

SPACE AND VOICE:
COMPOSITIONS FOR CONTEMPORARY CELLO

CHARLES MATTHEW BRUBECK

A DISSERTATION SUBMITTED TO
THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

GRADUATE PROGRAM IN MUSIC
YORK UNIVERSITY
TORONTO, ONTARIO

APRIL, 2018

© CHARLES MATTHEW BRUBECK, 2018

ABSTRACT

This dissertation contains a diverse portfolio of ensemble and solo compositions for contemporary cello. Throughout the accompanying paper, the concepts “space” and “voice” are utilized as analytical lenses, as they are central to my compositional approach. The evolution of cello space in Western art music is contrasted with cello space in jazz, and the modes of sound production in the classical cello tradition are compared to the voice of the jazz cello. While examining jazz cello voice, the notion of idiomatic improvisation is considered and the paper turns to original research regarding the recordings of Harry Babasin, Oscar Pettiford, and Fred Katz, who introduced the cello as an improvising instrument to the jazz genre.

The remainder of the written component focuses on my composition process and aesthetic considerations. Composition and improvisation are treated as distinct but interrelated points along a continuum of creative music practice. Within the composition process, improvisation is used to generate musical materials, and various methods of structuring pieces to incorporate improvisation are employed. Commentaries on the composition process, including the salient features pertaining to space and voice, are included for each score.

ACKNOWLEDGMENTS

I would like to thank the members of my committee (Supervisor Michael Coghlan, Dr. Mark Chambers, and, last but not least, Professor Casey Sokol) for their advice and feedback throughout the dissertation process. I am also grateful for the assistance of Professors David Mott and Rob Simms.

Additionally, I want to extend my deep appreciation to all the musicians I work with, many of whom have both performed and inspired a number of my compositions.

Finally, my family and friends have provided ongoing support and encouragement. I look forward to spending more time with them.

TABLE OF CONTENTS

ABSTRACT.....	ii
ACKNOWLEDGEMENTS.....	iii
TABLE OF CONTENTS.....	iv
LIST OF FIGURES.....	vi
INTRODUCTION.....	1
CHAPTER ONE: SPACE	
Cello Space in Western Art Music.....	7
Cello Space in Jazz.....	11
CHAPTER TWO: VOICE	
Cello Voice in Western Art Music.....	15
Cello Voice in Jazz.....	24
CHAPTER THREE: JAZZ CELLO PIONEERS, THE BASSISTS	
Harry Babasin.....	35
Oscar Pettiford.....	37
CHAPTER FOUR: JAZZ CELLO PIONEER, THE CELLIST	
Fred Katz.....	47
CHAPTER FIVE: MY COMPOSITION PRACTICE	
Style.....	69
Notation.....	70
Instrumentation.....	71
Improvisation and Composition.....	74
CHAPTER SIX: ENSEMBLE COMPOSITIONS	
It's Not What It Was.....	87
Sniffin' Around.....	95
The Return of Dr. Spookulus.....	101
What Now?.....	108
In A Hurry.....	115
Poupée Mécanique.....	123
Zephyring.....	131
Beignet Bounce.....	138

Punkeydoodles Corners.....	143
Prime Directive.....	148
CHAPTER SEVEN: SOLO COMPOSITIONS	
Be Prepared #2.....	178
Banjolene.....	186
Scordatura Suites	189
Suite 1.....	192
Suite 2.....	201
Madiba.....	207
Now That You've Left Us.....	211
Prelude in G minor.....	214
CONCLUSION.....	228
REFERENCES.....	230
REFERENCE SCORES.....	235
REFERENCE SOUND RECORDINGS	236

LIST OF FIGURES

Figure 1: Measures 9-16 “Sarabande”, J.S. Bach <i>Suite I for Unaccompanied Cello</i>	17
Figure 2: Measures 1-16 of Oscar Pettiford’s solo on “Swamp Fire.”.....	39
Figure 3: Measures 1-32 of Oscar Pettiford’s solo on “Perdido.”.....	40
Figure 4: Alto sax and cello melody in “I Know.”.....	56
Figure 5: Fred Katz’s solo on “A Nice Day.”.....	59
Figure 6: Third chorus of Fred Katz’s solo on “The Ghost.”.....	60
Figure 7: Standard fingering for 2 octave Ab major scale.....	82
Figure 8: Fingering for amended 2 octave Ab major scale.....	82
Figure 9: Fingering for single position gesture in Ab major.....	83
Figure 10: Fingering for Ab Lydian flat 2 scale.....	83
Figure 11: Electronic signal path.....	180

INTRODUCTION

Composers for the contemporary cello have an unprecedented opportunity to create fresh and diverse works. The improvising cello in jazz, a growing body of material for cello and electronics, as well as Yo-Yo Ma's popular forays into transcultural music-making, have all served to expand the cello's role beyond its historical legacy as an instrument associated primarily with Western art music. The cello's expressive qualities offer tremendous potential for the composer to draw inspiration from a wide range of cross-pollinating genres within our music culture.

This was not always the case. After its introduction in the 17th century, the cello rapidly found its way into the performance practice of Western art music. However, unlike the violin or double bass, it took longer for the cello to enter the orbit of jazz. In my view, this is curious since the cello possesses many attributes that lend themselves to jazz, particularly with respect to the vocal qualities of the instrument. Before turning to my work as a composer, in the following chapters I offer a brief survey of cello performance practice in Western art music and the specific context of its introduction to jazz. Within this framework I hope to shed some light on the features of cello playing that are associated with both the classical and jazz traditions, and how the cello has influenced my compositional process and body of work.

Traditional composition training directs one to consider harmony, melody, theme, instrumentation, meter etc., and I am cognizant of these conceptual elements in my work. However, working on the portfolio for this dissertation provided an opportunity to reflect

in greater depth on my personal composition process. I observed that, when writing for the cello, I am keenly aware of the musical “space” within which the cello operates, as well as the “voice” with which it speaks. These broad concepts of space and voice are lenses through which I began to view and evaluate music for the cello, including my own compositions. While space and voice certainly have a natural area of overlap in any given composition, thinking about them separately allows a more rigorous examination.

Before going further, it may be wise to briefly differentiate my use of “space” from other ways this term can be applied to music. Music is most often made in an acoustic space that is receptive to such an undertaking or built specifically for such purposes. Recording engineers find a particular space for an instrument or vocal within a sound field. We perceive musical sounds, particularly those with tonal qualities, as occupying a spatial dimension. The cellist adjusts intonation by perceiving a pitch as too low or too high. A *sul tasto* bow stroke is said to produce a thin sound, while more bow pressure closer to the bridge produces a thicker sound, and so on. Therefore, spatial terms can be metaphors for describing the phenomenology of sound, but this is not my primary concern.

Additionally, music occupies an important cultural space. People gather to enjoy music in a wide range of settings, from concert hall to front porch. Music is associated with religious traditions, and accompanies ceremonies such as weddings and funerals. Music may be harnessed for overtly political purposes such as protest songs, or to make a subtle plea for compassion by playing the cello in battle-torn Sarajevo. We appreciate

music for its formal qualities as well as its social significance. Although I recognize the importance of music's cultural space, my focus is different here.

When I address space in music, I am referring to matters of composition and performance practice that pertain to the cello in Western art music and the jazz tradition. As such, I employ the term "space" to identify a delineated region in the sonic texture where the cello's role is both clearly defined and vital. As one might expect, cello space has never been static. It has evolved with changing musical styles and developments in instrumental technique. Furthermore, it varies among musical genres, and is navigated differently in solo and ensemble contexts. From my stereo perspective as both composer and performing cellist, I have observed that successful compositions involve careful attention to establishing space for the cello. This informs my desire to investigate cello space and its implications for the form and structure of compositions. Chapter 1 provides an overview of the differences in cello space between Western art music, where the space for the cello is fairly well defined, and jazz, where the lack of a cello tradition engenders specific compositional challenges.

The term "voice" adheres more closely to its traditional meaning within music than the aforementioned "space." A composer is said to have an individual voice when there are certain compositional techniques, or preferences for particular sounds and textures, that become salient features of their work. Of equal relevance to this study is the notion that jazz improvisers develop a unique voice that easily recognized by listeners.

Voice, fundamentally, is the sound produced by the cello. It is shaped by the physical properties of the instrument, the techniques utilized to play it, the dominant

language of the genre, as well as the aesthetics associated with culturally mediated values of sound production. For example, the cello's voice in the hands of renowned baroque interpreter Anner Bylsma playing the Bach Suites (1992) is dramatically different from the sound produced in the surreal screams of Erik Friedlander's cello heard on his CD *Maldoror* (2003). Some may not even recognize it as the same instrument. While this is undeniably a comparison of extremes, in both technique and musical language, the fundamental point is that the voice of the cello is not fixed. Like a living thing, it is in a state of continuous evolutionary change. Composers, as well as cellists themselves, have been expanding the boundaries of the cello's sonic palette for centuries. Those writing for the contemporary cello can now avail themselves of a rich repertoire of sounds, drawn from the performance practice of Western art music as well as the aesthetics and language of popular and non-Western music. Chapter 2 discusses the evolution of the cello's voice: its embrace of the *bel canto* vocal tradition in Western art music; the radical shift in sound production realized through the use of extended techniques associated with 20th century aesthetics; as well as the new timbres and language of improvisation required when the cello was introduced to jazz in the mid-20th century.

While I have extensive classical cello training, I was raised on jazz. I have valued the richness of improvisation from an early age and it has become a prominent feature of my compositions. Western art music training did not provide much insight into cello improvisation, as this practice had lain dormant for nearly two centuries and was not included in standard cello pedagogy. I wanted to learn more about the cello's emergence as an improvising instrument when it was introduced to jazz in the mid-20th century, but

there was minimal discussion of the cello in jazz historiography. Consequently, I undertook the exploration of this overlooked topic, focusing on the first three jazz cellists and applying the overlapping lenses of space and voice to their recorded work. Chapter 3 analyzes the contributions of Harry Babasin and Oscar Pettiford; both established jazz bassists, who were the first musicians to record pizzicato cello improvisations. Chapter 4 examines the recordings of Fred Katz, documenting the efforts of the first classically trained cellist to take up jazz improvisation. Katz was also a composer and arranger who wrestled with how to integrate the cello in jazz and, to some degree, his efforts resonated with my own composing experience.

My compositional approach focuses on establishing a space in which the cello's voice can operate to its full potential. Chapter 5 is an overview of the pragmatic considerations and aesthetic underpinnings of my compositional practice. It includes discussion of stylistic orientation, notation strategy, instrumentation, and the relationship between improvisation and composition in my creative process. This chapter is intended to provide a general background for the written commentaries about each composition that follow.

Included in my portfolio are seventeen compositions: ten written for a variety of ensembles, and seven for solo cello. Discussions of individual works, along with their associated scores, are found in chapter 6 (ensemble compositions) and chapter 7 (solo compositions). These commentaries examine the composition process, from inception to written score. Within each commentary, space, voice, and the role of improvisation are

addressed. The standard analytics of harmonic function, counterpoint, meter, and so on are also explored, when demanded by the particular features of each composition.

CHAPTER ONE: SPACE

Cello Space in Western Art Music

The origins of the cello are a bit murky. The first documentary evidence of the cello is a three-string instrument that appears in a cathedral painting of 1535 (Dilworth 1999,7). The instrument emerged as the bass member of the violin family in the 16th century. At that time it was often known as the bass violin or some variation such as *violone*, *basso di viola*, *bassetto*, *viola da braccio* and the like (Bonta 2002). With much regional variation in string length, tuning, and the number of strings, it was not until Stradivari introduced the much-copied *B form* of the cello in 1709 that the modern proportions of the instrument became relatively standardized (Dilworth 1999, 10). During the 17th century, the viol instruments competed for prominence with the violin family as fashions changed within various European courts. In fact, the entire violin family was regarded as a bit rustic and, in Northern European paintings, the cello was often found in street scenes or taverns rather than the royal court (8). Indeed, many 17th century cellos, including those of the Italian maker Guarneri, have a hole where there was once a peg to hold a strap attached to the button at the back of the neck. This further indicates the activities of the roving musician, far removed from sedentary concertizing for the aristocracy (12).

Little is known about cello space when the instrument first appeared. There were many differences in regional instrument nomenclature, and composers and music publishers were often quite vague about which bass instrument was required in a particular score. It is generally believed that the art of cello performance in both sacred

and court music emanated from Italy to the rest of Europe. The first pieces scored expressly for the cello are bass accompaniments to a sacred vocal Motet composed by a Milanese nun, Caterina Assandra in 1609. A more celebrated piece where the score calls specifically for cello is Monteverdi's *Vespro della Beata Vergine* of 1610. An early secular piece calling for cello was *Sonata per Violino i Violone* by G. P. Cima (Bonta 2002). Most listeners would have encountered the cello for the first time in a subordinate space, fulfilling the bass function in ensemble context. The cello was often the instrument of choice, along with the harpsichord, in the *basso continuo* ensembles found in countless Baroque trio sonatas and recitatives well into the period of Bach and Handel.

Scholars believe that the introduction of the wire wound string circa 1664 improved intonation and allowed for increased volume. Furthermore, the wire strings were shorter than earlier gut strings, permitting a more fluid compass of intervals in the left hand (Bonta 2002). Roughly during the same period, pieces by Cavalli and Arresti introduced the concept of the melodic bass. Here the cello departs from the continuo, often in fugal imitation of the violins (Allsop 1999, 162). There are numerous instances in baroque music where the cello briefly displays its ability to carry the melody. It is believed that the first works to feature the cello, accompanied by other instruments, were written by Domenico Gabrielli in the 1680s (Stowell 1999b, 117). It is not surprising that Gabrielli was a fine cellist himself (Campbell 1999, 52).

The development of the sonata as a musical form greatly contributed to the broadening of cello space in ensembles. Following Gabrielli's lead, numerous Italian composers of the 1600s and 1700s composed for the cello with continuo accompaniment

(Stowell 1999b, 117). These sonatas by Vivaldi, Sammartini, and Marcello remain a significant component of the repertoire for young students of the cello. A sonata variant, which paired the cello in a bass role with an obbligato keyboard, brought the cello to greater prominence (116). Drawing on this instrumentation, but abandoning the traditional hierarchy of the form, Beethoven wrote the first sonatas where piano and cello form a truly equal partnership. Even in the opus 5 sonatas of 1796, where the piano part is more technically challenging than that of the cello, themes are traded back in forth in such a way that the listener's attention is directed toward both instruments.

These Beethoven pieces have always resonated for me because of the variety of functions assigned to each instrument. For example, the *A-Major Sonata* of 1808 opens boldly with a statement of the theme by solo cello. In the development, the cello accompanies a two-part canon on the piano with an extended passage of rapid, arpeggiated chords. Beethoven relishes this type of interplay, where the instruments trade both lead and accompanying roles, thereby creating many textures with just two instruments. Here we find cello space in the ensemble context in one of its highest forms. Every musical gesture has a well-designed function. The cello can always be heard in the texture and makes an essential contribution to the musical conversation.

Another type of cello space that emerged was in ensemble pieces that contained a section devoted to a cello soloist. Early examples of these instrumental concertante formats were written by Jacchini in 1701 and Dall' Abaco in 1712. Vivaldi was chiefly responsible for the earliest cello concertos, eventually writing twenty-seven during his lifetime (Stowell and Jones 1999, 92). This concerto space, featuring the cello soloist

with orchestral accompaniment, includes the 18th century works of Boccherini and Haydn, 19th century compositions by Schumann and Dvorak, and 20th century works by Prokofiev and Britten. With more than three hundred years of compositions in this tradition, the question was never whether the cello could assume a leadership role, but rather if the cellist was capable of the increasing technical demands placed on the soloist by the composer.

Unaccompanied cello has also enjoyed a long tradition in European music. In this case, there is no need to create space for the cello *within* a texture because the cello *is* the entire texture. Instead of a dialogue with another instrument, in which the foregrounding of various musical ideas are put into play, the vitality in the cello's role must emerge from the cello's relationship with itself. Again, Gabrielli led the way, composing his seven *ricercari* for solo cello in 1689 (Stowell 1999a, 137). However, it was Bach's *Suites for Unaccompanied Cello* that established a definitive solo space for the cello that was as musically complete as any of his works for unaccompanied violin or solo keyboard.

Another contributing factor to the emergence of solo cello space was baroque improvisation. As Ernest Ferand demonstrates in his pioneering treatise, *Improvisation in Nine Centuries of Western Music*, the baroque era embraced improvisation on the instruments of the viol family. He gives an example of a *recercarda* that appeared in a 1553 treatise by Spanish composer Diego Ortiz. According to Ferand, Ortiz wrote a melody for the keyboard that served as a ground bass against which the viol improvised counterpoint (Ferand 1961, 12). It does not require too much conjectural fantasy to hear

the connection between Ortiz's *recercardas*, Gabrielli's *ricercari*, and the preludes of the Bach suites. Cello music inherited improvisation from the bass viol tradition of the baroque. Like Ortiz, Gabrielli and Bach were notating pieces for the cello with an improvisational character.

The use of improvisation by cellists in an accompaniment role is well documented. J.B. Baumgärtner's 18th century *Instructions de musique, théorique et pratique, a l'usage du violoncelle* provided guidelines for the spontaneous realization of figured bass accompaniment to recitatives by using double and triple stops to fill in the harmony over a prescribed bass line (Graves 1971, 190). As composers tried to exercise more control there is also documentary evidence of a growing tension with improvised expression on the cello. Benedetto Marcello's satirical pamphlet, *Il Teatro a la Moda* of 1720, commented on the immoderate use of embellishment by cellists (Bonta 2002). Whether or not it was well regarded by everyone, I believe that improvisation had a significant role in expanding cello space in the baroque era, providing a driving force behind the cello's transformation from accompaniment instrument to a leading one.

Cello Space in Jazz

In contrast to the well-established tradition of cello space in Western art music, it is difficult to parachute a cellist into the middle of a jazz ensemble. Any cellist who has sat in on a jam session can attest to the challenges of this situation. Traditional jazz instrumentation works well because the roles of the instruments are clearly defined. A bass player knows how to accompany as well as when it is time to step out as a soloist. The horns play a melody, blow a couple of choruses and, unless they have written

accompaniment figures, generally stay out of the way. What of the cello? It is not exactly a bass, nor is it a guitar or a low horn. Yet, it is capable of fulfilling many of the functions of these same instruments in the jazz ensemble. Jazz compositions and/or arrangements that involve the cello require careful consideration of the instrumentation of the ensemble, and attention to the possible functions or roles that can be assigned to each instrument.

The more traditional jazz instruments are faster, louder, and brighter than the cello. Even the trombone, although less agile than the cello from a note velocity perspective, is acoustically loud. It has a bright sound at the attack of a note and cuts through. The cello, with its dark timbre, is naturally quieter than other jazz instruments that share a similar range, such as electric guitar, trombone, and baritone saxophone. Most cellists amplify, often with some detriment to the original nature of the instrument's sound, in order to be heard.

The issues are not restricted to balancing the volume of instruments that play simultaneously. One must also consider the sequence of solo improvisations. The louder, more agile, and timbrally brilliant saxophone will often entice the rhythm section into playing with greater volume. If the cellist is the next soloist, only sensitive and experienced rhythm section players will intuitively recognize the need to accompany the cello in a quieter way. The composition process can offer solutions. For example, the saxophone and cello can improvise on different formal structures, each with their own sense of relative energy, within the same piece.

Another challenge for creating space in a jazz ensemble is the range of the cello. The low end of cello is in the same range as the middle range of the acoustic bass. Composers have usually gravitated towards differentiating the two instruments by having the cello play with the bow. The middle third of the cello's range, roughly from the C₃ to G₄, is a very comfortable region for improvisation. However, this is the same area where chord accompaniment by the piano or guitar most often occurs. The cello is by no means the only instrument that improvises in this sonically crowded range. Because of its darker sound and lower volume, the cello must often compensate by playing in a higher register for its voice to emerge from the texture.

I have observed that the usual methods of jazz composition are often reconsidered in order to create a space for the cello, whether it is an alteration in texture, instrumentation, volume, rhythmic feel, or any other parameter of music that concerns the composer. In the 1950s, the Chico Hamilton Quintet (with cellist Fred Katz) was the first group to fully explore the potential of cello space and voice in a jazz ensemble. This pioneering effort will be examined in greater depth in chapter 4.

Lastly, for most improvising cellists, there is a robust tradition of solo cello recordings and performances. Katz's first recording as a leader on *Zen* (1956) included a very adventurous solo cello track. Jazz cellist Abdul Wadud was the first to dedicate an entire LP to solo cello playing in his recording *By Myself* (1977). A quick survey of prominent cello improvisers, most of whom are classically trained, reveals a number of solo recordings. I believe the solo cello tradition of Western art music provides a workable model for contemporary cello improvisers. The study of solo works by Bach,

Kodály, Britten and others, has familiarized cellists with the rich potential of solo cello space. The power as both composer and performer to control what occurs within this solo space necessitates great attention to proportion and sonic detail. In the solo cello recordings I listen to, and in my own solo cello music, the performance tends to gravitate to the far edges of the jazz tradition. While the performances certainly involve improvisation, elements of the classical tradition, new music, and world musics are often incorporated. I would suggest that this liminal site in the overlap of traditions is worthy of exploration. With the right compositional mindset, there is a boundless space with very few limitations.

CHAPTER TWO: VOICE

Cello Voice in Western Art Music

As mentioned in the discussion of space, the cello became established as both an ensemble and solo instrument during the 17th century. As such, the cello spoke the accepted musical language of the common practice period. In this era, the method of cello tone production appeared to be closely modelled on the *bel canto* ideal of vocalization. This makes intuitive sense, as the cello does encompass most of the human vocal range from bass to soprano. The *bel canto* approach employed a legato style and changes of bow direction were barely audible. Emphasis was placed on a uniformity of tone when switching from string to string, in the same way that singers were expected to transition fluidly between the *tessitura* of their vocal ranges. Like singers, cellists used vibrato for expressive purposes as well as for smoothing the switch from one note to the next. This practice continues to be incorporated in cello pedagogy today, as it remains the voice required by most standard classical cello repertoire. For example, students may be asked to learn an opera aria, and to “imitate each element of the vocal performance exactly: nuance, vibrato, intonation, rubato, portamento, tempo, etc.” in order to develop their *bel canto* voice (Glyde 2011, 41).

When the cello expanded beyond the role of accompaniment and took on the nuances of melodic line, its individual sound became more prominent. This was most evident in the solo repertoire. Bach wrote his extraordinary *Suites for Unaccompanied Cello* circa 1720, and his commitment to an unadorned, concise, and clear musical language made an enormous contribution to cello voice. While the vast majority of the

suites are written in a texture best characterized as monody, Bach was able to fashion a compelling single musical line by balancing expressive melodic shape with a strong sense of harmonic progression. Forkel, the earliest Bach scholar, noted that, “By particular turns in the melody, he has so combined in a single part all the notes required to make the modulation (i.e. *progression*) complete that a second part is neither necessary or possible” (David and Mendel 1998, 448). Despite changes to harmonic language, this model of completeness in a single line was thoroughly absorbed by the composers of the 20th century, as evidenced by the 1915 solo works of Max Reger and Zoltán Kodály, and is still relevant to composers today.

One type of monody found in the preludes of suites I and IV is an arpeggiated figure that delineates a slowly evolving harmonic progression. This texture is common in the preludes of the *Well-Tempered Clavier*. A much more prevalent texture is “monodic polyphony” where a single melodic line implies the polyphonic relationship of two or more voices (Chambers 1996, 77). Here the movement of independent voices is suggested by large changes of register, implying a contrapuntal dialogue. Bach also exploited the “true” polyphonic capabilities of the cello. Three and four note chords are often seen at cadences, to signify the end of a phrase. Sometimes he utilized textures of broken chords to support the melody in the top voice. Other times double stops are used in succession to display a contrapuntal relationship between two voices, or a single long note is extended above or beneath a moving passage to create harmonic tension. Frequently, Bach employs a mixture of these techniques, which contribute to the perception of the cello as a polyphonic instrument capable of counterpoint. In figure 1

below, the melody notes are indicated by stems up, and the notes suggesting secondary accompanying voices are indicated by stems down.

Figure 1: Measures 9-16 “Sarabande”, J.S. Bach *Suite I for Unaccompanied Cello*



Furthermore, a survey of these suites reveals Bach’s comprehensive knowledge and innovative use of a wide array of Baroque cello techniques, including double stops, broken chords, *bariolage*, and *scordatura*, thereby pushing the technical possibilities of the instrument. Finally, Bach managed to write music with enduring emotional appeal. Few can ignore the pathos in the “Prelude” from second suite or the exuberance of the “Gigue” from sixth suite.

In the common practice period, technical innovations and an expanded cellistic language emerged as composers embraced the utility of the instrument in the burgeoning solo, sonata, and concerto formats. Some of these composers worked closely with the renowned cellists of the time or were performers themselves. Boccherini, a cellist, wrote concertos in which thumb position technique was employed for the first time to extend the upper range of the instrument. Anton Kraft, a cello virtuoso and composer, is thought

to have worked closely with Haydn on his 1783 *Concerto No. 2 in D Major* and with Beethoven on his 1803 *Triple Concerto* (Wijsman 2001).

This era also saw a proliferation of faster passages, expansion of the cello's range, and the introduction of unusual sonorities such as fingered octaves and *bariolage*.

Techniques were developed that enhanced the velocity, range, and polyphonic capabilities of the instrument. This resulted in new competency standards of technical proficiency on the cello. Perhaps the 1895 Dvorak concerto, with its use of such devices as the double stop trill and fingered octave *glissandi*, is most emblematic of the dialectic developing within the Romantic tradition between the lyrical *cantilena* melodies and technically demanding passages.

In the 20th century, Rachmaninoff, Fauré, and Elgar were among those whose concertos continued to focus on the lyrical qualities of the cello, with occasional flashes of fast moving activity. While these composers did experiment with both form and harmony, there was little variance from the Romantic aesthetics of the *bel canto* voice. However, other composers had an alternate set of compositional priorities, and deemphasized the virtuosic in favour of techniques that produced novel sounds. In 1914 and 1915, three very different works emerged: Anton Webern's *Three Little Pieces for Cello and Piano*, Kodály's *Sonata for Violoncello Solo*, and Debussy's *Sonata for Cello and Piano*. These compositions demonstrated a notable development in cello voice. By employing various unorthodox techniques, these composers shifted the emphasis from the vocal qualities traditionally associated with the cello to far-ranging explorations of its sonic possibilities.

Anton Webern's *Three Little Pieces* (1914) offer the greatest deviation from the *bel canto* vocal tradition. Webern's compositional language abandoned tonality as well as any semblance of melody in favour of a spare style that emphasized silence and a focus on sonority. He seemed to treat the possible sounds of the cello much in the same way that he manipulated the twelve notes of the chromatic scale, avoiding repetition as much as musically possible. Webern's "Piece I" has the cellist play in the following order: A low register note crescendo and decrescendo, a *sforzando/piano* artificial harmonic in high register fading to normal note in the middle register, three notes rapidly ascending *sul ponticello*, a *forte* pizzicato, an ordinary note arco *mezzoforte*, a soft *glissando sul tasto*, an artificial harmonic in low register, an artificial harmonic in high register, and four notes ascending slowly *sul ponticello*. This entire array of disassociated sonorities occurs within the first minute of the piece.

In 1915, Kodály wrote his massive solo cello sonata. One of the ways Kodály reimagined the instrument was to alter the cello tuning to B₁ F#₂ D₃ A₃. This open tuning to a B minor seventh chord affected the resonance of the instrument and extended the playing range from B¹ to B⁶ at the end of the fingerboard. In a clear departure from the well-established norms of 19th century aesthetics, Kodály chose to incorporate elements of Hungarian folk music into his modernist musical language. Much of the melodic material is presented in a declamatory vocal style. There are long passages of a non-metered, quasi-improvisatory character where the cellist self-accompanies by plucking open strings with the left hand. While the tuning and passagework in B Dorian project

pathos, it feels as if we have left the yearning melancholia of the Romantic tradition for the hard realities of Hungarian village life.

When the steady meter and fast tempo of folk dance music emerges it becomes one of the most physically demanding pieces in the cello repertoire. Three-note chords are first strummed, then glide upward with elastic *glissandi*. Numerous *fortissimo* passages jump from high to low on the instrument, and require so much fast and furious bowing that one has the sense of beating the cello. One of the reoccurring themes of the third movement is a whirling folk dance melody played on the A string which must be played as a double stop with the open D string. Both the Pentatonic scale derived from the Lydian mode and the droning D recall the hurdy-gurdy traditions of Hungary.

Debussy's melodic and often playful *Sonata for Cello and Piano* (1915) features natural harmonics, *sul tasto* and *flautendo* bowing timbres, *sforzando* pizzicatos, and chords that can only be sustained using the thumb in a strumming motion. The "Serenade" movement opens with a passage that clearly distinguishes between dry and legato pizzicato articulations, with slur marks connecting two notes at a time. This notation is somewhat ambiguous as to intent. The passage could theoretically be played using a hammer-on, left hand articulation. However, most cellists *glissando* between pitches, forcing the vibration of the string to continue through the two notes. (Interestingly, this is one type of pizzicato articulation that many jazz cellists employ, borrowing a well-established sonority from the jazz bass tradition.) At the close of the movement, the cellist must alternate between a delicate motif in the high register of the cello, which is played *pianissimo* with a *flautendo* bow articulation, and a quick, staccato

articulation of the open strings in descending order. While Debussy's explorations of pan-diatonic, modal, and occasionally bitonal harmonies are far less radical than Webern's atonality, both works share a delight in rapid contrasts between pizzicato and arco articulations. These pieces point to a future where the cello's voice is less stable, and technical competency is measured by how seamlessly a cellist can rapidly move between demanding performance techniques.

Like Kodály, Debussy was deeply interested in folk music. In the third movement of Debussy's sonata, the cellist is required to play broken pizzicato chords that evoke the flamenco guitar tradition. This Spanish flavour is enhanced by the semitone root motion of harmonies derived from the Phrygian dominant scale, which is the fifth mode of the harmonic minor commonly found in Sephardic and Moorish music. The incorporation of language from different folk music traditions necessitated the development of new performance techniques to produce appropriate sounds. As a young musician experimenting with improvisation on the cello, I found Kodály and Debussy intriguing because they embraced languages and musical gestures from other cultures. This music resonated with my desire to expand the cello's voice by exploring diverse musical traditions to broaden my repertoire of possible cello sounds.

In the one hundred years following Kodály's sonata, the voice of the cello seems to have evolved at an accelerated pace. These changes came from an immense shift in 20th century aesthetics. As tonality was eroded by Debussy and Stravinsky, and finally dismantled by Schoenberg's twelve-tone system, equating of beauty with consonance came into question. The mechanical noise machines of the Italian Futurists, Varese's

percussion music, and Henry Cowell's eerie swipes of the piano strings all pointed to a future where composers would focus on sound itself. The interest in the phenomenology of sound inevitably led to a musical language that embraced noise.

Henry Cowell argued in his book, *New Musical Resources*, that a non-periodic vibration occurred in the tone quality of all musical instruments. He asserted that the traditional distinction between sound and noise was logically and aesthetically faulty. Cowell suggested that the relationship of noise to music was similar to humanity's attitude about sex, "essential to its existence, but impolite to mention" (Cowell [1929] 2004, 23). By the 1930s, new approaches to performing on conventional instruments and early experiments with electronic music were moving the debate beyond the future life span of the tonal system to a new music that actively embraced noise. As Cage presciently wrote in his essay, *The Future of Music: Credo*, "in the past, the point of disagreement has been between dissonance and consonance, it will be, in the immediate future, between noise and so-called musical sounds" (Cage [1937] 1973, 4). In the 1950s, Stockhausen continued this line of argument with a linguistic metaphor and suggested that "consonantal, hence noise-like sonic phenomena" were the necessary complement to tones or vowel sounds of musical language (Stockhausen [1958] 2004, 375).

While it is true that an interest in noise on conventional instruments had previously appeared, it was rare and most often associated with program music such as Heinrich Biber's *Battalia* (1763) and Berlioz's *Symphony Fantastique* (1830). In my view, the modern focus on what is commonly referred to as "extended technique" is a natural consequence of broadening the definition of musical language to include the

element of noise. This flourishing of musical experimentation, which embraced all the sounds that could possibly be made on the instrument, naturally included sounds that would have been considered ugly in previous eras. The snap pizzicato introduced by Mahler in his *Symphony No. 7*, later a common feature of Bartok's string music, certainly adds the noise element to an otherwise conventionally pitched gesture. The haze surrounding the *sul ponticello* articulations in Webern's *Three Little Pieces* have a pronounced noise element as well. The destruction of the tonal system led to a proliferation of highly individualized musical languages and systems of organization. Formerly "unmusical" sounds were employed to shift the focus from the narrative qualities of tonality toward a modern approach of structuring music with sound alone. Composers such as Stockhausen, who had worked extensively within electronic music, suggested that traditional instruments had outlived their utility (Stockhausen [1958] 2004, 371).

