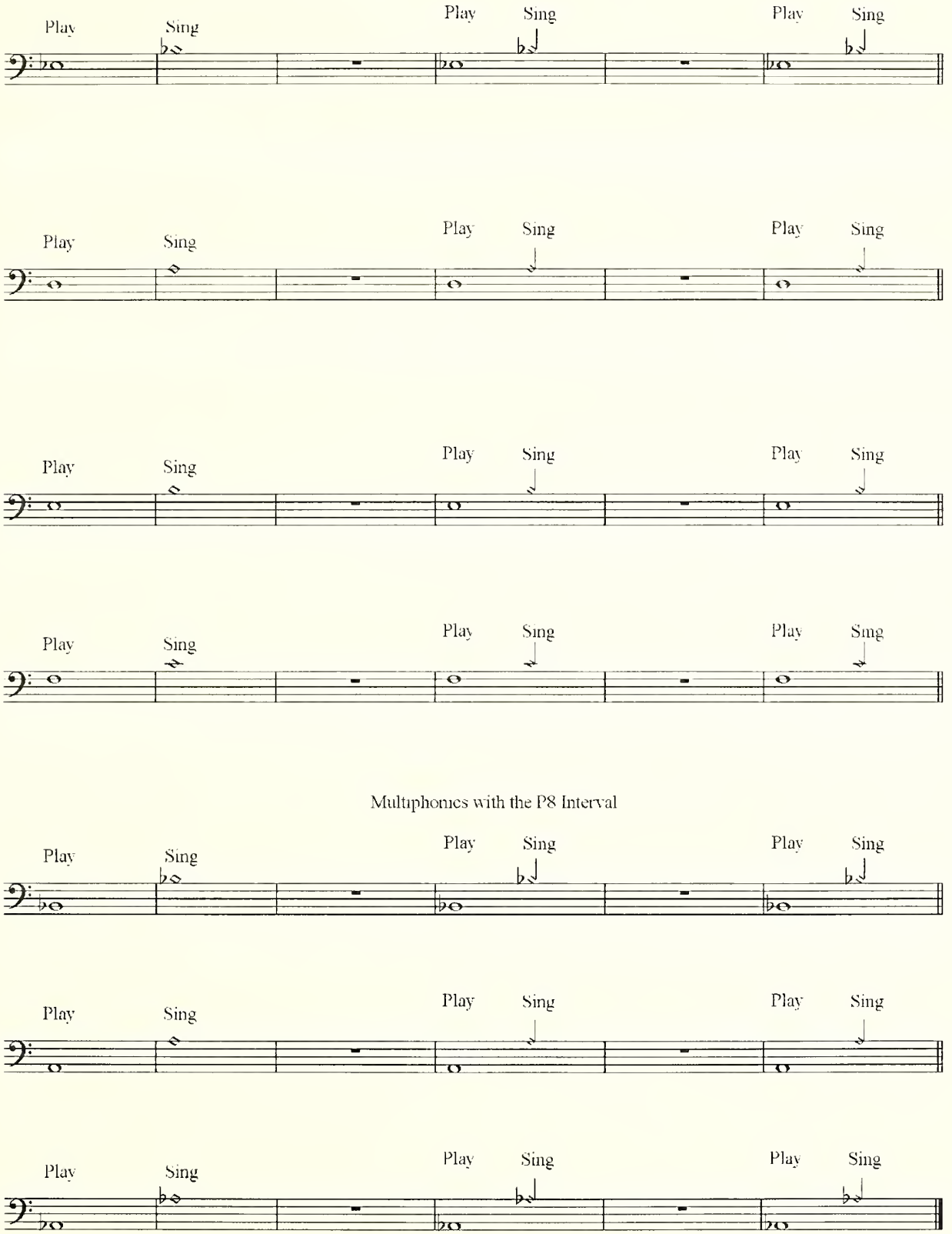








Multiphonics with the P5 Interval



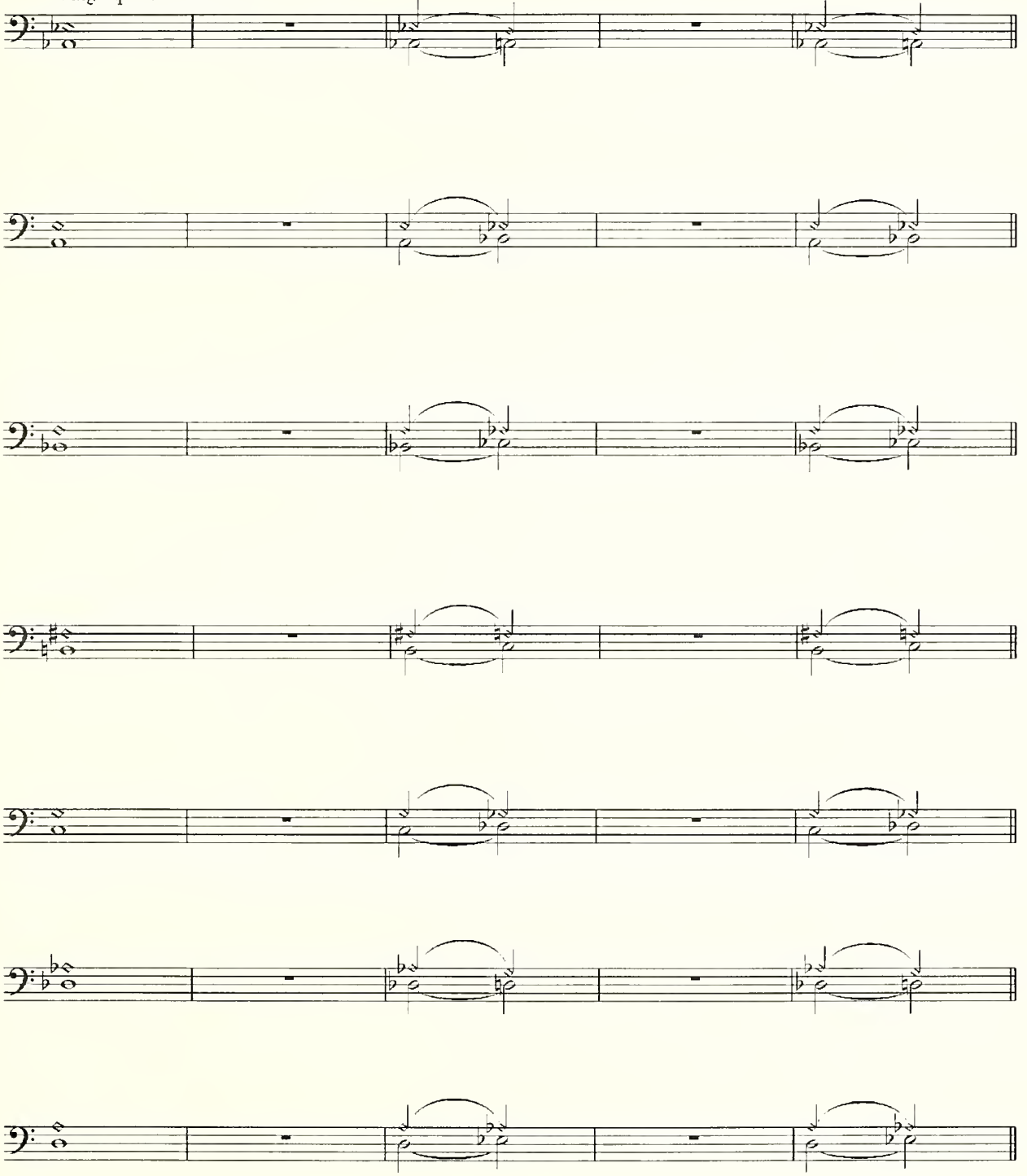
