Intentional Simplicity: Evoking Authenticity
In Self-Produced Acoustic Rock Music

Technical Study:
Listener ability to perceive Auto-tune on lead vocals in acoustic rock music
and Auto-tune's effect on listener preference

By

Joshua Aaron Guthals

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New York University
New York, NY 10012

Thesis advisor: Paul Geluso

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Abstract

With advances in technology, more musical artists write, perform, and produce their own works. In providing a written account of the production process of *Graceful Exit* from songwriting through postproduction, my motivation was to present musical artists a methodology to consider when self-producing professional quality albums. I engaged a historical perspective, linking my songwriting and production processes to those used on influential singer-songwriter folk-rock albums from past decades. I also interviewed music industry professionals to help build a rationale for the production of my album. What emerged was a practical approach to production that I call "intentional simplicity" whereby the songs of my thesis album mainly obeyed these criteria: they are concisely written, use simple arrangements and only a few acoustic instruments, prominently feature an expressive and lightly treated lead vocal, and use very few postproduction effects. I scrutinized the production and postproduction methodology of *Graceful Exit* and analyzed the finished recordings and music of selected songs from the album. Lastly, I implemented a pilot study examining listeners' ability to determine the presence of pitch correction on lead vocals in acoustic rock music, specifically processed with Auto-tune. I hypothesized that listeners can better determine the presence of heavy Auto-tune or no Auto-tune when compared to light Auto-tune. I also examined listener preference for heavy, light or no Auto-tune testing the hypothesis that people prefer light or no Auto-tune to heavy Auto-tune on lead vocals in acoustic music.

Preface/Acknowledgments

What you've got here, really, are two realities, one of immediate artistic appearance and one of underlying scientific explanation, and they don't match and they don't fit and they don't really have much of anything to do with one another. That's quite a situation. You might say there's a little problem here.
    —***Zen and The Art of Motorcycle Maintenance*** (Robert Pirsig, p.49)

When I matriculated at NYU in fall of 2009 with the intent to obtain a master's degree in music technology, it was not without trepidation. As a songwriter and heartfelt indie musician, my primary interest was writing and singing poetical pop songs while accompanying myself on acoustic guitar or piano. In an interview with a Canada public radio station in 2010 I was dubbed "an acoustic spirit in a digital world" by the interviewer, Philip Hong, who saw me as "one great exception in the useless follies of today's digitally generated emptiness." I discussed with Hong my general preference for "artists who use mostly acoustic instruments – like Leonard Cohen, REM, 10,000 Maniacs, Liz Phair, and Joni Mitchell," explaining to him that "I like the variations that come from using live instruments – their timbre, the way they blend imperfectly but beautifully." The radio station posted our interview on their website during the second year of my studies in music technology at NYU – and I remember wondering if it might indicate me as a Luddite within my own field of study.

I enrolled in NYU's music technology program because of a gut instinct that there would be something valuable in spending some twenty-seven months of my life studying music technology – and in planning an extended departure from my accustomed role as acoustic performer. I sensed that technologist and performer might not be truly disparate pursuits. In Robert Pirsig's meditative novel *Zen and the*

Art of Motorcycle Maintenance, some characters fixate on a romantic and non-rational engagement with the world while others are more focused on gaining an intricate and rational understanding of the inner workings of worldly things (Pirsig, 47-50). My interest to explore the field of music technology was mainly due to a desire to bridge my own conflicting impulses and find for myself the intersections between the gestalt-oriented artist and the precision-driven technologist.

It was therefore with significant excitement that I learned of the introduction of the Tonmeister honor's thesis track to NYU's music technology program during my second year – a thesis track which, along with requiring appetizing courses like Aesthetics of Recording, Audio Production, and Concert Recording, would require students to record forty minutes of music in the Steinhardt School's brand new state-of-the-art James L. Dolan Music Recording Studio. The online honor's thesis description stated that the project must "include substantial non-electronic instrumentation" along with "detailing the technology, recording and mixing techniques used." It seemed difficult to imagine a better means to simultaneously expand my grasp of music technology and explore my own music making process than throwing myself immediately and fully into the Tonmeister thesis track. Eureka! Just as I had hoped when I matriculated at NYU, my chance to bridge my dualities within one expansive project had presented itself.

During my first Tonmeister thesis-planning meeting with Paul Geluso, my thesis advisor, he firmly instructed me not to do this project alone, explaining that a full-length album was too big an undertaking for one person to complete and that I would learn much through collaborations along the way. His words proved

fortuitous: meeting and collaborating with faculty members and peers, reading and studying technical and artistic works, working with and interviewing music industry professionals, and benefiting from the support of family and friends led to a finished album and an accompanying thesis document I am proud to have created – and definitely could not have created alone. I would like to thank the following people (among many others) for their contributions to making this project a reality:

To summarize my Tonmeister experience, I have taken Pirsig's preface to *Zen and the Art of Motorcycle Maintenance* and replaced the word "motorcycle" with "album," seeing in his preface an apt description of the process of completing my recording project here at NYU:

"The real *album* you're working on is an *album* called 'yourself.'
The study of the art of *making an album* is really a miniature study of the art of rationality itself. Working on *an album,* working well, caring, is to become part of a process, to achieve an inner peace of mind. The *album* is primarily a mental phenomenon." (Italics indicate my modifications of Pirsig's preface.)

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Introduction

With advances in technology, more musical artists can write, perform, and produce their own works. However, self-producing a professional quality album of any genre is an intensive, complex undertaking. The producer encounters a dizzying array of choices from start to finish, such as what songs to include, what instrumentation to use, and what methods to follow during recording, mixing, and mastering. And in the genre of singer-songwriter-driven acoustic rock, the songwriting is as important to the project's final outcome as the many other production decisions. There are many ways to lose one's direction.

My personal motivation with my album project *Graceful Exit* is to expand my proficiencies as songwriter, performer, and self-producer. From a songwriter's perspective, my goal is to imbue an album with the best lyrical and musical elements of great singer-songwriter-driven rock albums. From a performer's perspective, my intention is to clearly communicate the song's lyrical and musical ideas to listeners. From my standpoint as *Graceful Exit's* producer and engineer, I want the project to follow the sonic qualities exemplified by seminal albums in this genre.

To help myself achieve these interwoven goals, I set about creating a methodology I came to call "intentional simplicity" that emphasizes a less-is-more approach to self-production. By creating this written account of the production process of *Graceful Exit* from songwriting through postproduction, my larger motivation is to provide musical artists access to my approach when self-producing albums. They can examine and critique both my written document and my recorded work and draw information for their own creative processes.

Intentional Simplicity: My rationale during the pre-production, production and postproduction processes of my thesis album *Graceful Exit* has been to construct structurally concise songs arranged with few instruments, to track performances with minimal recording gear, and mix the project with the least amount of post production effects while still creating a professionally-produced acoustic rock album.

This rationale is culled from several sources:

1) fulfillment of the Tonmeister thesis project requirement to use mainly acoustic, non-electronic musical sources

2) a desire to follow a historical lineage of elegance and simplicity in the recording process (as inspired by Annea Lockwood's field recordings of waterways, and singer-songwriter-driven albums Tracy Chapman's *Tracy Chapman*, Joni Mitchell's *Blue*, and Neutral Milk Hotel's *In the Aeroplane Over the Sea*)

3) after reading accounts of music producers' methodologies in David Howard's *Sonic Alchemy* and interviewing music professionals Jeffrey Norman, Rusty Santos, Aaron Prellwitz, and Alex Forbes, a desire to create a production methodology that uses recording and postproduction technologies sparingly and thoughtfully to record a musical work in its most authentic state

Chapter 1. A: Historical Perspective: singer-songwriter-driven acoustic rock

Singer-songwriter [is] a term used since the late 1950s to describe . . . mainly American and British singing composer-performers, often with roots in folk, country and blues, whose music and lyrics are considered inseparable from their performances . . . . Singer-songwriters are generally socially aware performers, the themes of their work often involving a sense of introspection, alienation or loss (real or imaginary): this is shared by both the singer and the listener, the sense of intimacy magnified by the microphone.
—John Potter (Grove Music Online)

From a historical perspective, albums by Tracy Chapman, Joni Mitchell, and Neutral Milk Hotel are singular examples from a massive and sprawling genre of singer-songwriter-driven rock music. These albums guided me toward constructing a songwriting and production process on *Graceful Exit*. What follows is a brief discussion of the songwriting and production aspects of these projects from a critical and personal perspective. (Note: In our Advanced Audio Production course we used William Moylan's *Understanding and Crafting the Mix: The Art of Recording* to guide us in analyzing the production of recorded works. I have called upon the steps of his process in my analysis. I also call upon elements of Leszek Wojcik's approach to musical analysis as taught in our Aesthetics of Recording course.)

Tracy Chapman's *Tracy Chapman*: the benefits of structural simplicity and impassioned vocal delivery and the costs of an inert production aesthetic

Singer-songwriter Tracy Chapman's self-titled debut album was released in 1988 to critical acclaim and massive global sales, reaching number one on the Billboard charts (Larkin). Music critic Thomas Erlewine describes the album and its production:

> *Tracy Chapman* is firmly within the classic singer/songwriter tradition, sounding for all the world as if it was recorded in the early '70s . . . Chapman's impassioned liberal activism . . . breath[es] life into her songs

even when the production is a little bit too clean. Still, the juxtaposition of contemporary themes and classic production precisely is what makes the album distinctive – it brings the traditions into the present.

Professional songwriter Alex Forbes, who lectured in my Songwriter's Forum course, describes the impact of "Fast Car": "It's an incredible song. There are so many verses before you hit that hook – 'And I had a feeling that I belonged' – and then it blows you away. This is a song that changed the world."

The album's production is by David Kershenbaum, who also produced for Joan Baez (Larkin). Listening again to the album with Erlewine's critique in mind, I realize I agree with part of his analysis of the recording: *Tracy Chapman* does feel too "clean" to my ears. I appreciate the spare, unpretentious rock arrangements, but the various musical elements seem spatially unbalanced, not well blended or integrated. I disagree with his statement that the album recalls the '70s – I think of albums from that era as having softness, stereophonic spread, analog hiss, and warmth. *Tracy Chapman* is mostly monophonic and feels very studio recorded and digital. These qualities make it sound as if it were not recorded in the '70s but rather in the '80s.

Conclusions: Overall, I am drawn to Chapman's raw emotional intensity and to the extremely simple musical structures of each song (such as the hypnotic oscillation between the verses and the chorus of "Fast Car" with no chronological musical development). I am not particularly fond however of the production choices on the album.

Joni Mitchell's *Blue*: the benefits of powerful lyrics, simple instrumentation, untreated, exposed lead vocals, and a warm, blended production aesthetic

As for music that was actually recorded in the '70s, Joni Mitchell's self-produced 1971 album, *Blue*, is a seminal work in the acoustic folk-rock singer-songwriter genre, considered "quintessential" as it "raises the stakes of confessional folk-pop to new levels of honesty and openness" (Ankeny). Sample lyrics from "All I Want" and "California" are typical of the evocative quality of Mitchell's carefully rhymed lyrics:

> I am on a lonely road and I am traveling
> Looking for the key to set me free
> Oh the jealousy, the greed is the unraveling
> It's the unraveling
> And it undoes all the joy that could be.
> Mitchell, "All I Want"
>
> Sitting in a park in Paris, France
> Reading the news and sure looks bad
> They won't give peace a chance
> That was just a dream some of us had.
> Mitchell, "California"

Mitchell's "creative integrity and [the] stylistic adventurousness of her lyrics are exemplary in the genre," as noted by critic Lloyd Whitesell. "Her lyrical output . . . has acquired special status [marking her as] the representative voice of a self-exploratory intellectual bohemianism" (Whitesell, 3).