It was within this new culture of experimentalism, of searching for new and unprecedented sounds, that the notion of extended technique gained currency and cultural resonance. The motivations for employing novel sounds, differed from composer to composer, but the result was an expansion of what is technically possible on the instrument. For example, now the voice of the cello embraces the pizzicato triple stop *glissandos* found in the opening gambit of Ligeti's *Sonata for Solo Cello* (1953). Electronic amplification and bowing the tailpiece aid in mimicking the songs of the humpback whale in George Crumb's *Vox Balaenae* (1971). While new techniques are often perceived as a composer-driven phenomenon, they can be performer initiated as

well. The radical two-bow technique developed by French cellist Frances-Marie Uitti, has inspired composers such as Scelsi, Kurtag, and Nono to write specifically for her highly idiosyncratic approach (Uitti 2000, 69). Luciano Berio worked with cellist Rohan de Saram, when developing his *Sequenza XIV* for cello (Ozorio 2006). This work employs percussion techniques familiar to de Saram, derived from the Kandayan ceremonial drumming tradition of Sri Lanka (Berio 2002).

When considering the voice of the cello in Western art music, it is apparent there is a complex relationship between compositional exigencies, instrumental technique, and the prevailing language of the genre. The sounds produced in 20th century experimentalism stand in sharp contrast to the more dulcet *bel canto* tones embraced by the vast majority of the admired cello literature from the common practice period.

Cello Voice in Jazz

Compared to its long history in Western art music, the life span of the cello in jazz is relatively brief. However, the entry of the cello into the jazz genre in the mid-20th century spurred further innovations in cello voice. Jazz embraces a different aesthetic of sonic beauty than Western art music. Therefore, the cello requires an alternate repertoire of sounds and techniques in order to speak the language of jazz. This involves producing timbres that arise from the African American vocal and instrumental traditions, and a more judicious use of the *bel canto* voice normally associated with the cello in Western art music. Fortuitously, the cello's vocal qualities make it is remarkably well suited for jazz. It can moan, groan, cry, glide, growl, screech, and more. Largely due to pizzicato

articulations, the cello is also adept at transforming its timbre into one suited for the rhythm section, filling the roles normally associated with bass lines and guitar-like polyphonic accompaniment.

Most accomplished contemporary jazz cellists have substantial classical training and learn to freely shift between a classical accent and a jazz inflection, depending on the context. Furthermore, creating a jazz voice for the cello can involve the setting aside and/or repurposing of certain techniques that require years of training in classical music. This is not so much an issue of “unlearning” as it is creating a parallel track of learning. The ultimate goal is to build a variety of instrumental techniques that one can choose from at will, depending on the musical context. Many of the approaches to sound production that are commonly employed to generate the jazz voice would be considered extended technique in Western art music. However, they are standard competencies in jazz.

For example, the use of *sul ponticello* bow technique can introduce a rougher, somewhat dirtier sound, which emulates other jazz instruments (e.g., saxophone, electric guitar), assisting the cello’s integration into the idiom. Pioneering jazz cellist Fred Katz employed *sul ponticello* in his album *Zen*, and this technique can be found in any number of subsequent recordings by cello improvisers over the past seventy years. In Canadian cellist Peggy Lee’s “Night Skate” improvisation, from *Sounds from the Big House* (2002), we can hear her freely shifting between *sul ponticello* bowing and a rich and soaring sound. In my classical cello studies, I first encountered *sul ponticello* in the orchestral literature. When I was learning to improvise, I discovered I could build on this

technique in order to gain control over which harmonic partials were emphasized. While the physicality of the bow stroke was similar to *sul ponticello*, for me it had lost its Western art music associations. I thought of it simply as “bow distortion,” an adaptive strategy utilized to produce a cello sound aligned with the timbral aesthetics of jazz.

Classical cello pizzicato technique typically employs a single, bent index finger with a predominantly vertical motion. In contrast, most jazz cellists have developed a two-fingered plucking technique (emulating the jazz bass tradition) where the string is pulled in a horizontal motion with outstretched fingers, which increases both the volume and velocity of pizzicato. Concurrently, the left hand often employs hammer-on or pull-off articulations to connect two notes within a single pizzicato attack. This combination of left and right hand techniques generates timbres and articulations that allow the cello to assume the bass role, one of the spaces frequently occupied by the cello in jazz. Similar to the upper range of the double bass, the cello has a limited sustain for each pluck. Therefore, pizzicato forces the player to think in terms of one or two notes per attack. This focuses the mind on a degree of rhythmic precision that is of lesser concern when phrasing multiple notes with a bow.

The aesthetics of pitch inflection are also critical for producing an authentic voice in jazz. The cello, as a fretless string instrument, has enormous potential for expressing pitch values when it is freed from the need to conform to tempered tuning systems. While sliding between notes (*portamento*) is permissible and desirable in some situations, a salient feature of the Western art music tradition is uniformity of pitch. This is primarily

due to the emphasis on harmonic or vertical relationships between notes, and their relationship with tempered tuning systems.

In contrast, modal music traditions focus on the horizontal relationships between notes. While most jazz is tonal music, the melodic language of improvisation utilizes pitch nuances often associated with modal music traditions. Even though jazz musicians may be improvising over a harmonic structure, the pitch inflections employed reflect the modal improvisatory practice of the blues. This is particularly evident on scale degrees characterized as blue notes such as flatted thirds, fifths, and sevenths. Jazz cellists will often slur position shifts of a tone or semitone, producing an unaccented glide between notes played with the same finger. Broader jazz cello gestures such as scoops, fall-offs, and wide vibrato shakes have a very different sound from the discreet pitch ornamentations (e.g., trills, turns, and grace notes) typically found in classical performance.

Generating a swing feel while bowing the cello requires additional considerations. Swing is more than a matter of rhythmic placement; it is also governed by articulation, accent patterns, and the timbre of the bow stroke. While pizzicato techniques derive from the cello's relationship to the jazz bass tradition, cellists can look toward the jazz violin to develop a swing bowing sound. Nevertheless, it is important to bear in mind that the cello and violin differ in more than body size and string length. For example, the cello requires more time than the violin to go from the attack transient to a state of periodic string vibration, thus more bow pressure is required to initiate a good tone. Jazz cellists must use sufficient bow weight and speed to cause the instrument to speak, while

simultaneously avoiding the production of such a substantial sound that the bow stroke sounds classical. This is a balancing act of competing technical concerns.

The above is by no means an exhaustive list of the cello techniques found in jazz. What I know from my own experience is that I first enlisted many of the above techniques as strategies for “fitting in” when playing jazz. These methods were further developed as I honed my own voice and personal instrumental vocabulary. As the cello moved from Western art music to various hybrids of jazz and other traditions, a wide range of idiosyncratic techniques have emerged from the hands of individual cello improvisers.

The *glissandi* pizzicato chords found in the Kodály and Ligeti sonatas had a certain shock value within the context of 20th century Western art music. However, when Abdul Wadud employed a sliding chord technique in Julius Hemphill’s “The Hard Blues” (Hemphill, [1972] 1997), the frame of reference was completely different. Wadud’s cello evoked the sound of guitar slides, in effect preserving the idiomatic language of the Delta blues, but reinvented for a new instrument. Dutch cellist Ernst Reijseger possesses a blazingly fast pizzicato technique (Reijseger 1997). At times, this is achieved by turning the cello sideways and holding it like a guitar, but his pizzicato speed in the normal upright playing position is nearly as rapid. Eugene Friesen uses left hand pizzicato and pull-off technique in combination with conventional right hand pizzicato to create an innovative cross rhythm texture (Friesen 2006). Erik Friedlander has developed asynchronous plucking patterns for the thumb and the fingers in order that his left hand can fashion independent lines (Friedlander 2007). Peggy Lee produces a bowed cello

sound that is quite similar to the multiphonics generated by skilled wind players. By playing notes that are capable of producing harmonics, but pushing the string further toward the fingerboard, she causes string vibrations that rapidly oscillate between the node and the stopped pitch in a somewhat randomized manner (Lee 2002). My fundamental point is that contemporary cellists expand and express their own individual voices through a variety of technical innovations on their instruments.

Undoubtedly, there is an array of techniques available on the cello to achieve an authentic jazz sound. However, jazz compositions also demand fluency in the language of improvisation, and the cello must acquire a vocabulary of spontaneous musical gestures that are in keeping with the idiom. By the time the cello was introduced to jazz, improvisation had largely receded in Western art music. This change corresponded to the rise in authority of the composer and the consequent degree of notational precision required in the 18th and 19th centuries. The last remaining cello concerto in the repertoire with an improvised cadenza (or at least a cadenza composed in advance by the soloist) is Haydn's D-Major of 1783. Thereafter, for 167 years, cellists were prohibited from choosing what notes they played until the indeterminate anomaly of Morton Feldman's *Projection I for Solo Cello* in 1950 (Feldman 1962). Furthermore, with the exception of the cadenza tradition associated with the concerto form, much of classical improvisation was strictly accompaniment, not a space for spontaneously inventing new melodies. Consequently, there is not a strong tradition of improvisation on the cello to transfer from Western art music to jazz.

Voice as sound production and voice as musical language are interpenetrating concepts. While music shares many features with language, spoken communication and instrumental music differ from each other in significant ways. Instrumental music, unlike language, is not a series of signs that refer to specific things in the real world. For example, a deceptive cadence may violate an audience's musical expectation of what is to follow, but it cannot describe a particular instance of an unexpected outcome with the precision of language. However, a written program note, or a brief on-stage explanation, can be employed to bridge this semantic gap.

Nevertheless, even though it lacks referential attributes, music does have many similarities with what Gottlob Frege described as the "sense" of language (Zalta, 2018). While music has no vocabulary in the linguistic sense, it contains discrete elements that distinguish one type of "speaker," e.g. a jazz musician from a classical musician. We might say that music shares with language a syntactic element, as different styles of music arrange their constituent parts in specific ways. For example, we can divide up a melody into a series of phrases, while the sections of the sonata form (introduction, exposition, development, recapitulation, coda) can be viewed as resembling the rhetorical path of a well-crafted essay.

In this spirit, and in keeping with standard musicological practice, I will employ linguistic terms in my discussion of music. For example, when I refer to the "vocabulary" of a jazz improviser, I am not referring to words in the dictionary. Rather, I am speaking of the repertoire of "licks," and other types of musical phrases that enable the jazz player to declare a type of fluency or "belongingness" within the jazz tradition.

The language of improvisation can be studied by looking at the note-to-note procedures used by jazz improvisers on their instrument. Jazz solos are frequently transcribed for study and formal analysis. One can study *what* a musician plays, e.g., a specific series of notes such as a flatted fifth on each back-cycling dominant chord. However, a transcription is a half-empty vessel, not the thing itself. What this type of analysis misses are the subtle inflections of pitch, timing, and accent patterns that are unique to a performance. For example, the alto saxophone was the vehicle through which Charlie Parker's improvisational creativity was expressed. As such, the alto saxophone acts as a kind of filter, discouraging some types of behaviour and encouraging others. To my ears, Parker's language of improvisation is a saxophone-based language. His contributions are tremendously important in the evolution of jazz music, and deservedly much copied by many different instrumentalists, but are very specific to his instrument.

Not surprisingly, one contribution to the academic literature on jazz cello improvisation is a collection of Charlie Parker transcriptions adapted for the cello.

By examining solo transcriptions, along with altered solutions, a cellist may determine for himself which aspects of this style may be adopted and which are best left alone. The question remains for each individual: How much more of this language can be internalized by repetition, and what lies beyond reasonable expectation in performance? The purpose then has been to demystify what is to most cellists a foreign musical language and present a possible process for learning it. (Isaacson 2007, 37)

This study demonstrated that the notes Parker played on alto saxophone were theoretically possible to play on the cello. However, learning to perform a jazz transcription requires a similar skill set to learning most Western art music. This process may open a window through which one can view some of the salient features of Parker's

bebop language, e.g., the rhythmic placement of ideas and how non-chord tones are encircled by chord tones. However, it does not necessarily provide insight into the significant relationship between jazz improvisation and spontaneous action on the cello. While experienced improvisers are capable of modelling music internally without their instruments, the improvisation I am discussing here involves performance and requires the thinking that occurs with the instrument in the hands. Split second decisions are constantly made based on the muscle memory associated with a variety of musical gestures, and accompanied by a foreknowledge of where the music might go. In this sense, a cellist cannot think like an alto saxophonist. While the musical language of jazz as a genre is not inaccessible to the cello, many of the possibilities available to the alto saxophone in terms of spontaneous musical action are beyond reach. As David Sudnow documents in his phenomenological study of jazz piano improvisation, *Ways of the Hand*, the topography of the instrument interface and the disposition of the hand are constant determinants in instrumental execution (2001, 55). Therefore, the acoustic characteristics and physical layout of the cello influence the creation and scope of its improvised language.

Any language of improvisation is oriented toward the idiom, or a sub-genre within the idiom, from baroque to rock and roll. Frequently, a player will incorporate typical musical phrases associated with previous or contemporary improvisers within the tradition. A musician who wishes to gain genre competency in jazz must develop a practice that balances the demands of contemporary jazz improvisation vocabulary, with whatever his or her technique allows on the instrument. In my view, a *cellistic jazz*

language exists in the overlap of what is ergonomically possible on the instrument and the improvising vocabulary required by the jazz idiom.

This intersection lies at the crossroads of slightly different meanings of the word “idiom.” All meanings originally stem from the Greek *idiousthai* “to make one’s own.” In one sense, composing idiomatically for the cello means writing music that physically suits the instrument. However, when speaking of jazz improvisation and composition, the term idiomatic is more closely related to its linguistic definition, in that one is producing phrases that have a specific meaning within a particular style of music (*The New Oxford American Dictionary*, 1st ed., s.v. “idiom”). An authentic jazz language on the cello must meet both these criteria: It must feel natural on the instrument, and the instrumental voice must produce a sound that holds musical significance within the language of jazz. While authenticity may be hard to define, perhaps, like swing, one knows it when one hears it.

Jazz language refers to the musical gestures associated with improvising and composing within the idiom. While jazz musicians and scholars alike may disagree about exactly what constitutes jazz at any given time, most musicians initially orient themselves within jazz by learning the standard song repertoire, along with an instrumental vocabulary of improvisation. Certainly, this is the model employed in most jazz education settings. Continuity with and frequent referral to the past *is* the tradition that defines the jazz idiom. In jazz historiography, canonical evaluations of recordings are often based on the originality of a jazz musician’s improvisations. However, no matter how early the recording, one must bear in mind that even the most celebrated musicians incorporate ideas from their predecessors. Louis Armstrong could not entirely escape the

influence of his early mentor, King Oliver. Thelonious Monk developed a completely idiosyncratic instrumental voice, a touch, and approach to swing like no other pianist, and a harmonic conception that was part of the foundation of bebop. Yet, his improvisations also represent a synthesis of various traits of his forebears in the jazz piano tradition. A Monk performance has moments of Ellington's ringing thunder, Basie's dry witted economy, and the sudden appearance of a crisp Art Tatum run.

Paul Berliner's 1994 book, *Thinking In Jazz: The Infinite Art of Improvisation*, is a significant ethnographic study of mainstream New York based jazz musicians. Berliner's study reveals the disciplined preparation engaged in by jazz musicians prior to improvising, refuting the popular notion that the sounds come out of thin air. A re-occurring theme in his interviews is how closely musicians study those who preceded them on their chosen instrument as they develop their own personal vocabularies. In his discussion of jazz language, Berliner examines how musicians build a "repertory storehouse" of discrete patterns or "licks" that can be used as building materials for improvisation. Often these melodic devices are "lifted" from existing recordings (Berliner 1994, 102). However, this model of learning raises the question of how one situates the arrival of a new instrument to a genre, like the cello's mid-20th century, serendipitous expansion into jazz. While cello space and voice had long been well established in Western art music, jazz was unfamiliar territory. With no jazz cello tradition to draw from, either embedded in recordings or observed in live performance, how did the first jazz cellists find their way? This is a subject in jazz historiography that, thus far, has received scant attention.

CHAPTER THREE: JAZZ CELLO PIONEERS, THE BASSISTS

The very first recordings on the cello in jazz were made by bass players: Harry Babasin in 1947, and Oscar Pettiford in 1950. Both were accomplished jazz bass players who took up the cello as a secondary instrument by happenstance and discovered that they enjoyed playing it.

Harry Babasin

Harry “The Bear” Babasin was born in 1921 in Dallas, Texas and studied bass in high school (Goldsby 2002, 68). While attending North Texas State University, he began playing with guitarist Herb Ellis and reedman Jimmy Giuffre. Babasin left school to join the Charlie Fisk Orchestra in 1942, and never looked back. He toured extensively with many of the most prominent big bands of the day before settling in Los Angeles (Wilonsky 2000). Babasin happened upon a cello that was being used as a prop on the movie set of *A Song is Born*. Cloning around, he put it across his lap and began plucking it like a guitar (Jinbashian 2007). Regardless, on the occasions that Babasin performed on the cello, he held it in the conventional upright manner.

Babasin made the first jazz recording on a cello in 1947 in a session lead by Dodo Marmarosa, a pianist who faded into obscurity after his brief association with Charlie Parker (Marmarosa 1947). Ross Russell, the founder of Dial Records, produced the sessions. One can readily hear that Babasin plays bass on two of the tracks, although Russell’s liner notes mistakenly list Babasin playing cello on all five pieces (Russell 1996). Babasin played walking bass lines for most of these recordings, using the cello

much as the bass was typically utilized in piano trios of the day. A crucial detail that emerges from listening to this recording is that Babasin tuned his cello in fourths, an octave above the bass. Unfortunately, this tuning approach limits the range of the cello by raising the lowest string from C_2 to E_2 , and lowering the highest string from A_3 to G_3 . Consequently, on the tracks where the cello is functioning within the rhythm section as the bass, Babasin is forced to construct awkwardly high walking lines that would have sounded with more authority on the powerful C string of a conventionally tuned cello.

Notably, Babasin took his solos on the cello rather than the bass. Two tracks have him improvising on two-bar breaks. However, in his most accomplished moment, he takes a full 32 bar chorus on Marmarosa's composition, "Bopmatism." Since Babasin brought both cello and bass to the session, one can reasonably assume that choosing which instrument to play on various tunes was intentional, based on the functionality of the instrument within the proposed repertoire. The bass offers greater overall volume by virtue of its size, a deeper range because of its lower tuning and longer strings, and a more enduring sustain. However, the cello is much more audible than the bass on every take that day, due to the higher range of the cello and the limitations of the recording technology of that era in capturing lower frequencies. Velocity was likely an additional consideration in Babasin's choice of which instrument to play when soloing. Marmarosa, who already had a reputation of being Los Angeles' answer to pianist Art Tatum, was working steadily with Parker, revelling in the speed demanded by bebop. In this style, the top bassists, such as Oscar Pettiford and Ray Brown, were executing long strings of 8th notes in their solos, effectively doubling the physical demands that had been required to

play within the earlier swing style. Babasin's walking lines on "Dodo's Dance" show that he was perfectly capable of fast tempo quarter notes on bass, but he leaves the "horn like," faster 8th note solos to the cello.

Babasin continued to play cello (as well as his primary instrument, the bass) throughout the next decade. He formed the Harry Babasin and the Jazz Pickers band, which included vibraphone, guitar, drums, bass, with Babasin on cello. The addition of bass to this ensemble, freed the cello from the confines of a supporting role in the rhythm section. The only extant Jazz Pickers recording dates from 1957, and featured well-known vibraphonist Terry Gibbs (Babasin 1957). In this recording, Babasin plays melodies that sound like they were conceived on the cello and plucks chords during the vibraphone and guitar solos. By this time, prominent bassist Oscar Pettiford had also picked up the cello and was recording with more marquee players. For this reason, a number of erroneous references overlook Babasin and designate Pettiford as the first jazz cellist.

Oscar Pettiford

Oscar Pettiford was born in Oklahoma in 1922 to a musical family. He learned the bass in order to complete his parents' touring band, Doc Pettiford & His Family Orchestra, which also included Pettiford's ten siblings (Goldsby 2002, 56). In 1943, Pettiford arrived in New York, where he quickly became a mainstay of the 52nd street jazz club scene, playing with Dizzy Gillespie, Art Tatum, and Coleman Hawkins. Unlike most of his contemporaries, Pettiford possessed the pizzicato technique to play with a fast 8th note velocity, and like saxophone soloists, he tended to think in long, flowing lines,

often borrowing from saxophonists' sense of phrasing and harmonic devices. A superb example is Pettiford's fluid bass solo on Coleman Hawkins' recording of "The Man I Love" (Hawkins 1943). If one listens carefully, one can hear Pettiford's quick inhalations (Tolley 2005, 17). Perhaps Pettiford was unconsciously modelling how saxophonists take deep breaths before long phrases.

Jimmy Blanton, Duke Ellington's bassist before the arrival of Pettiford, was generally credited with developing the bass as a soloing instrument in jazz. Blanton died young in 1942, and Pettiford seemed to be the type of bassist Ellington was looking for. He joined the band in 1945 and became a trailblazer (Berendt and Hoesmann 2009, 444). Pettiford not only filled Blanton's shoes, but also further solidified the bass as a solo instrument.

Pettiford opens his "Swamp Fire" solo (see figure 2 following) in a higher register of the bass (Pettiford 2008 [1946]). He has a tendency to play four consecutive semitones within descending 8th note passages. Other devices, which resemble those found in bebop horn language, are the enclosures of chord tones by non-chord tones, as in measures 11 and 12. The use of an A natural passing tone in measure 12 is another bop device.

Figure 2: Measures 1-16 of Oscar Pettiford's bass solo on "Swamp Fire."

The musical score for measures 1-16 of Oscar Pettiford's bass solo on "Swamp Fire" is presented in four systems. Each system consists of a Piano (PNO.) staff and a Bass staff. The key signature is B-flat major (two flats) and the time signature is 4/4. The piano part features chords G^{7(b9)}, G^{7(b13)}, and C⁻. The bass part includes triplets and various rhythmic patterns. Measure numbers 1, 5, 9, and 13 are indicated at the beginning of their respective systems.

In 1949, Pettiford broke his right arm during a baseball game. During the months his arm was in a cast, Pettiford could not manage playing the bass, so he practiced on a cello that he had found in a pawnshop some years before (Goldsby 2002, 56-57). Like fellow bassist Babasin, he chose to tune his cello in fourths (E₂, A₂, D₃, G₃). Given Pettiford's innovative approach to the bass, it is not surprising that he experimented with the cello. Ultimately, Pettiford made many noteworthy recordings on the cello until his premature passing in 1960, including a cello duet session with Babasin in 1953 (Pettiford 2008). Pettiford's initial cello recording occurred during a 1950 session that showcased

both Duke Ellington and Billy Strayhorn on piano (Tolley 2005, 17). Unlike Babasin's debut on cello in the bass role, Pettiford is at the front of the bandstand, leaving the bass duties in the very capable hands of Lloyd Trotman. Pettiford's multiple choruses on "Perdido" are brilliantly constructed and they definitively illustrate that pizzicato cello can swing as hard as any other jazz instrument in the right hands (Ellington 1950).

Figure 3: Measures 1-32 of Oscar Pettiford's cello solo on "Perdido."

$\text{♩} = 196$ C_{MIN}^7 F^7 $\text{B}^{\flat}\text{MAJ}^7$ G^7
 C_{MIN}^7 F^7 $\text{B}^{\flat}\text{MAJ}^7$ D_{MIN}^7 G^7
 C_{MIN}^7 F^7 $\text{B}^{\flat}\text{MAJ}^7$ D_{MIN}^7 $\text{D}^{\flat 7}$
 C_{MIN}^7 F^7 $\text{B}^{\flat}\text{MAJ}^7$
 D^7 G^7
 C^7 F^7
 C_{MIN}^7 F^7 $\text{B}^{\flat}\text{MAJ}^7$ G^7
 C_{MIN}^7 F^7 $\text{B}^{\flat}\text{MAJ}^7$ $\text{B}^{\flat 7}$

The “Perdido” cello improvisation (figure 3, above) contains many of the hallmarks of Pettiford’s mature bass style. Looking at his second chorus one sees his predilection for descending 8th note phrases that avoid commencing on the downbeat and often end on the “and of one” or the “and of three.” When playing bass, Pettiford often opens his lines with three or four consecutive semitones. Three semitones is the normal interval compass of the hand on the bass. He does the same on cello in measure 17 and 22. In measure 17 this creates a raised seventh as a passing tone on a dominant chord. This device was so common in the bebop era that it is now taught as an eight-degree scale in jazz pedagogy. Pettiford also leaps down to his open D string and then goes back up to his G string, giving his line a more curved contour. This device happens in measures 4, 16, and 31.

Naturally, some of the outstanding features of this improvisation are the melody spinning of a great jazz musician. The opening gambit of quarter note triplets, played extremely behind the beat, is creativity of the highest order. Here, Pettiford’s usual descent is four consecutive semitones (possibly fingers 4 3 2 1 before playing the open D string). The quarter-note triplets return in measure 10, highlighting the introduction of the first C# of the chorus.

Another inventive feature is the presence of motives based on hemiola phrases. The descending third motive is introduced at the downbeat of measure 12. This motive moves sequentially by step in a series of three hemiolas (see brackets) that imply a 6/8 time signature and continue through measure 14. The B natural at the end of this polyrhythmic phrase is an unanticipated pleasure.

As with most noted jazz improvisers of the day, there is a certain amount of harmonic sophistication. The aforementioned B natural functions as a tritone substitution. The neighbour tone C# in measure 10 becomes b13 with the shift to F7. Nevertheless, it was the length of Pettiford's 8th note lines and how artfully they are phrased across the four-measure harmonic structure that warrants comparisons of his cello playing with such proto beboppers as guitarist Charlie Christian and saxophonist Coleman Hawkins. As far as the public was concerned, and in the narrative of jazz history, Pettiford demonstrated that the cello could be a jazz instrument improvising single note lines.

Considering that Pettiford took up the cello seriously in 1949, how did he achieve such proficiency by 1950? Clearly, he was already a brilliant jazz bassist before picking up the cello; therefore, he had an abundance of transferable skills and patterns. Let us return to Paul Berliner's work where he defines a "lick" as a short phrase that is idiomatic on a given instrument, sometimes associated with a particular chord progression and other times associated with a particular style such as the blues (Berliner 1994, 227). Musicians gain genre competence by first becoming fluid in this vocabulary of licks, and later develop their own individual improvising language. Pettiford had impeccable timing, phrasing, and his lines swung hard. All these skills were established in Pettiford's bass playing well before he turned his attention to the cello. One can assume that any lick that he knew on the bass could be readily transferred to the cello by using a slightly different fingering, because his cello was tuned in fourths an octave above the bass.

In order to confirm my guess that this "birth of the jazz cello" narrative involved a number of transferable bass skills, I tuned my cello in fourths and played along with

Pettiford. I am designating this approach “kinetic transcription.” Given that I also play the double bass, I found this to be a useful way to get a feel for the similarities and/or differences between the two instruments. I discovered that when the cello is tuned in fourths, the “map” of where all the notes are located is identical to the double bass. Additionally, because the cello has a shorter string length than the bass, one can play more notes without shifting positions, which is very convenient.

For example, in normal first position on the bass, one’s hand encompasses a major 2nd, and one must stop notes with the first, second and fourth fingers because the third finger does not fall naturally on a note. In first position on the cello (irrespective of tuning) each finger falls on a semitone, thus the hand encompasses a minor third. In the extended first position on cello, one can easily put a whole step between first and second fingers, and another whole step between second and fourth fingers, allowing the performer to play a major third in one position. Therefore, on the cello, the combination of tuning in fourths and the ability to reach more notes in one position means that the diatonic scale (and all of the subsequent modes) can be played across three strings without shifting regardless of key. This convenience is not possible on either a conventionally tuned bass, or on the cello tuned in fifths, unless the scale happens to use open strings. In an improvising language that is as replete with scalar motion as bebop, the ergonomics of a cello tuned in fourths is remarkably efficient. I suspect that this was very appealing to bassists, as it allowed them great freedom to present soloistic ideas on an instrument that speaks more rapidly than the bass.

I am not disputing the importance of Pettiford's pioneering work on the cello. However, his achievement may be viewed as having certain limitations with regard to cello voice. Tuning the cello in fourths has a number of negative effects on range, resonance, and projection. It lowers the higher range by a whole step, and the lower range by two whole steps. Additionally, the lowest two strings lack gravitas as they do not sustain or project very well with the high tension placed upon them. Furthermore, chords played on a cello tuned in fourths span a narrower range, and offer less opportunity for complete four-note seventh chords.

Another issue with regard to voice is that Pettiford clearly favoured pizzicato. It could be that prior to electronic amplification via contact pickups, the pizzicato articulation was the only cello sound that would cut through the combined volume of a loud bebop ensemble. On the other hand, like many jazz bass players of that time, Pettiford may not have had much arco skill. There are only a few bass recordings where he uses the bow. Nevertheless, his focus on pizzicato narrowed his sound options considerably. One cannot crescendo into a note, neither is it possible play more than a few notes in a legato phrase. Arco technique produces a much wider variety of sonic colour and encourages the expressive vocal qualities of the cello to shine. While there are photographs of Pettiford at the cello holding a bow, recordings of him using a bow are elusive.

Pettiford's concept of cello space was firmly based in the bebop era combo tradition, with its well-defined roles for rhythm section and other instruments. As the leader, he was able to assign the bass role to another player. Therefore, he could lead the

band on cello from centre stage. Additionally, Pettiford was a prolific composer and frequently chose to feature the cello as his solo instrument. In his able hands, the cello functioned primarily like a horn, playing single lines of melody or accompaniment. Pettiford's relatively mainstream vision of jazz did not necessitate much innovation regarding composition and arrangement in order to feature his cello. Guitar could have easily been substituted for cello in any of his recorded work.

However, Pettiford did occasionally experiment with unconventional instrumentation in combination with the cello. His 1954 sextet recordings, featuring Charlie Rouse and Julius Watkins, demonstrate attention to careful arrangement of chord voicings using the unusual combination of tenor sax, French horn, and cello. Pettiford's last large ensemble recordings in the U.S., before he moved to Europe, even included the harp. Pettiford may have come to the cello by happenstance, but given the number of times he recorded with it, he clearly was fond of the instrument and demonstrated the viability of pizzicato cello as a legitimate jazz instrument. This effort by itself was a remarkable achievement in his era.

It should be noted that Babasin and Pettiford initiated something of a trend. A number of jazz bassists in the 1960s such as Ray Brown, Sam Jones, and Red Mitchell experimented with making their own "cello" recordings. For the most part, they tuned their cellos in fourths and played pizzicato. One notable exception among bassists was Ron Carter. He played a cello tuned in fifths, employing both pizzicato and arco techniques, in his experimental outings with Eric Dolphy and Mal Waldron (Dolphy 1960; Carter 1961; Waldron, 1962). Carter rapidly returned to the bass for the remainder

of his extensive career, and currently satisfies his ambitions to play fluidly in a higher register with his custom-made piccolo bass tuned A-D-G-C (Ouellette 2013, 347).

The vast majority of improvising cellists who have emerged in the past seventy years are not bassists first, and cellists second. These cellists are classically trained, tune in fifths, and are fluent with both arco and pizzicato techniques. Many are gifted composers and write for ensembles with unusual instrumentation. They have much more in common with Fred Katz who, in 1955, broke significant new ground when he brought his considerable cello skills into the jazz idiom.

CHAPTER FOUR: JAZZ CELLO PIONEER, THE CELLIST

Few jazz historians have taken an interest in the cello, let alone identified the fundamental difference in approach between the work of bass players and the efforts of classically trained cellists who choose to embrace jazz improvisation. In fact, these two divergent approaches to jazz cello exhibit significant differences in improvisatory vocabulary, techniques of sound production, and musical aesthetics.

Fred Katz

Fred Katz was a colourful character born in 1919, in the heart of Brooklyn's Jewish immigrant community, Katz began classical piano studies at age nine and was already showing signs of precocious talent when his father bought him his first cello two years later. He performed the Saint-Saens cello concerto at New York's Town Hall at age fifteen (Carpenter 2003, 44; Kun, 2007). After serving in the army in Europe, Katz began to hang out at the 52nd street clubs in New York. He became a capable jazz pianist and arranger, and was hired as the music director for his Brooklyn neighbour, Tony Bennett (Kun, 2007). When Katz was playing with Lena Horne in New York, he met several members of her orchestra who were from Los Angeles, including drummer Chico Hamilton.

By the time Katz had moved to Los Angeles in 1954, Hamilton had left Horne and was conceptualizing a new group following the critical success of his trio recording with guitarist Howard Roberts for the Pacific Jazz label (Gordon, 1997). According to

Ted Gioia in *West Coast Jazz* (1992) Katz was looking to experiment on the cello in jazz, and Hamilton recruited him as part of his effort to create a group with unusual instrumentation (Gioia 1992, 188). After some experimentation, Hamilton formed a quintet consisting of drums, bass, guitar, cello, and a wind player who played saxophones, clarinet, and flute. As Katz himself tells the story, he brought his cello to Hamilton's house for an evening jam session, and after this successful experiment, the sound of the group was largely conceptualized to include the cello (Carpenter, 2003, 42).