Multiphonics with the P8 Interval

Multiphonics Exercises

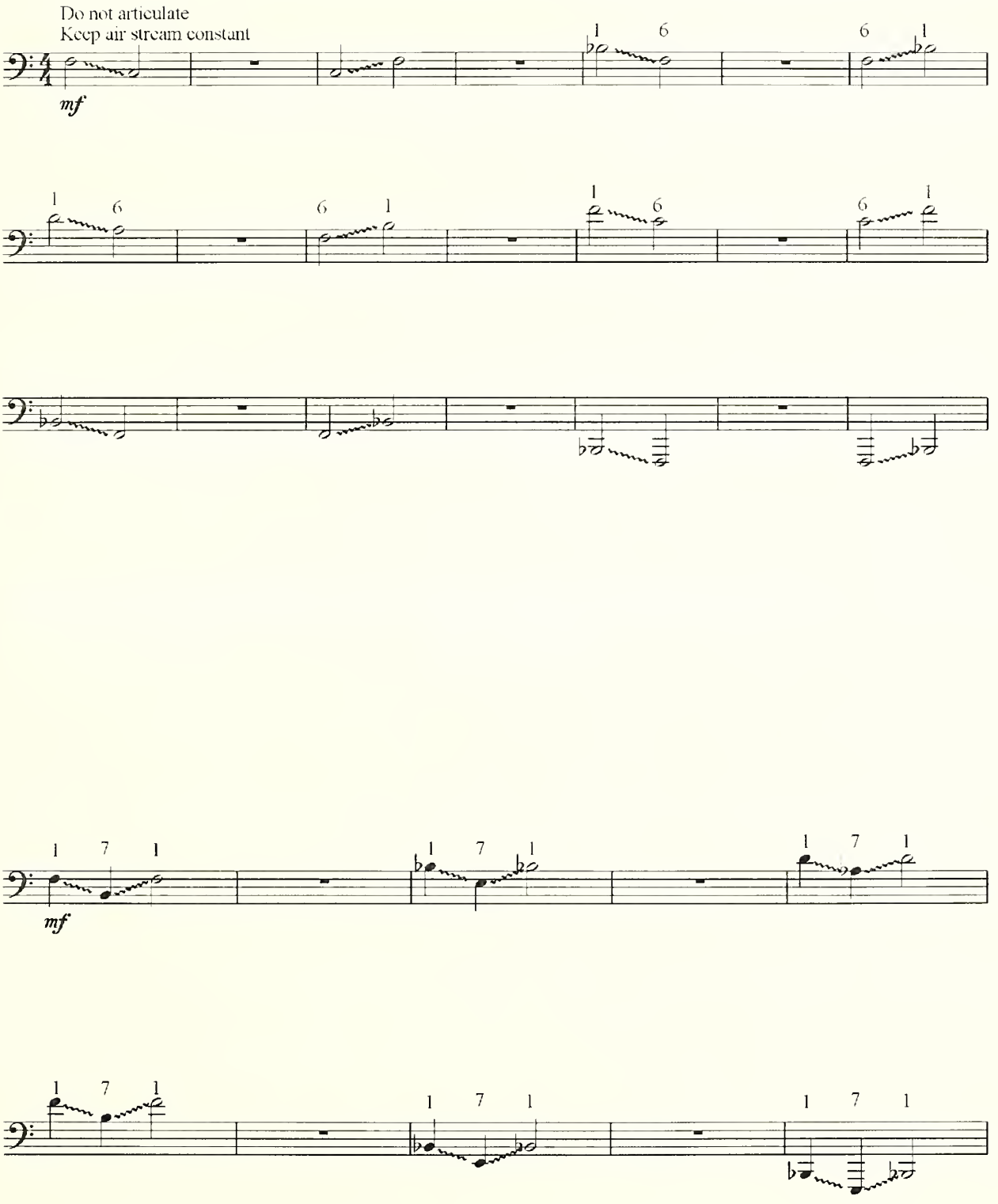
Study No. 2