From a production perspective, the tracks on *Blue* are typified by Mitchell's front-and-center vocals, adorned with little to no reverb, backed by usually dead-center or hard-panned instruments including guitar, bass, dulcimer, and percussion. When compared to *Tracy Chapman*, the production feels warmer and more blended and compliments the "sad, spare, and beautiful" aspects of the album (Ankeny).

Conclusions: I find the album a consummately delightful listening experience, especially in how the production's simplicity, warmth, and richness highlight the artistic strengths of the performer, i.e., her "instrumental prowess, harmonic surety and profound lyric sense" (Griffiths). The album feels expansive even when many of the productions on the album feature only her voice and an acoustic guitar or piano.

Neutral Milk Hotel's *In the Aeroplane Over the Sea*: the benefits of simplicity in production and rawness in lead vocal performance

Neutral Milk Hotel's 1998 album *In the Aeroplane Over the Sea*, produced by Robert Schneider, features cryptic songwriting and strangled singing (and sometimes shouting) by Jeff Mangum. The album has become a cult smash, selling hundreds of thousands of copies and recently voted the sixteenth best album of the last twenty-five years by *Q* magazine's readers (*Q* Lists). The album is lyrically complex and at times stylistically experimental and as such receives a rather critical reception. Writes Ankeny about the album:

> [Mangum's] musical concepts . . . come into sharp focus; . . . while Mangum spins his words with the rapid-fire intensity of a young Dylan, the songs are far too cryptic and abstract to fully sink in – *In the Aeroplane Over the Sea* is undoubtedly a major statement, but just what it's saying is anyone's guess.

I disagree with Ankeny's analysis that the lyrics are too obscure to engage listeners. Rather, to me the abstract nature of Mangum's lyrics are perfectly mediated by the album's production approach – one that is sonically vibrant, saturated, and very close to the listener in the perceived sound field. Tracks on the album for the most part consist only of an off-kilter lead vocal (sometimes doubled) that is very loud in

the mix, a jangling acoustic guitar, some of the time an accordion, and a few backing vocals. Many tracks on *In the Aeroplane Over the Sea* feature many more instruments (such as a brass section), but I find myself most drawn to the songs on the album that mainly feature a tortured sounding singer and an acoustic guitar.

Conclusions: I agree with the description found on Oxford Music Online of Neutral Milk Hotel's production style: "folk-style melodies and lo-fi production values provid[ing] the perfect accompaniment for Mangum's strident vocals and highly esoteric lyrics" (Larkin). This is especially the case on the wonderfully erratic tracks "Two Headed Boy" and "King of Carrot Flowers Part 1," which have little overt production, are musically basic – in instrumentation, structure, and tonality –but are extremely dense in the sound field, and are energetic and engaging.

An emerging production methodology on *Graceful Exit*:

These albums and especially the tracks I have analyzed have deeply affected me as a songwriter and strongly influenced my production of *Graceful Exit*. (Please see Figure 1 for my analysis of Chapman's "Fast Car," Mitchell's "All I Want," and Neutral Milk Hotel's "Two Headed Boy.") Hearing the tracks from *In the Aeroplane Under the Sea* back-to-back with tracks from *Tracy Chapman* and *Blue* illuminated the stark difference to my ears between the productions of three albums that I love – the hyper-polished production on Chapman's album lacks an aesthetic drive or personality, something that is present on the very intimate and openly blemished

Neutral Milk Hotel album; whereas Mitchell's album's spotless production has a soft-spoken characteristic that feels warm and friendly.

Discussion: As *Graceful Exit*'s producer, I determined that replicating the most desirable elements from these albums would place my album in the historical pathway I would like to see it follow – one with a lyrical adventurousness, vulnerability, and transparency; and one with a warm, clear production with a few minimally effected instrumental elements that principally features untouched, raw-sounding lead vocals backed mainly by piano and acoustic guitar. I greatly prefer the rounded quality of the Mitchell production and the saturated intensity of the Neutral Milk Hotel production to the somewhat aseptic mix on the Chapman album, so along with simplicity and clarity of the instrumentation I also want to incorporate the lived-in quality of the first two projects and avoid the austerity of *Tracy Chapman.*

Chapter 1. B: Project Rationale: Intentional Simplicity

In their performances and on many of their recordings there is an almost symbiotic relationship between singer[-songwriters] and their instruments, usually guitar or piano, at which the songs have generally been composed. The playing is usually fairly simple and always underpins the text.
　　　　—John Potter (Grove Music Online)

Listening to *Tracy Chapman*, *In the Aeroplane Over the Sea,* and *Blue* clarified

the songwriting and production elements that I wanted to spotlight on *Graceful Exit*,

but I did not yet feel that I had a clearly formulated production rationale to guide the

lengthy process of producing an album. I turned to a variety of other sources to

further clarify my methodology: I examined additional recorded works, read about

production approaches, and conducted interviews with industry professionals

involved in the production of my album.

Listening sessions and further research: the importance of serving the artist's strength through production choices

Seeking additional guiding production principles for my project, I listened to

a variety of other albums in the acoustic rock realm, such as Leonard Cohen's *The*

Best of Leonard Cohen, the Smashing Pumpkins' *Melon Collie and the Infinite Sadness*,

Bon Iver's *For Emma, Forever Ago*, Bright Eyes' *Lifted or The Story is in the Soil, Keep*

Your Ear To Ground, Animal Collective's *Merriweather Post Pavillion,* and Liz Phair's

Exile in Guyville. My primary – if unscientific – finding from these extended listening

sessions was that these projects' greatness could be credited to their production

style bringing out the music's and the musicians' best attributes, one of which often

being the songwriter's quirky and imperfect voice. I concluded that I desired a

comparable production approach to highlight my strengths and authentically present my writing and performing.

I read David Howard's fascinating book *Sonic Alchemy: Visionary Music Producers and Their Maverick Recordings*, with its breathtaking accounts of the innovations of producers like Phil Spector, Brian Eno, and Steve Albini. I particularly appreciated his descriptions of anxiety-ridden and soft-spoken producer Chris Thomas finding the "explosive missing ingredients" needed to make the Sex Pistols' 1977 album *Never Mind the Bollocks, Here's the Sex Pistols* a cultural sensation, and of Thomas adding a 'myriad of textures' to the Pretenders' guitars on their self-titled 1980 debut album to make that project a hit (Howard, 244-47). Also mesmerizing are his descriptions of Martin Hannett's heroin-fueled production approach on Joy Division's 1979 album *Unknown Pleasures* – "his decisions were obstinately based on doing the exact opposite of what the band wanted" – that led to the creation of the classic post-punk track "Love Will Tear Us Apart" with its "compressed drum slam, moody bassline, . . . angular guitar shards, and austere synthesizer tape loops" (255-59). Howard's book is tremendously inspiring, with is depictions of music producers as gleeful mad scientists trying everything under the sun to churn out a cohesive finished product. However, most of the producers in the book veer toward highly involved, high-impact production choices that while intriguing may override the kind of subtly that I sensed I wanted my production to possess.

I then turned to the work of an avant-garde composer named Annea Lockwood who had first captivated me when I read about her in Joel Chadabe's book *Electric Sound: The Past and Promise of Electronic Music*. Since the 1960s, she has

sought to record the world's rivers and she insists that the skillful and simple process of recording water is a way of making music: "Water passes over many different surfaces at many different rates, so the resultant textures tend to be really intimate, and really complex and quite absorbing to listen to." She believes that the act of recording itself exists as the means "to bring [in] sound which otherwise can't be transported into people's living rooms" (Chadabe, 80). While listening in my own living room to her recordings of the waterways of the Hudson River and the Danube River (Lovely Music: 1989 and 2008, respectively), I think about her decision to record "an aural journey [of the] changing sonic textures of every part of the river from source to mouth" and to present the resulting unedited tracks as standalone musical albums (I uploaded them to my Amazon cloud alongside acoustic rock albums by PJ Harvey, Paul Simon, and Low). I am particularly drawn to Lockwood's self-description as a "'low tech' composer interested in creating music from unusual sound sources," (Nelson, 147). I pondered how I could bring the effortlessness and extreme simplicity of Lockwood's waterway compositions to the production aspects of a singer-songwriter album.

Interviews with industry professionals: the value of "less is more" in songwriter-driven rock production

A series of conversations with music industry professionals finally helped clarify my production impulses under the term I coined: "intentional simplicity." I spoke at great length with engineers Jeffrey Norman, Rusty Santos, and Aaron Prellwitz about their production rationales and also talked with songwriter Alex

Forbes about principles that guided her songwriting. Their insights were quite instructive in finally cementing intentional simplicity as my production rationale.

I interviewed engineer Jeffrey Norman (who mixed two tracks on *Graceful Exit*: "Probably" and "Vanishing Point") about his experiences recording John Fogerty's 1986 album *Eye of the Zombie.* When I asked Norman what engineering choices he had made regarding capturing Fogerty's vocals, he said that they had tried out a variety of different microphones and finally settled on a Neumann U87. I asked what else he had done to make the vocals sound professional and he said, "well, that's pretty much it. We chose the U87. It sounded good." [Note: Norman is also the primary re-mixing archivist for the Grateful Dead's live concert recordings of the '70s. I heard him speak at this year's AES convention in Manhattan about the process of unearthing and restoring endless hours tapes of Grateful Dead Europe concerts for box-set release, a massive project he had been finishing when we first met. He discussed with me at various times the aesthetic of mixing Grateful Dead music: few effects, minimal processing – a "real" feeling. Quirks and mistakes were welcomed as indicators of the performance being authentic and as way to endear fans to the "reality" of the music.]

I had been anticipating that Norman would list a complex series of compressors and microphones used on each song of Fogerty's album along with EQ-ing and all manners of pre- and postproduction effects that went into such a major label release. However he repeatedly stated that the song and the performer are the focus of a recording and that he uses the least amount of processing he can during both production steps. I asked him about his approach to mixing tracks from my

album, wondering if he was engaging such a rationale with my songs. He said of mixing the *Graceful Exit* track "Probably": "because it is a personal song, with perhaps the singer/songwriter's own experience as its basis, I felt a less-is-more approach seemed most appropriate."

My emerging concept of intentional simplicity gathered steam during an interview with Rusty Santos (most famous as producer/engineer of Animal Collective's *Sung Tongs*) after he had finished making a deliberately, even radically pared-down mix of my song "Reunion." We had tracked a full four-on-the-floor drum-kit part and an electric-bass part for "Reunion" along with my lead vocals and acoustic guitar. I had also included in the track's rough mix portions of a field recording of nighttime fields in Montana. Santos pushed to entirely remove the drums, electric bass, and field recordings, stating that what he sensed made *Graceful Exit* interesting as a cohesive project was the interplay between my plaintive singing and the songs themselves. In the end he used the acoustic guitar and the lead vocal trreated with a very obvious and latent echo effect as the only elements of the finished mix.

