Terminal Station:

The Creation And Study of
A Canadian Rock Operetta
(And Its Idiomatic Soup)

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Abstract

What does the action or discipline of composition mean in 2017? Different arts will flow into, and away from each other organically. Rigidly defined boundaries can restrict what art belongs where, and which preservation and qualitative techniques are used, and can be an impediment to evolving the creative process.

Authenticity happens in a fleeting moment; it is a product of an evolving environment; some aspects natural, others arranged and ordered. It may be fortuitous to freeze creation in a moment, and it may not. Preserving compositions made using the Digital Audio Workstation will require acceptance of methods that are not yet standard pedagogy, but are common and required in the business and professional lives of composers all over the world.

The process used to create of the original Rock Operetta "Terminal Station", initiates a discussion about method, content and technology, and supports a philosophical and cosmopolitan compositional environment in 2017.

Acknowledgements

I would like to acknowledge the indispensable knowledge, valuable support and encouragement of my primary supervisor, Professor Sundar Viswanathan.

I would also like to thank my secondary supervisor Professor Michael Coghlan, for his attention to detail, and inspirational composition lectures.

Professors Stephanie Martin, Matt Vander Woude, Al Henderson, Jay Rahn, Casey Sokol, and Rob Bowman have all influenced and informed my approach for better, and played an important role in the completion of this thesis.

Often, great advice was gained simply during chance meetings in the hallways and corridors of York University's music building, and by taking the opportunity to cross the threshholds of welcoming and open office doors. Occaisional lunches with Dr. Parmela Attariwala were always fruitfull.

To my wife Michelle and my daughter Annabelle. I am forever grateful for your love, support, understanding and patience, while I undertook what I once thought impossible.

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Introduction

I have been a professional performer, producer and songwriter, working, and recording for 30 years, and creating specifically with Digital Audio Workstations (DAW) for 17 years. My first commercial recordings were released in the late 1980's, a short time after working with Canadian visual artist and musician Michael Snow. I was a technician assembling and translating Snow's maquettes into the large sculptures that still hang menacingly from the front of Rogers Centre in Toronto, called "The Audience." It was during this visual arts gig, standing next to an unfinished sculpture of a monumental woman some 17 feet tall, that I heard my own composition via radio station CKLN. That was the moment I chose music over visual arts as a profession.

Consequently, that single composition required years of saving money in order to record mix and release it on long playing vinyl disc. There were countless rehearsals with band mates. The human and monetary cost seem punitive and prohibitive to making music, and so I began learning the skills of sound engineering through studio work.

I've learned a great deal from touring and releasing original music, and from mixing the albums and the live shows of more than 3000 performers, comprised of jazz, punk, rock, folk, classical, world and operatic icons.

I have engaged in a kind of composition that appears at odds with some schools of thought. Many musical ideologies teach composition as if it is accomplished without the influence of the many processes and circumstances that I know to be integral to composition. I believe that compositional approaches and mediums can be shared between, and have always been the result of an evolution of mixed musical and artistic idioms. I feel that there is room for

an approach than can move music past concerns of "idiomatic or cultural authenticity", where music is considered to have undisputed origin or value.

My colleague Len Guenther recently gave me his take on the issue of authenticity that I find commiserate with my own creative beliefs, and a valuable reminder while in the throes of creating. He wrote, "Authenticity is about becoming oneself in opposition to cultural norms and tradition."

It is from this perspective that I sometimes skirt the perimeter of the expansive authenticity debate. For the purpose of this thesis, authenticity is a moving target to be punctured only once in a moment, the environment or space evolving constantly to reframe creation from new perspectives, ad infinitum.

The purpose of this work is to discuss the compositional process, and where it has evolved to, through the course of creating an operetta, and to create the content required to present it. Coincidentally it makes an argument for the use and acceptance of varied compositional tools such as the music studio console, and the Digital Audio Workstation (DAW) as standard practice, and the DAW's digital record as the appropriate score.

Secondarily, the music itself will show the ease with which varied musical idioms and instruments will interact with each other, primarily because of the use of the DAW, and its ability to imitate and make useful, virtually any sound or musical instrument, including the ones used commonly in western classical music. A final commercial stereo audio recording will also be supplied; its completion with out the DAW would not have been possible. The compositions themselves would not exist with out the use or influence of the DAW, and many parts rely on the DAW or a compatible counterpart for their performance.

Hopefully the reader will agree, that despite the commonly expressed fear that music made primarily through the computer will lack humanity, the listener will recognize the human

heart as whole and present within its performance.

Though it is not the purpose or subject of this research paper, it became apparent that a deeper investigation into the myriad meanings and implications of the ownership of music, would be of interest in the future. A study considering different peoples reasons for composing, and the relationship between published (preserved) music and its perceived value could lend a great deal to the subject here in. The use of the DAW and the implications of publishing ones own work aurally, in print, and now digitally in an academic way, could require a paradigm shift within parts of the music community. The business of music education, and the work of composition can be radically altered by the use of the DAW. This shift could be considered analogous to the advantages and pitfalls of abandoning pen and paper for the typewriter, working through word processing and finally accepting the use of a notation software such as Sibelius, and the laptop computer as a standard. For those who struggled to edit on paper while creating a thesis, it must appear as though certain talents and efforts are devalued, in order to accommodate a new technology that requires years to master, and constantly expects refreshed talents in order to take advantage of it's creative power. After all, forms of paper and pen have been adequate since antiquity.

It is also apparent that the new technologies could be considered effective teaching tools while placing a different perspective on the roles that many have relied on in order to earn a livelihood, such as editing, mixing, arranging, engineering, publishing, teaching, and playing music.

While creating the music for this thesis, I shared the content with trusted friends in order to gain their reflection. Due to the subject matter, their reactions where almost always guarded and apprehensive, and concerned with my well-being. I believe this is due to the common practice in popular music in which the authors will often express their own perspective

and experience.

Many works, especially operatic ones, discuss gruesome topics such as suicide, death, and afterlife, or return from a form of Hades or Hell, but usually from the perspective of the past via myth and legend. The reactions so far to this work are interesting to me, in that they speak to a absence of, or repulsion to the real stories that a composer might share, rather than romanticized and distant psychological and abstract forms that we often create in place of connecting directly with each other.

It is my voice that you will hear singing, and my fingers performing acoustically and virtually while committing musical ideas to hard drive, with the help of the computer's voice. This thesis is not meant only for your mind's ear, but also for your physical ears as well. You will read and hear my story and composition, and view an account of some of the tasks of creating a finished commercial product, as a result of the knowledge required to operate a DAW.

All final mixes where mastered online for broadcast by Landr, a company and e site that employs algorythms that map sonic preferences, and then alters final mixes to match accepted broadcast standards.

Chapter 1: This Composer's Credo and Thoughts about Composition and Method

I don't need or want music to take me away. I want it to take me to it. What is *it*? I don't

want fantasy. I want insight. I like the here and now. It might be due to my secular nature; I have

no God or heaven to aspire to. I want the music that I create to reflect my relationship with this

life.

For me it is contrary to purpose to call something art when it is philosophically rigid,

when context cannot re-imagine it, or when it relies only on being rectangular, or being confined

by a stave, stage or stanchion. And equally so when autonomous, it moves nothing, and requires

only definitions, uniforms or status, and not involvement, commitment, emotion and action.

When the idea of it, is more valuable than it, itself. Where ownership (copyright) is value, and

the written or painted paper piece is valued more than the act of making it (only one thing

requires the other). Steve Reich puts in plain language some of my concerns for an informed

approach to music making, including the need to reflect upon one's environment, in order to

create something vital.

> You grew up with Chuck Berry, and uh… hot dog stands and a million burgers sold at
> uh …you know McDonalds. That's running through your subconscious. I don't know
> what you have to do about it but just… y know don't tell me some lie…pretend you're in
> Vienna in 1812, cause you're not…[1]

> *Steve Reich*

Defining Composition

"The action or art of producing a work of music, literature, or art".*[2]*

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[1] From the documentary "in The Ocean"https://www.youtube.com/watch?v=h0NwiTHIhGM
[2] Taken from the Apple dictionary referencing, The Oxford American Dictionary

What is implied or understood by the definition above is that *music* means the aural document, that *literature* would mean a group of words (a physical document), and that *art*, a visual and sensual document. Never the less, composition is the arrangement, of the elements of sight, touch and hearing, and in the case of multidisciplinary arts and culinary art, taste and smell, come into play as well. To go a step further, it would not be unreasonable to suggest that a scent of Hyacinth or of rotting garbage, or presentation in a museum or on a street corner will influence a person's experience of a composition. It is another tiny leap to suggest that a musician script, score or order these sensual influences as part of a composition. Composition might involve one person alone by candlelight with a quill, two exchanging files by Internet across a nation, or ten between corners of the earth. It could involve many, whose disciplines are varied.

The Score

The Western musical score is an attempt to forever freeze a musical idea. There is a beginning and an end; the parameters are set, and dynamics carefully measured. It is a document for archival purposes, and a guide to the re-creation of musical moments strung together for another time. This does not mean for a moment, that the score will be interpreted as the composer intended.

 The way in which a composer might order and consider balance, unity, movement and rhythm, focus, patterns and proportion, will be limited to the environmental factors at play in the time and place that they are existent.

A composer of orchestral work in the classical realm creates for instruments that are mostly predetermined; their timbre, the quantity of instruments (defining their dynamic ability), their placement in the visual and aural spectrum a known factor. The audience will experience

the piece in a space that can accommodate an orchestra, and can decide to sit nearer a violin than to a cello, in essence making a choice as to the mix, or the representation of certain sonorities over others. The composer composes knowing these things before hand, and dynamic direction is given based on sonic considerations that might include section size, or whether the piece will be performed by period instruments, thus defining their own unique harmonic character. The map of these interactions is called the score. The score is determined by the choice and availability of instrumentation, and its usefulness will be determined by its ability to accommodate the composition. The composition and score are defined by the knowledge set or a preference for the idiom or piece, which in turn are often influenced by pedagogical practices. There is not necessarily a chicken or an egg, and an oeuvre is not airtight; all music has evolved through varied forms of authenticity, to its present state. This is true of all forms of music, whether they are jazz, rock, bhojpuri, or carnatic, the possible list of emerging and melting music, could contain a thousand specialities.

In 1937, composer John Cage makes a prediction about the score in an essay called *The Future Of Music: Credo.*

> I believe that the present methods of writing music, principally those which employ harmony and its reference to particular steps in the field of sound, will be inadequate for the composer, who will be faced with the entire field of sound.[3]

> We have been at that moment for quite a while, and we are still there, here and now.

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[3] Cage, John. *Silence. 50th Anniversary Edition Paperback* . Wesleyan University Press: 2013

The Chapter 2: Electronic Media as Compositional Tools

The Recording Studio

There is no shortage of composers who believe in, and work using recording studios as an aspect and essential instrument of their compositional practice. Glenn Gould, who many agree was one of the greatest North American musicians of the twentieth century, spent a great deal of time composing through the use of tape editing and imitative environmental musical signposts such as reverb and panning.

Another successful and influential composer, producer and creator of the ambient music genre, Brian Eno wrote:

> When you walk into a recording studio, you see thousands of knobs and controls. Nearly all of these are different ways of doing the same job: they allow you to do things to sounds, to make them fatter or thinner or shinier or rougher or harder or smoother or punchier or more liquid or any one of a thousand other things. So a recording composer may spend a great deal of her compositional energy effectively inventing new sound or combinations of sounds.[4]

In essence, knowing the tools of the studio requires a similar knowledge set to knowing the character and limits of the instruments of the orchestra, and is essential to the act of composition, in a contemporary way. But how do we represent these instruments, and their characters and dynamics with a score language created 300 years ago, especially if the characteristic of those instruments can only be known or experienced in real time, such as with automated (scripted changes) random pitch filtering (random and selective addition or removal of sonic characteristics)?

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[4] Ambient Music. *Audio Culture, Readings in Modern Music.* Bloomsbury Academic, 2004

Musical Instrument Digital Interface (MIDI)

       Simply stated, the Musical Instrument Digital Interface, or MIDI, is a digital communications language and compatible hardware specification that enables multiple electronic instruments, performance controllers, computers, and other related devices to communicate with one another with in a connected network.[5]

The Digital Audio Work Station (DAW)[6]

       For better or worse, most professional composers working in all musical idioms today use, or have their music processed by a digital audio workstation. In use since the late 1970s, the DAW is a culmination of musical and compositional knowledge. It is not an overstatement to say that a DAW's sound library can mimic or store and reproduce most, if not all of the recordable sounds known to humankind, and that new sounds are created daily for use in musical composition. The DAW not only maps the occurrence of pitch, loudness, its placement and direction (implied placement as part of an orchestra), distance, timing and timbre in the traditional Western sense (the score), but also the phase considerations, and the history of the process required to create those sounds when they are synthetic. The DAW contains the process and information required to replay a composition or group of compositions in a virtual folder called a "session". This session represents the history of the evolution of a composition in play, and it shows and remembers every change of mind that the composer has had, and the process by which the composition grew to accommodate what came before. One of the many benefits of this is that a student or musicologist studying the composer can observe these processes and the map of the occasion by opening a session. The digital memory required to preserve an average session is that which is contained by a common flash drive, often in the realm of 4-10 gigabytes. While recorded acoustic (non MIDI) instruments would need to be remapped as MIDI,

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[5] Huber And Runstein. *Modern Recording Techniques Fourth Edition*. Focal Press: 1997
[6] DAW is an electronic device or computer software application for recording, editing and producing audio files such as songs, musical pieces, human speech or sound effects. https://en.wikipedia.org/wiki/Digital_audio_workstation

the traditional score is created almost as a matter of fact in the rear ground; it is a document

that requires knowledge of the DAW and specialties study such as audio engineering. Musical

audio, video, and MIDI files created by use of the DAW can be shared easily across continents, as

can the entire session, encouraging collaborative work. Analog instruments are equally at home

along side digital ones while using the DAW, or can be translated into midi-based sounds.