Essentially, it was the first "chamber jazz" group. Unlike bassists Babasin and Pettiford, Katz used the standard cello tuning in fifths and, most importantly, established bowed cello in jazz. Initially, the quintet was a commercial and critical success. Their first recording received a five star review in *Down Beat*, the album sold well, and they had appreciative audiences (Gordon 1997). Ultimately, however, this band did not fare particularly well. Many jazz historians offer only grudging praise. For some, the Chico Hamilton Quintet epitomized "the excesses of the West Coast sound" (Gioia 1992, 189). To my ears, there are certainly moments where the music has classical music pretensions, is over-arranged, and lacks spontaneity. On the other hand, compared to the ad hoc nature of many bop and post-bop ensembles of the day, the Hamilton Quintet exhibited remarkable ensemble cohesion and unity of purpose. As he had already demonstrated in his stint with the piano-less Gerry Mulligan/Chet Baker Quartet, Hamilton was capable of producing excitement and intensity on the drums (often using brushes) without raising the decibel levels. In order to accommodate the cello, and to a certain degree the flute and clarinet, the band experimented with low volume levels. Effectively, they dared their

audience to quiet down and listen. Whether or not one appreciated the group's low-volume, chamber jazz qualities, Hamilton's intuition was correct: the cello gave his band a "signature sound."

The Complete Pacific Jazz Recordings of the Chico Hamilton Quintet is a comprehensive collection of material from all of the Chico Hamilton Quintet recordings from 1955-1959, as well as including Fred Katz's album *Zen*, which utilized the same personnel. This collection provides a fascinating documentation of the integration of the cello into a jazz ensemble, as well as Fred Katz's invaluable contribution to the evolution of the cello's voice in a jazz context.

It is obvious that Katz added distinctive colour to the ensemble, but it took some time before the band's composers knew exactly what to do with the cello. Wind player Buddy Collette recalled a period of experimentation with instrumentation where Katz would play both cello and piano. At first, the easiest solution was to use stock arrangements and give the cello the tenor sax line (Gordon 1986, 136). However, by the time the band made its first recordings in August of 1955 at The Strollers club in Long Beach, the group concept had jelled. The cello, with its chameleon-like ability to appear in various guises, was able to assume a variety of functions in the quintet arrangements. From my perspective as a composer-cellist, one notable contribution of the Chico Hamilton Quintet was the creation of a flexible cello space within a jazz ensemble.

At times, the cello space did not differ much from the role typically taken by a low wind in conventional jazz ensembles of the 1950s. Often, the cello would simply double a melody an octave below the winds or play in unison with the guitar. This

instrumental colour appears in Jim Hall's band theme "I Know," Fred Katz's ballad "Reflections," and in numerous other compositions contained in the recording collection. The octave doubling of a wind line is also used to good effect in riffs and counter-lines. This sort of *head arrangement* is evident in the early recordings, which were made live at the nightclub before the band entered the studio some months later. For example, during Jim Hall's guitar solo on his tune "Spectacular," Katz doubles Collette's tenor sax backing riff at the octave in a gesture reminiscent of horn arrangements of the swing era big bands.

Given that there were three voices above the bass in the band, it was natural to gravitate towards homophonic harmonization strategies, especially on the faster numbers where it would be awkward for the guitar to play double stops or chords. This approach can be heard in Collette's "Change It," and Charlie Shavers' barnburner, "Undecided." Because the cello has a wider range than most wind instruments, it can be found in either alto or tenor positions in relationship to clarinet or flute, and sometimes in the soprano above the saxophones or guitar. On medium tempo numbers, in order to distribute four or five notes to three instruments, the guitar is given dyads or complete chords, as is the case in Collette's "This Is Your Day." The composers in the quintet were quick to realize that the cello was capable of polyphony as well. In the coda of "This Is Your Day," the cello plays double stops along with single notes in the tenor range to accompany the melody in the guitar. The same technique is used to support the saxophone solo in Carson Smith's "Beanstalk." The group seemed to deliberately explore the permutations of how the instruments could be vertically arrayed.

The quintet favoured a complex arranging style, so there are many instances where the various voices move independently within a contrapuntal texture. Naturally, this rhythmic independence of line gave the cello more prominence than the homophonic writing. Collette's "A Nice Day" has interweaving cello and guitar parts around the clarinet melody. Katz's composition, "A Mood," features a lovely cello melody accompanied by a descant line coupled in thirds between the tenor saxophone and guitar. Jim Hall's composition "Chrissie" opens with a four-part fugue, with staggered entrances by guitar, cello, flute, and bass. Hamilton's "The Morning After" contains a mixture of three arranging strategies. He opens with pizzicato cello in tenths above the bass line, then introduces bowed cello and guitar harmonizing the clarinet melody in a homophonic texture, and closes with imitative counterpoint between guitar, clarinet, and cello.

The third album, *Chico Hamilton Quintet in Hi-Fi*, was recorded in the early months of 1956. Fred Katz made further contributions as an arranger and composer. His composition style leaned toward the intricate and contrapuntal, but was stylistically varied. Katz's arrangement of the standard, "When Your Love Is Gone," (entitled, "Gone Lover,") reveals a complex weave of eclectic musical influences. The melody appears in fragments throughout most of the tune and is not stated in an overt way until three-quarters of the way through the arrangement. There is a remarkable bit of writing for cello and flute voiced in octaves, which resembles the angularity of Hindemith more than bebop. Another section, which employs low guitar and cello doubling the melody, recalls Mingus's penchant for growling trombone. When the clarinet finally states the original melody of the popular song, it is unexpectedly accompanied by an Afro-Cuban rhythm.

Sinuuous lines on flute, doubled by guitar, close the piece above an ostinato bass line while the cello simply bows a G harmonic every two bars on the downbeat. The cumulative result is a four-minute arranger's *tour de force*.

Katz's quirky composition, "The Squimp," revolves around a cyclical, funky bass line, which is doubled by cello. A series of non-repeating melodies recall the riff tune arrangements of the Basie book. The blend of bowed bass and bowed cello resembles the sound of the tuba more than either instrument would individually. Perhaps because of the use of clarinet, the overall effect resembles the informal counterpoint of a New Orleans street band. While Katz is drawing from the earliest of jazz traditions, his atypical orchestration gives this gleeful composition a simultaneous modernity.

As one might anticipate, there were arrangements where cello was employed to do what cellos are perceived as doing best: stating the melody in a ballad. For example, Katz has the lead in "My Funny Valentine" and his own slightly Hebraic piece, "The Sage," as well as the bridge melody of Russ Freeman's "The Wind." It is to the band's credit that this particular card was not overplayed. The live recording of "Stella by Starlight" is particularly striking and evokes the chamber music of Villa Lobos. In this trio performance, the cello melody is accompanied by an arpeggiated guitar ostinato with simple root motion in the bass. By moving the song's key up a tritone from Bb to E, the musicians gained the harmonic possibilities created by the open E pedal on bass and guitar. Additionally, in the original key of Bb, the melody would be either too high on the cello, or it would need to be played an octave down on the G string, which would

encroach on the guitar's range. In the key of E, however, the melody is high enough to be played exclusively on the A and D strings of the cello, which have superior projection.

Without access to the original charts, it is impossible to know the difference between the arranger's original concept, and the contributions Katz may have made during rehearsals. I would surmise that Katz introduced a number of cello techniques in the spirit of experimenting with what the cello could do. For example, in Katz's composition, "The Sage," he arpeggiates chords underneath the guitar melody by rolling his bow back and forth across all four strings. This is a lovely technique found in Dvorak's B minor cello concerto, and works well in this piece. Katz also gravitated toward percussive aspects of cello performance and offered rhythmic accompaniment through the use of bow articulations. He plays *spiccato* 16th note lines as a propulsive sort of filigree in "I Want to Be Happy." While the overall effect can be construed as a bit on the "cute" side, the mesh of fast moving cello and Hamilton's brushwork is striking. The double stop fifths played with a bouncing bow stroke in the intro to "Cute Little Deal" are both percussion sound and a harmonic underpinning. The same technique is used in Carson Smith's "Jonalah." As the track fades, Katz changes his bow stroke to the more percussive *col legno battuto*.

Katz also had an affinity for polyphonic strumming. This technique is prominently displayed in the intro to Jim Hall's blues tune "The Saint." The melody is a bop-inflected line doubled on tenor saxophone and guitar over a two-beat-feel walking bass line. In every gap, Katz jumps in with a cello chord. In the live recording of "Caravan," Katz plucks a Latin ostinato bass line followed by a resounding C major

chord strummed from top to bottom. “Caravan” works well for the cello. In F minor, the extended dominant sonority of C in the *A* sections allows for a number of simultaneous bass line and chord possibilities while exploring the depths of the cello’s range. It is noteworthy that Katz was already engaging the capabilities of his instrument to fulfil both bass and chord functions within the jazz ensemble. Perhaps due to the restrictions of range when a cello is tuned in fourths, Pettiford, despite his fluid pizzicato technique, never attempted anything of this nature.

The above is by no means a comprehensive list of composition and arrangement strategies. Nevertheless, it does reveal how the five very capable composers-arrangers of the Chico Hamilton Quintet recognized the utility of the cello and devised space for the instrument within a small jazz ensemble context. The presence of the cello may have precipitated a more extreme version of the “chamber music meets jazz” path on which they were already travelling.

In advancing a voice for jazz cello, Katz is the first classically trained cellist to contend with which methods of sound production are best suited for playing jazz. For example, Katz’s pizzicato sound differs dramatically from Pettiford’s because Katz primarily uses the one finger technique taught in classical training. Thus, in the contrapuntal writing of “Spectacular,” the cello sounds almost comically prim when contrasted with the pizzicato of Carson Smith’s bass. While Katz employed pizzicato with regularity as an accompanist, it appears that he was more comfortable improvising with the bow. His only pizzicato improvisations recorded with the quintet are eight bars of “Beanstalk” and the instrumental trades of “Pluck It.”

Berliner's study notes, "an idol's personal sound is commonly the precise object of imitation for learners" (Berliner 1994, 124). The musicians he interviewed were noticeably conscious of inheriting a sound production lineage on their instruments. In contrast, Katz had no models to work from when constructing an authentic jazz cello voice. There are multiple instances throughout the recordings where Katz's voice sounds too classical, even within the West Coast chamber jazz aesthetic that the quintet came to represent. He has the full-bodied, soloistic tone that comes from strong bow pressure and the frequent use of vibrato. Katz seems reluctant to let go of the *bel canto* model of sound production. This method works when the quintet resides within the sonic domain of chamber music, as in the aforementioned rendition of "Stella By Starlight." Conversely, the *bel canto* cello sound on "My Funny Valentine" sounds comparatively overwrought. Katz does find the right balance of *bel canto* and African-American vocal styles for his cello voice in ballads such as "The Sage," "A Mood," and "Reflections," where he locates the emotional centre of his compositions.

Pitch inflection is both a subtle and critical element of jazz performance. Katz had a very clean and precise shifting technique. His playing does not demonstrate the expressive *portamento* that is commonly heard in the jazz violin tradition of Stéphane Grapelli or Stuff Smith. Occasionally when Katz scoops up to a note, the inflection resembles an operatic gesture more than a reference to the blues. This is effective in "Stella By Starlight," but sounds incongruous in his rendition of "My Funny Valentine." At times, Katz's use of vibrato masks the microtonal quality of his blue notes and inhibits the clarity of their resolution to the Western diatonic scale. Towards the end of his tenure

with the quintet, he recorded the Ellington/Strayhorn ballad “Daydream.” Here Katz performs with an improved feeling for how to ornament a melody with discreet or bent pitches, and more effectively casts the cello as a blues instrument.

Like many classical string musicians who experiment in the jazz idiom, Katz was capable of “putting it all together” in terms of matching his left hand technique with a swinging bow stroke. This was especially evident in his interpretation of written material. Katz was an excellent mimic of how other members of the band phrased their lines. If one listens carefully to both takes of “I Know,” Katz demonstrates an impressive and swinging, horn-like articulation on the cello. The precision with which he doubles the alto line is striking (Hamilton 1956).

Figure 4: Alto sax and cello melody in “I Know.”

The image shows a musical score for two instruments: Alto Saxophone and Cello. The Alto Saxophone part is in Concert Pitch, and the Cello part is in bass clef. The music is in 4/4 time and the key signature has two flats (B-flat major). The tempo is marked as quarter note = 144. The Alto Saxophone part starts with a rest, followed by a series of eighth and quarter notes, and ends with a sharp sign. The Cello part starts with a rest, followed by a series of eighth and quarter notes, and ends with a sharp sign.

Katz experiments with the timbral possibilities of the cello in his extended solos. He introduces sounds that approximated the performance practice of other instrumental traditions within jazz. In “Katz-Up,” through the use of *sul ponticello*, he achieves a gruff sound in his lower register, which suggests Ben Webster’s tenor saxophone tone. Later, Katz plays a high register trill between E₅ and G₅ that resembles a big band trumpet shake. In the same solo he plays a stopped G on the C string simultaneously with the

open G, generating an unusual beating effect one associates with double strung instruments or the close interval singing found in Balkan music. This unusual sonority, along with Katz's use of harmonic *glissandi*, seems rooted in the spirit of sonic experimentation that naturally arises when musicians explore improvisation.

As mentioned in chapter 1, the language of improvisation is an integral component of jazz, yet Katz acknowledged significant challenges when it came to improvising on the cello. "Many of the things in jazz require great playing, but a different kind of technique...the most difficult thing was thinking like a jazzman on the instrument. That is different. You are so used to playing along, reading from the printed page. Then all of a sudden you come away from the page and you don't know what to do" (Gonzales, 1989). Katz further commented, "...when Chico Hamilton originally started, I played both piano and cello. I was able to play jazz on the piano very well. But to translate that to the cello was very difficult for me. I could think as a jazzman on the piano, but I couldn't think as a jazzman on the cello. Only six or seven months later, could I play any kind of jazz" (Gonzales, 1989). As discussed above, Katz's compositions and arrangements, as well as his accompaniment gestures, reveal an understanding of the inner workings of jazz music. Why would Katz, a musician with the genre competence required to work professionally as a jazz pianist, find playing jazz on the cello to be difficult? What was it about thinking like "a jazz man" that he found elusive on the cello?

As previously mentioned, a likely impediment was the absence of a cello tradition in jazz. One can assume that, when learning to play jazz on the piano, Katz could

reference live performances as well as the recordings of any number of jazz pianists. However, as an aspiring jazz cellist, this common method of learning was not an option. With the exception of Babasin and Pettiford's bass-derived approach, the cello was a stranger to the jazz idiom. Therefore, Katz could not take advantage of the usual legacy of instrument-specific "licks" and lineage of sound production that are customarily transmitted from one jazz musician to another. Katz may or may not have listened to Oscar Pettiford, but as a cellist with considerable arco facility, Katz had no reason to retune in fourths, limit his range, and eschew the bow.

An additional consideration is that cello improvisation had been absent from Western art music for nearly two hundred years. Consequently, even simple improvisation was not part of classical cello pedagogy. In contrast, when jazz violin emerged in the 1920s, multiple traditions of fiddle music with varying degrees of improvisation were well established. Finally, there was the issue of personal expertise. Katz, while an accomplished cellist, had no prior experience improvising on the cello. In order to speak with a jazz inflection, Katz was obliged to synthesize the considerable skills he had acquired as a classically trained cellist with the normative competencies of the jazz idiom.

The Hamilton recording collection is of particular interest because the development of Katz's vocabulary of improvisation on the cello represents a rare *tabula rasa*. These recordings start when Katz had been playing jazz cello for just a few months. Perhaps because Katz was the least experienced improviser in the quintet, he was often given short spaces in which to solo. When one only has eight measures "to tell a story," it

is quite a different situation than having multiple choruses to build ideas. Given that all instruments were tracked in one room without the recording technology to fix or overdub a solo, it seems possible that Katz planned his shorter solos. For example, Katz's eight-measure solo on Buddy Collette's "A Nice Day" (Hamilton 1955) is so perfectly executed that it is likely Katz had a good idea of what he was going to play beforehand.

Figure 5: Fred Katz's solo on "A Nice Day."

The image shows a musical score for an eight-measure solo in 3/4 time, key of F major. The notation is written on a single staff with a treble clef and a key signature of one flat. The melody consists of eighth and quarter notes, with some notes beamed together. Above the staff, the following chords are indicated: F, D/F#, GMIN7, C7, BMIN7, E7, AMIN7, D7, GMIN7, C7, and F. The solo begins with a quarter rest in the first measure, followed by a quarter note in the second measure, and continues with eighth notes in the third and fourth measures. The fifth measure contains a quarter note, and the sixth measure contains a quarter note. The seventh measure contains a quarter note, and the eighth measure contains a quarter note. The score ends with a double bar line.

Admittedly, this particular solo could have been performed by any number of instruments, but there are features that directly relate to the ergonomics of improvisation on the cello. Katz makes use of harmonics and open strings as much as he can, thereby giving the left hand more time to shift positions. In his right hand, Katz has a lightly swinging lilt to his bow that is often evident in his part playing, but less present in what appear to be more spontaneous improvisations.

Much of Katz's longer solo on the blues tune, "The Ghost," exhibits a certain "squareness" because many of Katz's phrases start on the downbeat and finish in two or four bars, rather than straddling the harmonic changes (Hamilton 1956). However, something quite interesting happens in the third chorus when Katz employs a double stop

blues lick that resembles a common device used by guitarists. He holds down the tonic with his thumb on the A string and descends chromatically from the interval of a minor second to minor sixth on the D string. Hamilton can hear where this is going, and the two link up nicely in the pickup to measure five. On the eighth bar Katz arpeggiates minor seventh chords, descending chromatically over a ii-V progression to create a tritone substitution. Collette plays a very similar lick in his earlier solo at the same place in the form. Katz closes with a riff borrowed from his second chorus and followed by a humorous trill before resolving to the tonic.

Figure 6: Third chorus of Fred Katz's solo on "The Ghost."

The musical score for the third chorus of Fred Katz's solo on "The Ghost" is presented in three staves. The key signature is one flat (B-flat major), and the time signature is 4/4. The score includes the following chords and melodic details:

- Staff 1 (Measures 1-4):** Chords are F7, B \flat 7, B \circ 7, and F7. The melody starts with a quarter note G \flat (B \flat), followed by eighth notes G \flat and F \flat (E \flat), and a quarter note E \flat (D \flat).
- Staff 2 (Measures 5-8):** Chords are B \flat 7, F7, A \min 7, and D7. The melody features a triplet of eighth notes (G \flat , F \flat , E \flat) and another triplet of eighth notes (D \flat , C \flat , B \flat).
- Staff 3 (Measures 9-12):** Chords are G \min 7, C7, F7, D7, G7, C7, and F7. The melody includes a trill on the eighth note of measure 11 and ends with a quarter note G \flat (B \flat).

Notably, at measure eight in the third chorus of "The Ghost," Katz finds a lick that translates particularly well to the cello due to the symmetrical relationship between the left hand positions required for each minor seventh chord and the harmonic motion occurring in the music. This is a good example of a cellistic jazz lick, in that it is idiomatic both to the jazz genre and the hands of the cellist. Another cellistic lick occurs

in the tune “Katz-Up.” Here Katz toggles back and forth between a descending line and the tonic. The effect is similar to *bariolage*, minus the articulation of string crossings. Many jazz string players use this device, depending on how the specific blues key intersects with their open string tuning. In this instance, Katz imports classical thumb position technique, creating a moveable open string somewhat analogous to a guitarist using a capo.

The Chico Hamilton Quintet experimented with alternatives to the standard twelve and thirty-two bar jazz forms, as well as with the typical harmonic hurdle jumping associated with bebop. “Free Form,” a modal group improvisation recorded live in August of 1955 at The Strollers, is, at times, a rather meandering affair. While many different tempos and textures emerge, the melodic content is strictly modal, the multiple counterpoint lines create a D minor pan-diatonicism, and there is no repeating form or predetermined melody. This performance of “Free Form” is historically significant and fills a canonical gap. Robert Gordon’s liner notes identify “Free Form” as one of the earliest examples of free improvisation. It follows Lennie Tristano’s pioneering work on the 1949 recording *Intuition*, but precedes Ornette Coleman’s free jazz experiments with Los Angeles based musicians in the late 1950s (Gordon, 1997). Katz’s earliest improvisation using the bow appears in “Free Form” and he plays with confidence. It has a much “freer” and more spontaneous feel than his improvisations within traditional jazz structures. In his arco melodies there are hints of the ornamentation found in Jewish music. When the music lags, due to a less than successful transition from one tempo to another, Katz jumps in with a supporting pizzicato figure that provides the rhythmic

foundation for Hall's blues-infused solo contribution. Katz brings to the improvised discourse a strong melodic and rhythmic sense. He may not have had an easy time "making the changes" required in traditional jazz structures, but he was not shy about making an important musical statement in a less confining context.

Another of Katz's stronger performances occurs in 1956 on Jim Hall's unusual modal composition "Siete Cuatro," an Afro-Cuban tinged jazz tune in 7/4. To my ears, this is one of the more modern sounding Chico Hamilton Quintet recordings. The guitar provides a swirling *montuno* figure over an ostinato bass line that establishes a modified 3-2 *clave*. The melody of the piece floats very freely above the rhythm section activity, allowing Katz to improvise a line comprised of long durations without sounding laboured. There are a series of four-bar breaks in 4/4 time where the rhythm section drops out, setting up a modal cello improvisation in E Mixolydian mode. Katz exhibits rhythmic confidence improvising within the even eighth note subdivision that is found in Latin music.

In 1956, the Quintet personnel assembled to record a Fred Katz album entitled *Zen*. With Katz in the leadership role, there is more emphasis on his compositions and arrangements. While "Pluck It," "Katz Up," and "Loma" are clearly in the jazz vein; much of the recording involves notated material alongside improvisation. "Lord Randall" is a cinematically brooding work, which concludes with a timpani improvisation by Hamilton. When discussing "Lord Randall" Katz commented, "It was written strictly in a classical vein, but it has to be played by jazz musicians to come out right" (Gordon, 1997). "Suite for Horn," is a multi movement work written as a concerto for the Quintet's

new reed man, Paul Horn. Each movement features Horn on a different instrument: alto saxophone, clarinet, and flute. In “Suite for Horn,” Katz adds a trombone trio and a woodwind quartet to the Hamilton band to broaden the orchestration possibilities. Katz employs extended forms and his melodic conception has more in common with Poulenc than Ellington, though the occasional blues riff enters into the mix. In a sense, *Zen* could be considered an early example of what Gunther Schuller was to characterize in 1957 as the “third stream” in American music (Carnovale and Dyer 2002).

Katz sounds much more at ease when he is playing his own interesting and stylistically eclectic music. “Granada” is an arrangement of a popular Mexican tune from the 1930s for solo cello. It is cast as an homage to Spanish music, and Katz successfully mimics many of the effects of flamenco guitar on pizzicato cello. As with the Debussy sonata (discussed in chapter 2), there is the intention of importing instrumental techniques from Spanish guitar music. It is difficult to assess how much of this performance is improvised, although I suspect that a certain amount of improvised experimentation went into planning his arrangement. This is likely the first recording of a cellist exploring “home-grown” extended techniques. Katz executes difficult hammer-ons and pull-offs, strums the cello with his thumb, and uses an original pizzicato tremolo technique that requires the use of both the flesh and nail side of one finger. When Katz takes up the bow, he employs *spiccato* bowing to imitate the *picado* passages of flamenco. In “Granada,” he enhances the drama of the cadences with ornamentation that borrows from both Spanish and Jewish music.

“Pluck It” is an all-pizzicato strings and *staccato* clarinet romp in the jazz idiom. Here Katz takes a rare pizzicato solo while trading fours. Similarly, “Classical Katz” is a playful clarinet and cello duet that references Bach, Mozart, jazz and the klezmer tradition in equal measure. None of this sounds improvised; the coordination between the instruments is much too intricate. However, the sense of dialogue and play imbues it with an improvisational character.

Where Katz absolutely shines, is on the ensemble piece “Montuna.” This is a very loosely conceived trio performance with cello, percussion, and bass. How the musicians get in and out of this tune appears to be completely improvised. Katz and Hamilton begin by trading rapid-fire bursts. Katz imitates Hamilton’s flam drum stroke with *col legno battuto*. When the bass and drums establish a *rumba*, Katz plays with a reckless abandon that is not evident in any of his earlier recordings. The tonal centre gets lost in the fray, which seems to be a liberating experience for Katz. He plays chromatic patterns and utilizes just about every sound that can be created by the bow. When the intensity fades, Katz alludes to the theme using eerie artificial harmonics. The last few seconds is a dialogue between Katz and Hamilton, where Katz slides quadruple stop chords up and down the neck of his cello in the manner of the Ligeti sonata. By this point, the chords have lost all tonal significance. The performers have entered into a world of sound-art experimentation.

What is particularly striking about “Montuna” is its modernity. In fact, it eschews many of the jazz conventions of the era, and presages much of the free jazz that burst onto the Los Angeles scene a few years later. As mentioned, the piece does not stay

within one particular mode, despite the C minor key centre suggested by the ostinato bass line. The theme is not a melody, instead it is two variations of a single riff. At the conclusion of the tune, the theme is hinted at but not explicitly restated. The improvisation is open-ended and does not conform to even an implied cyclical harmonic structure. “Montuna” contains what can best be described as “pan-idiomatic” improvisation. It draws from multiple traditions for its vocabulary, but does not seem to belong to any one place or time. It is a strange, beautiful, and fundamentally avant-garde musical moment that stands on its own.

Katz stated that the potential for the cello in jazz “depends upon the ability of cellists to wail and also the writing done for it”, further observing that the “cello has much beauty in its soul, and if jazz will not accept it, this speaks very badly for the development of jazz” (Hentoff 1957). Throughout the history of jazz there has been a certain tension between those that want to define the jazz idiom in a narrow way (traditionalists) and those who champion jazz as an art form that is in a constant state of evolutionary flux. As Gunther Schuller observed in *The Swing Era*: “True jazz by its very nature cannot be held to a formula or be based on some stationary perfection” (Schuller 1989, 846). In other words, there is a danger inherent in defining what “jazz” is, based solely on its traditions.

The Berliner study on genre competence (discussed in chapter 2) is limited by its focus on participants who were all mainstream jazz musicians, thus comfortable and accepting of a standard jazz tradition (DeVeaux 1998, 394). Berliner did not interview the likes of John Zorn, Ornette Coleman, or Cecil Taylor, who do not fit neatly into the

dominant paradigm. Yet, these musicians have stretched the boundaries of what is now considered jazz in order to accommodate the particular way they thought and played. As a result of the efforts of these and other musicians, jazz has been diversified and invigorated. Jazz should not be a circumscribed system; rather it must embrace a boundary-shifting, permeable method of making music that involves improvisation. Without the potential to evolve, jazz will become just another historical art music.

Taking the long view that jazz is an expanding instrumental language that incorporates the idiomatic expressions of its participants, the doors should be wide open for those who play unusual instruments. This is especially true in light of jazz's growing presence as a global phenomenon. Jazz has spread throughout the world because it has taken on many local flavours through the process of transculturation. Embracing various global music traditions, as well as the diverse instrumental vocabularies of its practitioners, is vital for the music's survival (Nicholson 2005, 166). Cellists, just like improvisers on the oud or shakuhachi, contribute an instrument-based vocabulary that keeps jazz moving forward as a living tradition. As improvising bassist Mark Dresser observed, "A tradition is not a static set of principles in which conformity produces the essence. It is a living relationship, a personal dialogue in which a not too reverent attitude towards the past informs the future" (Dresser 2000, 251).

As discussed above, Katz's album *Zen* strained at the confines of the jazz tradition in that it contained compositions incorporating elements of 20th century and common practice era classical, Latin American, flamenco, and klezmer music, as well as the proto-free-jazz-rumba-freak-out "Montuna." His pioneering efforts highlight the dynamic

tension that exists between individual creativity and the weight of genre based musical tradition. In my research, I came across a poem that seems apt (Katz, 1958):

Tradition is a terrible tyrant.

Memory, man.

It's better to live in the moment.

I am eating this sandwich.

Know what I mean?

Listening to the eclectic mix of Katz's recorded work one can discern that he cast his net wider than many jazz musicians of the 1950s, thereby setting an important precedent for sonic experimentation on the cello within the jazz idiom. His compositions and improvisational voice did not adhere to the dominant bebop model. Instead, he carved out a space for the expressive qualities of the cello within jazz music by experimenting with different instrumentation strategies, as well as a variety of composition approaches. Katz pointed the way for future cellists to develop personal improvisation techniques, broaden the capacities of their voices, and move beyond the accepted jazz canon.

Although I found the Babasin and Pettiford bass path to be of historical and musical interest, Fred Katz's experience as a composer-cellist holds considerably more resonance for me. Gioia observes that "Katz was not the first to use the cello in jazz, but he was perhaps the first significant jazz player to play it without doubling on the

contrabass” and that Katz was “devoted to establishing the cello as a legitimate jazz voice, anticipating the later work of other dedicated cellists...” (Gioia 1992, 188-189).

While the idea of the cello as a “legitimate jazz voice” is not well explored in this all too brief commentary, Gioia refutes the parochial view of the cello as some sort of classical interloper, and alludes to intentionality as an important component of Katz’s effort.

Additionally, he acknowledges that Katz was the first to give the cello a voice, and that other cellists followed.

Similar to Katz, I was an autodidact on jazz cello. When I embarked on my journey of moving beyond classical cello to explore jazz and improvisation, I had a background in jazz piano but no experience playing jazz on the cello. There were few jazz cellists to emulate and, at the time, I was unaware of most of them. I was constantly seeking adaptive strategies for my existing cello skills in new musical environments. Studying the recordings of the earliest jazz cellists, while reflecting on my own musical development, helped underscore the reasons why attention to cello space and voice are paramount in my composition practice.

CHAPTER FIVE: MY COMPOSITION PRACTICE

In the following discussion of my composition practice, I will focus on pragmatic and aesthetic considerations regarding style, notation, instrumentation, and my use of improvisation. As my compositions are quite diverse, this chapter is intended to provide a general background for the detailed commentaries on each composition that are presented in chapters 6 and 7.

Style

I incorporate a wide range of musical influences, including Western art music, jazz, pop, rock, folk, and various world music traditions. Therefore, a convenient label for my compositional style remains elusive, because it does not fit neatly into one particular genre. While a number of the compositions in my portfolio can best be described as “jazz,” others may be more aptly categorized as “new music.” At times, the musical language of composition and improvisation may change within a single work. Jazz, as well as the indeterminacy experiments of the New York School, has contributed to a contemporary music culture that values improvisation and experimental music on the periphery of various traditions. In this era, jazz musicians may perform a fully notated piece, while a new music group might present a work that contains improvisational elements. Clearly, the border between these genres has become somewhat porous. However, since most of my compositions involve improvisation and have been

performed at jazz festivals and concerts, it may be most appropriate to situate them under the ever-expanding umbrella of “jazz”.

Notation

I utilize a range of flexible and adaptive notation strategies for my compositions. My classical training on the cello consisted of studying written music. Therefore, I am comfortable with the Western art music tradition of notating a composition in this manner. It is a very efficient way to precisely communicate key, meter, tempo, pitch, duration, dynamics and more. Standard notation is a *lingua franca*, clearly understood by all the musicians for whom I write. Nevertheless, no score completely encompasses a precise representation of the sounding music. Both classical and jazz notation rely on the interpretive powers of musicians for the music to come alive.

The notation of my ensemble pieces often conforms to the *jazz lead sheet* tradition. This approach enables communication of the essential structural features of the composition without micro-managing the improvised activities of individual performers. For the most part, I strive to notate what must be communicated, and avoid writing that which musicians would do instinctively. For example, I rarely notate drum parts, as I find it limits the creativity of the percussionist. I prefer to provide charts that show the “big picture,” rather than specifying desired drum patterns, dynamics, and so forth.

A number of my compositions employ a hybrid of Western art music score notation and jazz symbols. This approach is useful when I ask a musician to play something that runs contrary to typical performance practice, or when very independent

activities must be precisely coordinated between players. These scores contain detailed notation, as well as specific areas designated for improvised passages. In describing the parameters of improvisation I sometimes use a combination of standard musical symbols and verbal instructions.

Most scores for my solo cello pieces contain musical notation as well as written instructions. I find that text is the most effective way of documenting complex procedures that involve electronics, unusual tunings, idiosyncratic cello techniques and the like. Two of the solo scores are fully notated.

Instrumentation

This portfolio contains compositions for performance by solo cello; cello and piano duo; cello, drums, and guitar trio; cello, drums, and piano trio; and a quartet consisting of bass, cello, clarinet and piano. They were written with very specific improvising musicians in mind. I am cognizant of their particular musical abilities and incorporate that knowledge in my composition process.

Naturally, as a composer-cellist, a number of the ensemble compositions presented here reflect my thinking about how best to integrate the cello in jazz. Including the cello in an ensemble creates an unorthodox jazz instrumentation. There is a ripple effect on the more traditional jazz instruments and their commonly accepted performance practices. For example, my compositions often require that piano or guitar share equal responsibility with the cello for melody, harmonic accompaniment, and (where possible) the role of the bass. In this sense, a very flexible ensemble space for the cello is created.