Santos's audacious decision to cut upwards of 75% of the instrumentation on "Reunion" became my final inducement to consider that less is more when it comes to creating a singer-songwriter rock album. Similarly to the conversations I had with Norman, during my 30 hours observing Santos in his studio editing and mixing my songs, he made it clear to me that he used various pre- and postproduction tools only when they were clearly called for in support of serving the message of the music. His aggressive simplifying re-workings of "Reunion" and another track on

Graceful Exit called "The Hero" led me and my collaborator Andrew Madden to

perform a dramatic stripping down of parts across most of *Graceful Exit*'s tracks

during the postproduction phase, whereby intentional simplicity became not just

using postproduction effects only when absolutely called for but, following Santos's

lead, omitting entire instrumental parts unless they clearly served the song. The list

of omitted parts on *Graceful Exit* eventually came to include flute, harp, strings,

electric guitar, drums, bass, backing vocals, doubled vocals, and a variety of field

recordings. This omission list also included full sections of songs and finally whole

songs themselves.

Aaron Prellwitz (engineer/mixer for Sun Kil Moon, The Mountain Goats, and

Suki Love) describes his personal postproduction philosophy: "I want the song's mix

to create the feeling that best conveys the song's strengths while subverting what

might distract the listener from the song's focal point at any given moment."

Prellwitz mixed six songs on *Graceful Exit*, including the track "Corpus Christi,"

which Madden and I had previously sent through our (as yet unnamed) intentional

simplicity process – following Santos's lead we cut the drums almost entirely, except

for as aggressively brief blips and lurches, until having them emerge suddenly and

fully for the last thirty seconds; we used the electric bass parts in only six measures

of the song's chorus; and we layered the lead vocal in the choruses but usually only

in unison with very little harmony and left them totally dry and singular in the

verses. Prellwitz discussed his response to the project overall and specifically to the

massively simplified tracks of "Corpus Christi" he received for mixing:

> The songs on *Graceful Exit* seemed to be very centered around the lyrics and I
> naturally wanted to keep the narrative the focus of the mix. There was a little

ear candy here and there, but I didn't ever let it get in the way of the vocal. I especially loved how the drums had been handled on Corpus Christi; the song is so beautiful that if drums had been playing all the way through it would have completely changed the vibe of the way the piano and vocal worked together.

Prellwitz also mentioned during our discussions that he "appreciated the fact that the tracks on *Graceful Exit* were not heavily compressed" and felt that "from songwriting to recording/producing, I'm not sure that I had any dislikes."

This concept of intentional simplicity also works from a songwriting angle: several of *Graceful Exit*'s songs were born from assignments in which songwriter Alex Forbes relentlessly encouraged students in my songwriting class to use the fewest words, fewest chords, and fewest melodic notes possible to express their desired sentiments. The *Graceful Exit* tracks "Kiss Don't Tell," "Caroline," and "Shrinking Violets" were written under her tutelage, and the songs "Corpus Christi" and "Graceful Exit" were written soon thereafter. Clearly Forbes's push for clarity and focus in songwriting had a strong impact on the thesis project overall. As Forbes put it in our interview:

> A great song boils down to how the lyrics meet the music, in the absence of all the production values that we seem to think so important. Underneath it all there must be a seed of an idea, an emotion, a thought that moves us in some way. Listeners need a foothold. With more simplicity, less artifice, and more poetry, the songwriter is better able to move the listener.

The end result: *Graceful Exit*'s production rationale, "intentional simplicity"

In summary, the primary interest during production of *Graceful Exit* has been exploring the extent to which production and postproduction technology serves the final artistic outcome of each track, and especially the ways in which it can be used very sparingly, judiciously, and intelligently in order to enhance the authenticity of

the finished album project. By following the intentional simplicity rationale, I found

myself making choices regarding instrumentation, effects, sections of songs, and

indeed technology itself with great care during each step of the album's creation.

Chapter 2. Artists, Track Listing, and explanation of repertoire

Graceful Exit is an acoustic rock album based around my singing and songwriting.

The following is a list of the personnel involved in the album's production. Where

relevant I list their educational or professional background.

PRODUCTION

Recording:
Joshua Aaron Guthals, bandleader of Kind Monitor, NYU (music technology)
Andrew Madden, Recording Workshop (sound engineering), NYU (music technology)

Songwriting:
Joshua Guthals

Additional songwriting:
Jennifer Guthals, University of Montana (flute performance)
Barret Anspach, Juilliard (composition)
Skyler Brickley

Strings composition and arrangement:
Jessie Montgomery, Juilliard (violin performance), NYU (composition)

Voice lessons and performance coaching for Joshua Guthals:
David Allan Howell, UC Boulder (vocal performance), NYU (vocal pedagogy)

Performing artists on album:,
Note: All artists were recorded in the live room of the James L. Dolan studios at NYU (except Megan Levin who, due to time constraints, recorded herself in her home studio in Brooklyn)
Joshua Aaron Guthals: vocals, acoustic guitar, grand piano, and auxiliary percussion
Jessie Montgomery: violin
Linda May-Han Oh: bass, Manhattan School of Music (bass performance), 2010 Bell Award for the Young Australian Jazz Artist of the Year
Ken Salters: drums, University of South Carolina (percussion performance)
Jeff Fowler: electric guitar, NYU (guitar performance)
Jung-Hee Oh: flute, Wesleyan School of Music (flute performance)
Nick Revel: viola, Eastman School of Music (viola performance)
Ellia Bisker: vocals, bandleader of Sweet Soubrette
Anna Fuchs: backing vocals, Westminster Choir College of Rider University (vocal performance)
Megan Levin: harpist, Rice University's Shepherd School of Music (harp performance)

Nature and sound-effect recordings:
Joshua Guthals and Justin Mathew, NYU

POSTPRODUCTION

Professional mixing engineers:
Jeffrey Norman (Grateful Dead, John Fogarty, Metallica) – mixing on "Probably," "Vanishing Point"
Aaron Prellwitz (Mark Kozelek, Sun Kill Moon) – mixing on "Corpus Christi," "On Every Sunday"
Rusty Santos (Animal Collective, The Dirty Projectors) – mixing and editing on "Reunion," "The Hero" (and preliminary mixing and editing on "Shrinking Violets" and "Lay Down on the Ground")

Other editing contributors:
I edited, mixed, or did preliminary mixing on several tracks and collaborated with Andrew Madden on additional editing and mixing. Stephen Kellner, NYU (music technology) and Senem Pirler, NYU (music technology) provided additional editing.

Sarah Register, mastering engineer at the Lodge in Manhattan, will master the album in an assisted session.

REPERTOIRE

*Graceful Exit***'s track listing:**
Note: All mentions of Guthals in this section refer to Joshua unless otherwise stated.

Song (writer/s); instrumentation, (performer/s); post-production (engineer/s)

1. **"The Hero"** (Guthals); vocals, acoustic guitar (Guthals); violin (Montgomery), viola (Revel), electric bass (Oh), sound-effect recordings (Guthals); editing (Guthals, Madden, Santos); mixing (Santos)

2. **"Reunion"** (Guthals); vocals, acoustic guitar (Guthals); editing (Guthals, Pirler); mixing (Santos)

3. **"Lay Down on the Ground"** (Guthals); vocals, acoustic guitar (Guthals); violin (Montgomery); drums (Salters); bass (Oh); editing (Kellner, Guthals); mixing (Santos); additional mixing (Guthals); additional mixing (Prellwitz)

4. **"Vanishing Point"** (Guthals); vocals, acoustic guitar (Guthals); editing (Pirler, Guthals, Madden); mixing (Norman)

5. **"Kiss Don't Tell"** (Guthals); vocals, grand piano, digital keys (Guthals); percussion, sound-effect recordings (Mathew); editing (Guthals, Howell); mixing (Prellwitz)

6**. "Graceful Exit"** (Jennifer and Joshua Guthals); vocals, grand piano (Guthals); violin (Montgomery); percussion (Guthals); editing (Guthals, Madden); mixing (Guthals)

7. **"Corpus Christi"** (Guthals and Anspach); vocals, grand piano (Guthals); backing vocals (Guthals); electric guitar (Fowler); electric bass (Oh); harp (Levin); drums (Salters); editing (Guthals, Madden); mixing (Prellwitz)

8. **"Caroline"** (Guthals): vocals, acoustic guitar (Guthals); violin (Montgomery); backing vocals (Guthals); editing (Howell, Guthals); mixing (Prellwitz)

9. **"On Every Sunday"** (Guthals); vocals, acoustic guitar (Guthals); violin (Montgomery); electric bass (Oh); drums (Salters); editing (Guthals, Madden); mixing (Prellwitz)

10. **"Courtesy of Jennifer"** (Guthals and Brickley); vocals, acoustic guitar (Guthals); flute (Oh); backing vocals (Fuchs); bass (Oh); editing (Guthals); mixing (Prellwitz)

11. **"Shrinking Violets"** (Guthals); vocals, grand piano (Guthals): digital keys (Guthals); backing vocals (Guthals); percussion (Guthals); harp (Levin); editing (Santos, Guthals); mixing (Santos); additional mixing (Guthals); additional mixing (Prellwitz)

12. "**The Fun Years"** (Guthals); vocals, acoustic guitar (Guthals); bass (Oh); drums (Salters); editing (Guthals, Madden); mixing (Prellwitz)

13. **"Probably"** (Guthals); vocals, acoustic guitar (Guthals); backing vocals (Bisker); electric (Oh); editing (Guthals, Madden); mixing (Norman)

OMITTED TRACK 14. **"Code Red"** (Guthals); vocals, grand piano (Guthals)

Song selection process:

I wrote ten songs on *Graceful Exit* and co-wrote four. The first four songs I

chose for the project – "Shrinking Violets," "Caroline," "Corpus Christi," and "Kiss

Don't Tell" – were written in Dr. Ron Sadoff's Songwriters Forum at NYU under the

instruction of professional songwriters Alex Forbes and Phil Galdston. These four

songs explored the ambiguity and difficulty of everyday relationships. I picked out

another twenty songs from my songwriting catalog that shared thematic

similarities. During a series of live performances, I played the twenty-four songs for

my production collaborator, Andrew Madden, and my non-musician friend, Patti

Collins, and we discussed each song's relative merits, narrowing down fourteen

tracks for inclusion on *Graceful Exit*. The resulting collection reflects upon dark and

multi-layered human dramas, e.g., an infidelity, the failed reunion attempt of a

broken family, a romance marred by political ambitions, a lover's leap into the

ocean, and acts of anarchy and rebellion against faceless authority. Many of the

songs are set in or reference natural settings, e.g., coastlines and night skies.

Inspiration for/ideas associated with lyrics and music of selected songs:

> **"Corpus Christi"** – the strums and harps of a siren song, the coast and heavy humidity of Texas, the memory of the 1916 hurricane, a drama between father and son as observed by an intimate friend; an unrealistic desire to make an escape to the mountains emerges.

> **"Shrinking Violets"** – an amusement park shimmers on the edge of a nighttime beach (as in the film *Lost Boys*) of a post-apocalyptic coastal city. Members of the working class start riots against the dominating elite, fires ignite and buildings go dark. A rallying cry is created, an agreement to stand up against the powers that be: "No more shrinking violets!"

> **"Caroline"** – '50's McCarthy-era fears, pastel lipstick and unmentioned alcoholism, satellites sent up in the sky, cookie cutter lives and 2.5 children, a man tells of his self-destruction to his wife Caroline, even as he fears she is going to become another source of failure in his life

> **"Reunion"** – 3:00 AM meteor showers out on the hillside in Montana are remembered 25 years later amid Fourth of July nostalgia; an uncertain effort at family reconciliation stops and starts and sputters.

> **"Graceful Exit"** – a naked lover's body falls downward and underneath water as a sensual and final remove from an unaccepting town; his lover wants to leap with him but is unable at the last moment to take the plunge

NOTE: Please see attached Appendix I for musical analyses of two songs from the album, "The Hero" and "On Every Sunday." Appendix II contains selected song lyrics, and Appendix III has selected musical charts.