  The DAW can be a substitute for a musician; it can be a tool that records, and teaches

etc. The DAW is not a panacea for listening to or creating great and lasting music, but for the

purpose of this thesis, its implications are important.

Chapter 3: Words, Silence (Space), Copyright and Improvisation are Composition

Words

In 1965 Marshal McLuhan is quoted as saying "the spoken word is music, pure music at any time. It is a form of singing."[7]

That same year, composer Steve Reich recorded street preacher Brother Walter in San Francisco's Union Square, and created a piece by editing the tape to create melody and rhythm, specifically highlighting the phrase "it's gonna rain".[8] McLuhan and Reich were not the first to think about words as music; many composers do not give preference to music made by inanimate objects manipulated by us, over the music of words or that of birds, their collusion in everyway an integral part of the whole composition. A flute's pitch may be placed to accommodate a sung word in harmony, a drum might echo or sound in place of an adjective or a snare drum imply a gunshot.

Some schools and specialities will say that the words that accompany an opera or a song are not music, but libretto or lyric (they can be all three), and not in the composer's realm of expertise. The music written for this thesis was dramatically affected and directed by the rhythmic and melodic nature of the lyrical content. Some will insist that certain sonorities should not be visited, or that certain venues are required for enjoyment of a composition. It is important to remind the reader that cultural experiences and behaviours, religious belief, class considerations and language, are only some of the many environmental circumstances that will inform pedagogical preferences leading to idiomatic choices. The definition of composition as a whole does not change, nor does that of a composer's role in music in general. It is not in the purview of this thesis to deeply examine the reasons for the idiomatic and pedagogical

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[7] Bazzana, Kevin. *Wondrous Strange: The Life and Art of Glenn Gould*. McClelland and Stewart Ltd: 2003.
[8] Reich, Steve. *Writings On Music 1965-2000*. Oxford University Press Inc: 2002

preference of all compositional schools, but to ignore the traditional rules observing artistic measure, and to serve musical intuition. The purpose of the compositions that are part of the Terminal Station project, is to create with respect to this time, in this place, and with the tools at hand and the sounds and influences of this very year, country and knowledge set.

Where music is concerned, the act or thing of composition includes real and implied spatial considerations, analog, electronic and digital media tools (including tape manipulation), the sense of sight and presence of literature (score) and words, and indeed, anything that the composer feels is necessary to communicate her ideas.

Copyright

The creators of music effectively gain intellectual copyright (unless forfeited by contract) immediately upon creation of a phrase or musical piece. Copyright is a record or an indication of intellectual property, and identification of the creator's ability to regulate the expression of the ideas contained therein. The composer can decide by what means (if at all) their music is preserved.

Through legal contract, a publisher often gains copyright and/or administrative privileges in order that they might reproduce the work, and promote the score and composer as needed. The publisher places a value on the score in the way of price, and generally, the more active the publisher's interest in the composer's work, the more likely the value of the original score will increase socially, as well as monetarily.

We place an academic value on publishing music as well; it is a kind of rubber-stamp of creative authenticity, and a proof that the work has met a measure of academic review.

Silence (Space)

John Cage's composition *4' 33",* was composed in 1952 for any instrument or combination of instruments, and is one of his many experiments with scripted silence and as a result, the environmental sounds that may be heard as music. His belief was that any sound could constitute music. During the first performance of the piece by David Tudor, the pianist sat silently through the three-movement piece, marking the beginning by closing the keyboard lid, and defining the three movements by opening and then again closing the lid, until the piece was finished. Four minutes and thirty-three seconds had passed, giving the composition its name. The environment became the piece. The music was the breathing and shuffling of a well-heeled crowd, seated in a converted barn. The throat clearing and sneezing, the mechanical snaps and bangs of a heating system or of a climate regulating system were forced into the score. These makers of euphonic and cacophonic sound were represented by nothing but the lines of the stave on the original score; there is no way in which one could for see or score the random music that certainly evolved, but the composer could imagine it before hand. This score does not exist without the empty space, and a version of the score (the original has been lost) re written from memory by pianist David Tudor, is preserved at the Museum of Modern Art in New York City. The score for *4'33"* is as much a visual statement in its entirety, as it is a musical one. The score represents a kind of thought music, which is not unlike reading a fully notated score by Bach and imagining the piece in one's mind's ear in its entirety, given knowledge of the environment in which it will be performed, and the instruments within it. A latter version of the score on which words are the music, removes the need for tempo causing duration, with Cage's direction, seen in Figure 3.2.

> "…However, the work may be performed by any instrumentalist or combination of instrumentalists and last any length of time".

Figure 3.1: Re creation of Cage's original 4'33"score by David Tudor[9]

Figure 3.2: Later score 4'33" score by John Cage[10]

I

TACET

II

TACET

III

TACET

NOTE: The title of this work is the total length in minutes and
seconds of its performance. At Woodstock, N.Y., August 29, 1952,
the title was 4' 33" and the three parts were 33", 2' 40", and 1'
20". It was performed by David Tudor, pianist, who indicated the
beginnings of parts by closing, the endings by opening, the key-
board lid. However, the work may be performed by an instrument-
alist or combination of instrumentalists and last any length of
time.

FOR IRWIN KREMEN   JOHN CAGE

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[9] http://blogs.getty.edu/iris/audio-david-tudor-at-the-getty-research-institute/
[10] Figure 3.1: https://johncageexhibition.wordpress.com/portfolio/433-2/

Improvisation

The improvisation that occurs throughout the score was influenced by Cage's choice of venue, which in turn influenced the type of person (and to a degree what they wore), the sounds they made as a result (consider coins instead of bills in a pocket), and the rhythm of the rain that was said to have fallen.[11] In much the same way, jazz improvisers have long composed in real time, providing only rudimentary scores, often just a line or two of melody, a numbered chord progression and lead sheets. Often, successful compositions are defined as much by the tonal and performance characteristics of the instruments and players gathered or made available, as they are by the instruction of the composer. John Zorn, a well-known composer of jazz, klezmer, and chamber music, speaks to this in an essay called *The Game Pieces*:

> Many people have wondered why I have deliberately chosen not to publish (or even write down) the rules to these pieces, preferring to explain them myself in rehearsals as part of an oral tradition. The reasons are many. There is a lot more to these pieces than just the rules. For one thing, the choosing of players has always been a crucial part of the performance process and the art of choosing a band and being a good bandleader is not something you can impart on paper in a written preface to the score. Although these pieces were written in the abstract and can be done by essentially anyone, they were not written in a vacuum. They were originally written to harness the personal languages of a new school of improvisers…[12]

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[11] Larson, Kay. *Where The Heart Beats: John Cage, Zen Buddhism, and The Inner Life OF Artists*. Penguin Books: 2013
[12] *Audio Culture, Readings in Modern Music.* Bloomsbury Academic, 2004

Chapter 4: Terminal Station's Composition

Here, the goal of the composer is to combine the many artistic influences the he has encountered, as elastically as possible, blurring the lines of his cultural and historical musical experience. No doubt, the composition contained here in will be placed in time and in space by the very nature of its presentation and the instrumentation used. There has been a short historical window in which one could write, perform, record, mix and edit a musical piece with the sounds and execution of a Bansuri flute next to a synthetic Steinway piano and a hi fidelity recording of a subway train made by a cell phone, mixed in ones own home, by a single musician. Yet this kind of practice has become common for many.

Given the creative freedom gifted by technologies, and the library of time, the perspectives and investigations of themes that are morally difficult, or emotionally "too close for comfort" are possible. Classical opera, opera comique, rock opera, musical plays etc. are often written from a distant perspective, referencing myths, legends, and histories removed from the personal experience of the composer. They touch on suicide, murder, adultery, and other themes common to life on earth, but what of the composers own life? What of the desire to say something of one's own history directly, and the warts within? It is one thing to write of the death of a God, or the desire for a goddess, it is another to admit personal weaknesses and agonies. We are agreed that these things are reasonable, and they are prescribed. But what of the death of a loved one, or ones own suicidal thoughts in a moment of exhaustion, or witnesses to weakness? What if interpretation of the events is outside the tolerance of popular faith or culture? How will an audience react? What is music for, if not to encourage discussion and exchange information and stories? How should a composer express and preserve these experiences, with consideration to present technologies, financial or perceived cultural

deficiencies? What of the composer with a mind to express via chamber and orchestral instruments, but without access to a union orchestra or performance hall?

Terminal Station's Technical Composition

The music created to support this thesis was made entirely with a commonly found DAW called Logic Audio, which was installed on a basic Mac computer called "The Mini." Together, these two tools cost less than the average laptop used by university students. In short, the technology is accessible.[13] A large proportion of dynamic, spatial and timbral aspects of these compositions cannot be represented by standard notation, and so screen shots will be used in place of the real time DAW, as submission of the full score via DAW is not yet permitted at York University.

Often, the compositions created for this thesis start with the appearance of a chord pattern that is influenced by an experience. The pattern or progression is then recorded using the instrument that seemed the most useful to the progression or lyrical content. *Track Level Jumper,* was motivated by Allegri's *La Miserere*. There are subtle changes in triad use that inspired a sense of floating between chords. The instrument used to record the bed track for *Track Level Jumper* is the *Loog*, a three-stringed acoustic or electric instrument designed for small hands and for teaching children. The acoustic version was used in this piece, and has the tuning G2, B2, E3, which is considered quite low, and unique to this instrument.

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[13] The computers used by York University's music department to teach, have Logic Audio installed on them. The usefulness of this DAW has been taught to undergraduate students by the author.

Figure 4.1: The Loog

The keyboard track was created to accommodate the recorded Loog track, and so on through to the strings, vocal arrangement and samples, each recorded instrument influencing the next. This process is typical to the entire project. In essence, the orchestra is improvising by reeling in time, over and over again, until each player has had an opportunity to hear and react to the music. Each player's part is influenced by a different evolutionary state.

Below you will find four screen shots representing a typical session (the score) from this project. The views of each screen represented by the capture can appear simultaneously across four different computer screens, and exist simultaneously as data, immediately available at all times. One can arrange many pre-set screen preferences, if only one display screen is available.

Figure 4.2: Logic Audio Mix Page

Figure 4.2 shows the virtual studio console, and images representing inserted dynamic

and spatial effects (1) represented as light blue rectangles. It also shows volume automation for

the track "feedback[14]" (2) which is a recording of a Fender Telecaster (volume, tone, timbre)

leaning against a Traynor 15 watt amplifier (gain[15], volume, three tone sweeps, reverberation[16]).

The channel strip that houses the E note feeding independently through the Telecaster becomes

a chord by the end of the piece, helped along by inserting an aural spreader, compression

(a signal attenuator), and a flanger[17]. The signal is also bussed (sent) (3) to two effects channel

strips (machines or programs that alter sound), (4,5), to be further altered by two reverb units in

the next screen capture. These effects are essential to the piece, and the best way to explain

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[14] "The returning of a loudspeaker signal back into a microphone feeding that speaker." Huber And Runstein. *Modern Recording Techniques Fourth Edition*. Focal Press: 1997.

[15] "Amount of amplification in Decibels." Huber And Runstein. *Modern Recording Techniques Fourth Edition*. Focal Press: 1997.

[16] The persistence of a signal, in the form of reflected waves in an acoustic space, after the original sound has ceased." Huber And Runstein. *Modern Recording Techniques Fourth Edition*. Focal Press: 1997.

[17] "A process whereby a delayed signal is combined with itself undelayed. The delay is varied to create continual changes in timbre." Huber And Runstein. *Modern Recording Techniques Fourth Edition*. Focal Press: 1997.

them is through use of the DAW. Consider that every instrument might have similar

considerations, and therefore legibility considerations on the printed page. While an acoustic

guitar, violin or drum might rely on relatively few factors with regard to its sound reproduction,

the electric guitar often relies on many processes. The very real guitar featured in two songs as

part of this thesis (and in figure 4.4), is equipped with hum bucking pickups (TV Jones FilterTron

and Seymour Duncan Vintage Stack), unique in the Telecaster used. The amplifier through which

the signal passes has vacuum tubes chosen to "break up" in a specific way (Electro Harmonix

12AX7 preamp tubes and JJ EL84 output tubes), and one can choose to bypass the tone stack,[18]

in order that the frequencies reproduced by the installed non-native speaker (Celestion Vintage

30), are broad or carved in their sonic character. The physical microphone chosen is a Shure SM

57, and is one of hundreds available. Each microphone has characteristics peculiar to the make

and model, and again will effect the character of the sound recorded. All of this, before we have

brought the signal or sound wave to the DAW.

Figure 4.3: Traynor Guitar Amplifier and Shure SM 57 Microphone

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[18] Wikipedia. A **tone stack** is a specialized type of audio filter incorporated into the circuit of an audio amplifier for altering the frequency response of the amplifier. The term is primarily used in reference to instrument amplifiers such as guitar amplifiers.