This dynamic space is a direct consequence of the considerable timbral possibilities of the cello. To a large degree, this is a natural extension of having two highly contrasting forms of sound production available: pizzicato and arco. The significant difference between bowed and plucked articulations contributes to the cello's versatility within an ensemble. For example, by approximating the pizzicato voice of the walking acoustic bass with a swing feel, the cello can occupy the rhythm section role associated with that instrument. Additionally, by assigning a mixture of plucked chords, strums, and arpeggiated figures the cello can inhabit a guitar space within jazz. In contrast to the pizzicato cello voice, arco techniques open up a completely different world of sound. Most importantly, one can determine the duration and dynamic envelope of every note. The vocal qualities associated with arco articulations allow the cello to make extensive melodic contributions and improvise utilizing a wide range of timbres.

As previously mentioned in my discussion of space in chapter 1, the notion of instrumental space in Western art music is more fluid and interpenetrative than much of traditional jazz, and is more accommodating of the cello. While there is little stylistic resemblance between my compositions for small jazz ensembles and 19th century chamber music, the spirit of creating a non-hierarchical space for the fullest range of instrumental expression is quite apparent in my work.

At first glance, the instrumentation for solo cello seems self-evident: an open, uncluttered space. However, the absence of other instruments does present the compositional challenge of how to express harmony and counterpoint on a primarily monophonic instrument. Composer and educator Margaret Lucy Wilkins suggests that in

solo compositions these elements can be implied and characterizes this texture as “plurality within singularity.” Referencing composers as diverse as Bach, Bartok, and Berio, she points out their creation of an “aural illusion” whereby “several strands of musical materials are progressing simultaneously, with the instrument hopping between the various lines, picking out a few notes at a time to suggest the development of the individual threads” (Wilkins 2006, 236).

In my solo cello composition process I arrived at several different strategies to address how and when to imply a dialogic or multi-voiced texture for my instrument. Though my style obviously differs from Bach’s high baroque approach discussed in chapter 2, I sometimes use a monodic texture with implied polyphony to create the “aural illusion” discussed above. For example, single note lines can be distributed in both high and low registers to suggest the movement of melody and associated harmonic underpinning to the listener. I also create textures of true polyphony through traditional bowed double stops, and by strumming and plucking to produce chords. Finally, live electronic processing can produce a multi-voiced texture. One can create several virtual cellos that behave independently of each other in live performance. This technique, *looping*, involves making a digital recording of musical materials and then adding additional layers through the process of overdubbing, or simply playing back the recording as “accompaniment” while simultaneously presenting entirely new materials to the audience. All three approaches serve to orient the listener and contribute to the continuity and internal logic of the performed composition.

Improvisation and Composition

Although classically trained, I grew up surrounded by jazz, so it has been natural for me to gravitate toward a compositional practice and aesthetic that incorporates improvisation. Improvisation can be thought of as spontaneous composition, but for the purposes of this dissertation I will employ the term “improvisation.” For many with a traditional Western perspective, improvisation produces ephemera. Like the dark side of the moon, its presence has long been acknowledged, but often as an “other” to formal composition. Yet the argument can be made that most musical innovations have come about because of an improvised practice, which was later notated by composers and codified by theorists. As J. T. Ferrand wrote in his pioneering treatise:

...there is scarcely a single field in music that has remained unaffected by improvisation, scarcely a single musical technique or form of composition that did not originate in improvisatory practice or was not essentially influenced by it (Ferrand 1961, 5).

For me, composition and improvisation are closely related, interpenetrative practices that nurture and compliment each other in the process of making music. Composition is the creation of a musical entity, and the performance procedures are typically communicated to musicians through notation and/or oral instructions. Within that entity, some materials are more fixed than others. In a sense, a composition is a story. The telling of the story becomes more engaging when there are many variables available to the teller (in this case the musicians). Performative behaviour, which can run the gamut from interpretation to improvisation, makes the unique features of the story come alive and become a tale worth telling.

A crucial difference between composition and improvisation in my practice is the temporal experience of the process itself. Setting aside the clamour of deadlines, composition is not time-limited. It embraces the idea that a distinct musical activity is conceptualized *prior* to the act of performance. I appreciate the slower approach inherent in composition, and value its solitude and considered reflection. Composition allows one to contemplate and explore the implications of musical ideas. If a fork in the road leads to an unsatisfactory result, one may return and try a new path. When composing, time is suspended and its passage must be imagined.

Conversely, improvisation is a process that occurs in real time. Whatever a performer imagines, and has the technical ability to execute, becomes the music. Once a decision is made to take a particular musical path, there is no possibility of “erasing” what the performer or the audience has already experienced. The improviser is constantly responding to the exigencies of an ever-advancing present. Anticipating how music is experienced over time is very difficult within the immediacy of improvisation. The thinking that comes when composing is not necessarily *better* than improvisation, but may lead to insights regarding aspects of scale and structure that are difficult to achieve when improvising.

As a practical matter, certain gestures in ensemble music simply will not happen without notation. Collective improvisation will rarely lead to well-coordinated changes in texture or dynamics; the larger the ensemble, the more difficult to achieve. While solo improvisation can be as harmonically complex as any solo composition, in ensemble improvisation only the simplest of original chord progressions are likely to emerge and,

in my experience, often lead to a texture akin to a harmonic ostinato. Imitative counterpoint is extremely difficult unless there is a notated harmonic framework that all musicians share. If a short melody is repeated a few times, improvisers might arrive at a heterophonic rendition of it after a few iterations, but the sudden appearance of a thunderous unison statement of melody can reliably be achieved only through composition. Similarly, a rhythmically complex figure executed simultaneously on several instruments cannot be guaranteed in improvisation. In short, some facets of music are best conceived ahead of time by the composer, and not left to the collective will of an improvising ensemble.

Nevertheless, improvisation is both a crucial structural and aesthetic feature of my work, and offers invaluable possibilities that completely notated music does not. Designating a specific section(s) of the work where improvisation will take place, selecting which materials will provide parameters for improvisation, and determining which musicians/instruments will be involved, are all decisions made as part of my composition planning process. Stable elements of the composition, often fixed in notation, mingle with variable elements that emerge from improvisation. The fixed elements, and the influence they have on the variable, give the work its identity. The piece is more mutable than in the classical model of composition, and one performance is likely to be quite different from another. As Umberto Eco observed in his essay on the open work, “Every performance *explains* the composition, but does not exhaust it” (Eco [1959] 2004, 171).

Composition involves the imagination of music, not just the real time experience of the acoustic phenomena. Just as I can “hear” music during the act of notation, I also imagine the type of improvisation that might occur. These thoughts inevitably lead to how the improvisational elements need to be positioned in relationship to the notated passages. Further along in the process, I may test the structure to determine its viability. I evaluate whether a particular harmonic or modal structure lends itself well to improvisation and, if so, might it yield as much potential for improvisational variety as I had imagined, or are the possibilities quickly exhausted.

While maximizing the multivalent potential of a composition is important to me, there are additional reasons to value improvisation. Almost every intentional human activity has an improvisational component (Alperson 2010, 273). The ability to improvise assists us to negotiate new situations, and can add variety to familiar tasks. In the performing arts, improvisation can offer members of the audience an opportunity to experience aspects of creativity. First, they can enjoy the element of freedom on display (274), and secondly, they can “gain privileged access to the performer’s mind at the moment of creation” (274). As mentioned, I have the luxury of writing for accomplished improvisers. Although still bound to the parameters of the compositional material, the audible beauty of improvisation is located in the personal expertise and distinctive vocabulary of the improviser.

As discussed in chapters 1 and 2, leaving room for improvisation within a composition was once a common practice in Western art music. On the cello in particular, the cadenza section of the concerto form was the last vestige of a much

broader tradition of improvisation on instruments of the viol and violin family. Whether the cellist was in a more tightly restricted situation, as when realizing a figured bass accompaniment for a singer, or given the performer freedom associated with the cadenza, some part of the piece's structure was dedicated to improvisation. The tacit understanding amongst musicians was that this improvisation would not have occurred without the composer providing the scaffolding. With the ascendancy of composer control, the inventive powers of the performers were gradually cast aside in favour of the note-to-note precision demanded by the ever-increasing complexities of the score. This has remained the dominant compositional paradigm in Western art music, with some notable exceptions.

In the mid 20th century, the New York School (Cage, Feldman, Brown, and Wolff) introduced indeterminacy, which had its European echoes in the aleatoric works of composers such as Stockhausen and Boulez. Most indeterminate (and aleatoric) music structures are designed so that performers make choices within parameters defined by the composer. For example, pieces such as Morton Feldman's *Projection I* ([1950] 1962) or John Cage's *59 1/2 Seconds for a String Player* ([1953] 1960) employ graphic notations that display ingenious methods of relinquishing the composer's control over certain elements of sound, while establishing a set of rules that restrict the individual preferences of the performer. While this does permit a degree of performer freedom, the "spontaneity" allowed is quite limited compared to improvisation.

While thoroughly parsing out the differences between indeterminacy and improvisation is not within the scope of this dissertation, as a general observation I find

that the two diverge significantly. As George Lewis observed, the indeterminate notion of improvisation defines spontaneity as having no reference to history or memory (Lewis 2004, 147). In my experience, one cannot improvise without reference to style, memory, or instrumental technique. Even free improvisation stalwart Derek Bailey admits, “all improvisation takes place in relation to the known whether the known is traditional or newly acquired” (Bailey 1993, 142).

In my compositions, I have largely eschewed the strategies associated with indeterminacy. As previously acknowledged, I have been influenced by jazz (and some other improvising traditions). In contrast to indeterminate works, the structure of most jazz compositions is designed to encourage idiomatic expression, where the performer is free to introduce their personality, stylistic references, and totality of instrumental technique. Likely, this comes from the historical origins of jazz music, which arose within a community of improvisers.

Jazz inherited a number of ready-made forms from popular music that can be used as templates for generating new compositions. One can borrow a familiar harmonic sequence, then change the melody or re-harmonize using chord substitutions in order to produce a new piece. This was the dominant approach from the 1920s through 1940s. There are dozens of jazz tunes that utilize, or elaborate on, the harmonic sequence of “I’ve Got Rhythm.” Composers such as Jelly Roll Morton and Duke Ellington did create original forms, but they were the exception rather than the rule. Later, with bebop and its successor styles, the invention of novel harmonic sequences that were not elaborations of the blues or Tin Pan Alley song forms became a more common practice. Regardless of

provenance, the jazz tradition found an elegant way to clearly delineate and balance the competing impulses of composition and improvisation. A melody is set to a harmonic structure, which establishes a cyclical form. The form repeats while new melodies are improvised, and the original melody is often restated at the close. Such forms have a long history. The baroque *chaconne* also employed a similar model of harmonic cycles and melodic variation.

Although ubiquitous in jazz, the cyclical form is just one of the methods I use to create an improvisational section within a piece. Some of the structured improvisation in my work can best be described as “linear” in form. This approach includes notated passages as well as sections designated for improvisation. These improvised sections are “open,” as their length is not predetermined. Furthermore, these improvisations typically do not occur in relationship to a repeating formal structure, be it harmonic, modal, or rhythmic, as they would in a cyclical form. For example, an improvisation can precede a notated passage or, alternatively, materials from a notated passage may serve as a jumping off point for improvisation. Additionally, improvisation may be interpolated as a means of transitioning between two or more distinct notated sections.

There are also compositions that combine the cyclical and linear approaches, as they need not be mutually exclusive. While a piano improvisation may occur over a cyclical form, it can be followed by an open-ended cello improvisation that transitions into a final section of notated material. The over-all architecture of the piece is linear because its entire form is never repeated. However, cyclical forms of composed and improvised material can be interpolated *within* the linear structure.

In addition to its structural function, I also use improvisation as a method for generating compositional materials. Historically, I have done most of my composing at the piano. There are many reasons why the piano is an excellent instrument for the composer. It is well suited for counterpoint because the two hands can be assigned rhythmically independent lines; the piano's polyphonic capabilities make it ideal for outlining harmonic progressions; and, the keyboard layout provides a visual reference for a passage prior to its notation.

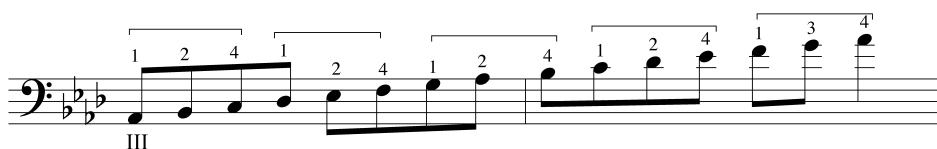
Upon determining that my focus for this dissertation was cello space and voice, I decided to take a sabbatical from writing at the piano and generate composition ideas by improvising on the cello. As part of my practice routine, I began to make a point of setting aside time to just "play," without any particular technical goal in mind. If something struck me as potential composition material, I would stop and make a quick recording so that I could later go back and listen. This proved to be a fruitful approach.

When improvisation is used as a generative process, emergent musical ideas often have somatic characteristics that are based on the instrument through which they originally gained expression. While the particular instrument does not entirely determine the creative output, it can act as a filter that encourages some avenues of exploration and inhibits others. The example of exploring scales (described in detail below), illustrates just one way that the physical reality of the cello can influence the expression of musical ideas.

The musical language of improvisation is based on the techniques available to the performer and requires a thorough understanding of the cello's topography. To this end, I

have experimented with various ways to expand my improvising vocabulary. One fruitful area of exploration was to play scales in a single position, skipping inconvenient notes that required shifts. This led to a greater familiarity with which pitches lay “across” the instrument in all positions. Additionally, dispensing with certain shifts in these “amended” scales increased my playing velocity. As an illustration, a two-octave Ab major scale requires five hand positions and therefore requires four shifts. This scale also requires three different hand dispositions/finger combinations when it moves from position to position: 1 2 4 extended, 1 2 4, and 1 3 4 (see figure 7.) Each hand position is indicated with brackets.

Figure 7: Standard fingering for 2 octave Ab major scale



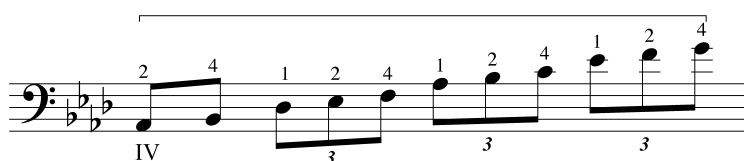
An amended Ab major scale skips two different notes; Db in the first octave, and Eb in the second. It is easier to move across the cello rapidly because it only requires two hand positions. Also there are only two distinct hand disposition/finger combinations: 124 extended, and 134 (see figure 8.)

Figure 8: Fingering for amended 2 octave Ab major scale



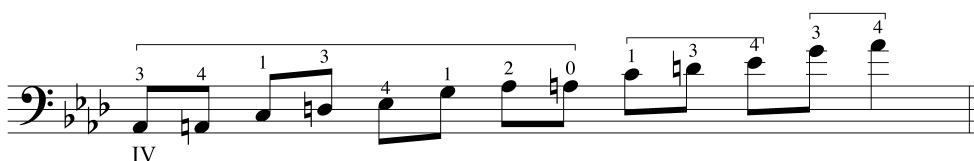
Another approach is thinking of the Ab major scale as a collection of pitches and playing across the instrument to maximize the number of possible notes played in a single hand position (see figure 9.)

Figure 9: Fingering for single position gesture in Ab major



I have also experimented using harmonics and/or open strings to maximize the number of available notes available in one position, even when it meant altering the pitch content of the scale. By substituting D for Db, the Ab major scale can readily be transformed to the Ab Lydian scale, which is more useful in a jazz context. Furthermore, a two-octave Ab Lydian scale requires three shifts instead of four, which is ergonomically efficient. Including open strings allows more time to shift positions, as well as the creation of unusual scales with distinct colours. Below is a scale derived from Ab Lydian that incorporates the open A string as a “foreign” note. With its atypical interval content, this scale already seems to suggest a melody (see figure 10.)

Figure 10: Fingering for Ab Lydian flat 2 scale



While the initial impulse behind these scalar explorations was to play more rapidly, I also found the omission of certain notes and the addition of others sonically intriguing. The musical result is efficient for the hand and contributes to an idiosyncratic, “cellistic” vocabulary of improvisation. Ultimately, I began to derive melodic patterns from these innovative scales that provided composition ideas. As Uitti succinctly comments about her experiments performing with two bows, “The mind inventing the techniques, and the techniques reinventing the mind” (2000, 69).

Generating compositional ideas at the cello revealed idiomatic possibilities that would not have arisen while composing at the piano. It also led to different value systems and priorities within the composition process. For example, harmonic relationships are so readily achievable on the piano that I tend to arrive at chord progressions first, and then experiment with melodies that fit within the progression. The result is that harmony “frames” the melodic thought. Conversely, when improvising on the monodic cello, melodies often emerge first. These melodies have certain “freewheeling” qualities, as they are unconcerned with harmonic context. In terms of harmonic thinking, the cello’s repertoire of three-note and four-note chords often led me to simpler harmonic progressions, which were more triadic in nature. Nevertheless, I discovered an alternate harmonic complexity in the juxtaposition of unrelated chords that were valued for their sonorous qualities more than their relationship to functional harmony.

Perhaps most importantly, I have a strong proclivity for developing a composition based on a particular timbral quality of the cello. Looking at the genesis of my solo compositions in particular, the creative process often starts with investigating unusual

cello sonorities. From there I turn to developing techniques that exercise more intentionality and control of these sounds. Subsequently, a composition constructed from these new sonic materials takes shape. The protean nature of the cello voice, cultivated by various idiosyncratic playing techniques, can lead me to sounds derived from many different world music traditions. For instance, the slackened strings of my *scordatura* tunings led me on a path towards compositions using quarter-tone pitches that evoked the oud and *maqam* tradition.

As both composer and performer on the cello, the generative idea is, in a sense, material “owned” by the cello. I prefer to keep this content on the cello, and build the contributions of the other instruments around it. This way, an idea improvised on the cello, whether it has its origins in experimenting with voice or is more conventional musical material, directs my focus to developing cello space within a composition early in the process.

Even though a cello-generated improvisation is the inception point, it rarely leads to an entire composition. I often take materials conceived on the cello to the piano in order to elaborate ideas. While a melody might come to me quite quickly while improvising at the cello, the piece will realize its harmonic potential after further exploration at the piano. Computer notation software with a piano keyboard interface is also an invaluable tool. While I prefer to use my imagination rather than playback capabilities for orchestration, a computer does let me experiment with contrapuntal textures of rhythmically independent voices that are beyond my technical abilities as a pianist. Furthermore, some materials generated by cello improvisation can be further

expanded through a variety of *a priori* composition techniques associated with 20th century composition such as retrograde inversion, isorhythmic structures, or the superimposition of meters.

Improvisation generates an abundance of ideas and potential materials. Once a musical idea is banked in memory, it is typically returned to over the course of several practise sessions. Following my intuition, the ideas worth repeating are explored and particular elements gradually crystallize in this process. It eventually becomes clear that some strands belong together and they become the anchoring points of a composition. Other ideas that have been generated may not fit well within the work, but can be quickly sketched out and stored for future use.

What follows in chapters 6 and 7 are commentaries on each composition that are intended to illuminate the key features of each piece. For convenient reference, each commentary is immediately followed by the score.

CHAPTER SIX: ENSEMBLE COMPOSITIONS

It's Not What It Was

Occasionally, melodies arrive spontaneously through the rhythm of spoken language. In this case, the phrase “it’s not what it was” inspired the opening motive. It is a beautiful melody on the cello, and I could immediately imagine the chord progression it suggested. “It’s Not What It Was” is the most classically inflected of the ensemble compositions, the stylistic character of the piece coming into focus when I moved to the piano.

Both cello space and voice closely resemble what is found in the Romantic literature for cello and piano by the likes of Brahms, Chopin, and Franck. The cello is treated as a melodic instrument using its traditional *bel canto* voice. The entire melody is on the upper strings. At the melodic peak, occurring at measure 15, the voice of the cello is particularly brilliant in this register of the A string. From here, the cello becomes darker and quieter as the melodic line descends continuously to the end of the piece. While the cello plays long, sustained melodies, the piano plays quarter notes consistently displaced by an eighth note. This type of syncopation is often found in music from the 18th century through the late Romantic period. It was used to create a sense of forward propulsion and lend emotional urgency to rhythmically simple melodic lines.

This composition employs harmonic language from both the late Romantic era and modern jazz practice. There is more extensive use of pedal point than is typical in the jazz tradition (measures 3-6, 16-18, 19-23). While diminished 7th chords over various

scale degrees can be found in jazz, the alternate bass notes are usually in the same diminished scale family and are typically used for creating specific voicings for V7 b9 chords. Diminished 7th chords over pedals also have the capability to resolve in unexpected ways, as in measures 19-23, which resolve in B minor rather than C minor.

Perhaps the most unusual progression is the unprepared modulation that occurs at in measures 18-20. Here F#7 sus4 moves through C sus4 to C minor, rather than to B. The F natural in the melody is a continuation of a chromatic descent that begins at measure 16. This chord sequence is oddly satisfying, and it certainly travels beyond the harmonic universe of Chopin. In an additional non-Romantic gesture, changing the meter from 6/4 to 9/4 in measures 4 and 6 increased the variety of the harmonic rhythm. This imparts a stillness to the music that I associate with post-minimalists like Arvo Part and John Adams. These periods of harmonic stasis provide a sharp contrast to the arrival of the second theme at measure 13, where the rate of harmonic change increases.

In terms of notation, "It's Not What It Was" is fundamentally a piano score that incorporates elements of a jazz lead sheet. It was not necessary to notate a separate cello part because the piano score is sufficient for rehearsal purposes. If the piece were intended for a classical cello and piano duo, the orchestration, dynamics, and articulations would be more detailed. While the standard chord symbols employed are designed for the jazz improviser, the piano part is notated precisely for certain chord voicings and to describe the rhythmic feel. For example, the chord at measure 4 is much more dramatic when played with just three notes (B G A#), rather than the five notes (B G Bb Db E) called for by the chord symbol G dim7/B.

Measure 15 contains a vertical sonority that highlights the shortcomings of jazz notation in relationship to the complexities of this hybrid harmonic language. While F min7 b5 (13) accurately describes the *collection* of specific notes; the chord symbol does not adequately illustrate the *function* of the chord. If one notates the chord as a dominant 13 with a flatted fifth and raised ninth, then there is no third in the chord. This would call into question its dominant nature. The melody notes are in the same diminished scale family as a diminished 7th chord built on the bass note of F. The Eb in the chord is not. If one swaps the F for Eb, then an inversion of vii dim7/I in the key of Eb is created. In the classical literature, this progression can resolve to either Eb major or minor. F# and A# are enharmonically common to both Eb minor and F# major, which explains the acceptability of the resolution to the F#9 sus4 chord in measure 16. The F in the bass has a stronger resolution by step than a chord built on Eb that resolves by a leap of a third. While F dim7 over Eb would be functionally correct, it is not sonically gratifying. As a result, it is crucial to write exactly which notes are played on the piano, rather than leaving it to interpretation of the chord symbol.

I experimented over time with different ways to structure the composition in terms of orchestration and improvisation. Structurally, this piece has much in common with contemporary jazz practice. The melody is accompanied by a cyclical harmonic progression, which provides a foundation for improvisation, and the ending is a truncated version of the original thematic materials. Nevertheless, there is more procedural detail than the average jazz lead sheet. The piece begins with an open-ended solo piano improvisation that serves as an introduction. The only controlled aspect of the

improvisation is that the pianist must arrive at the left hand figure in measures 1-2. The cello, accompanied by the piano left hand in measures 3-12, states the melody. Upon the repeat, the piano doubles the cello melody and continues the chord accompaniment as written through measure 23. The chord progression of this 29 bar structure is repeated and serves as the accompaniment to a cello improvisation in B minor. At the end of the cello improvisation, the piece modulates to C# minor. The piano improvises over the same 29 bar progression while the cello provides bass accompaniment. Measures 47-50 are an open improvisation where piano and cello negotiate a return back to the original key of B minor. Upon the D.S., the melody returns in truncated form (skipping the first ending) and moves on to the coda, which resolves to C major.

“It’s Not What It Was” occupies a liminal area where classical music and jazz overlap. It was composed with improvisers in mind, although the musicians must be sensitive to the aesthetics of the late Romantic era. Cello and piano must both maintain an appropriate tonal quality and not allow jazz or blues influenced improvising vocabulary to infiltrate the piece. “It’s Not What It Was” evokes the nostalgic melancholy of a particular era by communicating a feeling of loss, accompanied by the warmth associated with recollecting things past. At the same time, the harmonic rhythm created by changes of meter, the unexpected chord resolutions, and the energy associated with improvisation all contribute to a modern sensibility.

IT'S NOT WHAT IT WAS

MATT BRUBECK

OPEN PIANO IMPROVISATION/INTRODUCTION
LEADS TO LEFT HAND FIGURE

CELLO MELODY

The first system shows a grand staff in D major. The left hand begins with an improvisation/Introduction, indicated by a box containing a stylized 'S' symbol. The right hand has a whole rest. The system concludes with a 'CELLO MELODY' in the right hand, which is a single eighth note G4.

B MIN

G DIM7/B

The second system continues the piece. The left hand plays a rhythmic eighth-note figure. The right hand has a whole note chord B minor (B3, D4, F4) in the first measure, followed by a diminished seventh chord G dim7/B (G4, Bb4, D5, F5) in the second measure. A box with a stylized 'S' symbol is above the first measure.

B MIN

G DIM7/B

The third system continues the piece. The left hand plays a rhythmic eighth-note figure. The right hand has a whole note chord B minor (B3, D4, F4) in the first measure, followed by a diminished seventh chord G dim7/B (G4, Bb4, D5, F5) in the second measure.

D/A

G MIN7(13)

The fourth system continues the piece. The left hand plays a rhythmic eighth-note figure. The right hand has a whole note chord D/A (D4, A3, C4) in the first measure, followed by a G minor 7(13) chord (G4, Bb4, D5, F5, G5) in the second measure.

2 $C\#MIN7\ b5$ $F\#7SUS(b9)$ $F\#7(b9)$ $\text{[C#]$ 1 $B\ MIN$

PIANO DOUBLES CELLO MELODY 2ND $F\ MIN7\ b5$

$F\#\ 13SUS4$ $F\ MIN7\ b5(13)$ $F\#\ 9SUS4$

$F\#\ 7SUS(b9)$ $F\#\ 7SUS4$ $C\ SUS4$ $C\ MIN$

$A\ b/C\ (b5)$ $F\ DIM7/C$ $D.S. FOR CELLO SOLO$

TRANSITION TO PIANO SOLO

C#MIN
PIANO SOLO

A DIM7/C# C#MIN A DIM7/C#

E/B A MIN7(13) D#MIN7 b5 G#7sus(b9) G#7(b9) C#MIN

END G MIN7 b5 G#13sus4 G MIN7 b5(13)

G#9sus4 G#7sus(b9) G#7sus4 Dsus4 DMIN

Bb/D (b5) G DIM7/D

G DIM7/D

OPEN: RETURN TO B MINOR ON CUE

B MIN

(D.S. AL CODA)

4

53

FMIN7 b5

F#13sus4

FMIN7b5(13)

F#9sus4

F#7sus(b9)

55

F#7sus4

C sus4

C MIN

A^b/C (b5)

58

F01M7/C

62

rit.

Sniffin' Around

“Sniffin' Around” began its life as a pizzicato improvisation in the low register of the cello. Initially, I was not sure if it was an elaborate bass line or a melody. Ultimately, this ambiguity led to a contrapuntal texture where two lines are equal protagonists, neither melody nor bass.

The modal melody is derived from a pentatonic scale that is a variant of the heptatonic blues scale. Yet, unlike the blues scale, it has both major and minor thirds, and the final scale degree is the sixth rather than the seventh. In traditional blues performance this scale (D, F, F#, A, B) emerges upon occasion, but the major third to minor third tension is restricted to ascending melodies while in “Sniffin' Around” this semitone movement occurs in both directions. Like many of my novel scales and their derivative melodies, it has idiomatic qualities associated with cellistic thinking. For example, the A section melody in the bottom staff can be played entirely in first position and the placement of open strings facilitates the right hand pizzicato pattern.

A consequence of generating composition materials through improvisation is that one can escape the confines of typical melodic phrasing and metrical structure. I was not considering meter when improvising but, after the melody was sketched, I noticed that the entire phrase was thirty-four beats long. I experimented with notating the phrase in such a way that the pickup to measure 7 became a downbeat, but this realignment required two changes of meter and was abandoned. The solution was an eight-measure melody in common time, with two extra beats at the end. Ultimately, these empty beats proved to be pivotal.

The melody was entered into notation software in order to experiment with imitation. A strict canon at the octave starts in measure 3 and extends through measure 5. However, the upper part needed fresh material to remain engaging and not trail behind after the lower part ended. I returned to the cello and improvised another riff that appears in the top staff of measure 6. This new idea emerged in a different meter, 7/4. Subtracting 14 beats from the end of the A section, this material was inserted into measure 6 and overlapped with the end of the strict imitation in the upper part. The competing 4/4 and 7/4 meters emphasize the lack of a hierarchical relationship between the two voices, as neither part imposes its meter on the other.

The content of the B section was motivated by several factors. The contrapuntal treatment of the original melody in the tonal centre of D had played itself out. A bridge that modulated to another key, and a treatment other than imitation was needed for the two-voice texture. Having established 7/4 meter in the upper part at measure 6, the B section is composed in 7/4. Keeping this in mind, I improvised the riff on Eb dominant that appears in the lower staff of measures 10-11. There are two empty beats in measure 9 of the A section, before the repeat. The same empty beats exist in measure 10 (the second ending), and elide with the change of meter. This serves to tie the A and B sections together.

The two beat gap also raises an interesting metrical ambiguity. If one follows the upper staff in 7/4 from measure six through the second ending, the first two beats of measure 10 feel like they could be interpreted as beats six and seven of measure 8. This metrical displacement causes the Eb 7 chord, written on the downbeat of measure 11, to

feel like it occurs on beat six in 7/4. The composition technique of transitioning to a meter change rather than imposing a meter change that all musicians will feel at once, proved to be one of the intriguing elements of this piece. For the remainder of the B section the two voices maintain their separate identities, sometimes synchronizing, sometimes hocketing, and other times completely independent of each other. The blues lick in the upper voice of measures 12-13 contributes a dissonant interval relationship with the lower voice.

In measures 16-20, “Sniffin’ Around” abruptly changes character. A homophonic series of triads in the key of C, and a sweep up to the piece’s melodic peak brings us to the sudden appearance of A major, the dominant. The dotted quarter rhythm of the chords refers back to the equivalent rhythms in the A section melody. This 20 bar form became the improvisation structure. It embodies an aesthetic that I value: apparent simplicity with hidden complexity. While the harmonic rhythm is relatively static, the metrical structure is fluid: eight and one half measures in 4/4 followed by eight measures of 4/4, a bridge of six measures in 7/4 followed by five measures in 3/4. In the last five measures, the harmonic rhythm is at the dotted quarter, which creates a duple polyrhythm running across the triple meter.

As a final tweak to the form, an open ended, pizzicato cello improvisation was added. Without a meter, the rhythm is speech-like. The left hand techniques include hammer-ons, pull-offs, and liberal gliding around between notes. The cello voice employed during this introduction borrows equally from the vocal and guitar traditions of the blues, along with a helping of jazz bass. In the first chorus, the lower counterpoint

line is repeated as the bass accompaniment to the piano improvisation. For the B section, as well as the entire second piano chorus, the cello departs from the written material and improvises a bass line.

The second cello improvisation occurs on the form and occupies a solo space that one associates with piano and bass duos. Naturally, the vocabulary is different and includes bluesy double stops, as well as playing at the range extremities of the cello. Finally, there are a couple of pizzicato harmonic *glissandi*. Plucking a harmonic, letting it ring, and then shortening the string by moving up from the nut in the manner of a glissando raises the pitch of a natural harmonic.

In the end, what is most rewarding about this composition is its use of counterpoint. Two melodic instruments of equal importance weave a complex web of interactions in the written material. The goal was to create a framework for this contrapuntal dialogue to continue seamlessly into the improvisation. Often imitative counterpoint can feel like a stylistic import, and there is some risk of projecting a cutesy “jazz n’ baroque” feel. In “Sniffin’ Around” the modal pitch vocabulary results in a counterpoint that lacks harmonic implication. Consequently, this piece reflects a space associated with classical cello without directly referencing classical style.

Sniffin' Around

Matt Brubeck

Introduction

Piano

Open Cello Improvisation

Cello

A *a tempo* ♩ = 156

pizz.

4

7

B

2nd

2nd

10

12

14

16

C/E G Amin No Chord A

The Return of Dr. Spookulus

“The Return of Dr. Spookulus” was constructed from improvised bass lines and contains several features that are idiomatic to the cello. In the A section, the ostinato pattern established in measures 1-3 is executed entirely in first and half position. The major seventh plunge from B to C occurring at measure 3 prevents the chromatic ascent to the tonic from occurring in too high a register. The right hand plucking pattern from the stopped B to the open C creates a powerful accent because the adjacent strings are stroked in a continuous motion by one finger rather than being rearticulated. The fact that a major seventh rings out in the process produces a sonic quality that sets it apart from a bass line created on the double bass.

This ostinato arrived so naturally that the shift of meter was not apparent until notation began. The metrical structure (4+4+6) was intriguing because there are several ways to subdivide fourteen beats. The initial experiment with a melody that was two measures of seven did not prove satisfactory. Consequently, a less analytical approach was implemented. A recording of the three-measure ostinato was looped and I quickly improvised a six-measure pizzicato melody over it. The rhythmic independence of the resulting counterpoint was pleasing. The two voices established an alternating pattern of eighth note activity. The only point where quarter notes are in lock step is from the last two beats of the third measure to the downbeat of the fourth measure.