Chapter 3A: From Pre-production to Postproduction: A Production Discussion

tech·nol·o·gy
noun \tek-ˈnä-lə-jē\

1) the practical application of knowledge especially in a particular area

2) a capability given by the practical application of [that] knowledge

3) a manner of accomplishing a task especially using technical processes, methods, or knowledge (Mirriam Webster dictionary)

In the following sections, I will discuss the production processes I engaged on

Graceful Exit with an eye toward the technologies used and also showing where I

have applied my production rationale of intentional simplicity.

Production Phase 1: Pre-production – Songwriting, Vocal Training, and Arrangement

Songwriting. In the Songwriters Forum, I had the support of songwriters

Alex Forbes and Phil Galdston in distilling the essence of my songs through practical

songwriting steps. Though it may seem a stretch call songwriting a technology, it

does match the definition: *a manner of accomplishing a task especially using*

technical processes, methods, or knowledge. Forbes has her masters in creative

writing from Stanford and has written a variety of hit songs including "Don't Rush

Me," a number 2 Billboard hit for Taylor Dayne. She had us develop the "seeds" of

our songs by following a process she calls "song starts" where we generated basic

starting points for our songs, such as a title, a memorable lyrics, or a simple melody.

She then guided us in methodically creating songs, requiring that our compositions

have clear themes, a memorable hook, a clear point of view, and simple melody, and

a rhyme scheme. Galdston (who co-wrote Vanessa Williams' monster hit "Save the

Best for Last") was insistent that our song demos be clearly recorded as to offer a professional presentation to listeners.

In keeping with their suggestions, I would flesh out songs each week on my home recording studio (a Digi 002-based ProTools rig with Reason, an inexpensive large-capsule condenser microphone, a Yamaha Digital Stage Piano, a Martin acoustic guitar, Mackie HR824 Monitors, a tambourine and a shaker). During the songwriting process, I would use ProTools and Reason, MS Word, and guitar or piano, to allow interfacing between my lyrical and music ideas and the emerging demo recording. By moving back and forth like this while I writing, I could sculpt the song real-time in both the written and recorded versions.

Both Forbes and Galdston were firm that we must be able to justify our song writing decisions to our peers and willing to edit and revise per the response and feedback of trusted listeners and other musicians. As a result of their instruction, I wrote two of *Graceful Exit*'s strongest tracks, "Corpus Christi" and "Caroline," songs that I am confident are structurally solid and thematically rich. For example, "Caroline," has a clear division between verse and chorus (said Forbes: "The best approach is usually verse-chorus, especially if you're trying to attract people to a song"), centers around a simple lyric – "I need a little love" – and revolves around an uncomplicated four-measure lick on the acoustic guitar (said Forbes: "Take what is popping out – a phrase, a melody, a chord, a part of the music – and do a lot of it.") The song was written as a direct response to Forbes' suggestions to "find something worthy of taking up three and half minutes of people's time" and "to save the obscurities for your big fans who are into the depths of your material."

Conclusions: In songwriting heartfelt expression and structural simplicity are key to communicating music ideas to listeners. Songwriting sessions can be streamlined through combining the songwriting and demo recording process into a single process.

Vocal Training. Throughout the pre-production phase I received vocal lessons and performance coaching from David Allan Howell, a masters student in NYU studying under Brian Gill for advanced certification in vocal pedagogy. Howell describes his primary motivation as "steering my students away from a manufactured vocal sound influenced by other singers" and "developing each student's unique voice with an emphasis on vocalization that is more communicative, immediate, and more at ease." By applying vocal training techniques taught to him by his professors and taken from written works such as The Functional Unity of Singing by Barbara Doscher, he sought to bring out a brightness and buzzing clarity in my singing voice, in order to "best use the whole voice, higher overtones, lower overtones, and everything in between." This was done by Howell for the sake of creating a clarity, presence, and fullness when vocalizing, which on the production side we found reduced the amount of compression and equalization needed during tracking and postproduction.

Indeed following Howell's approach created a stable lead vocal that generally did not require much in the way of postproduction effects like Auto-tune, delay and reverb. As Howell explains: "through improving the sound of the vocals during live

recording, singing is less physically exhausting AND requires less work during

mixing, supporting a 'less is more' strategy during production."

Howell explains specifics of his method to preparing me to sing *Graceful*

Exit's songs*:*

> I worked to free Joshua from the boundaries of old habits, under-singing, and
> complacency in performance. We used tools designed to energize and engage
> the breathing apparatus: applying pressure on the lower back, and lower
> abdomen, releasing the jaw via physical interruption with the hands against
> the tempero-mandibular joint, and applying pressure to different parts of the
> face including nose, cheeks, teeth and jaw. These exercises increased Joshua's
> resonance awareness, and, as a result, the direction and clarity of airflow and
> vocal line.

Howell also requested that I practice singing the songs from beginning to end, as a

preparation for doing single takes during tracking sessions. With his background in

live music performance and his awareness of *Graceful Exit* being a singer-songwriter

driven album he worked with me to "avoid disrupting the songs' intention by

needing to splice one take with another" with a goal toward maintaining "integrity

by singing the piece fully through during tracking." This marked a departure for me

as a singer accustomed to recording vocals bit by bit during recording sessions

("Dizzy," the song I self-produced in Advanced Audio Production, is a prime example

of the step-by-step approach I frequently employ when building a lead vocal part).

As a result of his instruction, the vocals of the following tracks on *Graceful Exit* were

recorded in continuous takes: "Kiss Don't Tell," "The Fun Years," "Probably," "The

Hero," "On Every Sunday," "Lay Down on the Ground," and "Caroline." Other songs

on the album blended continuous takes with minimal overdubbing.

Conclusions: In vocal performance, a singer-songwriter's goal is a "heightened

speech approach to make the words and vocals more immediate and

communicative." Howell suggests that "gradually and consistently moving from an vocal sound motivated by 'aesthetic' to a unique voice motivated by desire for ease and presence" will lead to a more authentic vocal delivery that is suited to a singer-songwriter's album. When possible, being able to sing the lead vocal from beginning to end in a continuous take is desired for clearly communicating the musical ideas and intentions.

Arrangement. Once the songs were selected and efforts were underway on vocal training, I contacted Jessie Montgomery, a masters student at NYU in film scoring, and told her about my thesis project. I had produced a session of one her film scores a few months before and had found her composing and playing delightful. She agreed to contribute strings arrangements on six songs on the album. During production meetings between co-producer Madden, Montgomery and I, we decided that we wanted to create an acoustically driven indie-folk album that would feature my singing and songwriting and also emphasize spare arrangements of strings, flute, harp, bass, drums, and electric guitar. After our discussions about instrumentation, I informed of a variety of professional and semi-professional musicians that we wanted them to contribute to the creation of the album. I sent Montgomery demo recordings of the six songs she had offered to provide arrangements for and also sent her preliminary production notes Madden and I had made about the project during our song selection sessions. It was typical of her to aid me in the song development by emailing me messages like this along the way:

I was taking a second listen to Graceful Exit and considering Andrew's notes. I do hear what he means about the beginning tempo being slower--the

melody has some nice suspensions in it that would warrant a little more stretching in the phrases. The current tempo certainly works, but slowing it down would add even more repose as the last track on the album. But, I'm just not sure how to increase and then decrease the tempo for the choruses in a musical way, unless it's double-timed? But then would the end result seem jerky?

One other comment I do have: Are you going for a vastness throughout? I thought maybe if the piano more in the middle register at least for the beginning, it would make the really low "bridge" material more interesting.

Teaming up with Montgomery proved helpful in the guiding the development of the album overall, even on the songs she did not arrange. There was easiness to our interaction, I felt she enjoyed and responded to the music, and her ease with building elegant strings arrangements (I was especially fond of her work on "The Hero," "On Every Sunday," and "Kiss Don't Tell") bled into the collaborations I had with artists on other tracks on the project. A few months after tracking was complete, Montgomery reflected on the arranging process:

Each song Joshua wrote and submitted to me was very concise in its message. Not just lyrically but also the musical profile of the song and the way the themes developed. Each song had a clear beginning middle and end and stayed true to its character set out at the beginning of the song. In my arranging I focused on mood and character, trying best to add a backdrop that supported the clear narrative. I also did my best to provide a pads that would add harmonic resonance to each song.

Conclusion: Collaborating with Montgomery resulted in lush musical arrangements that greatly expanded the content and power of the songs. Having regular pre-production meetings to clarify our production intentions made the actual tracking process simpler and more efficient.

Discussion of pre-production process: The pre-production process of *Graceful Exit* was quite extensive, spanning songwriting to song selection to vocal training to

instrumentation planning. On my previous recording projects and demo recording sessions, I had tended to do most of the work on a song during the tracking stage, in that I would compose the song real-time. Because the demo creation phase occurred during pre-production, the production process could focus almost solely around recording my performances and those of other musicians. Also having a detail-oriented co-producer was of great help to offset my more creative nature. Madden sent me an email at the start of pre-production that I used to help prepare me for the forthcoming tracking phase:

> 1. Prepare all of the piano and guitar parts so as to perform them in a solid state. Chords and vocal melody must be ready. This should include >= 6 songs.
> 2. Book studio time for Thursday, February 3rd.
> 3. Download and read through Section 2: Console Operation of the SSL Duality manual.
> 4. Collect names and email addresses of all musicians who should be considered as collaborators and/or players.

Receiving professional songwriting instruction in Sadoff's course and collaborating with talented people such as Howell, Madden, and Montgomery left me with preparedness and confidence as we entered the tracking stage.

Production Phase 2: Production – Tracking Lead Parts and Additional Instruments, Additional Development of Instrumentation

"You can capture the sound of creativity and energy, and it's separate from the performance and the production and the miking and all of these different things. There's just … this untamed quality that, if you can capture it, resonates with people when they hear it
        —*In the Aeroplane Over the Sea* (Kim Cooper, p. 62)

I created a production schedule with my thesis advisor Paul Geluso that ran over a ten-week period (from February 16, 2011 through April 28th). I would make use of overnight recording sessions in the James L. Dolan studio two days a week

from 9:30pm to 5am. I quickly ran into an issue as I set about scheduling sessions – people prize their sleep and therefore did not want to assist the production overnight sessions or perform during them. Because I knew that my piano and guitar playing and my singing would be central to the songs, I decided that other instrumentation would be added later during daytime sessions that I would schedule at another time. I chose to devote my overnight sessions to the following schedule, as described in an email I sent to Geluso:

> The basic plan is to do tracking of my guitar, piano, and lead vocals for two new songs each week on Wednesday evenings. The subsequent Thursday night will be used for rough mixing of the material from the night before and also to draw up any additional creative ideas that come up while doing the rough mixing.

I spoke with Montgomery and Madden and they agreed to take part in the first two hours of the sessions as long as they could finish by midnight. Because Montgomery had agreed to do strings arrangements on five or six songs, we set up a schedule where every two weeks Madden would come help me set up the studio for Montgomery to track her strings parts. Under this approach, I would submit a song or two to her from my sessions and she would have two weeks to prepare her arrangements.