Moving Voice and Instrument in Opposite Directions

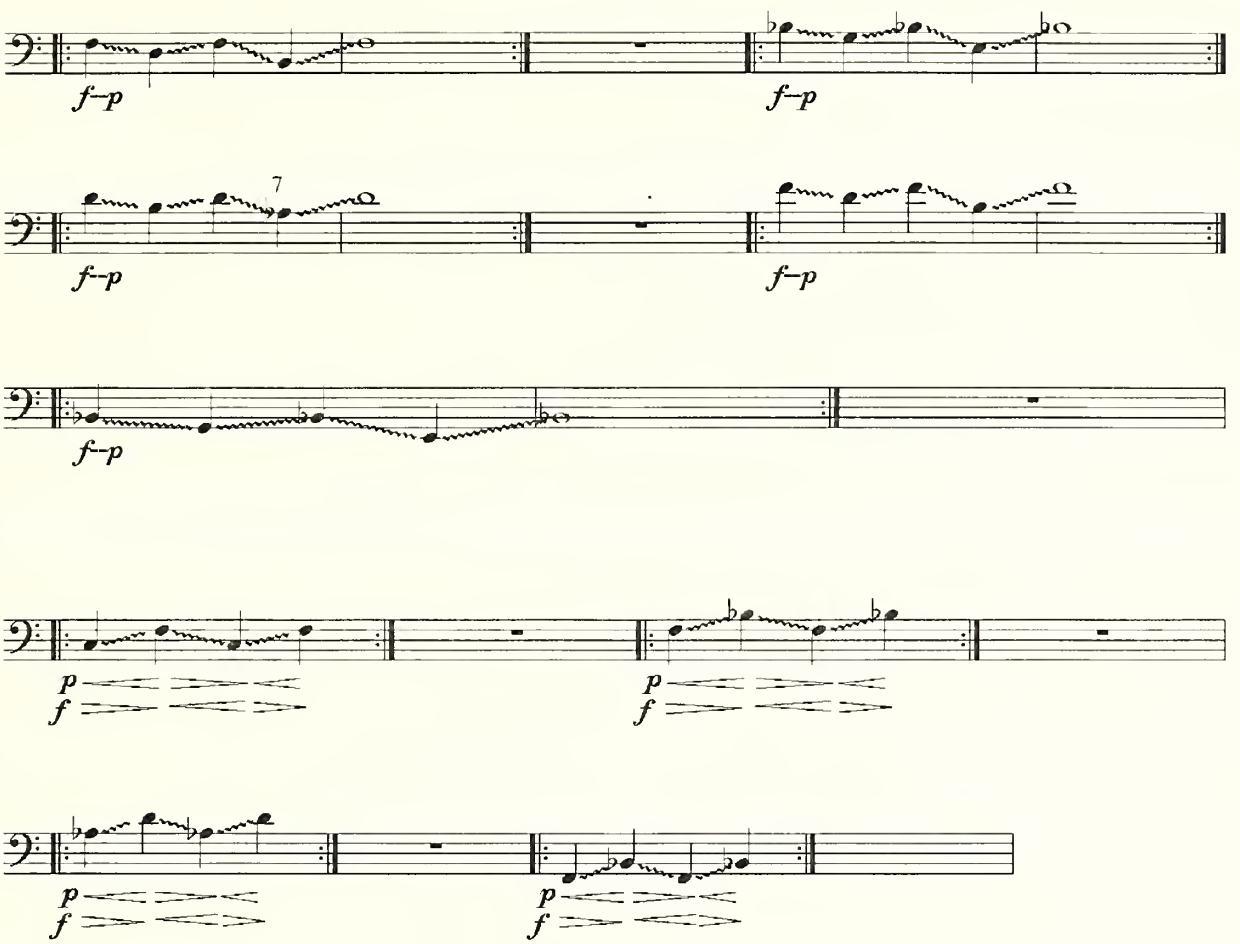
Play round note heads on instrument