Figure 4.4: Fender Telecaster with FilterTron and Seymour Duncan Pickups

*Figure 4.5: Frequency response, Vintage 30 speaker (left), and "stock" Rocket 50 (right)*
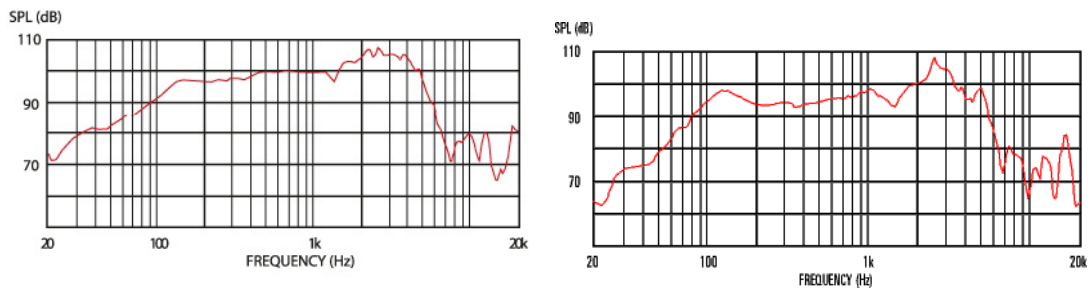
Figure 4.6: Fender Telecaster's Filtertron (neck) Output
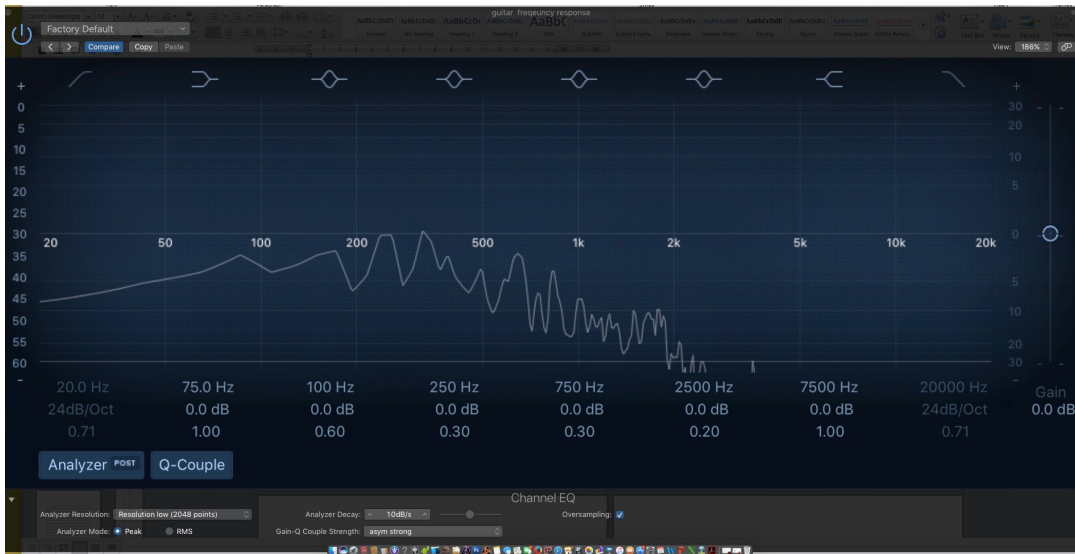
Figure 4.7: Fender Telecaster's Seymour Duncan (bridge) Output
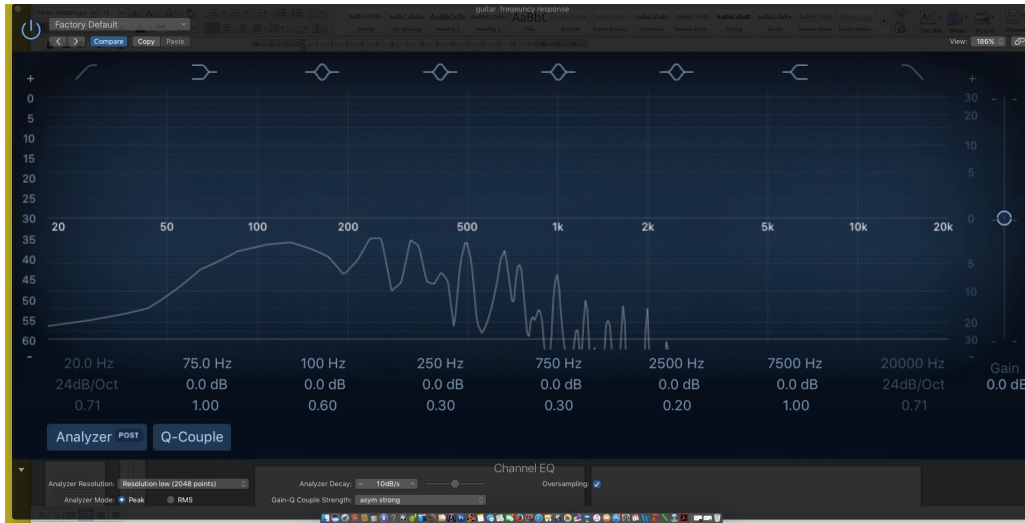
*Figure 4.8: Logic Audio Score View*
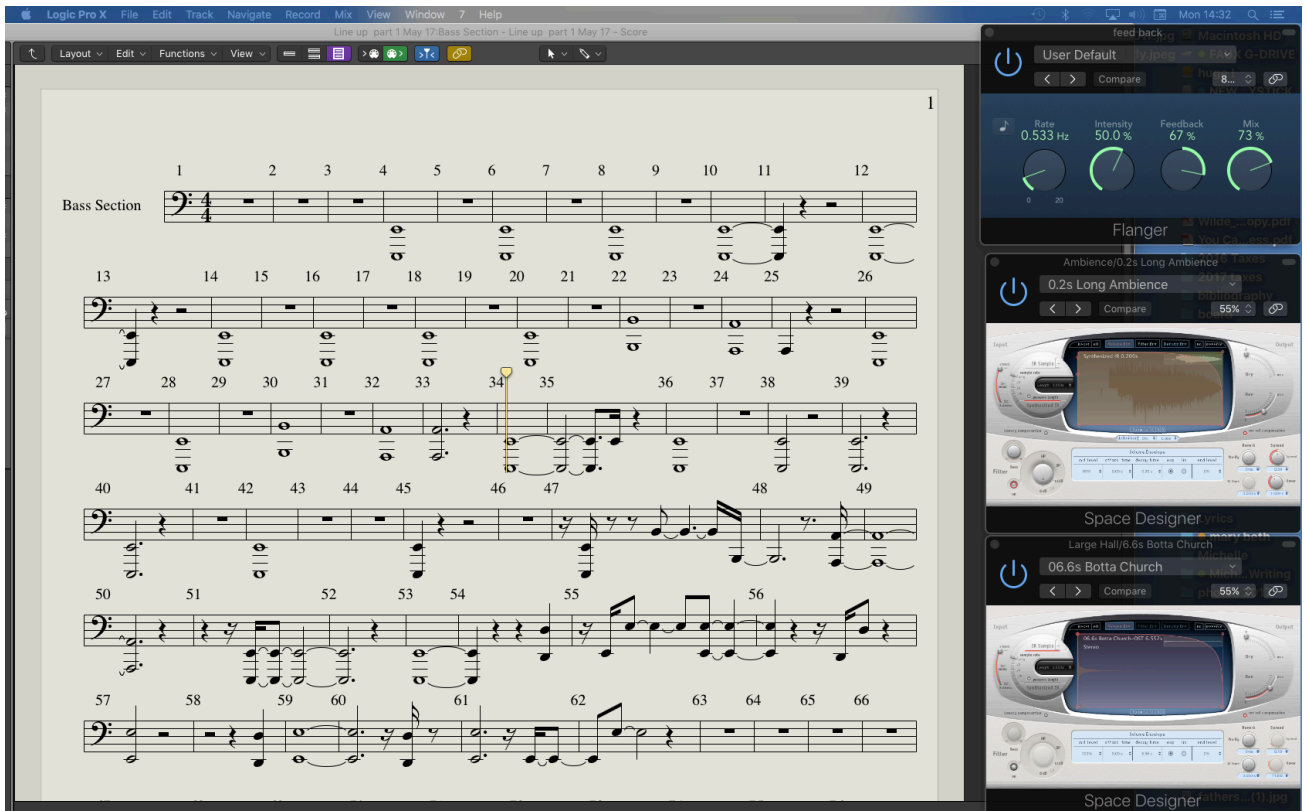
Figure 4.8 is perhaps a more recognizable vision for many musicians. The keys played by the composer on a keyboard trigger MIDI data which is recorded by the DAW. This data has

been written as notes on a stave. The full score, including all of the instruments included in the session, is available in its entirety. Next to the notation are three effect units, stacked vertically, all of which are entirely automatable in an endless array of possibilities. The top unit is the aforementioned flanger with four distinct parameters, rate, intensity, feedback, and mix. The next two graphics middle and bottom right, are the two separate reverb units required to create the washed chord that evolves from the random feedback of the Telecaster; one is set as if the guitar and amplifier are in a large hall; the other gives a longer ambience, and slow decay.

Figure 4.9: Logic Audio Tracks View
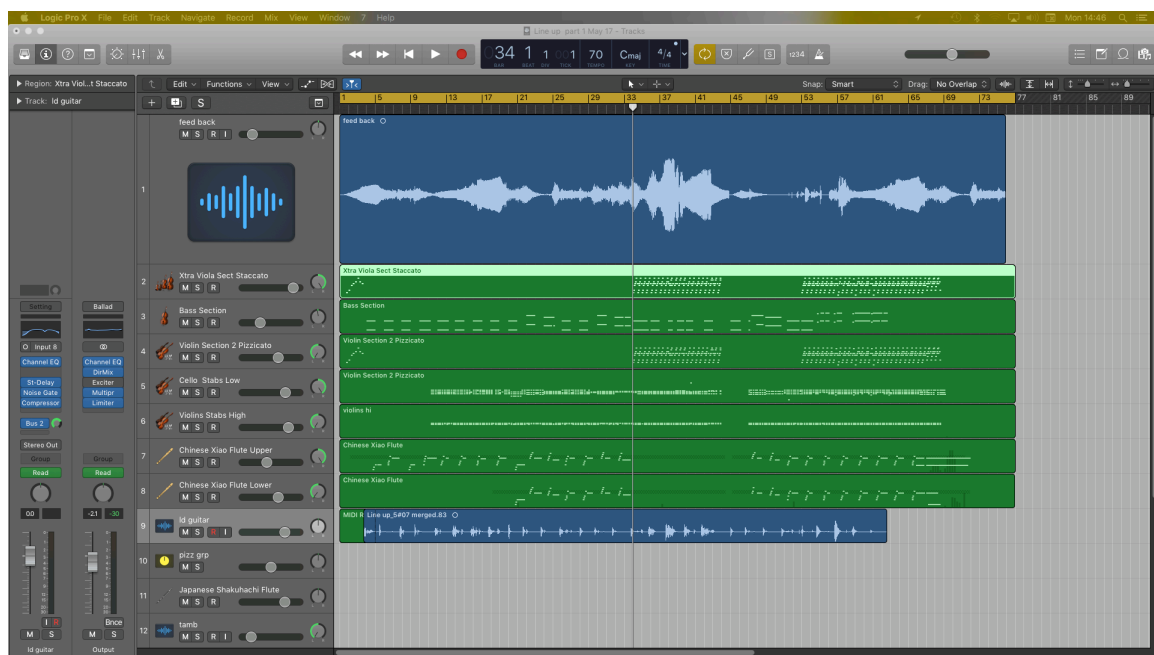
Figure 4.9 shows the entire timeline of nine different instruments, some MIDI based, others organic. Their pan and volume settings, their mute, solo or record status, the key and time signature, the tempo, and the bar count position of the cursor are visible. The blue areas are the waveforms of recorded analog instruments, and the green sections contain virtual MIDI bars that trigger synthetic copies, facsimiles or samples of cello, violin, viola, and Chinese xiao flute (or any other sound for that matter). Also seen on the left is the master output section,

including the inserts (physical or virtual sonic machines), that will prepare this composition for

radio play at internationally accepted levels through the use of compression, equalization and

limiting.

Figure 4.10: Logic Audio MIDI Pitch Data and Velocity View
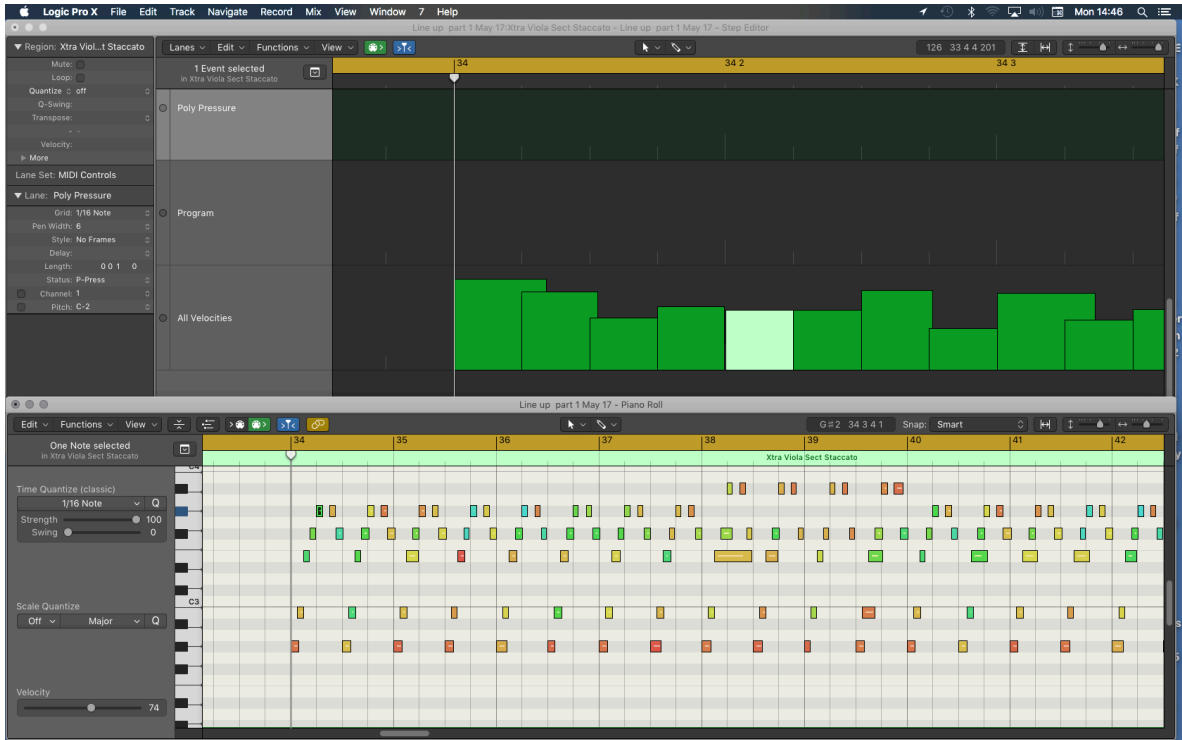
The lower half of figure 4.10 above is a view of rectangular or square multi-coloured

MIDI notes in relation to time (horizontal) and the keyboard (vertical). Their colour relates to

their velocity[19] (perceived as volume). The quietest represented as 1 or violet, and the loudest as

127, or dark red. You may notice the use of the colour spectrum created by breaking white light

into its primary colours: red, orange, yellow, green, blue, indigo and violet. In the lower half of

figure 4.10, the fifth note (a green rectangle) from the left is highlighted and appears green

within a black frame. In the upper half of the screen the fifth and light green pile represents the

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[19]The piano, being velocity-sensitive, responds to the speed of the key-press in how fast the hammers strike the strings, which in turn changes the tone and volume of the sound https://en.wikipedia.org/wiki/Keyboard_expression

velocity of the highlighted note in a different way. These piles show the perceived volume of each and every note, in relation to each and every other note.