After each of my private sessions, I would emerge with a version of a song to send to her. At our tracking sessions Montgomery would arrive with a handful of musical figures and hand-scrawled charts for the song we had scheduled for that day's tracking session (See Figure 2 for her chart for "The Hero.") Her charts were kernels of her musical ideas and in recording we would elaborations on those ideas. During tracking sessions with her (and sometimes with her violist companion

Revel), we would begin to loop in Pro Tools the rough versions of the songs that I

had tracked a couple of weeks before. She would play the musical figures she had

written and then quickly flesh out her first ideas with new additions, as the song

would loop. We would move back and forth between loop recording and simply

playing the songs and talking about them. Montgomery discussed her process as an

arranger a few months after we completed tracking on the project:

> Coming up with material for the tracks on *Graceful Exit* was an improvisatory
> process, which left room for a very creative environment. I could take
> descriptive and narrative direction from Joshua and interpret it musically so
> that the overall process felt very organic -- he could speak freely in
> descriptive imagery that was in line with his vision for the aesthetic of the
> song, and I felt freedom to then improvise on themes (something I don't get
> to do very often as a classically trained musician). The improvisatory nature
> of the work led to a looser than usual notation in my chart writing. Instead of
> mapping out the entire song, I was able to come up with fragments that I
> thought fit well with certain sections and then I would riff off of them to
> complete the arrangement of each track during tracking sessions with
> Joshua.

The tracking process with Montgomery went surprisingly quickly. We tracked her

violin and viola arrangements in five sessions during the ten weeks that I had

overnight sessions at the Dolan studio.

I will take a step back to describe my own self-production process before

touching upon the process of tracking the additional musicians. The process ended

up being fairly consistent once I had set up the structure with Geluso and began

attending my weekly overnight recording sessions. Madden and I would set up the

needed equipment (or I would do it alone if Madden was not available), which for

me were vocal mikes, and piano and guitar mikes. We always sent all of my parts

through the Api pre-amp before passing them into Pro Tools at the SSL Duality

board.

For the piano and guitar parts, I would record my parts several times in a row until I felt confident had played at least one take that was nearly perfect. I would return to the control and listen to what I thought to be the best single take. I would generally allow myself only two or three edits. If more edits were called for, I would return to the live room and record several more continuous takes until I had one good take to build from. I followed this process for of my piano and guitar parts until I had fourteen songs tracked.

For the vocals, I made extensive use of the loop record function in Pro Tools to allow me to produce myself during my performances. I would usually wait two to three weeks after recording the instrument part to record the vocals. I would pull up what I had thought to be my best take and confirm that it was a functional part to which I could sing along. If I was still happy with the piano or guitar performance, I would set up loop record either on the whole song or on single sections depending on my vocal goals with that song. I would generally loop through three to five vocal takes, sometimes less and sometimes more (the need for extra vocal takes generally depended on my level of fatigue, which was often high due to tracking so late at night). I used this process across all of the tracks except for "Vanishing Point," "Reunion," "Kiss Don't," and "Graceful Exit," "Lay Down on the Ground," and "Caroline." David Howell, Senem Pirler, and Andrew Madden would man the Pro Tools session while using talk back to guide me through the vocal parts of the songs, providing feedback and coaching along the way.

Additional sessions at Dolan were used to track the additional instruments on the album. My general approach was to send the rough mix of the song to

whomever I wanted to play on the song. We would schedule daytime sessions

through Geluso and I would track the performer. Rather than requiring people to

play specific parts, I instead asked each performer to prepare a part that they

thought would blend well with the overall mood of the song. Because I worked

primarily with professional musicians, this was nearly always a successful approach.

By the end of the tracking process I had tracked my parts, Montgomery's

arrangements, and a variety of additional instrumentalists. I had a massive amount

of recorded material to bring into the postproduction phase, which not surprisingly

involved a great deal of editing and paring down of parts.

A note on microphone set ups that we used for tracking my parts and the other

instruments – I consulted DPA's online guide, I consulted with the miking guidelines

in "Tonmeister Technology" by Michael Dickreiter, and I conducted interviews with

peers at NYU including Madden, Tom Beyer, Tyler Sawyer, Ignacio Arriagado,

Merter Yildirm, Julia Caruso, and Senem Pirler. (See attached figures for detailed

photos of the microphone configurations I used during tracking sessions.)

Production Phase 3: Post-production – Editing, Mixing, and Additional Tracking

The post production process on *Graceful Exit* occurred over about a eight

month long period, and was made up of the following parts: editing and mixing,

overdubbing and additional tracking. Whenever possible, I continued to implement

the intentional simplicity rationale during each step of this process. For example, the

editing, rather than being focused on 'fixing' parts, was mostly focused on

eliminating portions of songs and muting out musical elements in order to create clarity.

As discussed in the Chapter 1B, attended several mixing sections with Rusty Santos provided me an impetus to put into a place a methodology to guide the postproduction of *Graceful Exit*. The postproduction process became composed of steps that were repeated across the thirteen tracks on the album: editing and listening sessions with Madden to simplify the tracks, collaborations with professional mixing engineers in which they would provide feedback on the songs and provide information about their mixing methods, and eventually mixing sessions of my own based upon what I learned from the professional mixers. In this section I will discuss the postproduction process that occurred on the songs "On Every Sunday" and "Vanishing Point." The process on these tracks is representative of what occurred during postproduction on the other songs on *Graceful Exit*.

Note: The postproduction process of several other songs (e.g. on "Reunion," "The Hero," and "Probably) receives extensive analysis in parts of Chapter 1B, Chapter 2B, and Appendix I. To deepen the exploration of the postproduction phase, these sections include excerpts from extensive interviews I conducted with professional mixing engineers who worked on the album.

Intentional simplicity enacted On Every Sunday and Vanishing Point:

After tracking of all elements was completed on "On Every Sunday," I set out implementing Rusty Santos' suggestion to cut anything non-essential, non-unique, and non-crucial to the storytelling of the song. In its rough state, the track had a lead

vocal, acoustic guitar, multi-tracked violin elements, drums, and electric bass. All of these elements occurred from beginning to end on the song. The song also featured an extended instrumental section with the lead vocal riffs in falsetto against backing instruments that were for the most part comping on their same parts from the preceding section. The result was a lack of differentiation between the sections of the song and an overall sense of heaviness and inertness.

"Vanishing Point" was in a similar state. We had tracked lead vocals, acoustic guitar, some piano ideas, auxiliary percussion, and strings parts. Perhaps due to a lack of advance planning on the orchestration of the song (Montgomery did not arrange this track), the different elements felt awkward and did not meld.

Madden and I listened to the songs from our Pro Tools session in Dolan studios and also on my laptop on my home studio. As we listened through the sessions on repeat we would talk aloud about ideas for simplifying and restructuring the songs.

On "On Every Sunday," we cut the strings from the first third of the song entirely, which prompted us to cut the bass and drums from the first sections as well. The opening third of the song was left with only lead vocals and guitar, which felt a bit bare so I added a violin line from the second section of the song. Now that we had created a nice sense of space in the first section, we thought about what elements would be served the middle portion of the song. After some experimentation, we went with lead vocals, acoustic guitar, full strings, and full drums. We muted the electric bass entirely until the end of the song, where it suddenly modulates to A-flat major (in the earlier sections that song had be in the

key of G). By bringing the bass into the song in this section, it feels fresh, a bit odd, and definitely stands out as a special and "chosen" element, instead of just another bass line. We made a few other stylistic choices on the track that we felt serves our goals to keep the sonic palette limited and unique: we removed the entire falsetto driven middle section of the song due to a lack of interesting development in the backing instruments. We reversed the strings in the opening section to make them eerie and we reversed the drums at the end of the song as a suggestion of the song "unraveling."

With everything we had deemed superfluous suddenly removed from the mix, the other elements were suddenly very exposed. We realized that the lead vocal was out of tune in several spots of the song and noticed that the drums were rather rhythmically off kilter in the middle and closing sections. We had Stephen Kellner perform structural edits on the drums, guitar, and bass to insure that the song functioned cohesively and I performed Auto-tune on two spots on the song. Later Prellwitz Auto-tuned another vocal section during his mixing process. The editing process on "On Every Sunday" was absolutely crucial to the development of the song, playing as large as role as the initial songwriting and the tracking sessions.

The editing process on "Vanishing Point" was even bolder. After listening through the hodgepodge of elements on the track, Madden and I had a realistic talk about our options. As much as we liked the elements individual, we saw that the simply did not integrate with each other on the track. Plus the track felt too long, which seemed to diminish its sad sweetness. We went back to the original demo recording and thought about the lyrics and came to the decision to cut everything

from the song except the acoustic guitar and vocals. We also deleted about a quarter of the song, including the introduction, a third of the section chorus, and a full minute of the final section of the song. The song went from about five minutes in length to about three minutes and ended up sounding very spare and very raw.

We sent "On Every Sunday" to Prellwitz for mixing and sent "Vanishing Point" to Norman. Both rough mixes by the engineers had a fair amount of reverb and delay effects on the voice, and Norman's had a similar amount of effects on the guitar. In keeping with our productions strategy we asked them both to remove as much of the effects as they were comfortable eliminating. The final versions of the songs are simple and spare with a very vulnerable lead vocal.

This process was repeated across the other songs on the album, especially "Shrinking Violets" and "Corpus Christi" which received aggressive paring down treatment during editing. Through establishing simplicity through our forceful editing, this simplified and shortened both the editing and the mixing processes performed by other postproduction professionals. I am also currently in the process of editing and mixing several songs on the album myself.

Chapter 3B: Analysis of Recorded Work

In this section I will look at the final mixes of three songs from the album, following the analysis methods recommended in Moylan's *Understanding and Crafting the Mix.* I will discuss the lyrics and music where relevant to provide a backdrop for examining the finished recording. After detailing the tracked elements of each song, I will then look at the songs as if I had not been present during production, acting instead as merely a critical listener to the finished recording. I provide an in depth analysis of "Reunion" – a very spare, fully acoustic track with aggressive delay on the otherwise bone-dry vocals, mixed by Rusty Santos. Also provided are discussions with the mixing engineers of "Corpus Christi" – an acoustic track with extensive multi-tracked vocals and highly processed guitar effects, grand piano, drums, and electric bass, mixed by Aaron Prellwitz, and "Probably" – a fully acoustic track featuring raw, unprocessed male and female vocals, acoustic guitar, and an electric bass, mixed by Jeffrey Norman. (Note: During analysis, I listened to the tracks while alternating between Mackie HR824 monitors and Ultrasone S-Logic headphones in the same quiet home-listening environment.)

Reunion:

"Reunion" was recorded entirely in Dolan Studios at NYU over three sessions in spring of 2011. The acoustic guitar (an Ovation 1771LX spruce top with composite body) was recorded in the studio's live room using a spaced pair of DPA small diaphragm cardioid condenser 4011 microphones set back about 18 inches from the guitar's neck and body (See Image 4A and B). The lead vocals were

recorded on three microphones: a Neumann large dual-diaphragm U87 microphone on shock mount set to cardioid setting and placed directly in front of the vocalist's mouth, an overhead DPA 4011 pointing downward at the vocalists nose, and a Neumann modified omni-directional condenser tube microphone M150 placed in the reverb radius of the live room (See Images 1, 2A and B). The vocals were recorded in a separate session from the guitar and supervised and coached by David Alan Howell and Senem Pirler. A third tracking session was used to track a rhythm section consisting of full drum kit and electric bass, elements that were not used in the final mix of the song. In this session the bass was tracked using a DI-box, the drums were miked using about 15 microphones – however, since these elements were not used in the final mix, they won't be discussed further. Also I made field recordings in the backyard of my parents' home several months prior to the tracking sessions in Dolan intending to include them in the final mix. As with the drums and the bass elements, these field recordings (of crickets, coyotes, sprinklers, and dogs barking) were eliminated and thus will not be described further.