Sing Square note heads



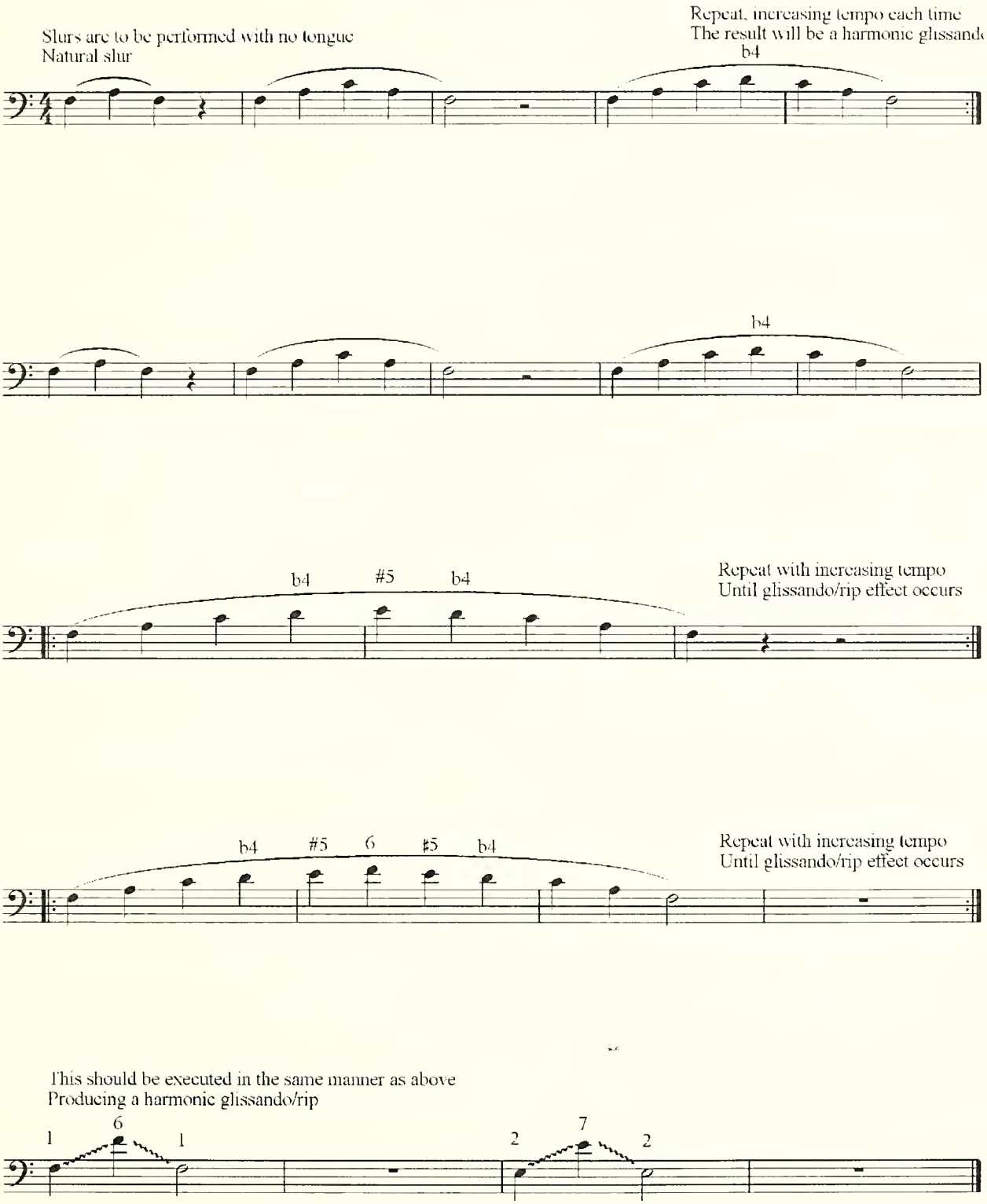
Glissando Exercises
Study No. 1
Basic Glissandos