The guiding principal behind measures 20-25 in the B section is to maintain the contour of the bass line, while shaving off the final beat. This generates a feeling of harmonic acceleration as the metrical structure proceeds from measures of seven, to six,

to five beats. At measures 26-27, the identical rhythm found in measures 1-2 is re-established in 4/4. However, in the final 6/4 bar before the repeat, the original figure is hocketed between the upper and lower voices. In addition to the metrical variations, section B is harmonically darker and moves through a number of tonal centres before arriving at the Db7 chord that stretches from measures 24-28. For example, the diminished F# A C D# G# chord found in measures 20-21 produces a strikingly dissonant vertical colour when accompanied by the C#s in the bass line.

Section C opens identically to section B. However, the harmony and meter remain static for four measures. The fresh colour introduced at measure 31 is a series of motives based on the rhythm of the treble melody in the A section. The interval between the last two notes of each motive widens, revealing in measures 31-34 the following sequence: tritone, perfect fifth, augmented fifth, and major seventh. In measures 33-35 the metrical scheme and rhythm of the original ostinato returns with new pitch material. The ascending semitone line in the bass is complimented with descending quartals based on Lydian harmony, resulting in an unusual cadence to F# minor.

This seemed the natural place to return to the top of the form, which meant modulating from F# minor to D minor. I experimented with standard methods of return. Some version of an A7 chord, with an F in the melody, was the most obvious option for a dominant function sonority. In the end, the non-functional harmony sequence of F# minor, F minor, to D minor was chosen because it seemed more in character with the wry humour of the piece.

Taking the customary jazz composition approach, the form for the exposition of the melody became the form for improvisation: A B A C. Despite the unusual section lengths (19 measures in section A, 9 in B, and 8 in C), as well as the 17 meter changes occurring in the span of 55 measures, the form proved to be memorable and a viable foundation for improvising. The form is not altered until the final iteration of the melody after the improvisations: A C Coda. The coda provides a brief recapitulation of the A section material and ends with a big-band-like “stinger.”

“The Return of Dr. Spookulus” was notated using a piano score format, without creating a specific cello part. This allows the piano and cello comparable degrees of freedom, so that orchestration is variable and can be determined during each performance. Like other works for this duo, this piece embraces an equal partnership between cello and piano. Any of the bass or melody parts can be played either arco or pizzicato on the cello. Sometimes the cello takes the bass line, while at other times it is in the piano only, or doubled by both. This same flexibility holds true for the melodies. The only constants in every performance are that the first and second ending chords are played by the piano only, and the melody of the second ending is performed on the cello arco one octave below written, with the piano doubling at pitch in measures 33-36. Additionally, the piano score format was useful because there are very specific chord voicings and bass lines that are key to the cohesion of the piece. It would be challenging to improvise over shifting meters without the specified bass line as a consistent guide. The chord symbols in the score are included primarily as loose indicators for improvisation, and do not necessarily represent the sounding harmony.

As the title implies, the character of the piece is a light-hearted romp. “The Return of Dr. Spookulus” is meant to evoke the campy-macabre atmosphere one might encounter in a Vincent Price film. Jazz and blues clichés could be used when improvising, although they are somewhat de-contextualized by the complex metrical structure of the form. Working with a sense of irony and playfulness provides the cello greater freedom of timbral expression. While some of the written material uses standard methods of arco sound production, there are improvised sections that use *sul ponticello*, *martelé*, and *col legno battuto*. The pizzicato techniques employed while accompanying the piano include a hard-hitting attack where the string rattles against the fingerboard, as well the occasional strummed chord. It is gratifying to use so many different facets of the cello voice within one composition.

THE RETURN OF DR. SPOOKULUS

MATT BRUBECK

SWING
♩=128

The musical score is written for piano in 4/4 time with a swing feel. It consists of four systems of music, each with a grand staff (treble and bass clefs). The first system includes a first ending bracket labeled 'A' with a fermata. The second system begins with a measure rest in the treble clef, marked with a '4' below the staff. The third system begins with a measure rest in the treble clef, marked with a '7' below the staff. The fourth system begins with a measure rest in the treble clef, marked with a '10' below the staff. The bass line is consistent across all systems, providing a steady accompaniment. The melody in the treble clef is primarily composed of eighth and quarter notes, with some rests and dynamic markings like *mf*.

2

15

17

F#07(9)

p

1

GLYDIAN

F#07(9)

GLYDIAN

20

p

B

E-9 b13

D7(#9)

21

p

22

p

23

p

2 F#07(9) GLYDIAN F#07(9) GLYDIAN 3

29

31 F#07(9) GLYDIAN F#07(9) GLYDIAN

33 F#07(9) D13

35 F#- Cm7(b5) Fm7(b5) F#- F- (D.C. AL CODA) HEAD OUT GO TO 2ND ENDING SOLOS ON FORM ABAC

37 Dmi(Δ7)

What Now?

Strummed quadruple stops are unusual in the cello literature. However, chords have long contributed to my composing and improvising voice, and are the generative idea for “What Now?”. The F# minor 11 involves a very fast strum, while the Eb major 7 #11 chord is played with a slower, more ringing articulation. The upper voices of the chords expand to a perfect fourth and then contract to a major second, creating the sense of open and closed voice leading. The timbral presence of these particular chords enables the cello to jump out of the trio’s texture.

The “What Now?” chords engendered several noteworthy features of this composition. While imagining the chords, I developed a melody at the cello that led to some unusual chord/scale relationships. The A section melody is entirely constructed from an octatonic scale, whereas the pitches B and E in the F# minor 11 chord are not in this same scale family. Neither of the two chords is dominant or diminished, as one finds in most jazz compositions that employ octatonic harmony. (A more typical treatment of octatonic melody with dominant chords appears in measure 44.) Additionally, the repeating “What Now?” chords have a rhythmic function. At the beginning of the piece, the drums and cello enter together on “the and of one.” The intent is to render the true downbeat of the 4/4 meter somewhat mysterious to the listener. Finally, giving chords to the cello permitted experiments with orchestration. When the piano states the melody as a single line at letter A, there is a subversion of jazz convention. Instead of the piano taking over the chords, they remain on the cello. In fact, the pianist’s left hand is used to dampen

the strings of the piano, which imparts a somewhat muted sound and *secco* quality. At A2 the piano takes up the chords and the cello plays the melody pizzicato.

The notation for “What Now?” resembles a jazz lead sheet, but moves through the sequence of events in the manner of a score. Unlike most jazz tunes, the form of the composition and the form of the improvisation differ substantially. “What Now?” contains cyclical forms that occur within a fundamentally linear structure. Composed sections are followed by various open-ended episodes of improvisation in a designated order. “What Now?” progresses from composed section A to a re-orchestrated version of A; to composed section B; to a cyclical improvisation on the structure of B; to a linear improvisation at C; morphs into composed section C; and concludes with composed section D. The cello space is highly mutable, as the function of the cello changes frequently through the piece. Its role includes chord accompaniment, melody and counter-melody, written bass line and walking bass, as well as an improvised solo.

The solo form for each instrumentalist is distinct and does not necessarily repeat the harmonic progressions associated with previously stated melodies. It works to the advantage of both piano and cello to divide their respective solo areas into discrete sections. The piano improvisation at B is a 12 bar cyclical progression that is well suited to accompaniment by walking bass and hard swinging drums. In contrast, the cello improvisation at C begins with a pulse that gradually fades away. The suggested piano accompaniment is a series of add 9 chords over an F# pedal. The score indicates the cello should start with harmonics, and that the pianist should become less attached to the notated F# pedal and parallel chords texture as the solo develops. The cello solo structure

is denoted as “open,” because it is of indeterminate length. The harmonic underpinning is merely a recommended starting point, rather than a specific form. In the recording, the piano and drums eventually drop away entirely during the cello improvisation. The F# pedal is re-introduced by the piano towards the end of the cello solo. The cello uses the top of each chord as a melodic cue for the D section, which is a coda derived from an extension of the harmonic ideas of measures 11 through 18.

“What Now?” owes much to experimentation with strummed chords on the cello, and also reveals the influence of Thelonious Monk. The changes on the B section contain a number of dominant chords that move by steps or thirds, a harmonic motion commonly found in Monk’s music. The ascending piano line that appears in measure 13 and the fourths high in the piano right hand at measure 16 are both a nod to Monk’s piano introduction to “Well You Needn’t.” The final chord, roughly a curious F minor chord with both major and minor sevenths superimposed, is akin to the harmonic contradictions that Monk employed in his chord clusters. What began as an exploration of an unusual polyphonic texture for the cello developed into multiple areas of melodic and orchestral invention. Despite its formal complexity, “What Now?” seems to unfold organically, like improvisation itself.

WHAT NOW?

MATT BRUBECK

SWING
♩ = 180

CELLO CHORUS/ PIANO MELODY AT A

REPEAT AD LIB.

First system of musical notation, featuring piano accompaniment. The right hand has a whole note chord F#-11, and the left hand has a whole note chord EbMa7(#11). This pattern repeats in the second measure. The system concludes with a repeat sign and the instruction "REPEAT AD LIB."

Second system of musical notation, marked with a circled "A". It shows the piano and cello parts. The piano part has a melody in the right hand and accompaniment in the left hand. The cello part has a similar accompaniment. The system starts with a measure number "5" in the left margin.

Third system of musical notation, including piano and cello parts. The piano part has a melody in the right hand and accompaniment in the left hand. The cello part has a similar accompaniment. The system starts with a measure number "9" in the left margin. Above the piano part, the chords F#-11, EbMa7(#11), DbMa7, C7, and F-7 are indicated. Below the piano part, the instruction "PIANO AND CELLO TOGETHER" is written.

Fourth system of musical notation, showing piano and cello parts. The piano part has a melody in the right hand and accompaniment in the left hand. The cello part has a similar accompaniment. The system starts with a measure number "13" in the left margin. The key signature changes to one flat (Bb) in the final measure.

2

WHAT NOW?

17

PIANO ONLY



A2 CELLO PIZZ MELODY 8vs

21

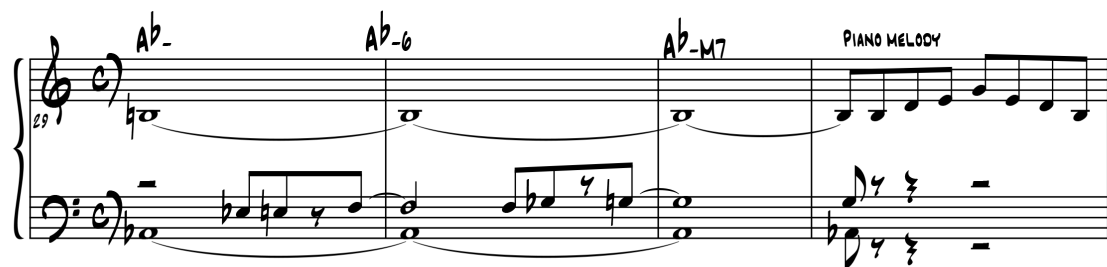


25



29

A^b- A^b-6 A^b-M7 PIANO MELODY



WHAT NOW?

3

Musical score for piano, measures 33-44. Measure 33 is marked with a circled 'B' and a piano dynamic. Chords above the staff are Ab7, A7, Ab7, A7, Ab7, and Db. Measure 44 is marked 'REPEAT AD LIB.'

REPEAT 12 BAR B SECTION CHANGES FOR PIANO IMPROVISATION
GRADUALLY COLLAPSE FORM TO ARRIVE AT C

Musical score for piano, measures 45-48. Measure 45 is marked with a circled 'C' and a piano dynamic. Chords above the staff are Dadd9, Dbadd9, Cadd9, Dbadd9, and Dadd9.

OPEN CELLO IMPROVISATION

CELLO CUES NEXT SECTION

Musical score for piano, measures 49-52. The staff contains diagonal slashes. A note at the beginning of measure 49 says 'PIANO AND DRUMS FADE AWAY AS CELLO COMES INTO FOCUS'

4

WHAT NOW?

CELLO MELODY PIANO AND DRUMS GO IN AD LIB.

$D^{\flat}ADD9$ $CADD9$ $BADD9$

$F^{\#-7}$ $E^{\flat}MA7(\#11)$ $D^{\flat}MA7$ $E^{\flat}MA7(\#11)$ $F^{\#-7}E^{\flat}MA7(\#11)$ $D^{\flat}MA7$ $E^{\flat}MA7(\#11)$

$F^{\#-7}$ $E^{\flat}MA7(\#11)$ $D^{\flat}MA7$ $E^{\flat}MA7(\#11)$ $F^{\#-7}$ $E^{\flat}MA7(\#11)$ $D^{\flat}MA7$ $C7$ $F-$

$F-6$ $F-MA7$

In A Hurry

“In a Hurry” was inspired by a physical gesture. It is one example of a composition idea based on the use of innovative scales with atypical interval content, as discussed in chapter 5. The A section melody is a series of notes played rapidly across the cello with minimal left hand position movement. The contour of the sextuplet lines in measure 1 is unusual. The typical shape of six ascending notes followed by six descending notes is not employed. Consequently, the rhythm feels more complex than it actually is. The choice of using seven notes up and five notes down causes the instruments doubling the melody to play with slight imprecision. The sonic result is a chaotic whirlwind. The C#-B motive that appears at the end of measures 1-3 feels like a natural answer to the sextuplets. The resolution to C in the eighth bar originated in cello ergonomics, and sounds appropriate because the sextuplets imply both altered dominant and Mixolydian scale sonorities.

The cello melody in measures 6 and 7 has a delicate and tuneful character not found in either motive of the opening. The texture changes to imitative counterpoint, with three entrances of the melody spaced at irregular time intervals. The final entrance of the melody, appearing in truncated form transposed by a major third, leads into the unison texture of the A section. These flourishes in measure 8 are again derived from hand patterns on the cello. They share the same interval relationship and fingering pattern as the first four notes of the melody introduced in measure 1, and proceed from the A to D to G strings in measure 9. All the material in the B section is played *rubato*, with the cello cueing the 32nd note runs, rather than a precise counting of the rests. Letter C marks the

reprise of the A section, but with an altered texture. Imitation is used again but rather than the clear delineation of the individual lines found in the B section, the staggered entrances create a churning rhythmic conflict between the sextuplets and 16th notes.

One composition aesthetic embraced is a degree of melodic accessibility, even though the formal relationship between melodic materials can be somewhat abstract. For example, the themes at A and B have very distinct characters. Yet, they both feel melodic because of the song-like structure. “In a Hurry” employs a conventional AABA form, comprised of sixteen rather than thirty-two measures. However, there is no typical repeating harmonic sequence, and the form for improvisation can be either cyclical or linear. All aspects of the notated work are available to the improviser, either as motivic or textural materials. Consequently, “In a Hurry” can be busy and florid, delicate and sparse, or quite rhythmically emphatic. It depends upon the predilections of the improvisers involved.

When writing “In a Hurry” I was thinking about the recordings of *The Jimmy Giuffre 3* (with Paul Bley and Steve Swallow). Like Giuffre’s trio compositions from 1961 and 1962, I wanted to write a piece with a striking character that provided concrete materials for the improvisers to use as a jumping off point, without dictating specifics regarding meter, pitch systems and so on. I also appreciated the treatment of the instruments in Giuffre’s music. Rather than having a hierarchy with traditionally defined roles (as was the case with Ornette Coleman’s free jazz quartet of the same period), Giuffre treated bass, piano, and clarinet as equal partners, each capable of carrying the melody. Sometimes the texture is imitative counterpoint. Other times the instruments

merge in a heterophonic texture. Perhaps the most visionary aspect is the role of the bass. Rather than “stepping out” and then returning to a rhythm section function, the bass in Giuffre’s trio remains in the foreground as much as the other instruments because it is no longer relegated to a strict timekeeper role. It is a space that one associates more with 20th century chamber music than jazz.

Piano, drums, and cello occupy a similar non-hierarchical, multi-faceted space in the recording of “In a Hurry.” There is no template for who is to accompany whom in the group improvisation. In the absence of a predefined harmonic or metrical framework, each musician must feel his or her way through the piece, effectively creating form through consensus. The notated materials provide hints for an improvisational approach and an emphasis on textural variety. For example, putting the drums in canon with the cello encourages rhythmic independence and allows the drums to occupy a musical space more typically associated with melodic instruments.

Several musical features of this composition are pertinent to cello voice and space. While there is a certain Scott Joplin quality to the motive on beats three and four, overall the thematic materials provided do not offer a particularly African-American flavour. Accordingly, the voice of the cello does not need not to depart much from the timbre of classical performance. On the other hand, having performed this piece in several instrumental contexts, one cannot predict exactly where this piece will travel in terms of stylistic orientation. The cello language imagined while composing, was one that moved in a flow of rapid gestures without reverting to the more typical scale patterns inherent in harmonically structured music.

The space the cello occupies in this piece is variable, somewhere along a continuum between new music and jazz. As with *The Jimmy Giuffre 3*, the cello is one of three instruments inhabiting a musical world where instrumental function is more dependent on the content of the particular piece than the traditional roles assigned by genre. The sextuplet figures on the cello are not meant to be virtuosic. The unison passages are not intended for precise synchronization. “In a Hurry” encourages the type of abandon usually associated with jazz, rather than the precision of chamber music. Nevertheless, “In a Hurry” eschews the language of traditional harmony-based jazz improvisation as well as the gestures associated with pulsatile free jazz music. Instead, it favours an improvising language based on the expansion and interplay of motives. The improvising cello is right at home in this musical space where genres overlap.

In A Hurry

Matt Brubeck

A $\text{♩} = 66$
octave doubling ad libitum

Piano

Cello

Drums

2

3

The musical score is presented in three systems, each corresponding to a measure number (1, 2, 3). Each system contains three staves: Piano (treble clef), Cello (bass clef), and Drums (percussion clef). The time signature is 4/4, and the tempo is marked as quarter note = 66. The Piano and Cello parts feature complex rhythmic patterns with sixteenth notes and slurs, and are marked with a forte 'f' dynamic. The Drums part provides a steady accompaniment with eighth notes and accents. The score includes performance instructions such as 'octave doubling ad libitum' and 'f'. The first system is marked with a box containing the letter 'A'. The second and third systems are marked with the numbers '2' and '3' respectively.

4

1. 6 6 6 6

5

2. 6 6

B loco

rubato *espress.*
p

P *rubato* *espress.*

p *rubato* *espress.*

7

cello cues each run

cello cues each run

cello cues each run

9

a tempo

a tempo

a tempo

Measure 9 consists of three staves. The top staff is in treble clef, the middle in bass clef, and the bottom is a guitar staff. The piano part features a melodic line with a slur and a fermata over the final note. The guitar part has a rhythmic accompaniment of eighth notes.

10 C

octave doubling ad libitum

f

f

f

Measure 10 features a piano part with a melodic line and a guitar part with a rhythmic accompaniment. The piano part includes a slur and a fermata over the final note. The guitar part has a rhythmic accompaniment of eighth notes. The tempo is marked *f* (forte).

11

Measure 11 features a piano part with a melodic line and a guitar part with a rhythmic accompaniment. The piano part includes a slur and a fermata over the final note. The guitar part has a rhythmic accompaniment of eighth notes.

12

The musical score consists of three staves. The top staff is in treble clef, the middle in bass clef, and the bottom in guitar-style notation. The key signature is one sharp (F#). The time signature is 3/4. The music features complex rhythmic patterns, including sixteenth-note runs and slurs. Measure numbers 6, 6, and 6 are placed above the treble staff, and 6, 6 are placed below the bass staff. The guitar staff contains rhythmic patterns with accents.

Poupée Mécanique

Locating unusual interval patterns within pentatonic scales is widespread in jazz improvisation. Naturally, this practice spills over into composition. The ostinato figure in the cello at the outset of “Poupée Mécanique” is an example. In this five note pattern, two ascending fourths are separated by a minor third, followed by a descent of a tone. The entire pattern is then chromatically transposed down a semitone. This particular ostinato was appealing because of its shifting tonality, as well as the slightly off kilter, mechanical quality due to its odd meter.

Moving the cello ostinato to the left hand at the piano, several melodic options were explored with the right. I arrived at a five-measure phrase that bore some interesting features. The ascent of a minor third followed by the descent of the major seventh is a distorted echo of the ostinato contour. The long tones that bookend the melody alter the modality and harmonic implications of the ostinato pattern. The E pushes the Bb pentatonic into the Lydian region, and the Ab gives the Bb pentatonic a dominant/Mixolydian sonority followed by a major 7th/Ionian sound. When chromatically harmonizing the melody, major thirds and minor sixths were the most gratifying. The resulting polytonal sonority is reminiscent of Eric Satie’s short piano pieces, where one has a sense that he is making wry commentary on the notion of tonality itself.

Recollecting Satie’s fascination with medieval and Renaissance composition techniques, I experimented placing the ostinato against itself in various prolation canons. Two were chosen for the harmonic implications of their interaction. In the first canon, at E, the cello imitates the ostinato pattern in the piano’s left hand at a duration ratio of 2:1.

This pattern of harmonic relationship repeats every two measures. The second canon, at F, also places the ostinato against itself, but this time in a duration ratio of 3:2.

Isorhythmic technique is also present at F, because a ten-note pitch set is permuted within the repetition of a twelve durational values. It takes five measures for the original vertical alignment of the two parts to line up.

These two canons produce hypnotic harmonic patterns and polyrhythmic relationships. Furthermore, they suggest that simultaneous tempos can occur within a piece. This happens in free improvisation, but is relatively rare as a composed parameter. The improvisation section is structured around the canons. A solo piano improvisation starts at D, accompanied by the ostinato pattern in the left hand. At E it continues in relationship to an implied slower tempo in the cello and drums. The piano and drums commence the second canon at F with a faster tempo due to metric modulation. With its much more dissonant harmonic character and polyrhythmic drive, the canon at F then becomes the structure for a rather turbulent and atonal cello improvisation.

Rather than have the melody at measure 8 return to end the piece, I opted for a completely linear structure. The ostinato is displaced by one eighth-note at G and creates a canon of semitones. When stated simultaneously by piano and pizzicato cello, a composite sound is produced that resembles neither instrument on its own. This curious texture becomes the perfect backdrop for a percussion solo. “Poupée Mécanique” concludes on the last two notes of the ostinato, “E – A.” It has the rather comical effect of stopping halfway through the pattern, like a machine when its gears have seized. The ascending fourth is also an oblique reference to typical tonal root motion.

“Poupée Mécanique” reflects my interest in the permutation of limited materials and places more emphasis on *a priori* composition techniques than most of my work. Its language is not particularly tied to a cellistic vocabulary of improvisation, other than the original ostinato idea. As with “What Now” and “In a Hurry,” “Poupée Mécanique” diverges from standard conventions of jazz composition by employing a linear approach to revealing its constituent parts. Another unorthodox feature is that neither piano nor cello accompanies each other during their respective improvisations. Instead, each instrument has a distinct part, which produces a multi-tempo simultaneity. The percussion part moves freely between the tempi of the piano and cello, and has the option of proceeding at a different pace all together. In addition to the harmonies of Satie, the stylistic influences of this music include the “temporal dissonance” of Nancarrow, and the isorhythm/prolation practices of Ockeghem. Of course, all three composers were crafting written music, and not using these techniques for structuring improvisation.

The fixed materials of the piece do not encourage the use of a jazz voice or improvisation vocabulary. The pizzicato articulations are not played in the manner of jazz bass, and the bowed melody is played *dolce* without a feeling of swing. The wild cello improvisation section is an appropriate space for *sul ponticello*, *glissandi*, harmonics and other techniques found in both jazz improvisation and new music. Of the pieces written for this instrumentation, “Poupée Mécanique” feels most like improvised chamber music. There is a great deal of prescriptive detail regarding how the piano, cello, and drums are meant to relate to each other. The spaces for improvisation are very distinct from the harmonic sequences or modal ostinatos typically found in jazz. Rather than leaving

accompaniment strategies up to individual musicians, much compositional thought went into fashioning highly individualized improvisations spaces for the instruments in a set order. While the featured improvisers can draw from their entire experiential vocabularies, the accompanists must use the limited materials provided by the score.

Regarding the title: the tender, but slightly disturbing, melody represents the frozen expression of an antique doll. It is worn and frayed by love. The ostinato propels the doll in awkward imitation of fluid human movement. Thus, the duration relationships of the canons are the sonic equivalent of the gear ratios hidden within.

Poupée Mécanique

MATT BRUBECK

$\text{♩} = 104$

Cello

Pizz.

PIANO

Vlc.

PNO.

(A)

Vlc. ARCO

PNO.

The musical score is written for Cello, Piano, and Violin. It is in 10/8 time and has a tempo of 104. The key signature has one flat (B-flat). The score is divided into three systems. The first system shows the Cello part starting with a pizzicato section, followed by the Piano part. The second system shows the Violin part and the Piano part. The third system, marked with a circled 'A', shows the Violin part playing arco and the Piano part. The Cello part continues with a similar rhythmic pattern.

2

Vic.  10

PNO.  10

Detailed description: This system contains measures 10, 11, and 12. The Violin part (Vic.) is in treble clef with a key signature of one flat. It features a melodic line with eighth and quarter notes, including a half note G4 in measure 11. The Piano part (PNO.) is in grand staff with a key signature of one flat. The right hand plays a melodic line with eighth and quarter notes, while the left hand plays a steady eighth-note bass line.

(B) Vic.  13

PNO.  13

Detailed description: This system contains measures 13, 14, and 15, marked with a circled 'B'. The Violin part continues its melodic line with eighth and quarter notes. The Piano part maintains the eighth-note bass line in the left hand and a melodic line in the right hand.

(C) Drums enter. Quiet brushes  16

PNO.  16

Detailed description: This system contains measures 16, 17, and 18, marked with a circled 'C'. A note above measure 17 indicates that drums enter with quiet brushes. The Violin part continues its melodic line. The Piano part maintains the eighth-note bass line in the left hand and a melodic line in the right hand.

Vlc. 19

PNO. 19

Vlc. 22

PNO. 22

(D)

Piano Improvisation.
Start with left hand as written

Vlc. 24

PNO. 24

(E)

Pizz.

Continue piano improvisation. After cello enters left hand *ad libitum*

4

Drums: Driving 3 against 2 time

F ♩ = 150

Cello improvisation

Vlc. 

27 Cue drums

PNO. 

Open

Vlc. 

30

PNO. 

♩ = 150

G Percussion Improvisation.....hit last two notes

Vlc. 

10

PNO. 

33

Zephyring

“Zephyring” grew from the juxtaposition of two distinct cello improvisation ideas: the pizzicato melody at letter A, and the plucked chord sequence at letter B. The cello melody at letter A emerged from exploring a fast, legato pizzicato articulation. Two notes on the same string are slurred together using hammer-on and pull-off left hand techniques. This legato sound is further enhanced by using the same right hand finger on the string crossings between the open D and stopped notes on the G string. Initially, the cello plays the melody alone in the low register. In measure 7 the melody jumps out of the bass into the higher range of the cello before its false resolution to the Bb chord. This melody recalls guitarists in the bluegrass tradition, who are prone to improvise in this legato manner in the low register of their instruments. The mandolin melody, introduced in the repeat of the A section, provides a satisfying descant line above the low melody and adds to the bluegrass flavour. The resulting contrapuntal texture is a non-hierarchical presentation of simultaneous melodies.

In contrast, the triple stop chords of measure 9 are the generative idea for the B section. These particular chords are plucked rather than strummed. Plucking keeps the rhythm precise, while the right thumb accentuates the bass note. The G and Bb chords make extensive use of open strings, while the G and Eb major chords are voiced as a stack of fifths. The entire chord progression is voiced with large intervals, which gives it an open sound. The chords also hold a degree of major/minor ambiguity. The only third is the D in the Bb major 7 chord.

The F# min11 chord in measure 15 was initially added for tonal variety, but a two measure shift in tonality was not satisfying. Therefore, the F# minor sonority was extended to measures 15-18, which created a ten measure solo form. The resulting harmonic stasis provides an interesting contrast to the preceding harmonic rhythm of two chords per bar. Additionally, this particular voicing of F# min11 offers a pleasing sound. Its outer shell contains a series of wide intervals, while the two top pitches are in a close interval relationship between the open A string and the B played on the D string. Furthermore, the F# min11 chord offers an atypical means of returning to the key of G, at the beginning of both the A and B sections.

As an overall observation about the harmonies in “Zephyring,” the cello and mandolin melodies emphasize plagal cadences in the A section, whereas the B section relies more on the repetition of quickly oscillating chords sequences that are non-cadential, and essentially modal in nature. The A and B sections also diverge in their metrical and rhythmic characteristics. The A section lopes along at a relaxed pace. The 5/4 time signature in measures 4 and 6 leave a graceful pause where the C add 9 chord sustains on the cello at the close of the first two phrases. The mandolin part ambles quite independently from the active cello line. The 8th and 16th note durations are only introduced for mandolin at measure 6. The most effective drum accompaniment for the A section proved to be simply stating the quarter note pulse on a cymbal. In contrast, the B section moves at an accelerated pace with no odd meters to break up the flow. The 6/8 meter, ostinato patterns, and forward propulsion are all qualities derived from West African music. Here the drums play with polyrhythmic drive.

One compositional challenge was to link the contrasting materials of the A and B sections. The piece possesses a pleasing stylistic duality, and seems to jump continents between North America and West Africa. By manipulating tempo relationships, I realized that a metrical modulation was possible between the quarter note pulse A section and the 8th note pulse B section by keeping the 8th note value constant. From a performance perspective, the pizzicato and left hand coordination required in the A section is very awkward at either too fast or too slow a tempo, so finding a common pulse suitable for both sections proved crucial in the construction of this piece.

The other element that integrates the two sections of the piece also arose from practical performance considerations. The ten measure progression at B is repeated at will, but the soloist needs to communicate when he or she is going to stop, so that all players can anticipate the metrical modulation back to the A section. This requires a cue at letter C that is always played by the soloist. The source material for this cue is an extension of the motive found in measure 7 of the mandolin melody. This proved to be the melodic glue that held the A and B sections together.

Once the relationship between the A and B sections was established, the next task was to determine the structure for improvisation. Would mandolin and cello both solo on the A and B sections or should each instrument take up a different section? A compromise solution was found. The cello must set up the chord vamp at B, so the mandolin solos first. After the mandolin plays the cue melody at C, the cello begins a pizzicato solo on the linear form of A, and then moves to an arco improvisation on the cyclical form of B. As a result of this form, “Zephyring” offers an abundance of options

not available to the cello in a composition with a single feel. In the A section the cello can use the legato pizzicato technique and employ a voice that draws from American folk music. In the B section the use of arco permits greater volume in relationship to drum activity, as well as enabling the velocity required to play the 16th notes.

Additionally, there are harmonic features advantageous to cello improvisation. Both G minor and F# minor are excellent keys because of the available open strings and natural harmonics. In the first six measures of the B section one can improvise using the Aeolian mode and never leave the G minor key implied by the chords. However, because the third and seventh of the G chord itself are missing, one can also briefly move to notes drawn from the G major or G Mixolydian scales. The B section progression is also conducive to “outside” playing. This is an improvisation technique pioneered by John Coltrane where one plays in a key that is distantly related to the tonality implied by the chord progression, often a half step above or below. On the cello entire scales can be played in thumb position, so the change in key has a corresponding single position shift as a tactile reference. Furthermore, “Zephyring” offers an interesting accompaniment space for the cello when supporting the mandolin solo in the B section. In the recording, the cello takes advantage of its fifths tuning to arpeggiate figures that evoke the entrancing polyrhythms of African guitar playing.

“Zephyring” is an excellent example of a multi-functional cello space within the trio setting. The cello part has composed pizzicato and arco melodies, improvised pizzicato and chorded accompaniment figures, and spaces for both pizzicato and arco improvisations. This is a great deal of variety for a short form composition. In a sense,

knowing the capabilities of the instrument from an improviser's perspective gave birth to the stylistic, formal, and textural aspects of the finished work.

ZEPHYRING

MATT BRUBECK

A $\text{♩} = 92$ NO MANDO 1ST X

MANDOLIN

CELLO

Pizz.

MDN.

Vc.

MDN.

Vc.

MDN.

Vc.

MDN.

Vc.

B $\text{♩} = 184$

MDN.

Vc.