The song's lyrics explore a family's efforts at reconciliation and they revolve around memories of a meteor shower that takes places in the nighttime sky in Montana:

> And in the backyard the stars were all lining
> Up to fall down. We were watching them shining
> And it wasn't love or hate: it was four a.m.
> And yeah I know, it was a long time ago.

Musically, "Reunion" is a deceptively simple song with a rounded binary form. The first section of the song and the recapitulation are in D major and the B section is in A major. Because the recapitulation is extremely brief, the song ends with a blurred

sense of key with harmonic coloration remaining from the extended A major

section. As analyzed by Barret Anspach, who has a masters in composition from

Julliard:

> With the structure set out in "Reunion," musically you start together than you
> go apart, then you come together again. But there is now a discord, because a
> ghost of the G# is still present at recapitulation. The result is that when the
> song returns to D at the close it feels like the subdominant of E, because A
> still feels like the new tonic. It has an unsettled feeling as the song ends,
> rather than feeling like a return to "home" as the rounded binary form might
> usually indicate.

Symbolically, this could suggest that the effort at reunion described in the song's

lyrics has been met with an uncertain result. Rather than strumming chords, the

guitar plucks out a rhythmical and melodic line that drives the song. Though the

song has a very clear 4/4 meter, a three part round develops due to a vocal delay

effect that is not aligned precisely to the guitar's rhythm, which smears the expected

sense of meter, again as a possible symbolic nod to the uncertainty described in the

lyrics of the family's efforts at reconciliation.

As a sound recording, the track "Reunion" is typified by two elements: the

extreme simplicity of the production overall and the treatment of the aggressively

exposed lead vocals in the mix. "Reunion" was mixed "in the box" by Rusty Santos on

LogicPro at his mixing room in Salt Mines Studios, Brooklyn, NY. The song features a

very closely miked lead male vocal with almost no audible processing (as far as

reverberation or compression or other common effects) – that is with the exception

of a very prevalent echo effect that begins at 1:01 in the song and continues

throughout. Santos used the three different microphones' recordings of the lead

vocals in postproduction to create the artificial echo effect. For the most part this

effect occurs in somewhat rhythmic pairs following after the lead vocal except for instances (e.g., at 1:01 and 1:57) when the echo continues onward until it fades out through a slow, fairly organic decay. The lead vocal is very loud and bright and placed front and center in the mix, with the acoustic guitar also placed front and center in the mix but much quieter and duller than the vocals. The echoes are almost as loud at the lead vocal itself, such as at 3:58 into the song.

As mentioned in Chapter 1B, Santos's final mix of "Reunion" was so influential to me that it drove the production and postproduction choices of the other tracks on the album, especially balancing the musical elements to prominently feature the lead vocal.

Corpus Christi:

"Corpus Christi" is a more ambitiously production-oriented track than "Reunion" or "Probably." There are some startling percussive elements, an underwater-sounding electric-guitar element, significant multi-tracking of the vocals, and a full band that appears at the end of the song. "Corpus Christi" was recorded entirely in Dolan Studios at NYU over four sessions: one for grand piano, one for vocals, one for drums and bass, and one for electric guitar. (See Images 1, 2A and B, 3A and B, 6A and B, and 9 for details.)

Musically the song mostly revolves around F# mixolydian, with certain sections referencing an inflected pentatonic scale resulting in a bluesy, old-fashioned feel especially in the piano solo at 2:07 into the song. From beginning to end the song is an extended common tone modulation from F# major to Eb. I co-

wrote sections of the song with Barret Anspach, who helped me a craft a watery

feeling to match the coastal images of the lyrics. As he describes:

> I remember thinking that some modulation was necessary since the song was
> so tonic-heavy. My inspiration could very well have been Debussy, since his
> music and the word "watery" are more or less the same thing. I built a bridge
> to the song that broke up the song's predominantly modal harmonic
> structure and emphasized a transition into the Ab min that starts off the
> chorus. The chromatics involved also brought about unexpected harmonic
> tensions.

The song was mixed "in the box" by Aaron Prellwitz at his studio in Portland,

OR: the final mix includes grand piano, electric bass, drum kit, male vocals, and non-

melodic and non-harmonic electric guitar elements. "Corpus Christi" has aggressive

and unsettling percussive "glitches" that occur at several points throughout the song

(1:21, 1:23, 1:31, and 2:47) along with pounding build ups on the drum kit that

disappear suddenly at each chorus (1:50 and 3:13). The song's verses consist mostly

of a lead vocal with grand piano. There is a light reverb on the lead vocal and the

piano is fairly spacious. Throughout the song the electric guitar appears and

disappears, functioning as a stylistic element that sounds otherworldly, as if from

outer-space or under water. At 1:38 and 3:02 there are sections with more reverb

on the voice and a few layers of multi-tracked vocals. The electric bass comes in only

during the choruses. The full drum kit comes in just during the outro of the song (at

3:56) along with several layers of falsetto vocals with heavy, washed out reverb

effects.

I interviewed Prellwitz extensively about his mixing approach on "Corpus

Christi" and he described the process:

In general, I was very pleased with the recorded sounds and more or less just tried to enhance what I had been given to work with. This was achieved mostly through EQing to cut muddy frequencies and boost other frequencies as needed for the tracks to sit in the mix the way I envisioned. Compression was also used in varying degrees of intensity, as I found appropriate.

The vocals were all run through the same buss with an overall EQ and light compression, with some individual tracks individually EQed in addition to the buss. Some of the vocals were also panned around the mix for impact and clarity.

The piano tracks were also run through a buss with an overall EQ and a plug-in that simulated tape saturation, helping to push the piano forward in the mix. The individual tracks of piano were all used and panned around, with the piano room track being fairly heavily compressed and panned far left while the close miss were all panned mostly to the right.

Since the drums were mere glimpses of a drum performance punching into the mix only momentarily, I wanted them to really make a statement with their comings and goings. Therefore I found a good punchy mix of the assorted drum tracks eliminating the hi-hat and OH A&B tracks and on the buss I applied a compressor to add a little whoosh to the drums and a limiter to really squeeze the drums and give them a very defined and punchy space when they appear.

At the end of the song, the drums play a different role and provide a beat to ride out on. For this drum performance I removed the limiter and added a reverb to give them a different sense of character and mix them into the reverb added to the end vocals.

(Note: See Images 10-13 for screen shots of his postproduction plug-ins on

the track.)

Probably:

"Probably" was recorded entirely in Dolan Studios at NYU over four tracking

sessions in spring 2011. All elements that made the final mix were tracked

identically to those in "Reunion": the male lead vocal, female lead vocal, and acoustic

guitar used the same setups of microphones. The song also features an electric bass

recorded using a DI-Box. Omitted from the final mix were a drum kit part and

ukulele part.

The song has acoustic guitar providing rhythm throughout along with a very understated and lyrical electric-bass line that plays through the song until 2:42 into the recording when it disappears with the female vocals. The lead male vocal and the female vocal have little if any audible processing on them. The vocals are not as loud proportionally to the other elements of the song as they are in "Reunion." The song is fairly monophonic; listening to only the left or right speaker does not yield a noticeable difference from listening to the song in stereo.

"Probably" was mixed by Jeffrey Norman at his studio in Berkeley, CA using a combination of DAW and outboard gear. Norman provided the following account of his process:

> Although all instruments have their specific places in space and level, on "Probably" I kept coming back to the lead vocal to ensure it was the focus.
> Even with a song with instrumentation as basic as this, I approach the song first from the rhythm track, which in this case is the stereo acoustic guitar. The guitar is panned "gtr hole" L88 and "gtr neck" R88. There is some outboard EQ on both guitar tracks (Millennia NSEQ-2) (+1@180 +4@10Kshelf [left] & +1@100 +3@8Kshelf [right]) and a little reverb (M5000 similar to Lex480 probably 1.8 sec). This is a fairly basic mix. The only panning I really considered was how to place the guitar. So the guitar sits where it does because of panning and EQ and minimal reverb, and I think it works well.
> Next was bass, where I used an NTI (outboard) EQ boost at sub and a little pulled out at 160 . . . slight compression (1-2 dB) with my mastering compressor Fairman TMC. I got what I think is a workable blend with all rhythm instruments before I tackled vocals, even if the vocals are the main focus of this song.
> The lead vocal came next. I also used an NTI EQ on the lead vocal (slight boost at 160 and "air") with compression (also the Fairman with more compression than bass). There is a slight amount of reverb from a United Audio EMT plate. The lead vocal also was run through the Transient Designer plug-in (United Audio) to assist in the vocal being quite "in your face."
> Last was the background vocal . . . compressed outboard through a UREI LA-4 and slight reverb from M5000.

        "Probably" is similar to "Reunion" in that its male lead vocal is remarkably forward and barely treated. It is differentiated in that it does not have the strident quality or the echo effects of lead vocal in "Reunion." It also features a female vocal. As a recorded work "Probably" is most notable for the overall placidness and straightforwardness of Norman's mix, with its careful balancing of the male and female vocal against acoustic guitar and the electric bass.

Chapter 4. Technical Focus:
Listener ability to perceive Auto-tune on lead vocals in acoustic rock music
and Auto-tune's effect on listener preference

INTRODUCTION

"There's no shame in fixing a note or two," says Jim Anderson, professor of the Clive Davis department of recorded music at New York University and president of the Audio Engineering Society. "But we've gone far beyond that."
           (*Time Magazine*)

Anateres's Auto-tune is a common technology used in music production. It is known for providing the now ubiquitous, hyper stylized "Cher effect" on the vocals of countless pop productions. However it can be used much more subtly to correct pitch errors that occur during vocal performances. To my ears, it sounds as if popular artists ranging from Postal Service to Sheryl Crow to the cast of "Glee" use Auto-tune on their music and T-Pain and Kanye West have made careers out of aggressive aesthetic use of the effect. As Frere-Jones says in the *New Yorker*: "No one has used Auto-tune's zero speed setting more consistently and successfully than the R. & B. singer T-Pain." As Josh Tyrangiel mentions in *Time*:

> Of the half a dozen engineers and producers interviewed for this story, none could remember a pop recording session in the past few years when Auto-tune didn't make a cameo – and none could think of a singer who would want that fact known.

As a quirky indie vocalist who does not have perfect intonation, I wondered at various moments during the self-production process of my album *Graceful Exi*t whether to use vocal pitch correction during postproduction to adjust various small and large pitch errors on my lead vocals.

To me, a hallmark of the singer-songwriter acoustic rock genre is the singer's imperfect but expressive vocals, and I rarely have used it on my own singing. Neil

Young, Leonard Cohen, Serge Gainsbourg, Wilco's Jeff Tweedy, and Neutral Milk

Hotel's Jeff Mangum come to my mind as performers who are known for giving off-

kilter, sometimes out of tune vocal performances that somehow manage to endear

audiences (Cohen's "Bird on a Wire" stands out to my ears as one of the most off-

pitch popular songs in recorded history). However, reading an article on the BBC's

website in which the producers of the X Factor admitted to performing real-time

pitch correction to their performers – on singers who are specifically being judged

for their ability to sing well – I wondered if the time had come for pitch correction

on my singer-songwriter-driven acoustic album. My question was, is Auto-tune a

desirable technology for an acoustic rock album created in 2011, given its

widespread (albeit often covert) use in the field of music production? Even if I

personally had resistance to the idea of artificially adjusting a singer's performance,

I wanted to consider that perhaps I was out of the current fashion on its use, and

that perhaps music listeners simply prefer to hear vocalists sing on pitch regardless

of the genre.