Figure 4.11: Spectrum Bar

Loud (127)   Quiet (1)

Note dynamic can also be viewed on the stave with colour as in the figure 4.12. Dynamic information can be figurative, without the need for print below or above the stave.

Figure 4.12: Notation and Dynamic Colour
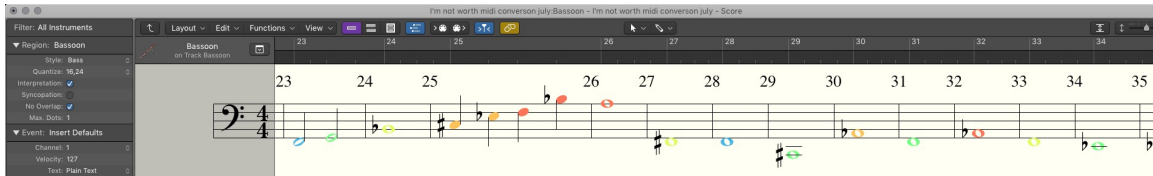
The view in figure 4.10 could be compared to the graphic scores created by Morton Feldman written in the early 1950s,[20]defined by the rectangular or square note graphics as representation of note length and dynamic. Visual representation aside, Feldman's score exists to elicit sound, while the DAW's graphic score is created both as an artefact of sound and as the guide, and trigger for performance.

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[20] Larson, Kay. *Where The Heart Beats: John Cage, Zen Buddhism, and The Inner Life OF Artists*. Penguin Books: 2013

Figure 4.13: Graphic score,[21] Intersection # 3 by Morton Feldman.
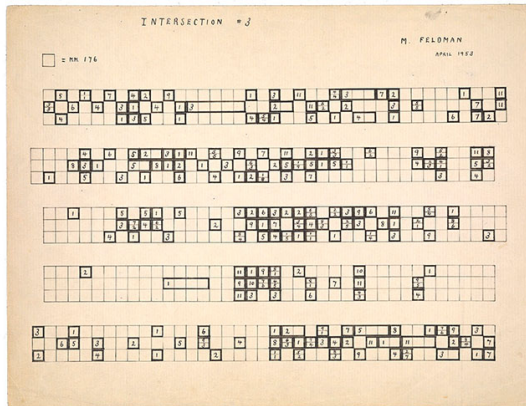
The DAW's inclusive score creates different reading and performance possibilities immediately upon creation. Kay Larson, in her biography about John Cage *Where the Heart Beats*, writes:

> Graphic scores introduce visual and performative openness and indeterminacy into the process of composing music. Traditional scores oblige repetition…The Graphic score is a kind of abstract art (so to speak) - a drawing that evokes a field of sound.[22]

Brent N. Boutwell is quoted in the same book and paragraph about the role of a graphic score:

> …It serves to "erect a non linear, 'imagistic' sense of time"[23]

Despite the graphic scores ability to be abstract, a close look at figure 4.10 will in fact show specific note length, dynamic and pitch. Consistent use of this part of the score manifests a sight-reading ability not unlike the understanding of the traditional score. There are many levels of process required to impart the character of each instrumental performance. With the DAW as the score, the details of this compositional process are both definite and exacting, or vague and suggestive in a way that the usual notated score could not possibly be, while still supplying the

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[21] http://blogs.getty.edu/iris/audio-david-tudor-at-the-getty-research-institute/

[22] Larson, Kay. *Where The Heart Beats: John Cage, Zen Buddhism, and The Inner Life OF Artists*. Penguin Books: 2013

[23] Brent N. Boutwell, Larson, Kay. *Where The Heart Beats: John Cage, Zen Buddhism, and The Inner Life OF Artists*. Penguin Books: 2013

very traditional article as well. In some cases, the score generated by the DAW might appear to contain notation that is overly literal, didactic, or unnessessary. The information is nessessary to the computer as performer; a good example would be found in the translated notation of the bansuri flute. While programming the instrument, breath, attack and decay are variables. programming the action of breathing before the note is to sound fully, required the midi information to appear earlier than the sound is achieved.

In this dimension of composition, the composer while composing is recording and mixing engineer, producer, archivist, arranger, and musician and computer technician.

The composer while composing is also the publisher, and there in may lay an unintended purpose and usefulness of this tome. Receiving and understanding the DAW based composition in its digital entirety as a proof unto itself, and as representation of extensive exhaustive compositional practice, is essential to understanding the composer's intention, and the process required in the composition's preservation.

The artist owns and completes this work, but who will endow it with academic value, if no one will see or hear it in its natural state, as sound, or as a session on a computer with access to all of the samples, sounds, processors, and engineering evidence, and through high quality audio systems? Would we be able to consider the complexities of *Dido and Aeneus*, in an active car repair garage? Who will measure its ability to fulfill expectations of balance, integrity, finesse, beauty, ingenuity, relativity, knowledge transfer and attainment? If the mind's ear does not have the experience to imagine the qualities of the music or the unique instruments by only seeing and not hearing the score, how will they know whether it can be given an academic yea or nay?

Chapter 5: The Story Created to Influence the Rock Operetta "Terminal Station", and the Myth of Edward Greer

It is important to note that the following tale a story composed of truths, half-truths, the opinions of the author, and out right manufactured lies. The content of this chapter is essential to the knowledge set required in understanding and performing the composed music of "Terminal Station".

The tops of the autumn trees look like soft orange and red pillows, and they smell like rotting pomegranates, from the rail edge of the Overlea viaduct. Cars run through them like fruit flies, like insects getting high on the stolen nectar that oozes from the places the fruit touches the highway. Combustion engines leave caustic carbon smog floating back up here to you, a lone pedestrian on a sidewalk; an afterthought. A selfish army of relentless, frantic disease ridden insects, 100,000 lost and desperate souls stealing liquid sugar away to their holes and castles, dumps and swamps. Assuming you hit the mark, it would be impossible to fail being crushed many times before the ensuing traffic jam. The wind is warm; the earth is receiving the dying leaves confidently, endlessly, and without regret.

I've learned that a deviated septum, can deny you the spiritual elevation of yoga. Breathing through the nose is the only way to enlightenment. I've observed that creating art does not make one an artist. Having one's art possessed, and having it being owned, now there's the thing that confirms your status. I'm lucky to have been owned quite a few times in my life.

There is also the track level approach. No waiting; quick, decisive, spectacular. Turn around, and head back the way you came, walking. You know you wouldn't make it over. There is still time.

Until a month or so ago Edward Greer (Eddy), who much like Orpheus, was a minstrel and had a muse for a mother. At Toronto's Art Gallery of Ontario, a likeness of *L. Faux* (Eddy's mother) hangs 10 feet high and every inch the mother he knew, waiting, innocent and vicious, miss-loved, and impetuous. She is still waiting, and she's dead, a dilettante whose life did not come to her in the right time. She is now immortalized in North American and European Art galleries, and actually much larger than life. Giant size.

In 1969, at the age of 33, she left her 4 and 6 year-old sons to her husband, embracing her teenage brother-in-law and the hippie dream, later to join him in marriage. Does one need to tell you the Greek-themed tragedy that might follow such an act? You can imagine the mess for yourself.

Edward's father Al Faux, was born in 1932 in Sault Saint Marie Ontario. He was the son of a man who by all accounts was hardened and abusive, and no doubt the product of a person much like himself. Al followed in the tradition of his own father at first (the other Al Faux), apprenticing at the steel mill, and earning his papers as a tool and die man. He was a union horn player on the side, and a cadet just a few years short of being considered of age to join Canadian Soldiers in the Second World War. He escaped *The Sault* (pronounced *soo*), and attended Ryerson Polytechnic College in Toronto in the late 1950s, later to teach there, and at the Ontario College of Art.

Edward has two brothers (one two years older, one twelve years younger), both of whom sprang from unions different from the one that birthed him. It was made abundantly clear by their mother, that the eldest had been adopted, because there was trouble "conceiving" at the dutifully required time. The vague rumour about the oldest brother was that his birth name had the paternal moniker "Kennedy", alluding to the possibility of a connection to the American political dynasty… you can never to be too sure. Afterwards, Edward was a miracle of course, and apparently no one noticed his appearance in utero until six months in, awash in second hand alcohol and cigarette tar as he was. The youngest brother was by his father's second wife, Starr. At the time, Starr was a twenty something college student who briefly inherited his ailing father's first two sons, his ravaged body, and exceptional brain. Eddy's father raised the boys in assorted buildings that resembled homes; 28 sided, farm house, and tent, the latter in which he lived his last days, choosing to die in a morphine dream and drowned by pancreatic cancer, penniless, soon to have his name on a Canadian Postal Stamp representing his designs. Eddy was 11, and he was 45.

I have only just this moment, accepted my hand writing as mine, as my own. It will not evolve much at all any more, or become more legible, and it is time that I allow other people to see it without excusing it.

That's the thing about life - it's the smalls over and over. It's the myriad debasements, and the criticisms and losses that will drive you to jump. If our village has carelessly nurtured us, we may need some respite from a long, or short and tiresome life. Most will agree that the quality of a person is not defined by the amount of time spent here on the surface of a blue planet. It is not even necessary to define anyone's value at all (is it?). One thing is for sure, you will not take your carbon based possessions with you; your Maserati will not get you to

"Heaven" any quicker, unless of course you drive it off the edge of the Scarborough Bluffs, or some other such misfortune.

Edward had an ear and talent for music, but the village from which he eventually escaped would not support what they considered his understandably vague desire to "do something different". Edward had not been taught or encouraged to elaborate about his deepest wants. His people would rather such needs and desires evaporate into years of self loathing and fitting in, until finally in the end, poof, off one goes to an imaginary land of lovely doilies and agreeable dead ancestors. Like magic!

It might be due to my secular nature; I have no God or heaven to aspire to.

Magic is a different ball of wax all together. One of the greatest and most frustrating things about music and art in general, is that it's ability to enchant humanity, or the birds, and the Gods and rocks in the case or Orpheus, is well… magic. Most people do not have the ability to compose or perform transformative works of art. Despite arduous training by well meaning people and organizations, the large majority of students will enter into service as a tool or technician, recreating a fleeting moment of inspiration created by someone with an indisputable understanding of us as we are, now. That someone will synthesize their environment, they will put a finer and visceral point on a seemingly confounding nest of conflicting emotions. They might use the numbers and ratios of Pythagorean theory in order to create systems, scales and harmony, but they will not be able to predict the outcome of their composition, the bit that makes a father cry, or the refrain that a nation adopts as a call to arms. Certainly some composers achieve these kinds of results more than others. If we could teach it, magic that is, we would. We would all aspire to communicate in a fashion that benefits our village, through art.

When someone departs in haste from this plane, and their mortal feet leave this planet, they will scatter behind them a rendering of their brief stay here; a physical and ethereal history of children and yachts, deeds and arrangements, entitlements and travels, lovers and wars. In the case of some who will die in a hospital in a cosmopolitan place like Toronto Canada, their personal effects might be presented to their next of kin or caregiver in a clear plastic garbage bag. The clear bag is a security measure as much as it is a tool to carry, and any secrets contained therein, or insights into a person's final days are clearly visible for all to see. This was the case for Edward, weeks after his mother's departure. As he sifted through the bag, he found a cherished shawl covered with cat fur, a ring from her grandchild, a wallet with usual health cards and a bag of various medications prescribed to prolong life, and deny the failure of the liver, heart, kidneys, and lungs. In fact, what had brought her there to the hospital, really, was old age. Now that we can live beyond our body's effective past due date in 2017, we can die slowly, with or without dignity, while denying fate using medicinal cushions.

Now it's Edward's turn to test the unknown. Some say that they have seen their own death. Some, having been brought back to tell the tale after being declared clinically dead, claim to have seen the efforts made by doctors to restore them to life. Some say there is nothing after death; others believe that there is everything worth having, over there on the other side.

Edward is parted from his body, and his body from itself, technically suicide by indifference. The people moving inside and along with the subway tube complain of the inconvenience, while texting various higher ups that they will be late, due to a track level occurrence.

 Edward has an opportunity to consider the absurdity of the contents of his own see through plastic bag, and the lessons to be learned within.

When some one dies, it does not follow that that there is a Hell, a Heaven, or even a third party judgment. There is a facilitator however (this is a myth[24]after all). We know that there are still traces of synaptic firings in the brain for a few minutes, and that organs will live for various lengths of time, from minutes to hours. The soul is said to weigh 26 grams. What Edward sees, feels, hears and touches in his transitional being, is going to determine his future.