Varying Dynamics with Glissandos



Glissando Exercises
Study No. 2
Harmonic Glissando



References

"abstract expressionism." *The Columbia Encyclopedia, Sixth Edition*. 2008. Retrieved March 22, 2010 from Encyclopedia.com: http://www.encyclopedia.com/doc/1E1-abstrexp.html

Baker, D. (1974). *Contemporary techniques for the trombone*. New York: Charles Colin.

Benjamin, R. (1999). *Arthur pryor: ragtime pioneer*. Retrieved from http://www.paragonragtime.com/pryor.html

Berio, L. (1968). *Sequenza V For trombone solo*. London: Universal Edition.

Bernstein, L. (1950). *Elegy for Mippy II: For trombone alone*. New York: G. Schirmer.

Cage, J. (1960). *Solo for sliding trombone*. New York: Henmar Press.

Cassone, G. (2006). *Mutes from monteverdi to miles: the story of brass instrument mutes from before monteverdi to miles and beyond*. . Retrieved from http://www.tomcrownmutes.com/learn_history.html

Chilton, J. G. (2007). *Non-intentional performance practice in John Cage's Solo for Sliding Trombone*. Ottawa: Library and Archives Canada = Bibliothèque et Archives Canada.

David, F. (1946). *Concertino, op. 4 (1837)*. New York: Carl Fischer.

Dempster, S. (1979). *The modern trombone: A definition of its idioms*. Berkeley: University of California Press.

Edwards, B. (2001). *Blue wolf: For unaccompanied trombone (1999)*. Austin, Tex: International Trombone Association Manuscript Press.

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.

Guion, D. M. (2010). *A history of the trombone*. Lanham, Md: Scarecrow Press.

Guion, D. (1997). Recital repertoire of the trombone as shown by programs published by the international trombone association. *Online Trombone Journal*, Retrieved from http://www.trombone.org/articles/library/recitalrep.asp

Herbert, T. (2006). *The trombone*. The Yale musical instrument series. New Haven: Yale University Press.

Hindemith, P. (1942). *Sonata for trombone and piano (1941)*. London [etc.]: Schott.

Lindberg, C. (2010). *Ferdinand david concertino for trombone op 4 (1837)*. Retrieved from http://www.tarrodi.se/cl/

Nicholls, D. (2002). *The Cambridge companion to John Cage*. Cambridge companions to music. Cambridge: Cambridge University Press.

Pritchett, J. (1993). *The music of John Cage*. Music in the twentieth century, [5]. Cambridge [England]: Cambridge University Press.

Pryor, A. (1900). *Blue bells of Scotland*. New York: C. Fischer.

Rosner, A, & Slotover, R. (2006). *Vinko globokar*. Retrieved from http://www.alliedartists.co.uk/artist_page.php?tid=25&aid=81

"serial music." *The Columbia Encyclopedia, Sixth Edition*. 2008. Retrieved March 22, 2010 from Encyclopedia.com: http://www.encyclopedia.com/doc/1E1-serialmu.html

Thompson, J. M. (2004). *Solos for the student trombonist: An annotated bibliography*. Vuarmarens, Switzerland: Brass Press.

Webb, B. (2007). Performing Berio's "Sequenza V".*Contemporary Performance*. 207-218.