EIGHTH NOTE STAYS THE SAME

Chords: G, C, G, C, B^b, E^b, F⁷, B^b, G/B, F/A, D^{MIN}7, B^bMAJ7, G^(ADD 9) (OMIT 3), B^bMAJ7, E^bMAJ^{7(ADD 9)}, F^{SUS}

MDN. **G^(ADD9) (OMIT3)** **B^bMAJ7** **E^bMAJ^{7(ADD9)}** **F^bSUS** **G^(ADD9) (OMIT3)** **B^bMAJ7** **E^bMAJ^{7(ADD9)}** **F^bSUS**

Vc. 11

MDN. **F[#]MIN¹¹** OPEN

Vc. 15

PLAY THIS MELODY LAST TIME TO CUE END OF SOLO

MDN. **G^(ADD9) (OMIT3)** **B^bMAJ7** **E^bMAJ^{7(ADD9)}** **F^bSUS** **G^(ADD9) (OMIT3)** **B^bMAJ7** **E^bMAJ^{7(ADD9)}** **F^bSUS**

Vc. 19

MDN. **G^(ADD9) (OMIT3)** **B^bMAJ7** **E^bMAJ^{7(ADD9)}** **F^bSUS** **F[#]MIN¹¹** TO TOP. EIGHTH NOTE STAYS THE SAME

Vc. 23

SOLO FORM: MANDOLIN B OPEN. CUE C
CELLO A. B OPEN CUE C
AFTER SOLOS D.C. AL CODA

MDN. 29

Vc. 29

Beignet Bounce

The music of New Orleans has a distinctive rhythmic flavour. The shuffle grooves employ the swung eighth notes of blues and early jazz, while clave patterns reflect an Afro-Caribbean heritage. “Beignet Bounce” is a New Orleans style blues that embraces the above rhythmic characteristics, although the majority of it is in 7/4.

I had been practicing a pizzicato technique in which a bass line could be articulated on the cello using the thumb on the C and G strings, while chords were plucked on the D and A strings with the second and third fingers. The intent was to fashion a rhythmically independent texture between two voices, rather than the more customary plucking of chords simultaneously. This Eb7 cello accompaniment figure in 7/4 appears in the two bar introduction section of the score. The clave pattern for the drums in the intro is also notated. This provides the percussionist an idea of how to organize the beat without explicitly dictating a drum set pattern. Like a traditional clave, it can be implied rather than stated. In the score, one can see how the “two” cello voices and the clave create a fascinating cross rhythm.

While working through this idea on the cello, the Eb7 accompaniment figure seemed to move quite naturally to Ab7. The emergence of such a traditional blues progression came as a surprise, despite its ubiquity in jazz. At this point, I moved to the piano to develop the melody and gravitated toward a simple riff on the I chord (measure 1) that also worked well on the IV chord by simply flattening the third (measure 5). Repeating this riff on the V chord proved unsatisfactory, so alternate melodic ideas were explored. Instead of the V chord, which typically appears at the ninth bar in a blues, I

opted for an accelerated harmonic rhythm by changing the meter to 3/4. The original blues riff returns in the last two measures of the form, but this time it is accompanied by rapid chord changes, before resolving to IV in the final measure.

One of the enjoyable qualities of blues composition is that the twelve bar structure is so malleable. In “Beignet Bounce” this allows for a range of harmonic features. The form is 14 measures on paper, but a closer look at the harmonic rhythm reveals a disguised 12 bar form. If the 3/4 measures (9-12) are grouped together into single measures of 6/4, then the form indeed becomes twelve bars. A typical blues would move to the dominant at the onset of the final four-measure phrase. Instead, there is root motion of a minor third followed by a fifth, as is found in John Coltrane’s “Giant Steps.” Curiously, the dominant chord (Bb7) is avoided altogether until the coda. At the conclusion of the phrase in 3/4 at measure 12, the B9 functions as a tritone substitution for F9. Taking into account this harmonic substitution, the progression at measures 12-13 reveals itself to be a series of dominant chords that descend by whole steps. This progression is all the more striking due to the acceleration of the harmonic rhythm. Starting on the second beat of measure 12, the chords change every two beats, thereby creating a hemiola that cuts across the bars notated in 3/4 and 7/4. This hemiola pattern is concluded with chords on consecutive beats, which provide resolution by half step to the subdominant on the downbeat of measure 14.

While the cyclical improvisation structure remains faithful to the blues, “Beignet Bounce” has a few arrangement intricacies. The introduction is inserted between the two statements of the melody. An open area of static harmony (Ab7) is included for a drum

feature in 7/4 before the recapitulation of the melody. The coda is an elaboration of the hemiola idea and introduces a repeating nine beat phrase.

The improvisation space for the cello in “Beignet Bounce” calls for a bass player approach. Therefore, the cello is played with a hard pizzicato attack, allowing the strings to slap against the fingerboard. At the beginning of the improvisation, the cello remains in the low register for as long as possible. The slow vibrato and amount of *portamento* between notes also mimic the double bass.

An intuitive path often beckons when working within an established form, like the blues. In this piece, there was little weighing out of alternate choices during the composition process. None of the meter changes, harmonic substitutions, or hemiolas were the result of conscious deliberation. Instead, “Beignet Bounce” flowed very organically from improvised idea to finished work.

BEIGNET BOUNCE

MATT BRUBECK

INTRO

GUITAR

CLAVE

CELLO

1

E^b7

3

5

A^b7

A13

A^b7SUS4

7

E^b7

C7ALT

9

FMIN7

A^b7

D^b7

B⁹

13

E^b9

D^b9

B7

A13

A^b7

AFTER 1ST MELODY GO TO INTRO
 AFTER 2ND MELODY CELLO AND GUITAR
 SOLOS ON FORM (1-14)
 OPEN DRUM SOLO AT 15
 PLAY MELODY ONCE AND GO TO CODA

15

A^b7 DRUM SOLO

2

Handwritten musical notation for two staves in 3/4 time. The key signature has two flats (Bb and Eb). The notation includes various chords and performance instructions.

Staff 1: The first staff contains two measures of music. The first measure is marked with a circled '2' and a square symbol containing a circle. The chords are Eb9 and Db9. The second measure is marked with B9, Bb9, and Ab9. The third measure is marked with Eb9 and Db9. The fourth measure is marked with B9, Bb9, and Ab9. The staff ends with a double bar line. A box labeled "END TIME RIT." is positioned below the staff.

Staff 2: The second staff contains two measures of music. The first measure is marked with Eb9 and Db9. The second measure is marked with B9, Bb9, and Ab9. The staff ends with a double bar line. A box labeled "EXTREME RIT." is positioned below the staff.

Punkeydoodles Corners

Like “Sniffin’ Around” and “Zephyring,” “Punkeydoodles Corners” is a composition with a melodic bass line. Unlike the prior pieces, this melody is arco, not pizzicato. If one chooses to ignore the audible Hendrix-like texture in the recording and focuses on the score, the cellistic nature of the piece comes to the fore. The cello line in the A section can be played entirely in first position, the string crossings are natural, and the double stops use open strings. The melody at measure 8 is also highly idiomatic for the cello. The opening A is a harmonic, which is a good place to orient the hand position. The 32nd note run in measure 12 requires dexterity and speed, but once the peak of the run in fourth position has passed, the rest of the passage can be played in first position in a standard pentatonic scale fingering using open strings. The speed required to get the desired bounce of the *spiccato* bow stroke determines the rate of the 16th notes and therefore the tempo of the composition.

When first improvised, the melody flowed quite naturally. Rhythmically, it feels like a relatively straightforward rock groove, but it has some unusual metrical changes. It seemed to be a four-measure phrase with seventeen beats. After some experimentation, I decided to think like a drummer and notate it in relationship to an imaginary backbeat feel. The resulting metrical structure became 4/4 + 5/4 + 4/4 + 4/4. This four bar melody is deceptive because apparently repeated materials are not actually repeated in relationship to the backbeat. For example, the five consecutive Bb notes occurring on the second beat in measure 2 appear again on the downbeat of measure 4. While measure 3 resembles measure 1, the motive is truncated by half a beat, which causes the rest that

occurs on beat four in measure 1 to materialize on beat three in measure 3. A rhythmically independent guitar line was also explored. However, the heavy hitting sound of the low guitar and cello in unison proved to be a more compelling texture, which was more aligned with the rock aesthetic I was seeking.

The B section has a more complex texture. This trio does not have a designated bass player; therefore, an arranging strategy with the cello and guitar swapping the bass function is necessary. A written melody serves as a “launch pad” for each musician’s solo break. At measure 5, a one bar guitar melody is followed by a two bar guitar improvisation, while the cello quotes a truncated version of the A section melody as bass accompaniment. In measure 8, the cello takes over the melody and the guitar accompanies. “Punkeydoodles Corners” creates a flexible space for the cello as it alternates between roles that are normally associated with bass and electric guitar in the rock “power trio” triangle.

On the recording, the cello accompaniment for the guitar improvisation sticks to a bass-like pizzicato voice, playing the line as written with the occasional E minor 11 chord added for backbeat emphasis. The C 13 chord, notated in measure 5, has a semitone rub between the Bb on the D string and the open A string. While this would be an unusual way to arrange the notes of this chord on guitar, this particular voicing is a natural consequence of cellistic thinking.

The cello voice for this composition eschews the niceties of both jazz and classical expression. In the recording, the *sul ponticello* technique discussed in chapter 2 is employed during improvisation. The bow distortion permits a lot of control over which

harmonics are emphasized by changing the bow speed, direction, and proximity to the bridge. Furthermore, manipulation of the bow does a very good job of getting a “dirty” sound, without depending on overdriven tube amplifiers. The pitch vocabulary of improvisation on this tune also stems from an appreciation of rock guitar. It puts the fretless cello in the interesting position of mimicking the type of pitch bends made by fretted instruments. At one point in the performance a very wide vibrato is heard, which serves as the sonic equivalent to the whammy bar on electric guitar.

“Punkeydoodles Corners” is a very small hamlet that straddles three counties in Southwestern Ontario. Several roads intersect at this dot on the map, and their names change due to invisible borders. This can be somewhat perplexing to the unwary traveller and, as the name would suggest, is a source of amusement to the locals. The composition is named after this location because what appears to be relatively simple music reveals itself as more complicated than initially imagined. While the score presents an intricacy of instrumental arrangement and metrical changes, it sounds best when played with rock and roll abandon.

PUNKEYDOOLES CORNERS

MATT BRUBECK

$\text{♩} = 92$ **A** DROP D TUNING!

GUITAR
CELLO

3
5
PIZZ
ARCO
8

E- IMPROVISE
E-
E- IMPROVISE

2

PUNKEYDOOLES CORNERS

11

GUIT

Vc.

C7

B7#9

13

GUIT

Vc.

E-

Prime Directive

“Prime Directive” is the confluence of several musical ideas, some improvised and others not. During free improvisation sessions, when another musician or group of musicians established a steady pulse, I was drawn to punctuate this pulse with single notes or chords at irregular intervals. Exploring on my own, I improvised chords on the cello in relationship to the steady pulse of a metronome. The more time that elapsed between the chords, the more intriguing the musical texture. While broadly cyclical, discerning an obvious pattern of repetition was difficult, and the large-scale rhythmic patterns that emerged did not imply common subdivisions of meter into groups of two or three etc. Growing tired of relentless clicks, the metronome was set to flash only. While repeating a D minor chord, I imagined the sound of an ensemble pouncing in rhythmic unison to an inaudible pulse. This rhythm, which repeated every nineteen beats, was sketched out as a possible starting point for an extended composition. Ultimately, it became the basis for “Prime Directive.”

The piece opens with an ambiguous chord distributed among piano, cello, and bass: the open voicing of a D minor triad with Bb and E superimposed. It appears four times in a syncopated fashion within a nineteen beat structure. These harsh, repeating chords appear to come out of nowhere, as there is no audible metrical demarcation. The challenge for performers is to maintain rhythmic accuracy without a conductor or percussive timekeeper. A quick tempo, with no beat subdivisions less than an eighth note, keeps the rhythmic language fairly simple. Throughout “Prime Directive,” whenever the

texture returns to irregularly spaced chords (e.g. Reh. F), the listener is reminded of the opening passage.

The title refers to structural anchors throughout the composition based on prime numbers. The opening through Reh. E, and from Reh. V to the end, all have nineteen beat structures; Reh. J and T both have seventeen; Reh. K has thirteen; Reh. L, M, and N each have eleven; while Reh. S has sections of nineteen and twenty-three respectively. At times adjacent sections of identical time lengths are treated quite differently from one another in order to provide rhythmic variety. For example, Reh. A, B, and C all contain nineteen beats. However, in Reh. B and C every eighth note is occupied by an *ostinato* figure which, through pitch repetition and forward movement, clearly promotes a feeling of metrical organization. Later, the line shared by piano, cello, and bass at Reh. V is organized in thirty-eight eighth notes grouped as 5+6+6+5+5+6+5. Thirty-eight, while not prime, is twice nineteen. At Reh. W the cello and bass duo is punctuated by irregularly spaced chords. At Reh. X the same chords are superimposed on a pizzicato cello line that implies an eighth note subdivision of 5+5+5+5+5+5+3+3+2.

This idea of establishing time structures, and then determining the musical materials within, first appeared in Satie's early film score *Entr'acte* and also figures prominently in Cage's work (Nyman 1999, 35).

Throughout "Prime Directive," areas designated for improvisation extend across phrases of predetermined time lengths. In order to avoid a steady pulse for the duration of the piece, certain passages of improvisation allow the performers to structure time as they wish. Several non-pulsatile passages with variable time lengths are interleaved with

pulsatile passages of fixed time lengths. The aim was to allow musicians to improvise with, and without, reference to rhythmic scaffolding.

The members of this mixed instrumentation quartet are treated as equal partners. All instruments freely exchange the duties of melody and accompaniment, providing rhythmic backdrops and so on. The intent is to mirror the high degree of flexibility one finds in notated chamber music, and apply it to improvisational space. At times, two sets of instruments are paired, each with different functions and materials. For instance, at Reh. G, the clarinet and bass improvise a duo, while the cello cues the piano to produce rhythmic punctuations inspired by the texture of the previous passage. Similarly, an improvised piano and bass duo at Reh. K is accompanied by staccato chords in the clarinet and cello. Passages where all instruments improvise simultaneously, e.g., at Reh. I, O, and P2, result in an interaction with no prescribed hierarchy of instrumental function.

The voice of the cello in “Prime Directive” is generally congruent with 20th century cello vocabulary. While the use of classical *bel canto* expression is limited by the lack of extended melodic passages, the technique of left hand pizzicato while sustaining an *arco* melody note is found in the Kodály sonata and harmonic *glissandi* appear in the Shostakovich sonata. Although “Prime Directive” does call for cello improvisation, it does not require a jazz inflection.

The ensemble that performed this work consisted of musicians highly skilled in both jazz and new music. However, I was wary of creating a work where the written materials resemble new chamber music, while the improvisations sound like jazz.

Consequently, the score describes the parameters of improvisation in a manner intended to reduce the emergence of standard jazz licks. Symbols that suggest jazz theory and nomenclature are avoided. While it was tempting to use jazz shorthand to describe the pitch set used for the cello improvisation at Reh. C as “E altered,” the piano and bass accompaniment figures have a B natural; which is not found in the E altered dominant scale. More importantly, the altered scale has a specific function in jazz improvisation. It contains the most dissonant colours found in the upper structures of dominant seventh chords. Jazz improvisers treat the various steps of the altered scale differently from a pitch set because the various tones resolve in one way or another over an implied dominant chord. Instead of jazz nomenclature, scales of my own invention are described pitch collections throughout “Prime Directive.” The only conventional modes used for improvisation are Dorian and Lydian, as these are common knowledge for most professional musicians in Western culture. For these, the usual scale name is given, rather than listing the pitches.

A second method for keeping the gestural vocabulary of jazz improvisation at bay is the manner of transition from improvised to non-improvised sections throughout the piece. At many points, the raw materials for improvisation are introduced in the section that immediately precedes an improvised passage. The goal is for the improviser to first rearrange the fixed materials and then gradually introduces new elements. For example, at Reh. H there is a contrapuntal texture where the cello melody is treated as a fugue subject. The subject is then passed to the bass, which is accompanied by the counter subject in the clarinet and cello. This arrangement establishes the subsequent trio

improvisation at Reh. I. The outcome is that imitative counterpoint, using both stated subject and counter subject materials, is foremost in the improviser's mind. The implicit objective is textural, rather than a harmonic or modal based improvisation procedure.

A third way to discourage the piece from sounding like an extended jazz composition is the treatment of rhythmic materials present at the outset. While all the composed rhythms are straight 8ths, they do not resemble the typical rhythms of Latin music, rock, funk, and so on. The cyclical structures of improvisation based on prime numbers inhibit predictable ostinato patterns. Additionally, as mentioned earlier, a number of passages, such as Reh. G, I, O, P2, and U2, are constructed without a steady pulse or fixed time length. The rhythmic language of "Prime Directive" deviates most from the concept of pulse found in jazz composition at Reh. R, with the use of *accelerando*. Here, a nineteen beat structure is repeated as a background to a piano improvisation, while the chorale in the bass, cello, and clarinet speeds up with each repetition until the original tempo is re-established at Reh. S.

"Prime Directive" involves the conceptual rigour, compositional planning, and notational detail of a contemporary chamber work. At over twenty minutes in length, it differs from the other ensemble pieces in terms of scale, but it embraces an economy of means. Nearly all the composed materials within this piece are derived from two sources: 1) the repeating chord motif and related time structures, and 2) the intervallic or rhythmic content of the clarinet melody at Reh. A. These fixed materials insure thematic unity, and their development produces a narrative structure, which creates the traditional sense of a musical journey. As with classical chamber music, part of each musician's responsibility

is leading the ensemble in the absence of a conductor. This goes beyond cueing duties. The improvisations that occur in both fixed and open time periods give participating musicians greater autonomy over the development and pace of the piece. Without a hierarchy of command, every musical gesture is a negotiation among equal participants. Considering these factors, “Prime Directive” can be best described as an experiment in improvised chamber music that is informed by the jazz experience of the performers.

Prime Directive

Matt Brubeck

The musical score is for the piece "Prime Directive" by Matt Brubeck. It features four staves: Bb Clarinet, Piano, Cello, and Contrabass. The tempo is marked as quarter note = 130. The time signature is 3/4. The Bb Clarinet part is mostly rests. The Piano part starts with a forte (f) dynamic and features a rhythmic pattern of eighth notes and quarter notes. The Cello and Contrabass parts also feature similar rhythmic patterns, with the Contrabass part starting on an octave 8va.

Bb Clarinet
notated in
concert pitch

Piano

Cello

Contrabass

$\text{♩} = 130$

$\text{♩} = 130$

$\text{♩} = 130$

$\text{♩} = 130$

Contrabass notated 8va
and should have low C extension
(See Reh. M)

2

6

B \flat Cl.

Pno.

Vlc.

Cb.

11 A

B \flat Cl.

Pno.

Vlc.

Cb.

3

15

B \flat Cl.

Pno.

Vlc.

Cb.

21

B \flat Cl.

Pno.

Vlc.

Cb.

mf

mf

f

mf
pizz.

4

25

B \flat Cl.

Pno. *simile*

Vlc.

Cb.

28

C 3d and 4th times improvise using: E-F-G-Ab-B-C-D (concert pitches)

B \flat Cl.

Pno.

Vlc. 1st and 2nd times improvise using: E-F-G-Ab-B-C-D

Cb. *pizz.*

5

32 F-Ab-A-Bb-C-Db-Eb 4X D *mp*

B \flat Cl. *mp*

Pno. 4X improvise using: E-F-G-Ab-B-C-D

Vlc. F-Ab-A-Bb-C-Db-Eb 4X *mp*

Cb. 4X *mp*

35

B \flat Cl. *mp*

Pno. F-Ab-A-Bb-C-Db-Eb

Vlc. *mp*

Cb. 4X *mp*

6

38 E

B \flat Cl. *mf*

Pno. *mf*
E-G-G#-A-B-C-D E-G-G#-A-B-C-D
coordinate chords with bass

Vlc. *mf*

Cb. *mf*

42

B \flat Cl. *mp*

Pno. *mp*

Vlc. *mp*
6/8 feel

Cb. *mp*

7

46

B \flat Cl.

Pno.

Vlc.

Cb.

49

B \flat Cl.

Pno.

Vlc.

Cb.

p

pizz.
p

8

54 Duet with bass
any pitch content

B \flat Cl.

Pno.

Vlc.

Cb. Duet with clarinet
any pitch content
arco

59 Duet with bass continues
End on this note

Cello cues shots same pitches
as previous section

Vlc. End on this note
Cue shots same pitches as previous section

Cb. Duet with clarinet continues
End on this note

G **H** $\bullet = 72$ *mf*

9

65

B \flat Cl. I Quartet improvisation

Pno. Wait a bit, then quartet improvisation

Vlc. Quartet improvisation

Cb. Quartet improvisation

mf

71

B \flat Cl. Piano solo Piano cues next tempo J $\text{♩} = 130$

Solo using material from H, gradually reestablishing first tempo

Pno. Build to steady 8th note pulse D Dorian Cue J when at tempo Continue 8ths D Dorian

Vlc. Piano solo Piano cues next tempo *mf*

Cb. Piano solo Piano cues next tempo *mf*

10

77

B \flat Cl. 4X K

Pno. 4X Continue solo, bass enters

Vlc. 4X

Cb. 4X Low D messin' with the clarinet and cello figure

82

B \flat Cl. Cello Cues L Open L Congeal into this rhythm any pitch Cello Cues M Open

Pno. Cello Cues L Open Congeal into this rhythm any pitch Cello Cues M Open

Vlc. Cello Cues L Open Congeal into this rhythm any pitch Cello Cues M Open

Cb. Cello Cues L Open Congeal into this rhythm any pitch Cello Cues M Open

11

87 M

B♭ Cl.

Pno.

Vlc.

Cb.

89

B♭ Cl.

Pno.

Vlc.

Cb.

90

12

Open cello solo. Vary figure as desired.
Cello plays figure to cue next section.

93 N

B \flat Cl.

Pno.

Vlc. arco

Cb.

Open cello solo. Vary figure as desired.
Cello plays figure to cue next section.

Open cello solo. Vary figure as desired.
Cello plays figure to cue next section.

Open cello solo. Vary figure as desired.
Cello plays figure to cue next section.

96 Last time only

B \flat Cl. *p*

Pno. play only if clarinet and cello need "help" *p*

Vlc. arco *p*

Cb. Solo

13

98

B \flat Cl.

Pno.

Vlc.

Cb.

f

f

f

6

100

B \flat Cl.

Pno.

Vlc.

Cb.

p

p

6

15

109 Continue under piano solo and fade Clarinet joins piano

B \flat Cl.

Free improvisation as others fade away Use the melody Clarinet joins piano

Pno.

Clarinet joins piano Bass joins with pulse

Vlc.

Continue under piano solo and fade Clarinet joins piano

Cb.

Continue under piano solo and fade Clarinet joins piano Introduce a feeling of steady pulse Keep quarters broken to avoid meter $\text{♩} = 60$

Accompany the piano in this manner getting faster start in E Lydian

112

B \flat Cl.

p Piano cues next $\text{♩} = 80$

Pno.

ad lib to this chord Piano cues next

Vlc.

p Accompany the piano in this manner getting faster start in E Lydian Piano cues next $\text{♩} = 80$

Cb.

Accompany the piano in this manner getting faster start in E Lydian Piano cues next $\text{♩} = 80$

arco *mf*

Detailed description: This page contains a musical score for measures 109-112. It features four staves: B \flat Clarinet (Bb Cl.), Piano (Pno.), Viola (Vlc.), and Cello (Cb.).
Measures 109-111: All instruments play a rhythmic pattern of eighth notes. The piano part is marked with a dynamic of *p*. Annotations include 'Continue under piano solo and fade' and 'Clarinet joins piano' with vertical lines indicating the entry of the clarinet. The piano part includes the instruction 'Free improvisation as others fade away Use the melody'. The cello part has a tempo marking of $\text{♩} = 60$ and the instruction 'Introduce a feeling of steady pulse Keep quarters broken to avoid meter'.
Measure 112: The piano part has a dynamic of *mf* and is marked 'Piano cues next'. The other instruments also have 'Piano cues next' markings. The piano part includes the instruction 'ad lib to this chord'. The cello part has a dynamic of *mf* and is marked 'arco'. The tempo marking $\text{♩} = 80$ is present for all instruments in this measure.

16

Piano cues next

116

B \flat Cl. *cello cues phrase*

Pno. *improvise* *cello cues phrase*

Vlc. *cello cues phrase*

Cb. *cello cues phrase*
arco

123

B \flat Cl. *Follow cello's lead, getting faster...*
mp *poco a poco cresc.*

Pno. *poco a poco cresc.*

Vlc. *Follow cello's lead, getting faster...*
mp *poco a poco cresc.*

Cb. *Follow cello's lead, getting faster...*
mp *poco a poco cresc.*

17

129 Stay with cello and bass Piano cues next Open $\text{♩} = 130$ S

B \flat Cl. *f*

Piano cues next Open *f*

Pno. *f*

Vlc. Stay with clarinet and bass Piano cues next Open *f*

Cb. Stay with clarinet and cello Piano cues next Open *f*

133

B \flat Cl.

Pno. *simile*
with D.B.

Vlc. *simile*
with piano L.H.

Cb. *pizz.*

18

136

B \flat Cl. *simile*

Pno.

Vlc.

Cb.

139

B \flat Cl. T

Pno. *mf*

Vlc. *pizz. mf*

Cb. *pizz. mf*

19

143

B \flat Cl.

Pno.

Vlc.

Cb.

146

B \flat Cl.

Pno.

Vlc.

Cb.

clarinet solo improvisation

clarinet solo improvisation

clarinet solo improvisation

clarinet solo improvisation

6

7

f

mf

f

ff

8

8

The image shows a musical score for measures 143-146. The score is arranged in four systems, each with five staves. The instruments are B \flat Clarinet (B \flat Cl.), Piano (Pno.), Violoncello (Vlc.), and Contrabass (Cb.).
- Measure 143: B \flat Cl. has a melodic line with a slur over measures 6 and 7. Pno. has a bass line with a dynamic of *f* and a *mf* section. Vlc. and Cb. have a rhythmic accompaniment.
- Measure 146: B \flat Cl. has a dynamic of *f* and *ff*, with a section of diagonal lines labeled "clarinet solo improvisation". Pno., Vlc., and Cb. continue with their accompaniment.
- The score includes various musical notations such as slurs, dynamics, and articulation marks.

20

U

151 A little slower

B \flat Cl. *mp*

Pno. *mp*

Vlc. A little slower *mp*

Cb. A little slower *mp*

8

156 *mp* Improvise to strings

B \flat Cl. *mp*

Pno. *mp*

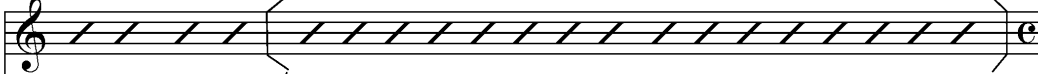
Vlc. arco *mp*

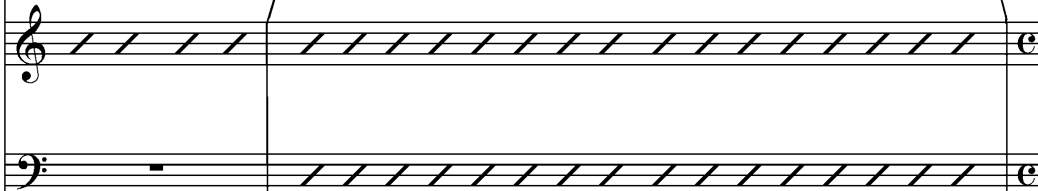
Cb. arco *mp*

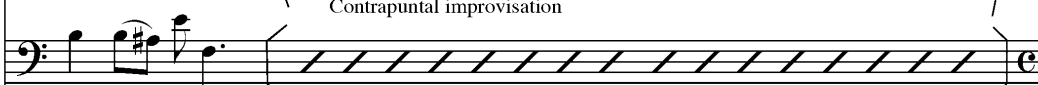
8


21

160 U2 Contrapuntal improvisation

B \flat Cl. 


Pno. 


Vlc. 


Cb. 


V $\text{♩} = 130$ Improvise similar gestures these pitches

163

B \flat Cl. 

Pno. 

Vlc. 

Cb. 

mf

tacet 1x

pizz.

mf

22

167

B \flat Cl. 4X W

Pno. 4X *f*

Vlc. 4X *f* Pointilistic, harmonics C Lydian

Cb. 4X *f* Pointilistic, harmonics C Lydian

172

B \flat Cl. X Duo with bass, C Lydian

Pno. *mf* Play any chord derived from C Lydian using the indicated rhythm

Vlc. *mf* pizz.

Cb. Duo with clarinet, C Lydian *arco* *mf*

23

175

B \flat Cl.

Pno.

Vlc.

Cb.

Duo with cello
C Lydian

mp

Duo with clarinet
C Lydian

178

B \flat Cl.

Pno.

Vlc.

Cb.

24

Y
181

B \flat Cl. *mp* *tr* *tr*

Pno. *mp* *mp*
Improvise C Lydian

Vlc. *mp* *tr* *tr*

Cb. *mp*

185

B \flat Cl. *p* *pp*

Pno. *p* *pp*

Vlc. *p* *pp*

Cb. *p* *pp*

CHAPTER SEVEN: SOLO COMPOSITIONS

Be Prepared #2

“Be Prepared #2” emerged from experiments designed to change the voice of the cello, and is one of several compositions that utilize electronic processing. John Cage’s music for prepared piano demonstrated how the timbre of an acoustic instrument could be radically altered by preparation. His multiple bits of hardware, erasers, and ribbons were more or less permanent installations on the instrument and were not removed or adjusted during performance. Compared to Cage’s elaborate piano preparations, my approach was significantly less complex and designed for ease of manipulation. Miniature wooden clothespins were attached to the four cello strings at various distances from the bridge. A distinct advantage of using clothespins is that they can be quickly relocated or removed while performing. The primary focus was on transforming the cello into a percussion instrument, but the composition process soon moved beyond the parameters of this initial impulse.

After a period of experimentation, specific locations for the clothespins were found that produced the plucked sounds I wanted to utilize. The measurement of the distance from the bridge to the clothespin on each string is indicated in the score. Proper location of the clothespins on the C and G strings created a sustained, bell-like sound with complex overtones that disguised the fundamental. The clothespin on the D string, placed closer to the bridge, inhibited string vibration and produced a damped, somewhat percussive sound. The A string placement caused the bridge to rattle, creating a buzzing that was similar to the resonating bottle caps on an African *mbira*. Over the course of

time, this pin would migrate away from the bridge as the strings vibrated. Gradually, the original *mbira*-like sound was transformed until it approximated the attack transient of a banjo. (This fortuitous timbral morphing served as an inspiration for another composition, “Banjolene.”) Experiments stopping the C, G, and D strings with the left hand, while plucking in a more rhythmically active way, resulted in a timbre that resembled log drums.

The sonic results from the pizzicato articulations were somewhat more predictable than those of bowing, because the force of a pizzicato does not significantly alter the sonic characteristics of a string clamped by a clothespin. In contrast, the degree of bow pressure brought to bear has an extreme effect on the timbre and has the potential of producing sounds ranging from a subharmonic murmur to the multiphonics of an overblown wind instrument. Furthermore, placing the bow between the pin and the fingerboard produces a completely different sound than a bow stroke occurring between the pin and the bridge. Thus, seven distinct bowing timbres are possible (two each on the C, G, and D strings, and one on the A string).

This new path of constructing music from materials of sound was intriguing. It occurred to me that the various timbres, created by the placement of the clothespins, might be additionally modified by electronic processing. Trial and error produced an electronic signal path (see figure 11) that provided a diverse array of sound, as well as new options for real time manipulation of sonic events.

Figure 11: Electronic signal path

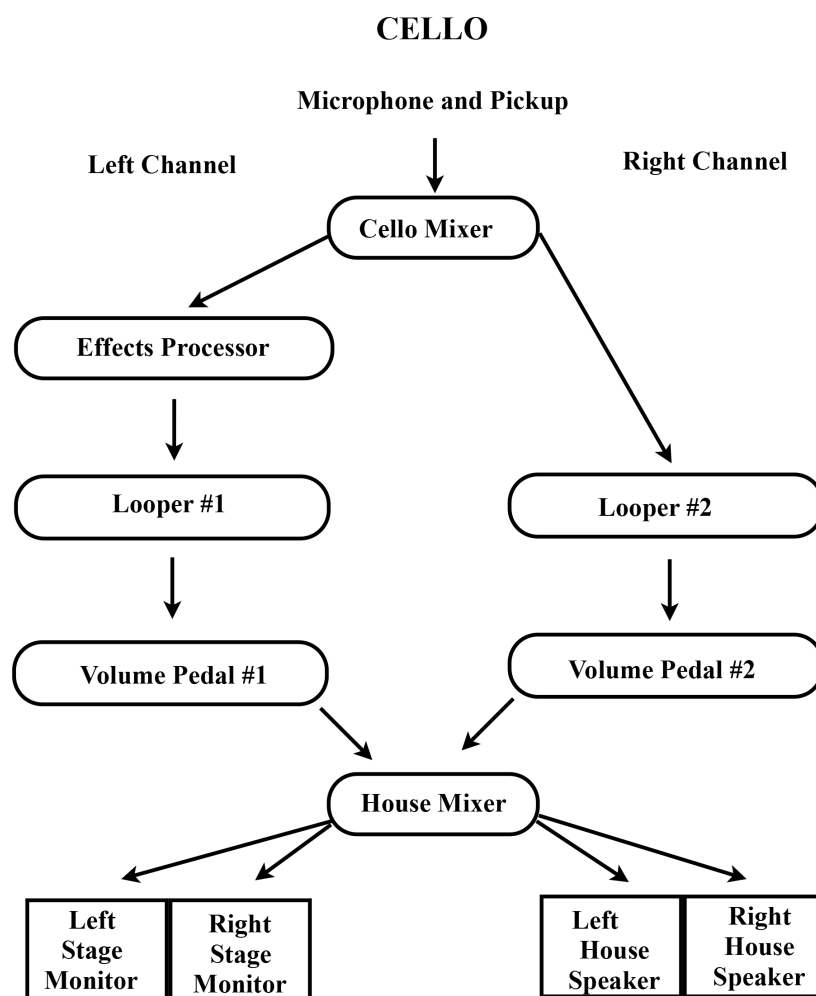


Figure 11 illustrates the flow of the electronic signal from its acoustic origins on the cello, through various devices, and its ultimate output through loudspeakers. The cello mixer blends the signals from both a microphone and a transducer pickup. This blended signal is then sent to both left and right channels, each of which can be independently altered. For example, in “Be Prepared #2,” the effects processor was used

to extend the gong-like sound of the cello's lowest open strings by adding a lengthy reverberation decay. This effect was recorded by looper #1 and played in reverse, which produced a long crescendo culminating in a percussive attack. Eventually, by layering different recorded loops I was able to create "gong" swells and decays, which became a continuous, rumbling accompaniment that could be moved from foreground to background by means of the volume pedal.