Imagine a bright, warm, endless space. There are ragged lines of transitioning people dragging their bulging, torn, and spilling bags across a plane of hard light. They scramble to collect, even as old opera tickets and a picture of "the greatest day of my life" flutters away and is slipped on by another casualty. There are some who have balled up their plastic bag, as there was no need to bring one. There are others who fall quite reasonably and predictably in the middle, lugging and carrying, but not dragging their diary of things. They are all making their way intuitively to a long rectangular sign facing them; it is painted on the side of transport truck.

Continue or Paradise, Please Decide.

Justice Delayed is Justice Denied.

A Valkyrie[25], the mythical Norse character who traditionally chooses who will live and die on the field of battle, and in this case presented as a buxom lady wearing a horned helmet, and carrying a spear and a round shield, will engage travelers in a discussion and discovery of their things. Depending on your cult, training, or belief system, your decision could be obvious or laboured, but "Continue" will get you the biggest bigger bang, actually. The moment you think, "continue", you're most likely betting that non-theism will get you a more predictable or assured result, and you will learn that it doesn't. You will fly away at an unimaginable speed, torn apart as if the Maenads you've secretly wished for hadn't copulated for millennia. You are

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[24] [24] …misconception, fallacy, false notion, old wives' tale, fairy tale/story, fiction; informal tall tale, cock-and-bull story, urban myth/legend.
[25] https://en.wikipedia.org/wiki/Valkyrie

now many with the universe, forever. No judgment… you are suddenly all knowing, but unable

to touch your lover, or smell rain on the sidewalk. Paradise will be a bigger surprise though, and

that is where Edward is headed.

Eddy considered the contents of his bag. Every guitar pick that ever flew from his fingers

never to be recovered was there. A pair of red, ladies hip huggers with a 28-inch waist from the

7th floor of Toronto's Eaton's store, looked shabby but significantly torn in the usual way. A

single copy of popular mechanics, dog-eared and worn, and the 45 rpm vinyl reproduction of "I

Saw Her Standing There" by *The Beatles* were wedged at the bottom of the bag, creating an

almost tear as the plastic bag stretched to its limit, where the disc pushed at the corner seam.

There was no remnant of relationships or correspondence, and no real feeling of loss. There was

a two-month pass for the European train network of the mid-1980s, newspaper clippings from

the local music magazine's listings promoting his first professional show, a small steel drum with

"Barbados" printed around the side, and a 1962 re-issue Fender Telecaster, cherry red.

All cultures can display racist elements. Most have been conquered or pillaged, raped or

enslaved, starved or appropriated. In 21st century Toronto it is accepted that creating "safe

spaces" can involve a kind of intellectual segregation. Racism, ageism, and sexism are battling

isms galore.

It's those "smalls" again, those things that don't really line up. The presence of mostly

musical paraphernalia seems to Edward, from this new perspective, completely useless. Being a

touring musician only distanced him from those he loved, while putting a very fine point on the

need for immediate gratification, in the absence of actual, chasm filling, loneliness quelling, love.

So he chooses Paradise. Instantly, there is a feeling very much like that described by

Harry Potter while using a port key… "Downright unpleasant… can lead to nausea, giddiness and

worse."[26] Another confusing consequence of this decision is that for a moment, Eddy is aware that he is headed straight back to earth at light speed, and then suddenly surrounded in darkness, and liquid.

Here is paradise, right now.

[26] http://harrypotter.wikia.com/wiki/Portkey

Chapter 6: Track Level Jumper

The protagonist of the operetta "Terminal Station" is out of energy, and tired of talking. He is worn down by the barrage of the small things in life, the indifference of his community, and not at all worried or afraid, but matter of fact. He is in a state of grace, continuing into more respite.

Through two years of subway and bus travel from downtown Toronto to York University in North York, I wondered at the lives and actions and thoughts of my own, and those of the people sharing transit with me. Twice or three times a week I arrived at Downsview Station (the last station on the line, for now), to an announcement from a prompter, and an automated, female voice.

Figure 6.1: Subway Read Out 1

Figure 6.2: Subway Read Out 2

Downsview station is the "end of the line". Often alluded to, it is a moment in one's life where there are no more choices to be made, no process left untried. Perhaps death.

On more than one occasion, the subway train on which I traveled was delayed due to a track level injury, or suicide. I watched as riders sighed and swore. Some gestured in full realization of the consequence to a life, but most expressed frustration, as they were now going

to be late. Track Level Jumper is an attempt to get inside the head of the victim, emotions spent,

factual consequence considered.

I don't want to think about it
I don't want to know
A single thing
Don't want to hear my cell phone ring
Anymore
You will know me by my blood type
Driver

I've been stuck inside for days
I can't feel the sunshine's rays
On my back
Where I should be feeling heat
Only
There's no way to get your feet wet
It's an extraordinary bummer
Never mind the track level
Jumper

Track level

Jumper

I don't want to talk about it
I don't wanna see that stunt
Again
On the tracks with people screaming
There's a way to get your needs met
When your brain is in the gutter
Never mind the track level
Jumper

Track level
Jumper

Track level
Jumper

Track level
Jumper

I wonder at an approach, and the idea of living as though we are arriving at a terminal

appointment, daily. I have known quite a few quality souls who have succeeded in ending their

own life, whether by a sudden act, or the continuation of a very bad habit over an extended

period of time. I make no judgement as to the value of a life based on the duration of it, and

prefer instead to believe that life is just one piece of something much larger.

Classical opera has often addressed suicide and murder (*Orpheus, Carmen, Dido and

Aeneas*, for instance) but popular rock music seems adverse to the subjects. Operas such as *Dido*

and Aeneas have the advantage of a certain kind of displacement; the characters are gods or

mythic, and our attachment to them is philosophical, not personal. When I write about the suicide of a friend, or perhaps about my own relationship with mortality, one might be inclined to say that it is not discussion for pleasant company, but for the therapist. The purpose of this particular rock operetta is to communicate real emotion and experience, with a view to making others feel moved as well.

Performing the words for this song, I felt that I was trying to maintain an emotional contact with the subject. It was important to me to not over think the performance, and to deliver the harmonies intuitively and with presence. It is no matter what the perceived value or varied level of sophistication impressed upon a listener by the pedigree of the violin, cello, synth harmonies, sitar or counterpoint, this song can be shared and sung by playing only the chords seen in Figure 6.4, on an instrument with three strings, and this is the most important musical state for its transmission. The music can exist as a full score, a graphic score, a recorded multi-track, or in a simple loog songbook; in my view, being represented by these four distinct languages enhances the work's value.

Form/Structure

The chord progression for *Track Level Jumper* was written on an instrument called the "Loog", which has three strings, tuned G, B and E. The chords were initially inspired by the subtle chord changes of Alegri's *La Miserere Mei Deus*, a religious work specifically written for performance by a choir in the Sistine Chapel. Here at first, there is a subtle sliding of the root note (Bb) one step lower every two bars, progressing through the chords B Flat Minor, to A Augmented, to D Flat Major. Moving the fifth of B Flat Minor up a half step gets you F Sharp, the fourth chord of the progression. Move the third of F Sharp up one semitone, and the fifth north a whole tone and you have a B chord with the fifth on the bottom. An E triad evolves by moving the third up a step, and the fifth up a whole tone. Finally B Flat, the fifth has moved down a

semitone, the root up a semitone, and the addition of a D in place of the A Flat brings us to a B

triad.

Figure 6.3: "Track Level Jumper" Verse Chord Progression Bars 2 till 12.

Figure 6.4: "Track Level Jumper" Verse Chord Progression MIDI and Dynamic Score Bars 1 till 12.
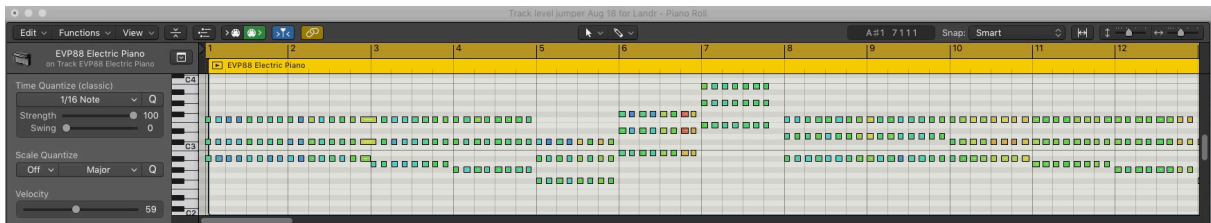
The Loog's open tuning and chord patterns used for the entire song appear in figure 6.4

and 6.5.

Figure 6.4: Loog Open Tuning.
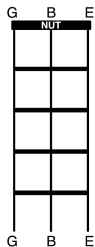
Figure 6.5: Loog Finger Positions (tabs).

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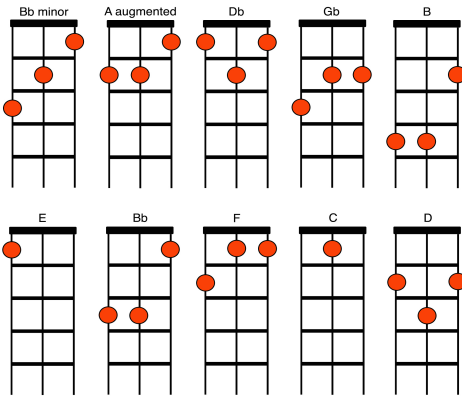
The words for *Track Level Jumper* had been written to accompany the Loog. The melody and words are enmeshed, and were improvised over the chord progression. The rest of the arrangement sprung from accompanying and improvising along with the recording of a live rendition of the song, played and recorded to the DAW in my home studio. This is a key consideration when composing with the DAW. The cost of booking musicians and a studio, while working out the final parts would have been prohibitive. The many versions that exist of this piece (five), and the alternative experiments with radically different orchestration before settling on the final version, would not have been possible without the DAW. Beyond the chord progression, there was no plan, and the music evolved over time. Many edits, re-arrangements, and dynamic changes were made to the DAW based recording (Analog, MIDI etc.) in order to create the final document, and the Logic Audio score reflects the history of those edits. The changes in this case are primarily made in the electronic environment, and the traditional score is created as a result.

The strings are grouped so that they are heard as a stereo pair. That stereo pair is run through a single stereo channel, and affected by a compressor and a virtual tape delay. The delay is scripted and automated to repeat selected parts differently, and used at different places

in the composition. Figure 6.5 shows tempo at 55 beats per minute, the delay settings (8th note

beated repeat, quarter note delay), the dry verses wet signal (24 wet to 70 percent of available

dry signal), and a few other parameters. The purple rectangular and triangular areas are shaded

drawn automation, and show at first and on the left a gradual decrease in delay use, second a

severe rise and decay of use, and third, at bar 33 a steadied occurrence. The score in the lower

half of the same figure, shows what music will be affected and how. It is possible to read this

score and simultaneously regard the notation bar by bar, while at the same time reading the

shaded automation bar by bar as well.

Figure 6.6: Automation, Tape Delay, and Score View
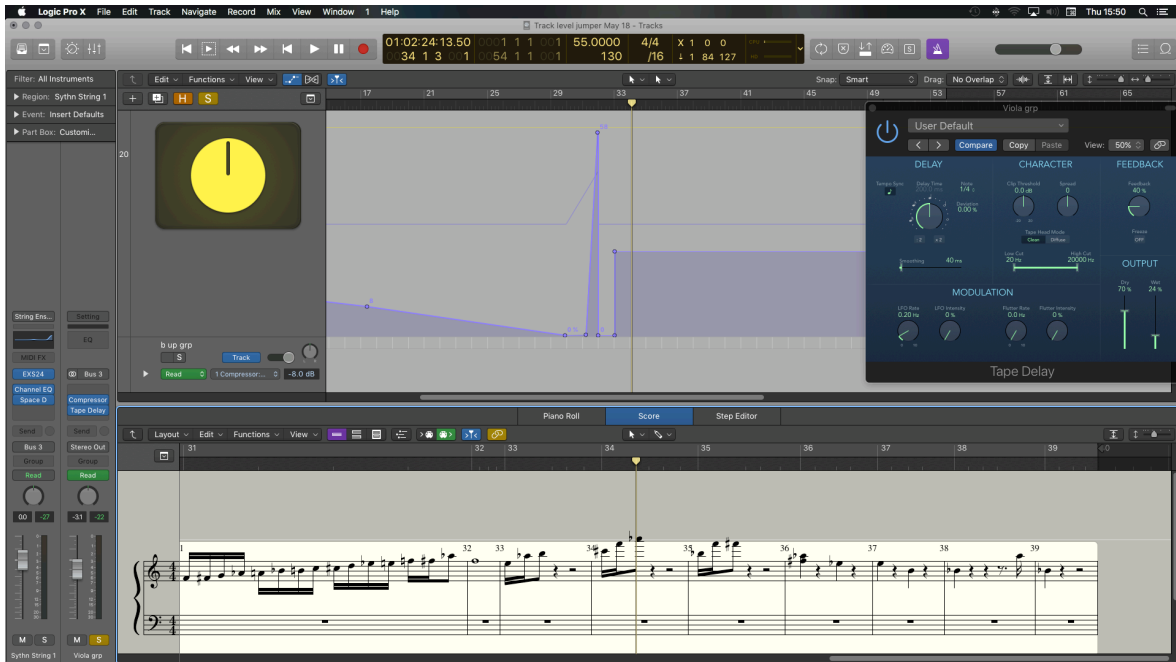
The result is an effect that would otherwise be created by multiplying the string section

by three or four times (depending on the repeat amount) and having them play the same figure

on different beats of the bar. It would not be possible for this composer to create this part of the

composition for this thesis without the DAW. Although the phasing effect is quite mild here, a

suitable sonic reference might be the minimalist and repetitive work of Steve Reich's *Melodica.*

For general and specific dynamic, density and spatial reference figure 6.6 below shows the full

graphic score for Track Level Jumper.