I had a series of questions about Auto-tune's effect on listeners: Can music

listeners hear Auto-tune on recorded music and does musical training increase

people's ability to perceive it? Do people prefer lead vocals to be Auto-tuned or left

untreated in non-dance music genres? If people do like the effect of Auto-tune, how

much Auto-tune do people prefer? Curious to see what research had been done on

the topic, I searched the AES database, along with Jstor and Google Scholar under

the keywords "Auto-tune," "Melodyne," "pitch correction," and "pitch" and was

unable to locate any studies on Auto-tune. The only articles I found about Auto-tune

were in popular news sources. As far as I could find, no one in the music technology field had implemented a test to see if listeners could perceive such processing on recorded music or had examined Auto-tune's effect on listener preference, which were my two main areas of interest.

I decided to design and implement a pilot listening study that would look at the amount of pitch correction that listeners will tolerate in an acoustic rock recording. My instinct was that people will prefer the least possible amount of pitch correction in acoustic rock music; I expected that they would be interested in recordings that align with their perceptions of the genre (in this case "pure" and "authentic"). First, I wanted to test whether people were able to perceive the presence of Auto-tune on the lead vocal in an acoustic setting. I hypothesized that listeners can better determine the presence of heavy Auto-tune or no Auto-tune when compared to light Auto-tune. I also wanted to investigate listener preference for heavy, light, or no Auto-tune in order to test the hypothesis that people will prefer light or no Auto-tune to heavy Auto-tune on lead vocals in acoustic music.

MATERIALS and METHODS

In designing my pilot study, I needed both a reliable method for creating testable listening samples and an accurate way to test the ability of listeners to perceive Auto-tune and to test their preference for its use. I discussed the study design in a series of meeting with Andrew Madden, Dr. Roginska, Dr. Farbood, and Finn Upham and designed the following pilot study based on our conversations.

I wanted to have song samples with different amounts and types of instrumentation and vocalizing in order test Auto-tune's effects in a variety of

typical acoustic settings. I selected three songs from my thesis album at random ("Corpus Christi," "Reunion," and "The Hero") and within these three songs I chose three fifteen second samples each from the choruses, bridges (if the song had a bridge), and verses. I was curious to see whether the presence or absence of backing instrumentation would impact either or both people's ability to perceive and their preference for Auto-tune, so I also created a cappella versions of the same samples.

Once I had chosen these samples, I set about creating a control sample (no Auto-tune), a lightly Auto-tuned sample (setting of 66% retune speed on the program), and a heavily Auto-tuned sample (setting of 0% retune speed) of each song. For simplicity's sake, the only variable I adjusted during the processing within the program was the retune knob (set to either 0% for fast tuning or 66%, a slower more "realistic" tuning). The result was fifty-four short song samples that had either no Auto-tune, light Auto-tune, or heavy Auto-tune. The following images are examples from the song "The Hero" of the method I took to create the three different gradations of Auto-tune processing. I have included the control sample's analysis in order to visually display the pitch variations in my vocalization, some caused by vibrato and tremolo, the rest due to pitch errors.

Figure1. The control sample used no Auto-tune
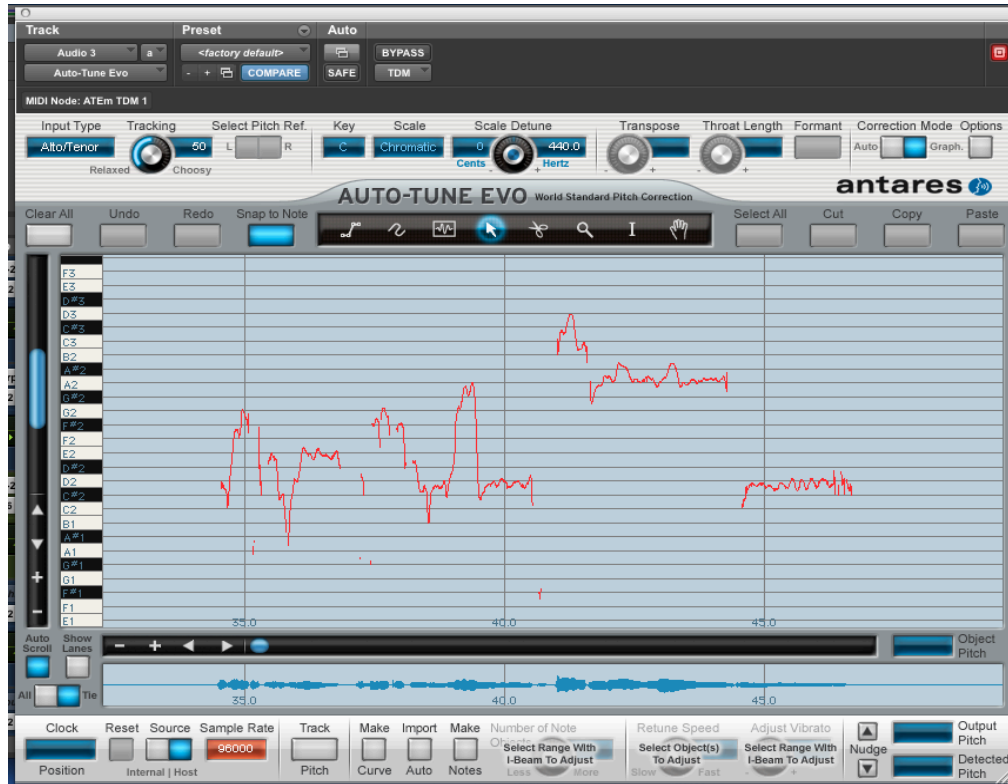
Figure 2. Light Auto-tune with a retune setting of 66%, transparent pitch correction:
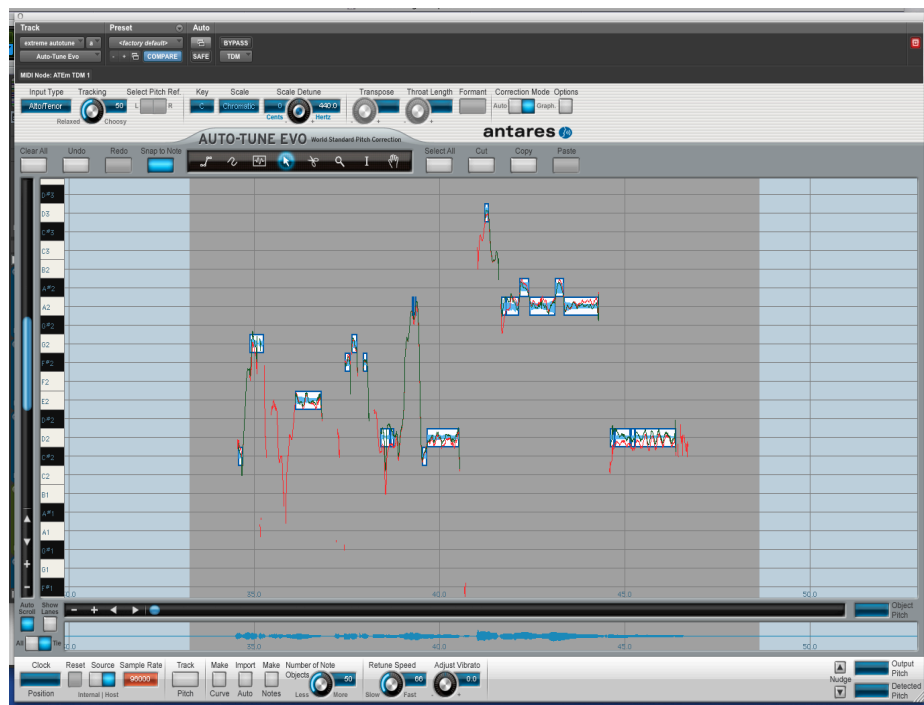
Figure 3. Heavy Auto-tune sample with retune setting of 0%, intense, almost robotic-sounding pitch correction:
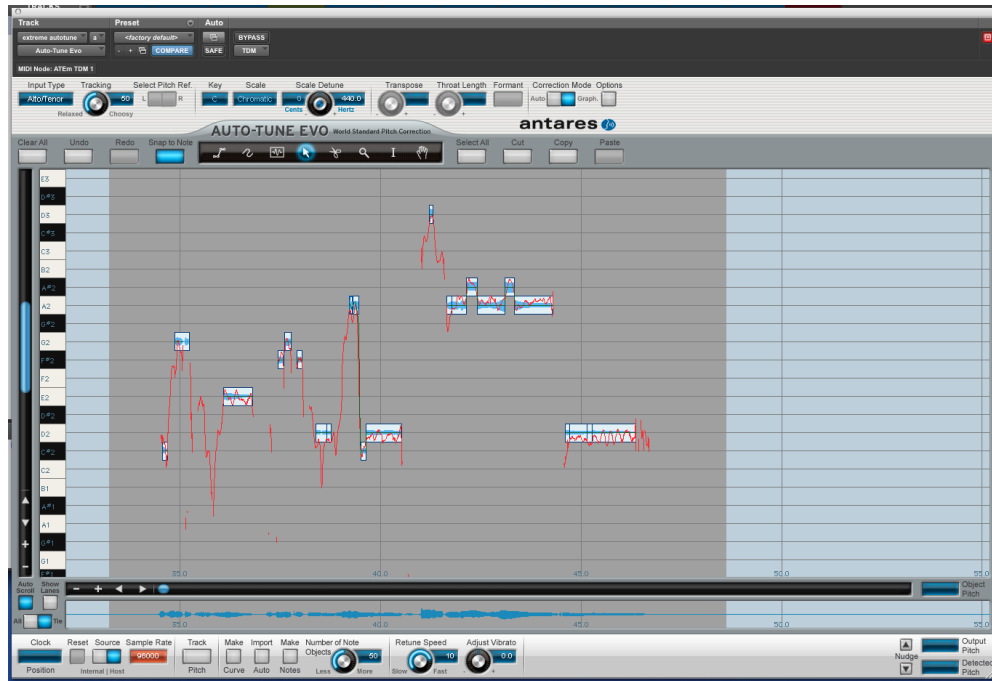
Because I wanted to test how everyday music listeners would respond to my samples, I decided to create MP3 versions of the samples and have listeners listen to them on their own computers over headphones or through their computer speakers. This seemed a more accurate way to test for their preferences then to have them sit in a controlled testing environment.

I sent out announcements of my listening test over Facebook, through school, and through email and ended up with thirty volunteers composed of peers, friends, and acquaintances. Each subject received two listening tests over Google Documents and two folders of song samples via email.

Test 1: The first test consisted of random pairs of song samples in one of the following configurations: Song Sample 1 with no Auto-tune immediately followed by

the same with light Auto-tune (or vice versa); or Song Sample 1 with light Auto-tune

immediately followed by the same with heavy Auto-tune (or vice versa); or Song

Sample 1 with no Auto-tune immediately followed by the same with heavy Auto-

tune (vice versa). This configuration occurred through the 27 song samples

resulting in 108 combinations. All of the song samples and the version's order

within the samples were randomly generated for each subject using Matlab. For this

test I did not test any different song samples against each other.

Listeners were instructed to listen to each paired sample and to pick which of

the two versions of the song they preferred. Here is the instruction they received:

> In this test you will listen to a recorded sample that contains two different
> versions of a song portion, one right after the other. You will listen and then
> you will indicate which version you prefer. Sometimes the difference will be
> quite subtle . . . don't 'try' to hear a difference. Just listen through the sample
> and follow your first instinct about which version you prefer.