Another significant aspect of the signal path soon became evident. Once looper #1 was in playback mode it ceased to record. Therefore, cello sounds from the right channel could be independently recorded on looper #2. (Looper #2 does not record events playing back on looper #1.) This permits the loops created by both the left and right channels to have completely different sonic characters. Their volume relationships to each other can also be changed. Either loop can be stopped and restarted or put in overdub mode in order to add additional sounds. In "Be Prepared #2" the two loops are of different lengths, asynchronous, and have a phase relationship with each other. This particular interaction of the two loops becomes a phenomenon of endless permutation.

With so many sonic materials available, it was important to narrow the scope of the composition to a reproducible procedure for performance. The basic sequence of events, as well as how to achieve particular sounds and textures, was documented. This document became the score. It outlines a linear structure of specific procedures that serve as destination points, with passages of improvisation occurring in between.

Instead of a harmonic, modal, or metrical system, the materials for improvisation are individual sounds and how they can be sequentially arranged or layered in

spontaneous performance. When playing a prepared piano, the physical act of pushing down a piano key is expected. Likewise, stopping a note while simultaneously plucking a cello string is a standard gesture. However, the sounds that follow from these actions on a prepared instrument can be somewhat disorienting. Over time, I became somewhat accustomed to the altered topography of the cello and formed an intuitive, tactile map of where specific sounds appear.

Nevertheless, this feeling of relative command proved to be elusive, largely due to an intricate system where the cello's voice gradually transformed. The clothespins migrated because of string vibration, and a few millimetres made a substantial difference in the timbre. As discussed above, bow pressure created very complex sounds that were difficult to divine. The use of electronic processing contributed another unstable element. Instead of using looping technology to build layers of discrete musical accompaniment phrases, loops were employed to create an array of constantly shifting sounds. "Be Prepared #2" is a system where there is some control over the input, but a degree of uncertainty renders the output variable. This demands a different type of evaluation during performance than the usual adjustments that occur in idiomatic solo improvisation. Each performance is a heuristic process that reveals the musical potential of the composition in real time.

Solo cello space often places the instrument in dialogue with itself. As previously discussed, this can be accomplished by composing for the instrument's polyphonic capabilities and the use of implied counterpoint. When electronic accompaniment options are employed, the resulting texture is often one where the musical exchange occurs

between a recorded background and melodic performance in the foreground. However, the recorded accompaniment in “Be Prepared #2” is quite unpredictable. The loops are nearly as variable as the actions of a fellow improviser. Consequently, the “solo” cello space in this piece is unusual in that it closely resembles a free improvisation duet between two performers. This was not anticipated when I added electronic processing to the percussive sounds of the clothespins.

An added bonus to experimenting with clothespins was the creation of the sonic conditions for “Banjolene,” the next composition. The “Be Prepared #2” transition to “Banjolene” starts with the score instruction: “Remove clothespins on D, G, and C strings.” The initial “Banjolene” riff is introduced here and recorded on looper #1. In the recording, the two-measure riff is played at both normal and double speed, bouncing around the stereo acoustic space as it ricochets between live performer and looper #1. The riff also interacts with the bowed improvisation and other prepared and processed sounds that have accumulated on looper #2, creating quite a sonic playground until the two loopers are faded in order to start “Banjolene” proper.

Clearly, “Be Prepared #2” and “Banjolene” are closely entwined. Not only do they share similar clothespin preparations and electronic processing requirements, “Banjolene” also provides transitional material and an exit strategy for “Be Prepared #2.” In performance, these two pieces elide together and are organically linked by the improvisation process that inspired the compositions. Nevertheless, they are two distinct works.

Be Prepared #2 (Score)

Matt Brubeck

Cello Preparations

Place four “mini” wooden clothespins on the strings between the bridge and the end of the fingerboard in the following arrangement:

A	0 (i.e. adjacent)
D	4
G	7
C	5

(Note: all distances are measured in centimetres from the bridge.)

The A string should vibrate against the bridge. This may produce a rattling sound not unlike the bottle caps on an mbira. When the wood of the pin and the bridge fall out of contact with each other the sound will resemble a banjo.

The D string will produce a slightly woody sound with short duration.

The C and G strings will produce a complex sound that resembles a large bell or gong.

Electronic Preparations

Put digital effects processor unit on “cathedral” or similar reverb setting with a long decay.

Left Channel and Right Channel volume pedals fully engaged.

The Procedure

Pluck the D G and C strings simultaneously as a chord. Let this sound ring a few times.

Record two of these sounds on Looper 1 and reverse the loop.

Now the reverb slowly builds backwards to the initial attack.

Listen for the timing of the events.

Put Looper 1 into overdub mode.

At the peak of each sound play another open string chord. (The effect should be like a crescendo before the sound and a decrescendo after it.)

Put Looper 1 in playback mode.

Turn Effects Processor reverb off.

Play more active pizzicato single note lines using the left hand to stop pitches.

On Looper 2 start recording a long loop (around a minute) of the sounds created above.

Parameters available for improvisation:

Either Looper 1 (the backwards reverb) or Looper 2 (the active percussive sounds) can be started, or stopped, or added to by overdubbing at any point.

Once both loops are interacting with each other put both loop pedals in playback mode.

Now improvise using bowed sounds exclusively.

Overdub short bowed figures on loop pedal two.

Introduce the A string arco. The clothespin rattling against the bridge will resemble “fuzz” distortion on a guitar.

Put bow down, and remove clothespins on D, G, and C strings.

Gradually introduce the following pizzicato riff. It should sound like a banjo.



Overdub this phrase on Looper 1.

Double the speed of the pizzicato phrase sample at will on Looper 1.

Let this phrase interact with the bowed improvisations on Looper 2.

While playing the banjo riff above

Gradually fade out Looper 2 and stop playback.

Gradually fade out Looper 1 and stop playback.

Segue to **Banjolene**

Banjolene

As mentioned briefly in “Be Prepared #2,” the “Banjolene” riff emerged from the clothespin explorations. During performance, the clothespin on the A string has a tendency to gradually move away from the bridge. When the clothespin is within two centimetres of the bridge, but not rattling directly against it, the sound of the plucked A string evokes the banjo. The pitch language in the first four measures also resembles the Appalachian banjo tradition, in that there is a notable ambiguity regarding the major or minor tonality of the key. The implied harmony toggles between the tonic and subdominant, but all the tonic chords omit the third. Another reference to banjo performance is the iterative quality of the notes in the opening riff. The slurred pizzicato hammer-on or pull-off articulations throughout the piece are found in the plucked string traditions of Appalachia. This is another instance where the mutable timbre of the cello voice influences the choice of musical language.

In contrast, measures 5-8 exhibit greater stylistic freedom. They are melodic in character, with a call and response between the graceful legato descending line and an ascending staccato answer. The change in rhythm to 5/4 allows the chord at the end of each bar to ring longer, giving each phrase more breath. The introduction of the F Lydian chords (VI or bVI, depending on the A major or minor tonality) also lends this section increased harmonic complexity.

Throughout the notated portions of the piece, elements of my personal improvising language are evident. Double, triple, and quadruple stops all use the open A string. The voicing of the F Lydian chord is a particular favourite because of the major

second between the B and A. The hammer-on and pull-off articulations are within a single hand position compass, occurring in registers where the stopped string length is long enough for the gesture to be effective. The *staccato* articulations are a result of a curved finger technique in the left hand that is slightly different from the outstretched fingers utilized for jazz playing. It is closer to how pizzicato is taught in classical pedagogy, except that two fingers are necessary to achieve the velocity demanded by the 16th notes.

“Banjolene” is a simple cyclical improvisation structure. The entire eight measure phrase is played while the last remaining clothespin is on the A string. When this phrase emerges as a solo statement, it occupies a foreground space. After it is recorded on looper #2 (see figure 11, p.180), the phrase becomes a background accompaniment to an arco improvisation. This presents an opportunity to introduce a contrasting cello voice, conjuring up both the timbre and improvisational style of the Appalachian fiddle. Cello technique involves playing half way up the neck, with the thumb barring across the A and D strings. This hand position allows the improvisation to occur in the correct register, and enables the performance of double stops where the lower voice moves against the A harmonic. To further achieve the “unschooled” character of the fiddle, one must also use a rougher bow stroke and employ left hand vibrato very selectively.

Folk music is known for its simplicity and direct communication. Although the journey to Appalachia was rather circuitous and unanticipated, sonic explorations of the prepared cello ushered in a musical language that is both elegant and plain spoken.

Banjolene

Matt Brubeck

Clothespin on A string only, no more than 2 cm from the bridge.

Play the following 8 measure phrase:

♩ = 90

Cello

pizz.

3

5

7

Put loop pedal #2 in record mode, and record the 8 measure phrase.

Put loop pedal #2 in playback mode.

Take clothespin off the A string

Improvise arco improvisation to the 8 measure phrase.

Stop loop pedal when done improvising!

Scordatura Suites

Scordatura translates as “mistuning” in Italian, and is a term applied to any tuning that varies from the established tuning of a string instrument (Chambers 1996, 13). My initial encounter with *scordatura* occurred when performing *The Rite of Spring*. Stravinsky calls for the assistant principal cellist to retune the C string to B in “The Mystic Circle of the Young Girls.” At first glance, this seems to be a rather elaborate method for permitting the cello to play a natural harmonic on F#₂. However, Stravinsky was not only looking for a specific pitch, but also seeking a particular colour in the sound.

I became further acquainted with *scordatura* when I studied Bach’s fifth *Suite for Unaccompanied Cello*. Here the top string of the cello is dropped by a tone, resulting in the tuning C₂ G₂ D₃ G₃. This tuning is also implied in the solo cello music of Domenico Gabrielli as far back as 1689 (Chambers 1996, 32). Gabrielli did not specifically call for this tuning because it was standard practice in Italy at the time (25). By the time Bach wrote his suite, circa 1720, the modern tuning of the cello (C₂ G₂ D₃ A₃) had been firmly established in Germany. Consequently, C₂ G₂ D₃ G₃ was known as the “Italian” tuning (74).

As Bach’s original manuscripts for the cello suites have never surfaced, scholars have had to rely on contemporary facsimiles. The copies made by Anna Magdalena Bach are viewed as the most reliable sources (Winold 2007, 9). The fifth suite bears an incipit calling for the tuning of C₂ G₂ D₃ G₃ and is written in *scordatura* notation (Chambers 1996, 74). It is customary to employ “a type of hand-grip notation, a kind of tablature

unique to *scordatura* string composition, which specifies where the player is to place the fingers to attain the correct sounding pitches” (14). For example, most editions of Bach’s fifth *Suite for Unaccompanied Cello* notate all pitches on the A string as a whole step higher than the sounding pitch in order to compensate for the top string being a whole step lower. Cellists place their fingers where the music indicates; in effect pretending the top string is tuned to A. This same type of hand grip notation appears in Kodály’s solo sonata to describe all passages involving the two lowest strings of the cello, which are retuned to F# and B.

The difficulty with this custom is that the music does not *look* as it *sounds*. As Chambers points out, if the player’s inner hearing anticipates certain pitches when looking at the score, the sounding result can be disconcerting (15). This method of notation is losing favour in contemporary cello composition. For example, Berio uses *scordatura* in his *Sequenza XIV*, but all the notated pitches on the retuned string are the same as the sounding pitches. Both *scordatura* suites in this portfolio originate in improvisation, where the pitches sought by the hands are governed by inner hearing. Consequently, the scores employ the modern practice of all notes sounding at their written pitch.

The use of *scordatura* presents technical challenges for the cellist. The primary difficulty is with left hand fingering. After years of associating a particular hand position and fingering with a certain pitch, it is difficult to reorient the ear and the hand to a different sonic outcome. While the interval compass in the hand on a single string is the same, the interval relationship between adjacent strings is altered. Not only are the

fingerings for double stops altered, the traditional fingering patterns used for scales, arpeggios, or other stock melodic devices are changed as well. Additionally, *scordatura* introduces subtle changes to the resonance characteristics of the cello's voice that necessitate some adjustments beyond left hand fingering technique. As Mark Chambers observed:

Altering an established tuning affects not only the string, but also the way in which the entire vibrating chamber of the instrument resonates. The normal tension of an instrument creates a balanced effect of evenness and equality throughout its complete range. Even one altered string results in a noticeable change in all string tension and in the string-bow contact relationship. (1996, 17)

I experimented with several *scordatura* tunings. In order not to break expensive cello strings, strings were lowered rather than raised. These slackened strings were slightly problematic for bowing because greater bow pressure and speed was required for the instrument to speak. It was more demanding to adjust pizzicato technique because timing is very closely linked to string tension. Unlike arco, pizzicato is dependent on the tactile relationship between finger and string. A string with loose tension requires more lateral force to excite, but excessive vertical force can result in the string buzzing against the fingerboard.

Even retuning a single string results in a noticeable transformation of the cello's voice. The instrument's timbre is altered, and one's idiomatic vocabulary must evolve. Initially, there is a sense of disorientation because familiar finger and bowing patterns produce unexpected results. Over time one moves to an acceptance of the sounds produced while employing the more ingrained patterns associated with conventional tuning. Ultimately, the hands start reaching with intention for particular sounds because

they can be imagined ahead of time. At this stage, the older patterns of muscle memory are supplemented by newer sequences of motion. Eventually a point is reached where one can think in *scordatura* away from the cello. Physical gestures and their intended sounds can be imagined during the composition process, without the direct tactile and acoustic references derived from the instrument itself.

Scordatura Suite 1

“Scordatura Suite 1” developed over the course of several weeks of improvisational experimentation with the C₂ G₂ D₃ G₃ tuning. As a result of earlier study of Bach’s fifth *Suite for Unaccompanied Cello*, the fingering implications were familiar. A crucial distinction is there are new ways to finger the notes G₂ and Ab₂. For example, one can conveniently play a C natural minor scale from C₃ to C₄ in extended half position. In standard tuning, one has to shift positions on the D string in order to reach both Eb and Ab in the same passage. It is also possible to achieve chords not available with standard tuning. The striking diminished chord Bach employed in measure 2 of the prelude (vii dim.7 over a C pedal) cannot be played on a conventionally tuned cello if an Ab is at the top of the chord. The Eb chord in measure 17 is also impossible to realize as a quadruple stop with the G as the top note.

Some of the compositional material in “Scordatura Suite 1” arose because of the polyphonic possibilities of the remapped instrument. The first three chords of Section II, as well as the altered dominant chords in the final measure, are technically possible with standard tuning. However, it would be extremely awkward to play the passage at the

indicated tempo. The strummed chords in Section III are unique to this tuning and are impossible to execute on a conventionally tuned cello. Likewise, the ostinato that is the basis of Section IV makes extensive use of the upper G_3 string in the plucking pattern.

Scordatura transforms the resonance characteristics of the cello. In the Italian tuning the high G string tends to vibrate sympathetically when either the low G or C strings are played. Additionally, the top end of the instrument does not project as much, which alters the balance of chords. The possibilities of improvising modally in G on the D string and having the ability to cross strings to an open string tonic note either above or below was intriguing. As newly available sounds were explored, the cello's voice began to resemble other members of the extended string family. When bowed, the high G string sounded like a *viola da gamba*, while pizzicato improvisations evoked a distant cousin, the *oud*.

The retuned cello and the *oud* have a number of similarities. Larger *ouds* have a string length of 67 cm, which is comparable to the standard 70 cm string length of the cello. One of the most common Arabic style *oud* tunings uses C_2 as the bass string, as does the cello. Although the body styles of the two instruments are quite different, the physics of comparably pitched strings stretched over the same length produce an analogous string vibration. Additionally, there are *oud* tunings in which two of the six courses of strings are pitched one octave apart. The resonance produced by these sympathetically vibrating strings corresponds to the vibrations of the cello strings tuned to G_2 and G_3 . Like the *oud*, the cello is a fretless instrument, which gives it the flexibility to play the quartertones prevalent in Middle Eastern music.

The similarities of the two instruments can be reinforced by performance practice. One can position the left hand on the cello in such a way that the index finger can hit quarter tone pitches on the 2nd and 6th degrees of a G Phrygian scale. Because the two half flats are separated by the interval of a perfect fifth, the same alteration of finger spacing may be used on strings G₂ and D₃. Any fingering on G₂ is then simply replicated on G₃. Additionally, I began to experiment with a pizzicato style that approximated the sound of the *oud* plectrum. To this end, a type of tremolo can be developed that uses a motion where the flesh and nail side of the right hand finger strokes the string rapidly. The sonorities produced by this particular *scordatura* tuning had set me on a path that now involved both the use of quarter tones in the left hand and a novel right hand technique that mimicked the *oud*.

I had listened to Middle Eastern musicians play this Phrygian scale with quarter tones and was aware that compositions, and their associated improvisations, are guided by a *maqam*. While Western scales define a collection of notes within a single octave in ascending or descending order, *maqams* most often consist of two tetrachords that form a 7 note scale, with associated quartertones (Simms 11, 2004). The first tetrachord is G-A half flat-Bb-C, and the second tetrachord (D-E half flat-F-G). In the Iraqi music tradition, these tetrachords combine to form what is called *Maqam Husseini* in its ascending form (14). However, the defining features of a *maqam* are more complex than a collection of pitches. Similar to the blues, a *maqam* is a scale, a type of melody, and a set of procedures all rolled into one. This *maqam*, fashioned while experimenting with *scordatura*, opened up a world of possibilities on the cello.

To construct “Scordatura Suite 1,” I instinctively focused on the transformed voice of the cello, without worrying about faithfulness or consistency in relationship to the musical practices from which I drew inspiration. For example, Section I resembles a *taqsim*, which is an unmetred solo instrumental improvisation found throughout the Middle East. Section II has a Western orientation that employs a steady pulse and a chord based motive along with cadential movement at the end of the phrase. The improvisation style employed in this section more closely resembles solo jazz guitar playing, where a chord vamp is immediately followed by a melodic improvisation. Section III is a freely metered improvisation, which is introduced by three strummed chords. These chords are particularly beautiful and would not have the same ringing effect in a conventional tuning.

Section IV is the longest and most complex part of “Scordatura Suite 1”. The ostinato is derived from a right hand plucking pattern, which recalls the accompaniment figures played by West African musicians on the *kora*. The thumb is placed on the C and G strings and plucks the “bass line” indicated by the stems down notation. The open D and high G strings (indicated by stems up) are plucked by the first and second fingers of the right hand. As the *kora* is a twenty-one string harp, each note produced is that of an open string, and the low F of the bass line corresponds to the *kora*’s lowest pitch. The use of a 3 + 3 + 2 rhythm, with gently swinging 8th notes, is common in West Africa. The confluence of string resonance, range, and idiomatic performance creates a likeness between cello and *kora*.

It was very challenging to maintain the ostinato and simultaneously execute a fluid melody. First, the ostinato was alternated with a metered improvisation, but the results were not satisfactory. In order to resolve this compositional dilemma, a loop pedal was used to create a texture where the ostinato could accompany a melodic improvisation. Subsequently, I improvised rapid pizzicato lines while using a digital effects processor setting that sends any pitch up an octave. When playing 16th notes starting on each scale step and running downward, the sound mimicked the right hand activity of *kora* musicians sweeping down the strings of the harp and executing polyrhythmic figures in relationship to the ostinato.

The next two systems in Section IV of the score are layers added to the ostinato loop recording. One potential hazard of loop pedals is that the audience hears repetition of the same recordings, unless strategies are employed that result in textural variation and changes in timbre. The signal routing used (see figure 11, p.180) results in the audience hearing the altered pitch (an octave up) during the act of overdubbing, while the loop pedal records the “dry” cello signal at the played pitch. Consequently, a different sound than what was just heard “live” appears on the playback of the recording. The loop gradually builds in complexity, but in a subtle way. Once the loop of three interlocking parts is finalized, the loop pedal is returned to playback mode, and no further recording is done.

The final improvisation of Section IV employs the bow. The digital effects processor setting adds a perfect fifth above the pitch played. While this type of pitch effect is not very interesting when playing single notes, double stops can create

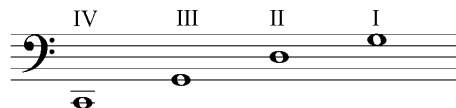
fascinating harmonies that contain close intervals (as indicated in the score.) Using this technology, a four-part texture is improvised over the three-part loop.

Section V of the suite closes with a recapitulation of earlier materials. As the loop fades, the freely metered pizzicato improvisation found in Section III is reintroduced, switching between *Maqam Hussein* and the Aeolian mode. A return of the strummed chords leads to a peaceful conclusion.

Scordatura Suite 1

Cello Tuning

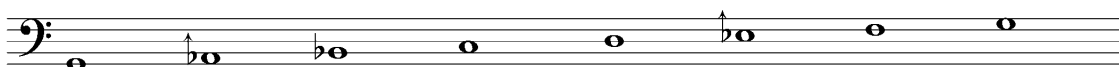
Matt Brubeck



I: *Taqsim*

Use pizzicato tremolo technique with flesh and nail sides of fingers.

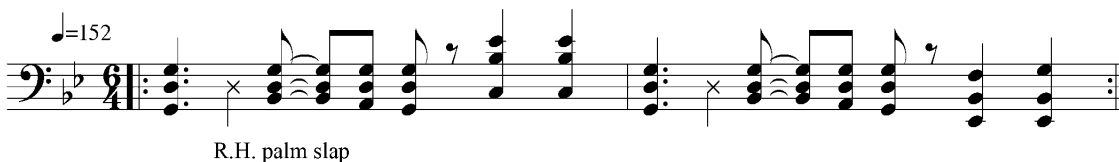
Improvise using Maqam Hussein
G A_{1/2}b Bb C D E_{1/2}b F G



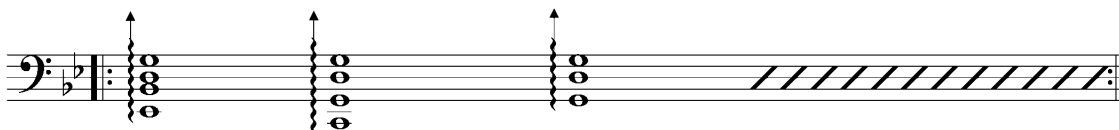
Transition

II: *6/4 chords and Aeolian Breaks*

Play the following chord sequence, repeating at liberty, and improvise melodic breaks between iterations of the progression. Keep in a strict tempo. Improvise in the Aeolian mode.



III: *Western, freely metered improvisation*



After these strummed chords, continue improvising in Aeolian mode.

IV: Kora

Start with this plucking pattern:

Swing! $\text{♩} = \text{♩}^3$
 let ring
 ♩=116
 R.H. fingers 1 2

Record four measure loop

Playback loop

Change FX processor to harmonize one octave above sounding pitch

Improvise in the manner of a kora player over loop background

Overdub two passes of accompanying harp ostinato patterns*

*Note: because of signal routing, the loop pedal will record the cello "dry" without the octave pitch.

1st pass

let ring
 R.H. fingers 1 2

2nd pass

1st pass

let ring
 R.H. fingers 1 2

Put loop pedal on playback of three part ostinato

Change FX processor to perfect fifth above sounding note

Improvise over loop background using the bow

Emphasize four part chords created by playing double stops

becomes

Transition

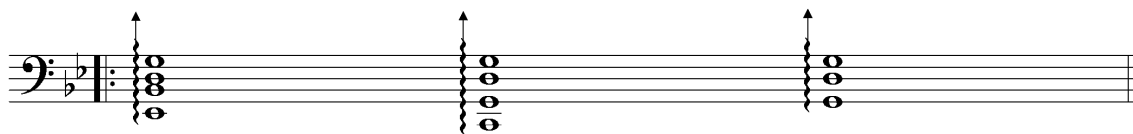
When finished improvising let the loop play for a time
Slowly fade the loop

During fade strum the chords that appear in part III

V: Coda

Pizzicato improvisation
Alternate freely between Aeolian mode and Maqam Hussein

Close with the strummed chords alone



Scordatura Suite 2

An incremental tuning approach was pursued for my next experiment with *scordatura*. All strings were tuned identically to “Scordatura Suite 1,” with the exception of string II, which was dropped from D₃ to C₃. This C₂ G₂ C₃ G₃ gave the cello an “open tuning” sound, because it implied C as the key centre or first degree of a mode. While it was possible to modulate to other keys, the two fifths built on C’s an octave apart tended to draw one back. Rather than resist this tonic undertow, I worked within the possibilities that unfolded while improvising in C.

The combination of two C strings and two G strings in this tuning encouraged a South Asian approach to composition, in which a space for modal improvisation exists over a fixed drone. I have observed violinists trained in India tune in the same repeating tonic/dominant relationship (*Sa Pa* and *Sa Pa*) one octave apart. While a drone is traditionally achieved on a second instrument such as the *tanpura*, in more recent years electronic drone devices, such as the *shruti box*, have become permissible. In “Scordatura Suite 2,” a loop pedal is used to create the self-accompanying drone texture. In order to emulate some of the pulsing one hears on the *tanpura*, I overdubbed identical notes and staggered the bow changes so that there is no break in the continuous sound. As the score reveals, the lowest C string on the cello is not used in the drone, as this note tended to overpower the others.

Conveniently, the use of this *scordatura* tuning enabled the performance of unconventional scales containing C and G. In the C₂ G₂ C₃ G₃ tuning, two scales appear in Section I of “Scordatura Suite 2.” The first of these (C, Db, Eb, F, G, Ab, B) is

introduced in system two. This heptatonic scale worked best for slower improvisations that emphasize delicate slides between notes. The second scale is hexatonic (C, Db, Eb, F, G, Bb), and is found in systems three and four. It can be played for two complete octaves in extended one-half position without a single shift. Naturally, this ergonomically efficient scale was very effective for rapid passages. It should be noted that I am fully cognizant that switching scales within a composition is not part of Indian performance practice. However, similar to the use of the Arabic *maqam* in “Scordatura Suite 1,” I was inspired by the South Asian tradition, but did not feel bound by it.

Section I of “Scordatura Suite 2” commences with a non-metered improvisation that roughly corresponds to the introductory *alap* of India, in which the pitches that constitute the *raga* are slowly revealed. In the West, the heptatonic (C, Db, Eb, F, G, Ab, B) scale that emerged within this *scordatura* tuning could be characterized as a harmonic minor scale with a flatted second degree. In Carnatic music it happens to be one of the seventy-two primary *Melakarta ragas* and is called *Dhenuka* (Bhagyalekshmy 1990, 39). Finding a Carnatic *raga* that corresponded to the scale employed was serendipity rather than intention. However, it may have been statistically likely, given that the *Melakarta* system allows for every possible heptatonic scale with a perfect fifth between the tonic and fifth degree.

Modifications to performance technique are required for the cello voice to emulate the South Asian bowed string tradition. There is more *portamento* between notes, which involves shifting on a single finger to notes that ordinarily would be articulated by adjacent fingers. Additionally, a slow vibrato is used sparingly. One ornament that is

prevalent in this tradition is the mordent, which is particularly effective for the minor third (Ab to B) of this scale.

The only composed melody in Section I consists of the whirlwind 16th note passage that appears in system four, using the hexatonic scale described above. The two retuned upper strings (C₃ G₃) allowed for much less awkward string crossings in the bowing pattern when compared to performing this passage on a conventionally tuned cello. The notated melody revealed a metrical structure of eleven beats. I decided to employ a linear improvisation approach, where specific composition goals are given, and the improvisation occurs in the context of a transition between these fixed materials. In the third system of Section I, a pulse is gradually introduced, but it is not fully organized into meter until the fourth system. Similarly, the notes Ab and B are incrementally taken away, and the note Bb is slowly infused to replace it. By the fourth system, the initial heptatonic scale introduced in system two (C, Db, Eb, F, G, Ab, B) has morphed into the hexatonic scale (C, Db, Eb, F, G, Bb). In the fifth system of Section I, this process is reversed as a way of transitioning to the slower, quieter Section II. The intensity of the improvisation fades. First meter, then pulse, are lost, and the original heptatonic scale returns. In the final instruction of Section I, harmonics on the notes G, B, C, D and E are ushered in to introduce the first appearance of tonality in Section II.

Although the drone continues throughout most of the piece, Sections II and III of “Scordatura Suite 2” become increasingly focused on the Western concern with vertical pitch relationships and distance themselves from the South Asian influence. Section II explores new possibilities for the double stop natural harmonics found in this tuning. A

series of harmonic dyads form the texture of a simple melody accompanied by a lower voice, which is recorded on the loop pedal. The harmonic effect is a pedal point progression in C major. Once the loop pedal is put in playback mode, these harmonics are layered over the drone to form the backdrop for improvisation. This particular space for the cello provides a *tessitura* for improvisation beneath the recorded harmonic accompaniment and above the drone. The resultant pan diatonic harmonies are made all the richer by including double stops in the improvised part.

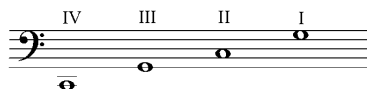
“Scordatura Suite 2” concludes in Section III with a slow fade of the drone, and a strummed progression in the lowest register of the cello. The open C₃ and G₃ strings ring in each chord. For contrast, the melody is now in the bass, a far more active role for the low end of the instrument than other sections of the composition. Like the natural harmonics melody found in Section II, the musical language here is simpler. It has the beguiling qualities of a lullaby.

The use of *scordatura* introduced a reshaped topography of the cello. Similar to my experience with the prepared cello, the altered tunings caused my ear and hands to search for new sounds. The transformed resonance and timbre of the cello became a creative starting point. Rather than working within a traditional composition form and choosing sounds that fit, I embraced the modernist sensibility of building a composition from sounds, and having the formal structure follow.

Scordatura Suite 2

Matt Brubeck

Cello Tuning

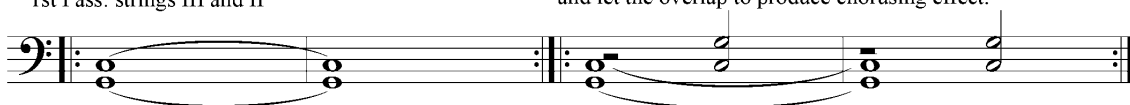


I

Build a drone like a tanpura using loop pedal.

1st Pass: strings III and II

2nd and 3d Pass: strings I and II. Gently swell into notes and let the overlap to produce chorusing effect.

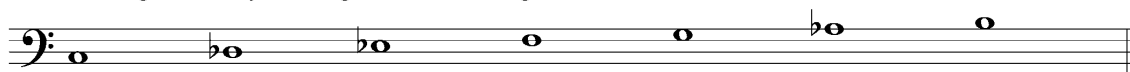


Put loop pedal in playback mode.

Improvise *alap*, non-metered.

Start in low register, slowly revealing the notes in the raga.

Gradually build in volume, range, and note density.



Introduce feeling of pulse.

Gradually eliminate use of Ab and B

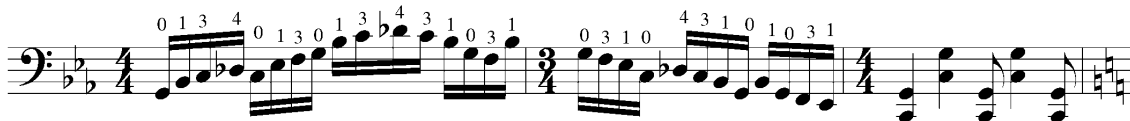
while simultaneously introducing new pitch of Bb.



Introduce 16th note values.

Build up to the melody below.

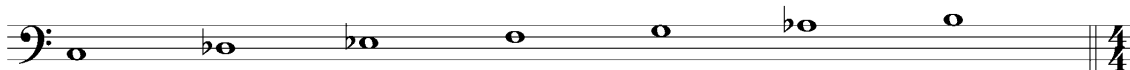
Imagine improvising within this 11 beat metrical structure.



After peak intensity, transition back to non-metered.

Gradually slow tempo while eliminating Bb's.

Reintroduce notes from previous raga, Ab and B.



Introduce the harmonics that appear in Part II: G, B, C D, and E.

II

Put loop pedal in record mode.
Record 4 measure phrase of double stop harmonics.
Sounding Pitch

Finger position and string used

Put loop pedal in playback mode.

Modal improvisation using C Major scale, long tones, double stops, ethereal...