Figure 6.7: "Track Level Jumper" Dynamic and Graphic Score.
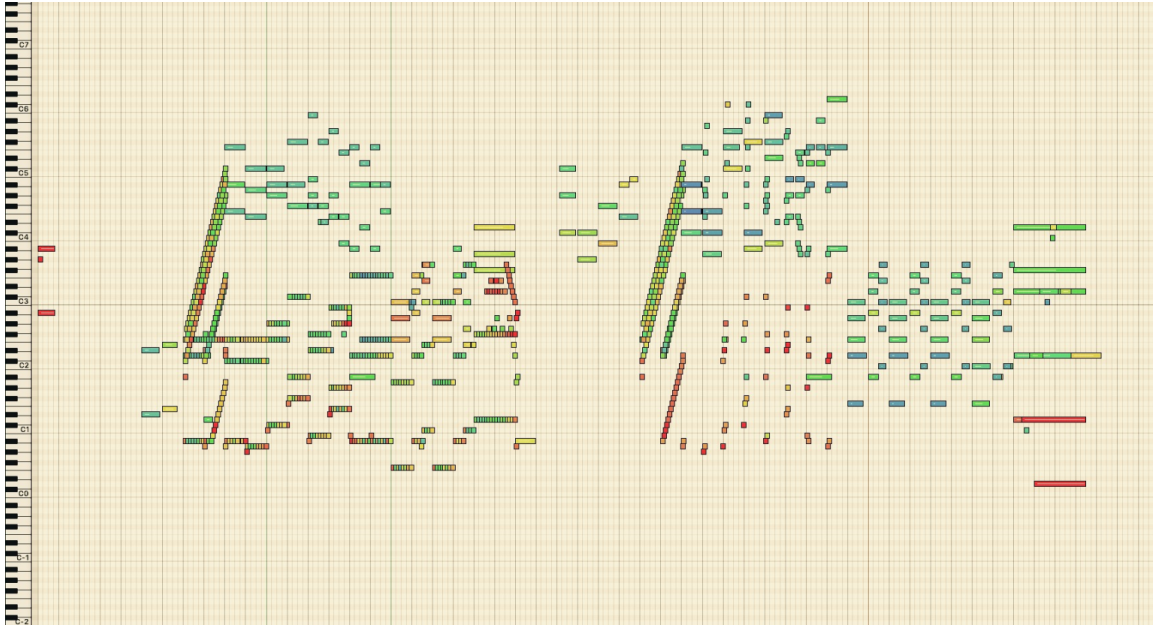
Based on this view of the composition, we can observe repeated and dynamic

compositional spaces, measured and considered instrumentation, a few absences of any

notation at all, a peppering of dramatic lower register orchestration in second half, dense

chromatic occasions, and in closing a sustained chord that represents a new tonal center, D, that

leads into the next piece of music, *See Through Plastic Bag*.

Timbral Notes

Because of the use of the DAW, the midi instrument's sonic qualities are often

indistinguishable from the original source, or completely unfamiliar in timbral quality. Often this

is a reflection of the way in which the MIDI sound is created. Some are samples and recordings

of real acoustic counterparts, triggered to play at will. Others are new sounds that mimic

through the use of programming, but are altered through varied sonic filters.

The introductory EVP 88 Synth is a MIDI triggered virtual instrument that can sound

virtually identical in timbre to the original Rhodes and Wurlitzer electric pianos that it is

modeled on. The Rhodes was an electric and percussive instrument that employed hammers

and keys similar to the piano, but instead of strings, tines were struck. The voice is mine (lead

and harmonies), and for the most part represents the tonal character of my singing voice. It has

been recorded through a Audio Technica 2020 microphone ($100.00), and for the balance of this

project, was affected by compression, virtual tape delay, equalization and mild pitch alteration.

The virtual sitar is created through the use of an EXS24 synth program, with a at least 33 variable

sonic alterations available, leading to endlessly different tonal possibilities. For the uninitiated, it

will be indistinguishable from the real instrument. As discussed previously, the guitar was

recorded through a very specific amplifier, guitar, and microphone, before entering the DAW.

Once there, it was "re-amped" through a virtual amplifier, adding gain, and altering equalization.

A compressor is added to the signal path, as well as stereo delay, which creates a visual effect

that plays the initial figure in the left speaker, and a half note later, echoes it in the right at a

diminished volume (a difficult feat to achieve in a live performance, let alone explain on a

traditional western score). The virtual double bass, cellos, violins and synth string groups created

by the virtual EXS24 virtual synth, are less satisfying in their ability to fool the ear, but are none

the less impressive impersonations of the real thing. An organic symphony, includes the gentle

air and noise of friction of bow against string, and the varied pitch of the players creates a

phased and tuned aura within narrow tolerance. The slight differences in execution, timing and

pitch that occur when many strings play, are difficult to reproduce electronically. The ES1

subtractive synth is used to created a 1950's aural vision of 2017's musical synth, through it's

overtone free, mono synthetic character, and juxtaposition to hi fidelity modern and abstract

signatures. The loog was played by the author and recorded through an Audio Technica 2020

microphone, and its initial sound is faithful to it's acoustic character. It was then passed through

a synthetic Logic Audio guitar amplifier to add distortion, bass and tremolo, and various

equalization alterations include a low end cut shelved at 100 hertz, decreasing gradually to -35

db at 20 HZ.

Chapter 7: See through Plastic Bag

If you ever collect the effects of a person who has passed, you'll know the finality in the moment of its happening. It is a time when family and strangers suddenly have access to the deceased persons personal belongings, and might gain insight into the parts of a life that would otherwise remain hidden.

I imagine, that if I were the traveler looking down on the event, now free from physical pain, that the relief and absurd reality of finally making that leap could almost be humorous. After all, the very dint left by the fact that one is in essence "ok" and conscious after death, would be a palliate in itself (in my view).

At the beginning of this piece, we hear two announcements, one recorded live, and one pre-recorded on Toronto's Yonge-University subway line. They are interweaved and a key element to the mood and understanding of this song. Consider that one recording is made by the composer moments after an actual track level disturbance."…the delay we were experiencing northbound at our Glencairn station is now clear." And "Downsview, Downsview Station, this is a terminal station" are repetitive reminders of the subject I am contemplating daily. Words can mean a great deal; imagine a substituted phrase such as "Downsview, Downsview Station, this station is a leaping off point for many suburban communities accessed primarily by bus, and includes the destination York University, a world renown centre for learning" instead! It is interesting to me how the use of a word will affect my mood and thoughts.

The deed is done, and the premise of this song is that Edward Greer has an opportunity to narrate his own demise and immediate aftermath, much in the way that people have

reported watching the effort to resuscitate them before they are returned to life. He also comes

to some conclusions that are distilled fragments of his life.

I'm flying
I don't feel like I'm dying
My brain is still breathing
My self is still reeling in the years

I'm finally feeling
In this moment that I'm stealing
I was afraid of giving
I'll miss the giving the most

Believing
Say what your thinking
It's when I stop watch watching
That's when I start drinking

Horizons?
I'll give my five cents
You and I had it all wrong
We could have been
So
Close

Someone's picking me up with a see
through plastic bag
I'm taking a train with a see through plastic
bag
I'm floating through space with a see
        through plastic bag
I'm going home with a see through blue
plastic bag

The following bass line can accompany all moments of *See Through Plastic Bag*.

Figure 7.1 Bass And Keyboard Notation

Using the Nashville number system, this entire song is a 1-4 minor, in this case using the

key signature of F (D minor), and cycling between D and G minor chord. When present, the

melody (joined by the keyboard) controls a subtle shift between a minor and major harmonic

structure in D, using the major 3rd except in bars 33-41('I was afraid of giving"), and Bars 61- 71

("You and I had it all wrong"). Otherwise minor voicings are pre-eminent.

This song uses synthesized and heavily manipulated rock drum patterns, a bass performance by the author borrowed stylistically from Motown, and a simple electric guitar pattern played in an open D tuning. Cellos, bansuri flute, oboes, electric piano and Tibetan singing bowls round out the instrumentation. Several interconnected and repetitive phrases using a D natural minor scale are in use ascending and descending, and shared between wind, string and percussion instruments.

Again, achieving this combination of instruments for this thesis and creating a commercially viable recording could not have been accomplished without the DAW.

Drum programming Is accomplished through a remarkable program that allows the composer to chose among different sounding drum kits, and then swapping in and out different cymbals, toms, snare drum, cowbell etc. A basic pattern is chosen, and then altered to taste. An algorithm allows the composer to move a large dot within a square with sides labelled, *loud,* which is opposite *soft*, and *simple* being opposite *complex*. Programmable *swing* and *fill* (embellishments) are accessible via a simple dial, as are *feel* (push to pull) *Ghost notes* volume and hi hat variances from closed to open and anywhere in between. Dynamics are changeable bar to bar, and as always a traditional score is generated simultaneously. The experience is much the same as rehearsals for live shows, in that tweaks are made as the composition evolves due to the character of each part, and the aural characteristics of each instrument. The author's personal preference would be for the recording of acoustic instruments in almost every instance. One cannot help however but wonder at the incredibly realistic timbre of the percussion instruments, the programmable humanity, the creative opportunity to freely experiment with and hear instruments of the world, and the economical tool the drum program has become.

From top to bottom, Figure 7.2 shows the reoccurring cellos (staves 1-4), violins (stave 5), oboes (staves 5-7), piano (stave 8 and 9),and bansuri flute (stave 10), that in effect act as the chorus, where there is no repeated vocal call to arms, as would be usual in pop music. Note the eighth note "push" Bars 3 and 5, giving a sense of urgency to the song any time this figure arrives.

Figure 7.2: Oboes, Piano, Bansuri Flute, Cello, and Violins

Figure 7.3 "See Through Plastic Bag" Dynamic and Graphic Score
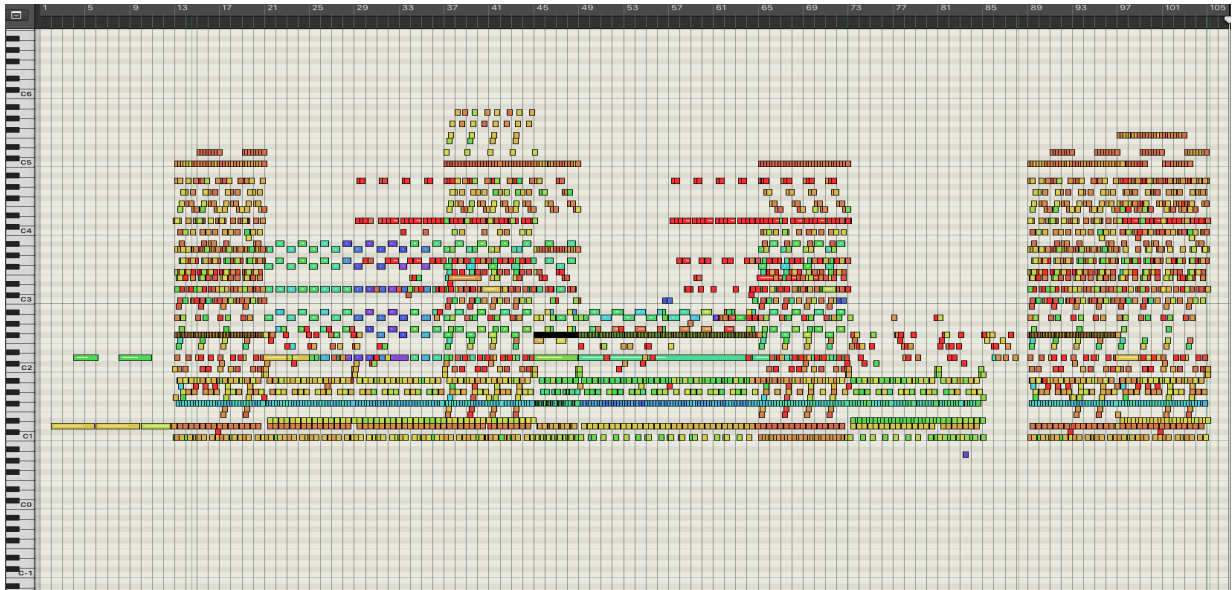
The score above can be sectioned in the same way as the traditional score to show each instrument's dynamic, note durations, and note value, and is made up of the midi pulses that trigger recorded, performed, sampled, and invented sounds. A general glance will show the song's dynamic character by bar (numbered across the top of the screen), and repeted visual patterns indicate chorus (dense, red loud), verse(less dense, green middling volume), and bridge(least dense, a combination of the red vocal melody, and drum patterns). In this session's MIDI chart (figure7.4), C1 triggers a bass drum sound, D1 a snare, G1 a floor tom, G flat 1 a closed hi hat, A flat 1 a more open hi hat, C2 a rack tom, D flat 2 a crash cymbal, G flat 2 a shaker with a fast decay, and A2 a long crash cymbal. Analogue bass parts (figure 7.6) are represented by midi bars, and also inhabit D1 through A2. At the top middle of each of the following figures, one may choose to view Piano Roll (midi), Score, or Step Editor (velocity, timing, note) while using the DAW's digital score.

*Figure 7.4 "See Through Plastic Bag" MIDI Drum Score, Bars 9-27*
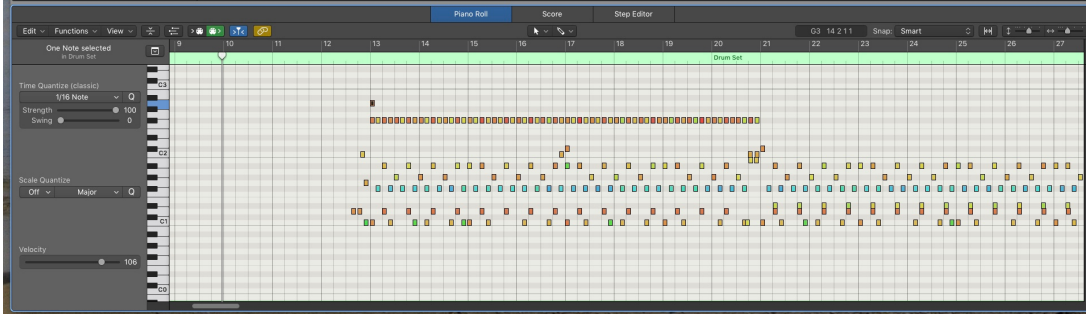
*Figure 7.5 "See Through Plastic Bag" Linear Drum Score, Bars 9-18*
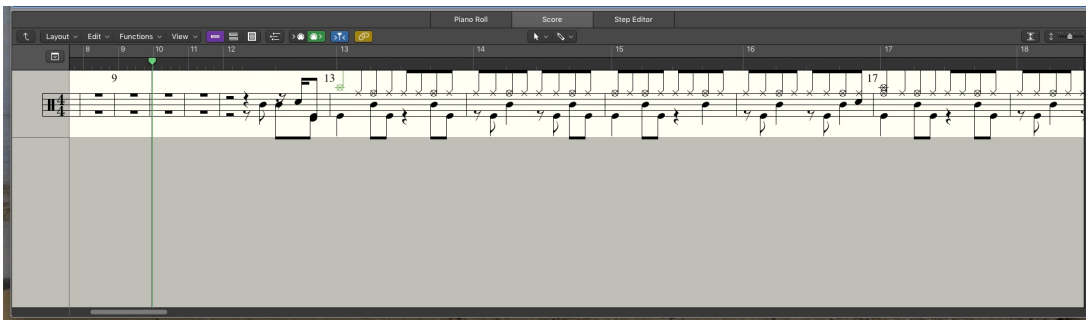
*Figure 7.6 "See Through Plastic Bag" MIDI Bass Score, Bars 10-28*
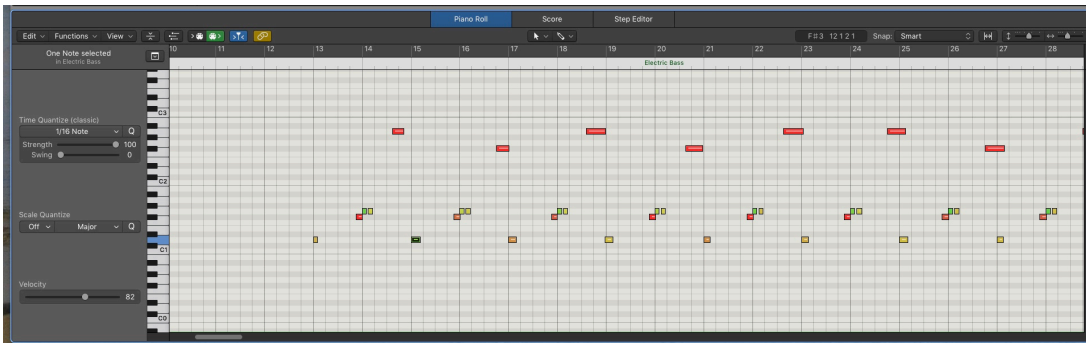
Figure 7.7 "See Through Plastic Bag" Linear Bass Score, Bars 1-27
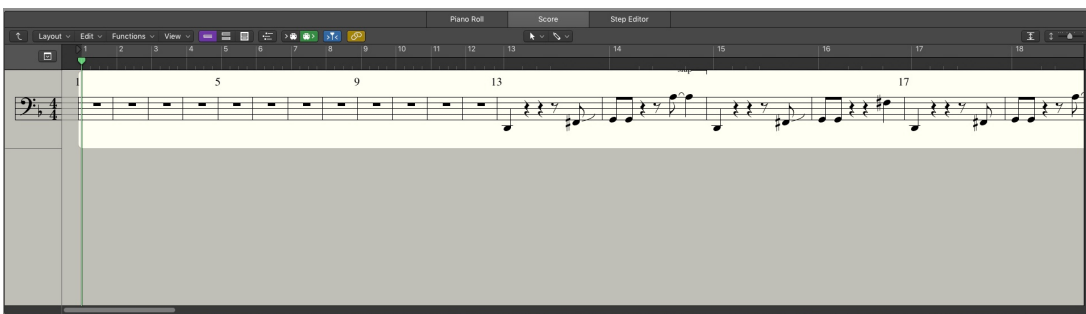
Timbral Notes

The strings used during "See Through Plastic Bag", are much the same sonically as they are in the song "Track Level Jumper". New additions of synthetic bansuri flute and oboe, show the ease in which one can manipulate the timbral characteristics of woodwind programming. While the flute remains almost entirely convincing in its colour, the oboe is recognizable only in name. Its character is purposely metallic and infinitly alterable, having been created through the "Sculpture" modeling synth. Drums are virtual and indistinguishable as synthetic to any but the trained ear. The composer may alter the tuning, drum size, kind or amount of drums, tone, swing, fill type, tempo, and many other characteristics such as cymbal choice and hi hats closed, open or varied in position. The electric bass is performed by the composer, directly to the DAW. It is then re-amplified through a synthetic bass amp, the author having chosen synthetic apparatuses , the UA 87 Microphone, an 8x10 inch speaker cabinet, and varied equalization settings including a "bump" at 1560 HZ. The synthetic electric piano mimics faithfully its very real and actual counterpart, the Fender Rhodes Mark 1 electric piano, in use since 1965 primarily in jazz, and popular music. Synthetic Tibetan singing bowls are struck to begin this piece, and their timbal character is much what one would expect from "The Real McCoy." Tambourines are played by the author, and committed to vitual "tape' through the AT 2020 microphone, and the Zoom UAC-8 analogue to digital converter, as are the vocals. Finally, a very passable Steinway piano is created with the help of the composer, and an EX24 virtual synthesiser.

Chapter 8: Line Up

Our main character has moved passed the trauma of life, and is accepting a new awareness, and the wisdom and spirituality that comes with the knowledge that everything is ok, despite the events that brought him here. There are references to South Asian sitar melodies combined with the slide guitar style of many blues and southern North American folk blues artists and dobro players. The flute and its melody, are a nod to Canned Heat's hit and late sixties hippie anthem "Goin Up The Country" by Alan Wilson. Wilson's lyrics reference biblical verse from John 2:1 of the Christian bible, where Jesus turns the water to wine. The lyrics "I'm goin', I'm goin' where the water tastes like wine", where part of a hippie anthem outlining spiritual shift for the boomer generation.

Again, a great deal of atmosphere is created by the Fender Telecaster (just tuning) feeding back, which produces a distant 5:4 G sharp (3rd) and the root (E), in a constant, randomly present, and fluid manner. Supported by a flanger, compressor, spreader, and several reverb and equalization units the effect created is that of a tambura, a South Asian acoustic string instrument used to create a drone for both classical, and meditative music. While the signpost is similar, South Asian classical drones would usually limit themselves to the root, octave and dominant combination, and not the root, third and octave combination that I have used.

Figure 8.1: "Line Up" Graphic Score First 18 Bars
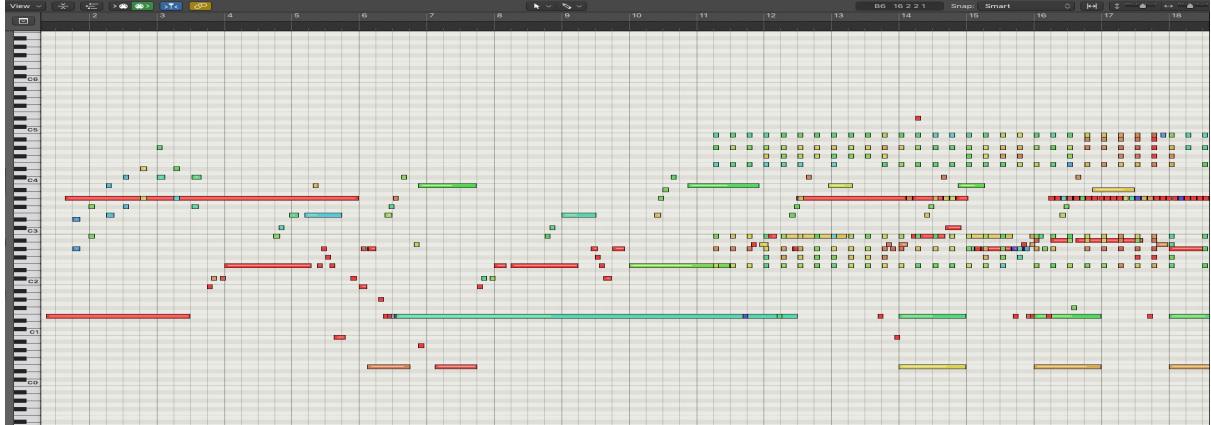
Figure 8.1 shows the first 18 bars of *Line Up*. Red lines lasting three and a half, and six bars

respectively are E and G sharp or Sa and Ga. A single violin arpeggio weighted in the key of B

foreshadows the repetitive final theme during bars 1 till 4. Starting in bar 11, pulsating E, E9 The

E 11 chords accompany the Slide guitar. One of the few problems with creating both graphic and

traditional notation with Logic, is that legato playing, typical of slide guitar (also tuned justly), is

not written or graphed correctly. While a glissando joins almost every note combination played

by the guitar during its two main themes, Logic Audio has difficulty mapping its occurrence. The

slide guitar in bar 16 visits the lydian scale, similar to the Kalyan mode used in Carnatic music.

Figure 8.2 below shows the computer's version of events in theme 1.

Figure 8.2 Slide Guitar Melody Theme 1

Similar in character to "Track Level Jumper", violins mimic the arpeggiated and minimalist music of Philip Glass (who coincidentally wrote and recorded with Indian classical sitar guru Ravi Shankar), in this case incorporating time delays that cause a vertigo like sensation, or suggest an out of phase and primitive musical canon. The imitative passages created by the captured, delayed and re introduced violins can be considered a separate instrument, as the recapitulation of the phrase can be altered and moved in time independently from the performance that gave birth to it. These are compositions that are unique to electronic means that would require trebled chamber membership in the past, and are made almost pedestrian in the DAW. Figure 8.3 below shows pan automation (light green diagonal line becoming midline) that scripts the effect of the string section walking from stage left wings, and arriving "front and center" for the duration. Once they have arrived (blocking the oboes, conductor and second violins from view), the yellow line rising from the bottom and plateauing from bars 61 to 66 graphs drawn automation that slowly introduces a repeating delay applied only to the violins. This creates the effect of several new violins rising up through center stage, and playing an identical figure to the reigning violins, gradually offset rhythmically and dynamically, only to slowly descend back into a pit under the stage, their syncopated performance diminishing accordingly after roughly 8 bars.

Figure 8.3: Pan and Delay Automation
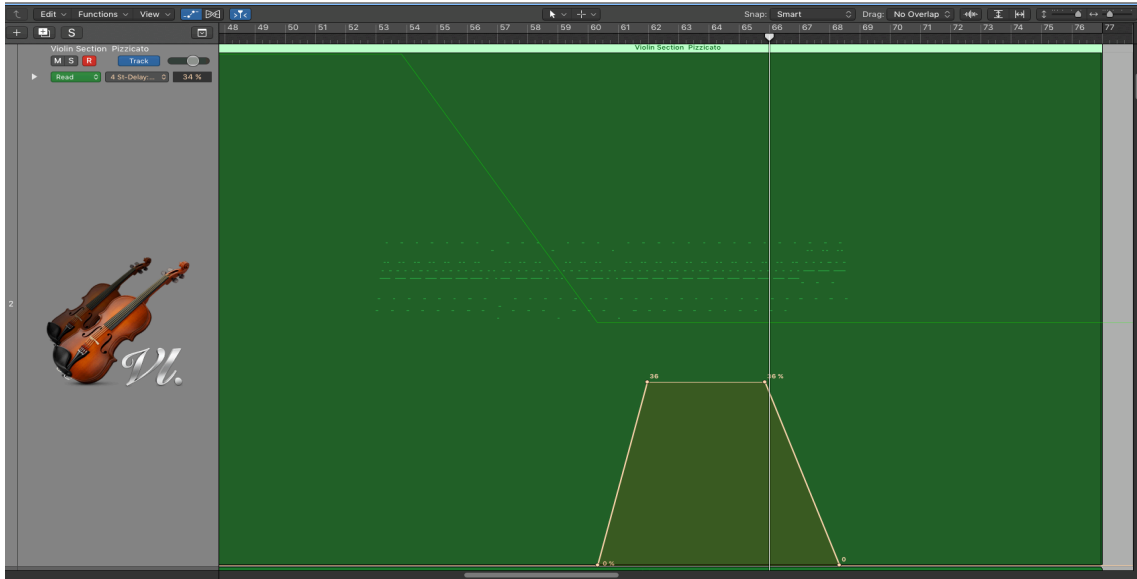
Figure 8.4: Stereo Delay Unit Settings at Bar 64

Figure 8.5 Violins and Cellos Bars 64-70

Figure 8.5 shows another use of slowly shifting harmonic groupings. In Bar 66, cellos, and violins move subtly from chords E nine to B six by moving the note E to D sharp. Bar 67 sees the removal of the note G sharp 2, and G sharp 4 until late in bar 67 to land the score squarely in the key of B, the fifth of our original key and the implied key in the very beginning at bars 1-4. We will leap another flattened fifth to F, for the beginning of the next song, "I'm Not

Worth It."

Timbral Notes

Synthetic double basses, violins, and cellos created by the EXS24 are good

representations of the natural and usual character expected by classical and abstract music

lovers. The ESX24 is also used to create facsimiles of the Chinese Xiao flute, and the results are

two instruments that resemble the acoustic original, with noticeable differences where attack

(breath) and note decay are manipulated in order to satisfy artistic preference. Guitars are

discussed earlier in this chapter.