III

Strum, with thumb, bringing out melody in the bass

Loop fades niente

let ring hammer-on

Madiba

In many ways, the topography of the cello shaped the contours of this composition. “Madiba” emerged from a cello improvisation with a moving melodic line harmonized by double stops. The construction of a two-voice line in the key of C took advantage of natural harmonics and full chords using open strings, exemplifying the triadic harmonic language that often emerges from composing at the cello.

There is some similarity to the declamatory gestures found in the classical solo cello literature (the prelude of Bach’s third suite comes to mind). However, despite the rolling chords, the reference point for the cello voice was the *a capella* vocal music of South Africa, such as *mbube* and *isicathamiya*. This influence is evident in the descending melodic line and the harmonies that freely mix sixths with parallel fourths and fifths within the diatonic system. The metrical scheme is intended to mimic the unusual *rubato* timing found in this music. Each bar contains a melodic phrase rather than a representation of where to place metrical emphasis. The melody can also be interpreted as a call and response texture between female voices (measures 1 and 2) and male voices (measures 3-5).

The accompaniment to the improvisation is a typical four-chord progression (I, IV, V_4^6 , V_3^5) heard in *mbaqanga*, an indigenous South African jazz style that emerged in the townships during the 1960s. The goal was the recreation of the sound that results from a combination of athletic bass performance accompanied by simple rhythm guitar chording. The swing feel of this music has a more pronounced triple subdivision than modern American jazz, and is closer to blues and early rock and roll. In the arco passage,

the bow stroke uses a great deal of bounce, and the bowing directions are meant to highlight the accent pattern of the bass notes on the first, third, sixth, ninth, and twelfth 8th notes. Chop technique is also used to accentuate the percussive element of back beat double stops. The pizzicato passage places emphasis on the anticipation of beat three, often found in *mbaqanga* (notated here as the fifth 8th note in 12/8 meter). A hammer-on technique in the left hand is indicated with slurs. The interplay of bass and guitar-like accompaniment voices are notated with stems up and stems down. The harmony also changes slightly in the second measure of the progression, with a substitution of ii⁶ for IV.

While “Madiba” has been performed both with and without electronics, the form remains the same. The “choir” section is played as written. The cyclical form of the improvisation is contained in the 16 bar 12/8 section (measures 21-36). The piece closes with a return of the choir. When using looping technology (figure 11, p. 180), measures 21-36 are recorded as written. The loop is then played back as the accompaniment to an arco improvisation.

When not aided by electronics, the 16 bar 12/8 section is played as notated. Then the progression is repeated, playing four measures as written followed by four measures of improvisation, while keeping the harmony in mind. Gradually the length of accompaniment figures decrease and the length of the improvisations increase. Periodically returning to the riff serves as an orientation point for both performer and audience. Jazz guitarists often use this self-accompaniment strategy in solo performance. When rehearsing this piece it was useful to imagine a musical conversation between

accompanists and singers, or perhaps a kind of interplay between high and low registers of the cello. Regardless of the mental image used, the result is a self-accompaniment where different timbres and textures are set into a dialogic dance.

One objective is to develop compositions where the solo cello space is complete without the support of additional musicians. “Madiba” offers an approach through the simplicity of its musical materials and directness in expressive communication. The melody is memorable and the form is very easy for the audience to comprehend. Listeners can “hear” the accompaniment in their minds. As long as the improvisation does not stray too far from the harmonic foundation, the perception of the cyclical harmonic structure lingers. The piece also demands a very strong sense of internal pulse, what jazz musicians call “time.” In performance, the improvisation is propelled by the imagined syncopations of the accompaniment figures. On occasions, it feels like the audience is keeping time too, silently contributing to the sense of swing.

This piece was written in honour of “Madiba” (as Nelson Mandela is referred to by many South Africans). Rather than using the plaintive sound of the cello often associated with mourning in the West, the cello voice is an amalgamation of various South African instrumental and vocal traditions. My intention was to celebrate Mandela’s extraordinary life in the manner of an African praise song. The vocal choir section is meant to evoke his dignity and resolute moral compass. The swinging improvisation calls to mind the joyous aspects of South African music, reflecting the hopes of the people in their long struggle for liberation.

SOLO CELLO

MADIBA

MATT BRUBECK

$\text{♩} = 60$
RUBATO

6
 11
 16

FINE

SOLO CELLO: AS STARTING POINT, PLAY AS WRITTEN FOR 4 MEASURES, IMPROVISE FOR 4 MEASURES

 $\text{♩} = 160$

WITH LOOPER: RECORD THESE 16 MEASURES, PLAYBACK AS ACCOMPANIMENT TO IMPROVISATION

BRIGHT IN TEMPO

21 **ARCO**

25

29 **Pizz.**

D.C. AL FINE

33

Now That You've Left Us

“Now That You've Left Us” is a short work for pizzicato cello that takes the listener on a brief journey in a short space of time. A literary equivalent might be the *haiku*. It was written a few months after my father passed away, and its emotional core is both song-like and contemplative. The piece came together very rapidly while improvising at the cello in his studio. All its essential elements were in place before notation began.

The metrical stress of the theme (dotted quarter, eighth, and four quarters) has the lilt of a British Isles folk tune, and mimics the rhythm of the title words. For the most part, the texture resembles a baroque air executed in *style brisé*, which emphasizes the vertical relationships established by setting a melody to broken chords, rather than the harmonic relationships created by streams of notes appearing in succession. A solo cello space possessing completeness of melody and harmony is established by embracing the polyphonic capabilities of the instrument, while the cello voice evokes Renaissance lutenist John Dowland more than J.S. Bach.

Several pizzicato techniques normally associated with European lute and guitar traditions are utilized to good effect. All chords are plucked simultaneously or broken between the thumb and fingers of the right hand. The slurs in the score indicate pull-offs or hammer-ons in the left hand. The direction of the strum is indicated in order to emphasize particular notes in the chords. The key of G is used to maximize the utility of the open cello strings and available natural harmonics. While some of the chords used appear from time to time in my improvising vocabulary (the Bb augmented triad in

measure 22 and the Db major 7 chord in measure 24), others were developed specifically for this piece. The Gb over C polychord in measure 20 and the Eb min #11 in measure 23, were novel sonorities for me.

One striking moment is the double stop at measure 27. Structurally, the B harmonic is both the melodic peak and the emotional focal point of the piece. After the darker, polytonal harmonies and distant keys suggested by the previous passage, it creates a bright spot that brings us back to the original key. In order to balance the harmonic with the more robust volume of the open C string, I employed a new technique. Instead of simply plucking the G string harder than the C, I extended my index finger in such a way that the nail struck the string (while plucking), which increased the volume of the harmonic. The cello itself brought me to this point in the piece, and caused me to develop this particular technique. The feedback loops that occur through experiential trial and error underscore how the cello can nurture the creative process.

Now That You've Left Us

Adagio $\text{♩} = 48$

Matt Brubeck

To be played freely

Cello

pizz.
p

pull-off

5

9

13

thumb

pp

20

mf

1

4

2

3

2

1

0

3

2

1

0

24

mp

harmonic with fingernail

III

IV thumb

normal

29

mp

mp

33

poco a poco diminuendo

hammer-on

rit.

p

Prelude in G Minor

The discussion below concerns three scores related to one composition: “Theme and Prelude ‘Starter,’” “Improvised Prelude Transcription,” and “Prelude in G Minor.” These differing versions have been included to illustrate various stages of the experimental process used to produce this piece. They also serve to illuminate the role improvisation has in my composition practice.

The initial impulse for the entire “Prelude in G Minor” project was the *largo* theme that appears at the outset of the “Theme and Prelude ‘Starter’” score. Returning to this melody on several occasions produced improvisations with varied attributes. One of the most promising ideas was a steady eighth note figure in 9/8 meter that had the qualities of a *ricercar*, prelude, or fantasy. Historically, these types of pieces have an improvisatory character. The score contains the original theme followed by the first four measures of the prelude. This combination became the genesis for the transcribed improvisation. The term “starters” denote fixed ideas that provide a referent during the improvisation process. They are a point of departure, but not necessarily an endpoint. A good starter may lead to several alternative outcomes. In this case, the prelude idea was one of them.

Improvising a prelude presents several challenges. First, there is no predetermined form. Unlike improvising a baroque binary dance or a jazz tune, one does not work toward previously established harmonic goals. Instead, the form is built as one advances. It must have a strong sense of harmonic progression and should move to a variety of tonal

areas through the process of modulation. If one finds oneself in a distant key, one has to modulate back to the original key to complete the prelude.

Another task was determining the character of the piece in relationship to historical notions of style. In this traditional solo cello space, I was aiming for the musical texture found in the preludes to Bach's first and fourth *Suites for Unaccompanied Cello*. The starter of the prelude is designed to encourage a disciplined improvisation in which one proceeds within a stream of steady eighth notes, allowing the melodic contours and harmonic implications of the theme to gradually determine the overall form. The *multo perpetuo* monody, the attempt to maintain strong harmonic pull, the motivic development, and the title itself all speak to the influence of Bach. Nevertheless, a baroque style of improvisation was deliberately avoided by employing a flexible approach to meter, and a more contemporary harmonic and melodic language.

Finally, I wanted the prelude to flow in a cohesive manner without being memorized. Aesthetically, it was crucial to maintain the spontaneity and freshness of improvisation. Eventually, a form developed that resembled the linear improvisation structures of my other works. Certain phrases became anchoring points, and these fixed materials were interspersed with new materials created in the moment. An equilibrium was located between spontaneous action and the constancy of music composed prior to performance.

The score for "Improvised Prelude Transcription" documents a solo performance at the Guelph Jazz Festival. After listening to the live recording of this piece, I realized it had a number of ideas that might be worth preserving for future use and decided to

transcribe it. Naturally, the transcription reveals the thinking and immediacy that occurs in improvisation when mediated by the idiomatic qualities of the cello. For instance, measure 16 is clearly derived from altered scale licks developed while improvising jazz on the cello. It is built on a series of sevenths (D-C, Ab-F#, D-C, F#-F), where the hand moves from position to position on the cello to form the interval between first and fourth fingers on adjacent strings. The lilting sequence in measures 42-43 is derived from interval patterns formed by moving thumb positions by descending whole steps. The starter motive opens with a fifth expressed by two open strings (G and D) followed by another fifth (Eb and Bb) using stopped notes. At measure 36, the original motive is transposed down a half step to start on F#. Here the two consecutive fifths separated by a semitone are spread over four strings. The stopped strings are the first fifth (F# and C#) and the open strings are now on the second fifth (D and A). This subtle transformation comes from the exploration of the cello's resonance characteristics, but eventually became a key harmonic feature of the piece.

The notated score, "Prelude in G Minor," utilizes and builds on some of materials that emerged from "Improvised Prelude Transcription." The improvisations documented in the transcription had force of argument but needed editing and elaboration. Both the transcription and the composition begin with the starter motive, but only about twenty percent of "Prelude in G Minor" is a paraphrase of improvised ideas from the transcription. There are a few favourite passages that are substantially the same, but most were modified when incorporated into the composed work. The most exact and lengthy correlation occurs in measures 29-40 of the notated composition, and is drawn from

measures 36-44 of the transcription. In this passage very few pitches are changed, but there are alterations of metrical organization. At times sequential movement is made more concise by eliminating superfluous notes or moments of harmonic ambiguity. Measures 14-16 of the composition are considerably tighter than measures 14-17 of the transcription. Some ideas hinted at in the transcription become fully developed in the composition. An excellent motive for sequential movement is initiated at measure 49 of the transcription. However, measure 50 is clearly an imperfectly realized effort to move this motive sequentially. In the composition, measures 87-91 are all spun from the same sequential movement idea. Here the sequence is extended in a manner that is much more harmonically compelling.

Another element borrowed from the transcription was the use of irregular, shifting meters that helped prevent the prelude from sounding too baroque. The restatement of the theme in F major at measures 82-83 has a Spanish flavour because of the lilt provided by the shift to 11/8 meter. If the project had started as a notated composition, it would have been natural to maintain the 9/8 meter throughout the piece; perhaps in an effort to project a more disciplined compositional style.

A subtle difference between “Improvised Prelude Transcription” and “Prelude in G Minor” is the treatment of motive materials. Intervallic manipulation of the materials is prominent within the improvisation. The same holds true for the composition, except the opening motive appears in more variety of guises. For example, at measure 56 the original motive, comprised of two sets of consecutive fifths, is expanded into three sets (B F#, G D, and A E). At measure 70 the motive appears in truncated form in 4/4 meter,

which sets up the most dramatic passage of the composition from measures 71-76. In the composition the motive also occurs in more keys than the transcription. It appears in the keys of G minor, F # minor, D minor, D major, B minor, C minor, F minor, and F major before returning to G minor. In “Improvised Prelude Transcription” the motive only moves to F# minor during the course of the improvisation. The reason may be that in improvised performance, where beginning and ending on the same key is valued, travelling to a remote key may have engendered some trepidation about discovering a convincing way to return to the original key. In “Prelude in G Minor,” remote key areas are occupied for a longer time span that allows for a more expansive piece.

Getting in and out of various tonal areas can be tricky, but overall the modulations in the composition are more effective. There is a sense of the patience of composition, of letting events gradually unfold over time. For example, the restatement of the theme in F# minor at measure 36 of the transcription is gratifying, but the modulation is abrupt and lacks the necessary preparation. In measures 18-23 of the composition the D natural is used as a common tone between G harmonic minor and F# natural minor. The note morphs from V in G minor to a flat 9 of a C# dominant chord. This figure is used again in measures 43-48 to accomplish the modulation to D minor. In both passages modulations are given sufficient time for the ear to gain distance from an established tonal centre and transition to acceptance of a new one.

Additionally, there are manipulations of materials that emerge from my knowledge of established *a priori* composition techniques. In “Prelude in G Minor,” the strict chromatic inversion of interval sets is borrowed from the techniques of serialism

and is a means of varying the materials that corresponds with my instinctual musical thinking. Measure 50 is an inversion of the interval relationships found in measure 49, and the same relationship exists between measures 52 and 51. The inversion is repeated in measure 53, repeated again in truncated form at 54, and then repeated and further truncated at 55. The notes A, C, and F# now form vii of B minor, the new key established in measure 56.

“Prelude in G Minor” does not demand improvisation or idiosyncratic cello techniques. Rather, it requires a classical cello voice and the competencies associated with performing Western art music. Nevertheless, the goals for both the improvised and composed versions of the prelude were much the same: creating a monodic texture that embraced expressive melodic shape; maintaining a strong sense of harmonic progression; and presenting musical ideas with concision. In other words, the aim was to achieve Bach’s completeness in a single line, without duplicating his exact style. I admire this feature in Kodály, Reger, and Britten’s 20th century forays into solo cello composition.

While I have notated brief improvised ideas and integrated them into compositions, the process of developing a notated composition from a performance transcription was a new experiment. I tend to conceptualize improvised ideas and composed ideas as coming from different strata of musical consciousness. Improvised ideas are intimately linked to the physical gestures of performance and they possess a more localized utility within a short time span. They are guided by instrumental technique and spontaneous decision-making. Formal composition provides a broader perspective, with as much time as needed to zoom in on the details. From this standpoint,

it is unlikely that I would improvise a prelude that had the sense of dramatic arc and proportion as the notated work. However, mining the transcription for useful improvised ideas proved to be a way to diversify the composition process; “composing” through the process of assembling useful nuggets from different strata of musical thinking. The fundamental aesthetic model of the prelude came from improvisation, without a conscious intent to “compose”, yet contributed to the final composition. In a sense, when there is a referencing of improvised materials within the composition itself, the distinctions between improvisation and composition are increasingly blurred.

Theme and Prelude "Starter"

Matt Brubeck

Largo ♩ = 50

Cello

mp
Left hand pizzicato. Let ring

7

13

19 *Improvise transition to Prelude "starter" below*

Andante ♩ = 76

21

24 *Improvise to end*

Improvised Prelude Transcription

Solo Cello Performance Guelph Jazz Festival

Matt Brubeck

Andante $\text{♩} = 76$

Cello

4

8

12

16

20

25

29

2



Prelude in G Minor

for solo cello

Matt Brubeck

Andante ♩ = 116

mp

4 *mf* *mp*

8 *mf*

12 *mp* *f*

15 *mf*

18 *mf* *subito p*

21 *mf*

24 *mf*

Prelude in G Minor

3

60 *mp*

64 *p*

68 *mf* *f*

72

76 *ff* *f*

80 *subito mp*

84 *mf*

87 *mp*

Detailed description: This page contains the bass line of the third system of the Prelude in G Minor. It consists of eight staves of music. The first staff (measures 60-63) is marked *mp*. The second staff (measures 64-67) is marked *p*. The third staff (measures 68-71) is marked *mf* and *f*. The fourth staff (measures 72-75) continues the *f* dynamic. The fifth staff (measures 76-79) is marked *ff* and *f*. The sixth staff (measures 80-83) is marked *subito mp*. The seventh staff (measures 84-86) is marked *mf*. The eighth staff (measures 87) is marked *mp*. The music features various rhythmic patterns, including eighth and sixteenth notes, and rests. There are also some dynamic markings like *subito* and *subito mp*.

4

Prelude in G Minor

89 *p* *mp* *mf*

92 *f*

95 *mf* *mp*

98 *p* *mp* *dolce* *p* L.H. +

The musical score consists of four staves. The first staff (measures 89-91) is in bass clef, G minor, 4/4 time, with dynamics *p*, *mp*, and *mf*. The second staff (measures 92-94) is in bass clef, G minor, 4/4 time, with a dynamic of *f*. The third staff (measures 95-97) is in treble clef, G minor, 4/4 time, with dynamics *mf* and *mp*. The fourth staff (measures 98-100) is in bass clef, G minor, 4/4 time, with dynamics *p*, *mp*, *dolce*, and *p*, and includes the instruction "L.H. +".

CONCLUSION

The portfolio of heterogeneous compositions that form the heart of this dissertation display the influence of multiple traditions and complement my diverse cello performance practice. All can trace their origins to improvisation at the cello, and most include specified areas for improvisation within the composition. Additionally, as I became aware of the extent that space and voice informed my compositional thinking, I was able to better articulate these concepts for myself and apply them to my creative work.

As background and context, the evolution of cello space and voice in both Western art music and jazz has been discussed. Furthermore, as a classically trained cellist drawn to the possibilities of jazz and improvisation, I researched the largely unexamined history of the cello's introduction to the jazz genre. This investigation of the jazz cello pioneers, particularly the inspirational Fred Katz, revealed that the creation of an authentic jazz cello voice involves both the production of a sound that is idiomatic to jazz, as well as developing a language of improvisation that is idiomatic on the cello.

The construct of space emerged as a primary consideration when writing for ensembles and led me to move beyond standard jazz composition and arranging strategies in order to promote an optimal space for the cello. I identified a need for flexibility in how ensemble instruments could relate to one another. My experiments with linear improvisation forms and more complex cyclical structures are directly related to addressing this need for mutable space within my compositions.

While cello voice is certainly a vital element in ensemble works, it shifted to the forefront of my considerations when composing for solo cello. Because I was not bound to any particular genre aesthetics, or engaged in interactions with other musicians, I felt free to explore the extensive range of timbral variations and diverse textures that can result from prepared cello, electronic processing, and *scordatura*. I found this process to be both liberating and inspiring.

Working on this portfolio has both honed my approach to composition and expanded my creative palette for future endeavours.

REFERENCES

- Allsop, Peter. 1999. Ensemble Music. In *The Cambridge Companion to the Cello*, ed. Robin Stowell, 160-177. New York; Cambridge University Press.
- Alperson, Philip. 2010. "A Topography of Improvisation." *The Journal of Aesthetics and Art Criticism* 68, no. 3: 273-80.
<http://www.jstor.org.ezproxy.library.yorku.ca/stable/40793268>.
- Bailey, Derek. 1993. *Improvisation: Its Nature and Practice in Music*. New York: Da Capo Press.
- Berendt, Joachim-Ernst, and Gunther Huesmann. 2009. *The Jazz Book: From Ragtime to the 21st Century*. 7th ed. Chicago, Ill.: Lawrence Hill Books.
- Berio, Luciano. 2002. Composer's note to *Sequenza XIV for Violoncello*. Vienna: Universal Edition.
- Berliner, Paul. 1994. *Thinking in Jazz: The Infinite Art of Improvisation*. Chicago: University of Chicago Press.
- Bhagyalekshmy, S. 1990. *Ragas in Carnatic Music*. Trivandrum: CBH Publications.
- Bonta, Stephen et al. 2002. "Violoncello." *Grove Music Online. Oxford Music Online*. Accessed August 4, 2014. <http://www.oxfordmusiconline.com.ezproxy.library.yorku.ca/subscriber/article/grove/music/44041>.
- Cage, John. 1973. *Silence: Lectures and Writings*. Middletown, CT: Wesleyan University Press.
- Campbell, Margaret. 1999. "Masters of the Baroque and Classical Eras." In *The Cambridge Companion to the Cello*, ed. Robin Stowell, 38-52. New York: Cambridge University Press.
- Carnovale, Norbert and Richard Dyer. 2002. "Schuller, Gunther." *Grove Music Online. Oxford Music Online*. Accessed June 17, 2015.
<http://www.oxfordmusiconline.com.ezproxy.library.yorku.ca/subscriber/article/grove/music/A2258122>.
- Carpenter, Kenneth S. 2003. Play It!: Music & Musicians - Cool Katz. *Strings* 18, no. 3 (10/00; October 2003): 42, 44.

- Chambers, Mark. 1996. "The 'Mistuned' Cello: Precursors to J.S. Bach's Suite V in C Minor for Unaccompanied Violoncello." DMA diss., Florida State University.
- Cowell, Henry. (1929) 2004. "The Joys of Noise." In *Audio Culture: Readings in Modern Music*, edited by Christoph Cox and Daniel Warner, 22-24. New York: Continuum.
- David, Hans T. and Arthur Mendel, eds. 1998. *The New Bach Reader: A Life of Johann Sebastian Bach in Letters and Documents*. Revised and Expanded by Christoph Wolff. New York: Norton.
- DeVeaux, Scott. 1998. Review of *Thinking in Jazz: The Infinite Art of Improvisation*, by Paul Berliner. *Journal of the American Musicological Society*, Vol. 51, No. 2. (Summer, 1998), pp. 392-406.
- Dilworth, John 1999. "The Cello: Origins and Evolution." In *The Cambridge Companion to the Cello*, ed. Robin Stowell, 1-27. New York: Cambridge University Press.
- Dresser, Mark. 2000. "A Personal Pedagogy" in *Arcana*, ed. John Zorn, 250-261, New York: Hips Road and Granary Books.
- Eco, Umberto. (1959) 2004. "The Poetics of the Open Work". In *Audio Culture: Readings in Modern Music*, edited by Christoph Cox and Daniel Warner, 167-175. New York: Continuum.
- Ferand, Ernest T. 1961. *Improvisation in Nine Centuries of Western Music: An Anthology with a Historical Introduction*. Koln: A. Volk Verlag.
- Gioia, Ted. 1992. *West Coast Jazz: Modern Jazz in California, 1945-1960*. New York: Oxford University Press.
- Glyde, Judith. 2011. "Aria Project Shows Cellists Can Learn from Opera." *Strings* 25, no. 8 (March 2011): 41-42.
- Goldsby, John. 2002. *The Jazz Bass Book: Technique and Tradition*. San Francisco: Backbeat Books.
- Gonzalez, Fernando. 1989. "New Groups Are Proving That Strings Can Swing, Too." *Boston Globe*. April 30.
- Gordon, Robert. 1986. *Jazz West Coast: The Los Angeles Jazz Scene of the 1950s*. London: Quartet Books.

- Gordon, Robert. 1997. Essay in accompanying booklet. *The Complete Pacific Jazz Recordings of the Chico Hamilton Quintet*, Mosaic MD6-175.
- Graves, Charles D. 1971. Translation of *Instructions in Music Theoretical and Practical for the Cello* by J.B. Baumgärtner (circa 1774) in "The Theoretical and Practical Method For Cello by Michel Corrette: Translation, Commentary, and Comparison with Seven Other Eighteenth Century Cello Methods." PhD diss., Michigan State University.
- Hentoff, Nat. 1957. Liner notes for *Soulo Cello*. Decca, DL9202 L.P.
- Isaacson, Kristin. 2007. "Yardbird Cello: Adapting the Language of Charlie Parker to the Cello Through Solo Transcription and Analysis." DMA diss., Louisiana State University.
- Jinbashian, Ishkhan. 2007. "Rediscovering the Miracle of West Coast Jazz." *Armenian Reporter: Arts and Culture*. August 4. Accessed May 15 2008.
<http://www.jazzinhollywood.com/>
- Katz, Fred. 1958. Liner notes for *Folk Songs for Far Out Folk*. Reissued on Reboot Stereophonic CD RSR 007. 2007.
- Kun, Josh. 2007. "Far Out Fred". Liner notes for *Folk Songs for Far Out Folk*. Reissued on Reboot Stereophonic CD RSR 007.
- Lewis, George E. 2004. Improvised Music After 1950: Afrological and Eurological Perspectives. In *The Other Side of Nowhere: Jazz, Dissonance and Critical Practice*, ed. Daniel Fischlin and Ajay Heble, 131-162. Hanover, New Hampshire: Wesleyan University Press.
- New Oxford American Dictionary. 1st ed. Edited by Elizabeth Jewell and Frank Abate. New York: Oxford University Press, 2001.
- Nicholson, Stuart. 2005. *Is Jazz Dead? (or Has it Moved to a New Address?)*. New York: Routledge.
- Nyman, Michael. 1999. *Experimental Music: Cage and Beyond*. New York: Cambridge University Press.
- Ouellette, Dan. 2013. *Ron Carter: Finding the Right Notes*. New York: Retrac Productions.

- Ozorio, Anne. 2006. "Rohan de Saram on Berio and New Musical Horizons." Musicweb International. Accessed July 10, 2014. http://www.musicweb-international.com/classrev/2006/Nov06/Saram_Ozorio.htm.
- Russell, Ross. 1996. Liner notes for *Up in Dodo's Room*. Reissued as Jazz Classics Records. CD-JZCL-6008.
- Schuller, Gunther. 1989. *The Swing Era: The Development of Jazz, 1930-1945*. New York: Oxford University Press.
- Simms, Rob. 2004. *The Repertoire of Iraqi Maqam*. Lanham, MD: Scarecrow Press.
- Stockhausen, Karlheinz. (1958) 2004. "Electronic and Instrumental Music." In *Audio Culture: Readings in Modern Music*, edited by Christoph Cox and Daniel Warner, 370-380. New York: Continuum.
- Stowell, Robin. 1999a. "Other Solo Repertory." In *The Cambridge Companion to the Cello*, ed. Robin Stowell, 137-159. New York; Cambridge University Press.
- _____. 1999b. "The Sonata." In *The Cambridge Companion to the Cello*, ed. Robin Stowell, 116-136. New York; Cambridge University Press.
- Stowell, Robin and Jones, David Wyn. 1999. "The Concerto." In *The Cambridge Companion to the Cello*, ed. Robin Stowell, 92-115. New York; Cambridge University Press.
- Sudnow, David. 2001. *Ways of the Hand: A Rewritten Account*. Cambridge, Mass: MIT Press.
- Tolley, Trevor. 2005. "Oscar Pettiford: First Bass then Cello." *Coda*, no. 319 January/February, 16-19.
- Uitti, Frances-Marie. 2000. An Adventure. In *Arcana*, ed. John Zorn, 67-77, New York: Hips Road and Granary Books.
- Wijsman, Suzanne et al. 2001. "Violoncello." *Grove Music Online. Oxford Music Online*. Accessed August 4, 2014. <http://www.oxfordmusiconline.com.ezproxy.library.yorku.ca/subscriber/article/grove/music/44041>.
- Wilkins, Margaret Lucy. 2006. *Creative Music Composition*. New York: Routledge.
- Wilonsky, Robert. 2000. Back to the Bass. *The Dallas Observer*. December 7. Accessed May 15 2008. <http://www.dallasobserver.com/2000-12-07/music/back-to-the-bass/>

Winold, Allen. 2007. *Bach's Cello Suites: Analyses and Explorations (Vol. 1 & 2)*
Indiana University Press.

Zalta, Edward N. 2018. "Gottlob Frege", *The Stanford Encyclopedia of Philosophy*
(Spring 2018 Edition), Edward N. Zalta (ed.), URL =
<<https://plato.stanford.edu/archives/spr2018/entries/frege/>>.

REFERENCE SCORES

- Bach, Johann Sebastian. *Six Suites for Unaccompanied Cello*. New York: E.F. Kalmus [c1968]
- Berio, Luciano. 2002. *Sequenza XIV for Violoncello*. Vienna: Universal Edition.
- Cage, John. 1960. *59 1/2 Seconds for a String Player*. New York: Henmar Press.
- Crumb, George. 1973. *Vox Balaenae*. New York: C.F. Peters.
- Debussy, Claude. 1915. *Sonata for Cello and Piano*. Paris: Editions Durand.
- Feldman, Morton. 1962. *Projection 1 for Solo Cello*. New York: C.F. Peters.
- Kodály, Zoltán. 1915. *Sonata for Violoncello Solo*. Vienna: Universal Edition.
- Ligeti, György. 1948. *Sonata for Violoncello*. Mainz: Schott Edition.
- Webern, Anton. 1914. *Three Little Pieces for Cello and Piano*. Vienna: Universal Edition.

REFERENCE SOUND RECORDINGS

- Babasin, Harry. 1957. *Harry Babasin and the Jazz Pickers*. Reissued on V.S.O.P. #39, 1998. CD.
- Brown, Ray. 1960. *Jazz Cello*. Reissued on Verve 440 065 395-2, 2003. CD
- Bylsma, Anner. 1992. *Bach: The Six Unaccompanied Cello Suites*. Vivarte BWV 1007-1012. CD.
- Carter, Ron. 1961. *Where?* Reissued on Prestige/New Jazz PRCD-30648, 2008. CD.
- Coltrane, John. 1959. *Giant Steps*. Reissued on Atlantic 1311-2, 1988. CD.
- Dolphy, Eric. 1960. *Out There*. Reissued on Prestige/New Jazz OJCCD-023-2, 1982. CD.
- Ellington, Duke. 1950. *Great Times: Duke Ellington and Billy Strayhorn Piano Duets*. Reissued on Riverside OJCCD-108-2, 1989. CD.
- Friedlander, Erik. 2003. *Maldaror*. Brassland HWY-005. CD.
- Friedlander, Erik. 2007. *Block Ice and Propane*. SkipStone Records. CD.
- Friesen, Eugene. 2003. *In the Shade of the Angels*. FiddleTalk Music. CD.
- Giuffre, Jimmy. 1961. *Jimmy Giuffre 3: 1961*. Reissued on ECM 1438-1439, 1992. CD.
- Haimovitz, Matt. 2005. *20th Century Cello*. Deutsche Grammophon 00289 477 5506. CD.
- Hamilton, Chico. 1955. *Chico Hamilton Quintet featuring Buddy Collette*. Reissued on *The Complete Pacific Jazz Recordings of the Chico Hamilton Quintet*, Mosaic MD6-175, 1997. CD.
- Hamilton, Chico. 1956. *Chico Hamilton Quintet in Hi-Fi*. Reissued on *The Complete Pacific Jazz Recordings of the Chico Hamilton Quintet*, Mosaic MD6-175, 1997. CD.
- Hamilton, Chico. 1957. *Chico Hamilton Quintet*. Reissued on *The Complete Pacific Jazz Recordings of the Chico Hamilton Quintet*, Mosaic MD6-175, 1997. CD.

- Hawkins, Coleman. 1943. "The Man I Love". First issued on Signature Records 9001. *The Smithsonian Collection of Classic Jazz*, Revised Edition 1987. The Smithsonian Collection of Recordings. CD.
- Hemphill, Julius. 1977. *Coon Bid'ness*. Reissued on Freedom Records 741028, 1997. CD.
- Jones, Sam. 1960. *The Soul Society*. Reissued on Fresh Sound Records FSR 765, 2013. CD.
- Katz, Fred. 1956. *Zen*. Reissued on *The Complete Pacific Jazz Recordings of the Chico Hamilton Quintet*, Mosaic MD6-175, 1997. CD.
- Lee, Peggy. 2002. *Sounds From the Big House*. Spool SPL117. CD.
- Ma, Yo Yo. 2001. *Silk Road Journeys: When Strangers Meet*. The Silk Road Ensemble. Sony Classical SK 89782. CD.
- Marmarosa, Dodo. 1947. *Up in Dodo's Room*. Reissued on Jazz Classics Records CD-JZCL-6008. CD.
- Mitchell, Red. 1961. *Rejoice!* Reissued on Fresh Sound Records FSR 908, 2016. CD.
- Monk, Thelonius. 1957. *Monk's Music*. Reissued on Riverside. OJCCD-084-2, 1987. CD.
- Pettiford, Oscar. 2008. *Oscar Rides Again*. Proper Records, Ltd. PROLUXE 5002. CD.
- Reijseger, Ernst. 1997. *Colla Parte*. Winter&Winter 910 012-2. CD.
- Wadud, Abdul. 1977. *By Myself*. Bishara BR 101. L.P.
- Waldron, Mal. 1962. *The Quest*. Reissued on Original Jazz Classics OJC-082, 1992. CD.