Chapter 9: I'm Not Worth It.

Written for the tenor ukulele, and a rag tag gathering of disillusioned and experienced orchestral malcontents, "I'm Not Worth It" happens in a moment of grace. Edward Greer has had the opportunity to look around a transitory and borderless space, and he takes note of the absurd amounts of effort his fellow travelers are expending observing the etiquette of the multiple single file organizational queue, dragging disintegrating bags of stuff through a washed out and over exposed space on their way to an interview with one of many wing helmeted, spear and shield toting Valkyries.

Operatic tradition birthed the phrase "It ain't over until the fat lady sings", a reference to the final scene in Richard Wagner's opera cycle Der Ring des Nibelungen. As a part of Terminal Station saga, every single transitioning soul gets a kind of "The Price Is Right" choice between "paradise" and "continue". But first, with the help of a valkyrie (the fat lady), they examine each and every item contained in their own see through plastic bag, and are asked to consider its significance now that they are where they are, facing the placement of their soul's destination, a large battle ready Norse goddess, and their own lifelong obsessions. Edward ponders his own physical history laid plain on the deck, and feels that he did not achieve what he could have, and not with any semblance of altruism, given his earthly set up. He is overwhelmed by the wisdom of the valkyrie, and also by the opportunity to continue in one of two seemingly benevolent directions. In Edward's case, he will choose paradise, and once the valkyrie (who agrees and condones Edwards conclusions) sings it out, he will be sped back to earth, only to start, from the start.

 Again.

In Paradise.

I'm not worth it
I've collected useless things
They're tied as concentric rings
And now that the fat lady is singing
I tried, and I tried
But I must have lost my mind
To be so unkind

What are these?
I was sacrificing trees
Reversing the work of bees
I'm begging on bended knee
Please, please, please

I want to make it up
Make it up
I wanna mop it up
Mop it up
I want to make it up
Make it up
I wanna mop it up

Mop it up

I'm not worth its
I was trapped inside that skin
And the edge I walked was thin
I was blind
I must have lost my mind
I must have lost
My mind

I want to make it up
Make it up
I wanna mop it up
Mop it up
I want to make it up
Make it up
I wanna mop it up
Mop it up

I'm not worth it

The ways in which the DAW makes this specific composition and recording possible are perhaps the subtlest of the gang. The timpani next to a ukulele is not a common sight or sound, either in the concert hall nor the folk club. Here the timpani anchors the chord progression through the first chorus, third verse and second chorus as a tuned bass line, without diminishing the usually diminutive ukulele's role. Clarinets, bassoons, a lone kalimba player and tuba surround the main character like a marching band, finding their footing and then crawling carefully, finally rejoicing in the miracle of eternity like a band of proud parents.

Much the same as the other songs contained in this project, the disparate musical parts grew as a result of hearing the instruments that came before, and in this case, started with the

ukulele progression, accompanied by the voice. The composition is created as a reflection of

hearing rather than of reading or imagining, and then reacting to each gradual change. In place

of first notating the music on paper, or in an orchestration program such as Sibelius, the aural

document appears in an organic way, and the notated portion of the score is manufactured as a

virtual kick back. It is as though the musicians are present throughout the compositional

practice; reeds, limbs and fingers kept supple and silent until called upon. It is a not a small thing

to enjoy the creative inspiration that blossoms from having access to virtually any sound, and to

consider its effect on the way one can compose without defaulting only to the sounds one is

familiar with, or the timbres that are organically available.

Figure 9.1 "I'm Not Worth It" Graphic and Dynamic Score
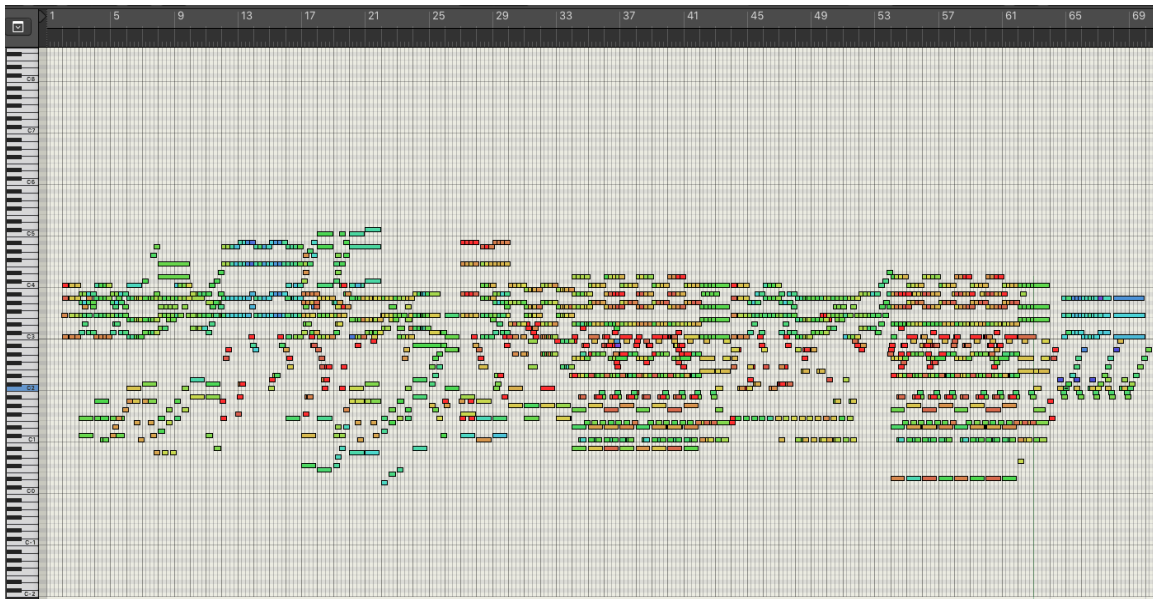
Timbral Notes

This song was written to be played with, and directed by the character of a tenor

ukulele. The uke was played and simultaneously recorded through the AT2020, The Zoom UAC8,

to the DAW. Its character is much the same as if one was standing next to the performer; the

intimacy is purposeful, but some of the low-end room noise below 200 Hz is removed via an

eight-band virtual equalizer, in order to leave space for the bassoons and the tuba occupying the lower register (A0-A#2). The timpani are virtual and essential, and could be easily mistaken for the real thing having been played in a large empty theatre. Supporting the timpani is a drum synth called the "Ultrabeat". Those sounds include fake hand claps, a thin sounding kick drum, a trashy struck garbage can, and a tapped closed hi hat. The EXS synth handles tuba, bassoons, piano and clarinet sounds that are lacking the air of the real thing, but are believable. Vocals are recorded in the usual way through the AT2020 and UAC8, compression and eq are inserted, and air added via an exciter (adds frequencies in the range of 6600 hz), to make up for the lower fidelity of the low cost AT2020 microphone.

Conclusion

It is my desire to create original music that reflects my own experience, points of view, faith, and philosophies. In order to compose "Terminal Station", I first created an internal dialogue.

What is authentic that hasn't evolved to its present state?

Nothing.

What is authentic that was not a product of its environment?

Nothing.

When was the moment before authenticity (did I recognize it)?

Never, and yes, when I questioned my intuition against insecurities related to how others might judge my intent.

Who has the authority to identify it here (authenticity)?

I am entirely responsible.

Who will endow that authority?

I will.

In the attempt to create music that reflects who I am, what I see, what and who influences me, and the life that I have experienced, the virtually unlimited access to different and varied instruments and sounds, is vital. The DAW allowed for subtle use of instrumentation while creating. This is not the same as creating a score without sound. While composing "Line Up" for instance, I needed to hear and react to the effect of the feeding guitar's 3rd or root, and its random dynamic occurrence, in order to compose the next instrumental part, or to improvise the next part's dynamic. Each and every step influenced the next, and allowed for improvisation to be kept and become composition, and to influence the next instrumental pass. The

opportunity to hear instruments that I couldn't have otherwise, helped to create compositional opportunities that would not have existed with out virtual reality. Ultimately, the DAW creates an audio record; something that composing using the traditional score does not.

Composing using the DAW, means that skills formerly considered outside of the composer's realm are now within it. Improvisation, sound engineering, publishing and information technology skills are made essential acts of music composition.

The digital record is the score, but it is not yet accepted as such. At present, it is not possible to present the DAW's record for academic review, or as part of this thesis. Despite the DAW's ability to present the traditional score as well as many other aspects of the composition's character and history, there is still a need to create a space for the medium in academia.

I would be helpful if music performers and players acquire the ability to read, and sight read the composer's digital score. After all, the traditional abstract academy approach is to reproduce the music from the composer's score, or from a reproduction.

Listening to a recording, or imitating the sound of acoustic instruments is not a replacement for the experience of live music played on acoustic instruments. In fact, the author prefers the live acoustic experience to listening to recorded music or sampling. This fact does not diminish the usefulness of composing with access to the tools of the DAW, and such an approach is likely to encourage the use of processes and sounds previously unavailable to the working composer, and can inform the use of new combinations of instrumentation for live performance.

Building the knowledge set required to operate the DAW requires focussed and dedicated educational commitment, and its prominence in the professional world of composition is apparent. Acceptance of new and different forms of score and instrumentation will inform western musical establishments, and should encourage adjustments that consider digital

additions to pedagogy that are presently becoming an integral part of compositional knowledge, in order to advance or expand the spectrum of music and processes considered of value.

The introduction to this thesis mentioned that one reason found for my pursuing compositional practice through the use of record engineering and the DAW, was the punitive cost of making an audio recording and composing in this realm.

Gathering together the small orchestra, producer, engineer, and specialized instrumentalists while completing rehearsals and score alterations for this project could have easily come in at 20,000 dollars. With a few affordable and accessible tools, costs are considerably less, while creating an audio recording that can generate income.

The DAW is neither a time saver, nor a shortcut. It is tool, instrument and archive of and for creating, and an extremely useful, and important skill set for any professional composer.

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Appendix
Track Level Jumper

Adam Faux 2017

See Through Plastic Bag

Pre recorded women's voice over loudspeaker: *Attention all customers on our line one to York University , the delay we were experiencing northbound at Glencairn Station is now clear...   please stand clear of the doors*

Sampler: *This Sampler contains the pre recorded sounds of a subway entering a subway station a womans voice declares*
"Arriving at Downsview Station,
This is a terminal Station".

Vocal lyrics: tak ing a train with a see through plas tic bag I'm_____ float ing through space with a

Vocal lyrics: see through plas tic bag__ I'm go in' home with a___ see through blue

I'm Not Worth It

Composer and Lyricist, Adam Faux

I'm not worth it   i've co

lec ted   use   less   things___   They're

tied   in   con   cen tri   c_____ ri ings____

and now that the fat la dy si i i i i i ings

Lyrics: I tried and I tried____

but I must have lost my mind...___

and re ver sing the work of bees I'm

worth it   I was trapped in...   side that skin

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... and the edge I walked was thin...

and i was blind   I must have lost my

mind...___

I must have lost

my mind ....

I wa na

mop it u u uu up___

i wan na

mop it u u up

mop it u u up

mop it u u up

Line Up

Composer, Adam Faux
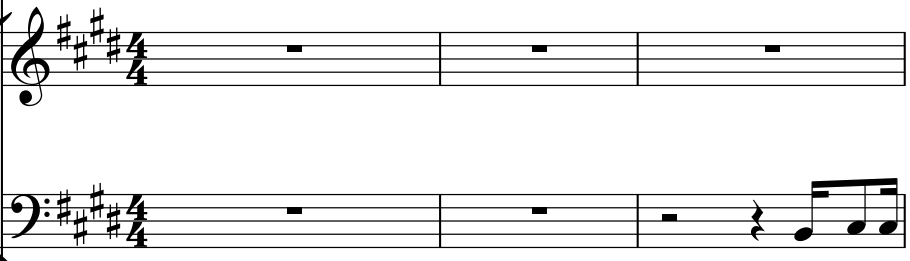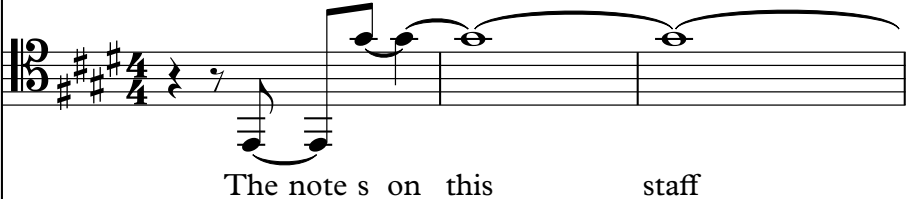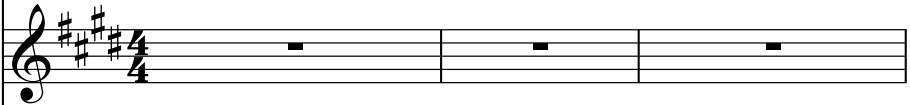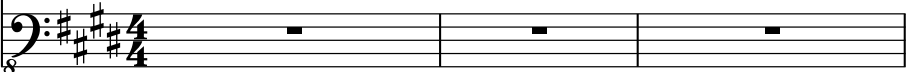
are   midi

arere generationsof an electric guitar feeding back freely tuned   to

an open e chord

leanig   against a fifteen watt

amplifier whose gain set tings are optimized

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to sustain the overtone series created by a

1962 cherry red fen der te le cas ter that is equiped

with a unique pair of pick ups that help to

cre ate a wall of__ ambient sound ... a   kind of wash that defines the

mood   an am bi   ance

of   the   piece

the sounds represented by   the Sibelius pro   gram   and   the

midi sounds in Logic audoio in   no

way a- proximates the actual sound of an electric

guitar feeding back and it is likely that the reader can imagine the overtone series created automated and manipulated in order that

the sounds made are sub tle , etc