By having subjects listen to versions of the same song with varying degrees of Auto-

tune, I could thus conclude whether subjects preferred more or less Auto-Tune

across all song samples and across each individual samples.

Test 2: The second test consisted of the 54 song samples randomly ordered by

Matlab for each subject (27 samples with full instrumentation with either no, light,

or heavy Auto-tune, and the same 27 samples a cappella). I provided them with the

following brief description of Auto-tune and instruction:

> Vocal pitch correction, sometimes called Auto-tune or Melodyne, is a process
> of adjusting the pitch of a recorded musical part. In this portion of the study
> you will listen to a sample and determine whether the lead vocal has been
> processed such that the pitch has been corrected or adjusted from its
> original, unprocessed state.

For each sample they answered the question "Has this sample been pitch corrected?" I administered this test to subjects *after* they had taken the first preference test under the assumption that hearing the samples under this framework would influence the other test that asked about their preferences.

Because we were curious to see what other factors might influence people's perception of and preferences for Auto-tune, we also gathered the following demographic information about them: how many years of musical experience they had, what their age range was, and if they listened to the samples on headphones or computer speakers. The thirty subjects completed their listening tests and submitted the results to us through Google documents.

RESULTS

We gathered approximately 3,500 pieces of data from the 30 subjects. Because this is a pilot study, we did not perform statistical analysis of the results. Rather we did preliminary analysis of the results in order to discover if there were any clear trends that might indicate the need for full statistical analysis or future testing on a full study at a later date.

Results of Test 2: The results for the test of listeners' ability to perceive whether a song sample had been processed with Auto-tune are indicated on the following chart:

Chart 1: Percentage correct by listener and subject pool for question "Has this sample been pitch corrected?"
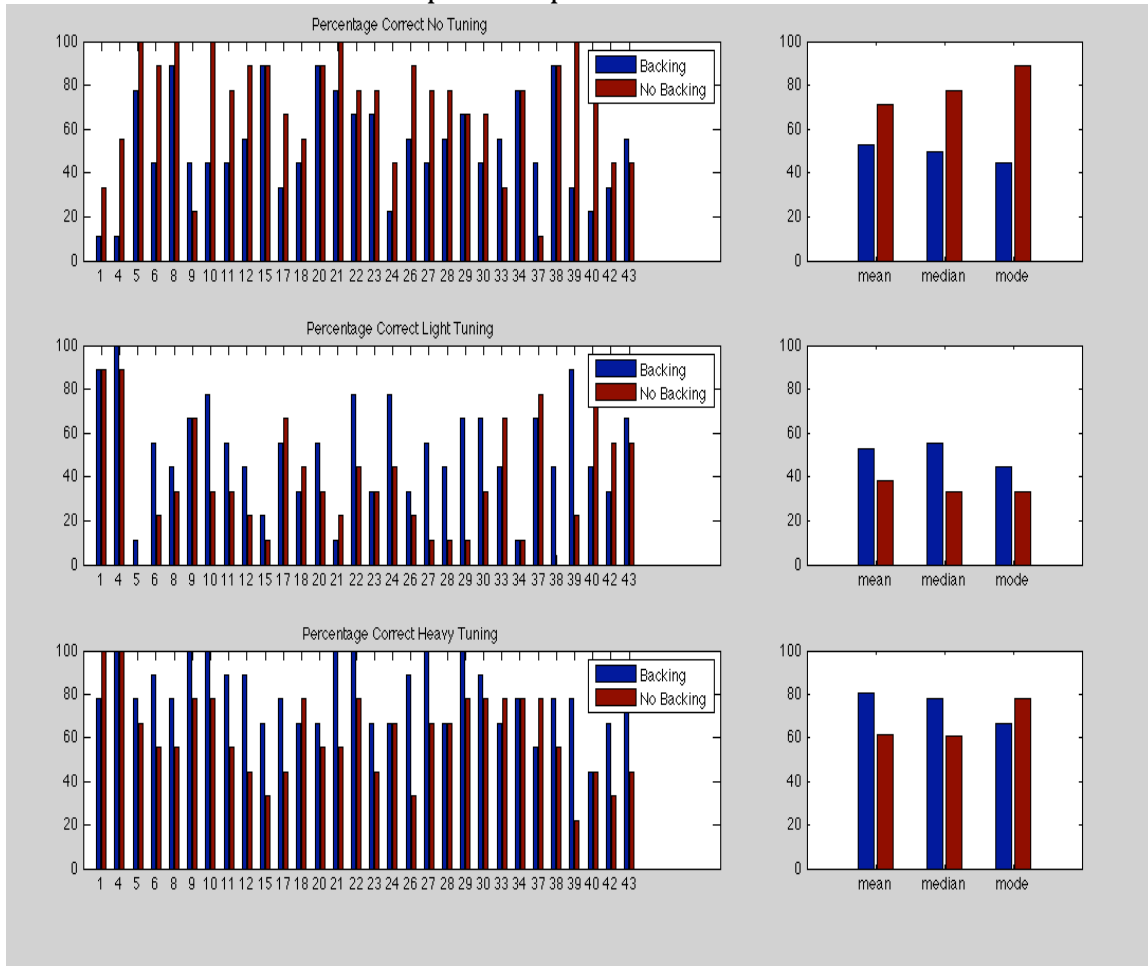
Across all subjects, the mean score for correctly indicating the presence of heavy Auto-tune was 80% for samples with full instrumentation and 62% for a cappella samples. For samples with light Auto-tune, people were not much better than chance at identifying the effect's presence on samples with instrumentation (53% correct) and they were worse than chance at identifying it on samples with no backing (38%). For the control (no Auto-tune), listeners were not much better than chance at identifying it on samples with instrumentation (53%) and were better than chance (71% correct) at identifying it on samples without backing instruments.

We analyzed the test based on demographics and saw no clear differences associated with subjects' age, level of musical experience, or choice of listening equipment. The trends were similar (again no claim is being made of statistical significance) across these subdivided subject pools: people were better than chance at identifying heavy Auto-tune with or without backing instrumentation, and were barely better than chance at identifying light Auto-tune or no Auto-tune.

Results of Test 1: Across all data, there was almost no preference against the use of Auto-tune, as seen in the following charts, comparing preference for no Auto-tune or light, light Auto-tune or heavy, or no Auto-tune and heavy:

No Auto-tune versus light   Light Auto-tune versus heavy
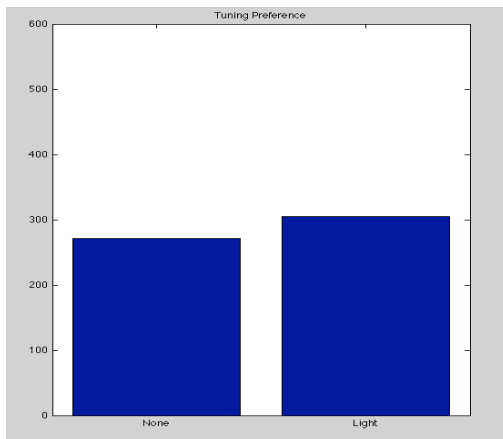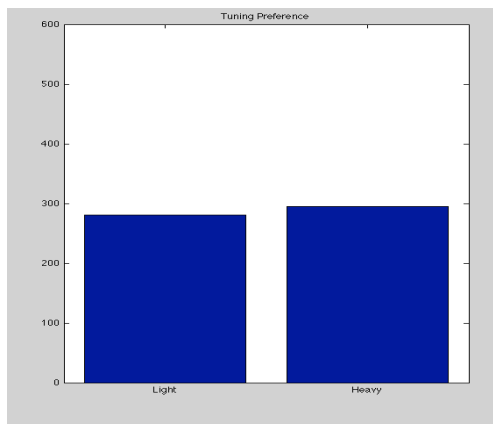
No Auto-tune versus Heavy
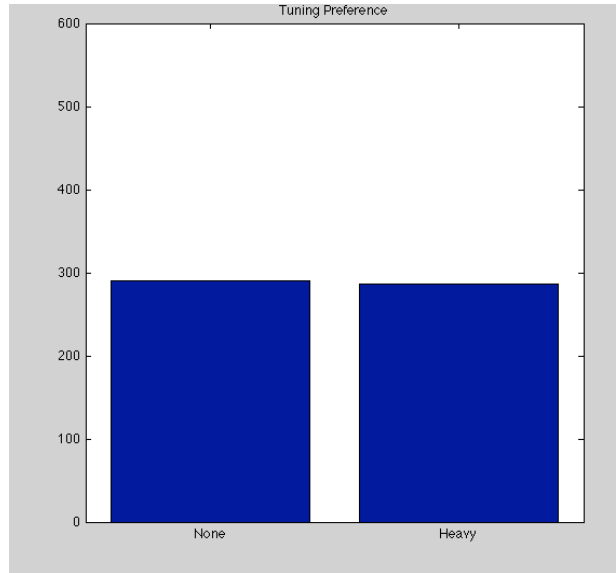
On a song-by-song basis, however, there were dramatic results indicating strong

preference for more or less Auto-tune, such as in the following examples:

Strong preference for heavy Auto-tune with backing and for light Auto-tune
without backing on "Reunion" Sample 3
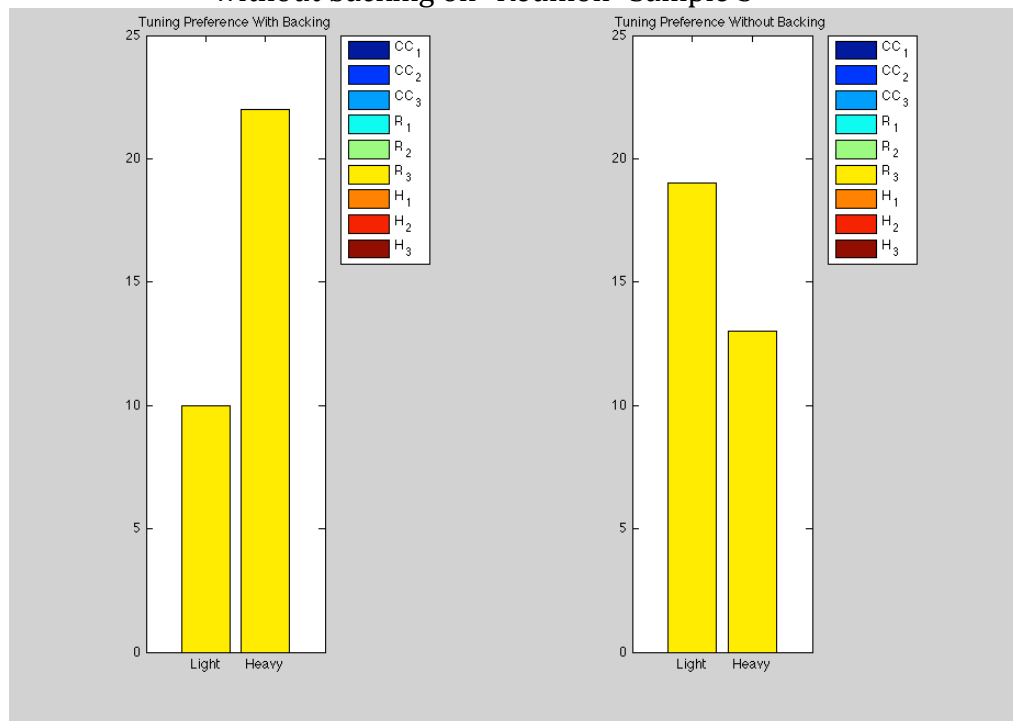
Strong preference for no Auto-tune both with backing and without backing on "Corpus Christi" Sample 2
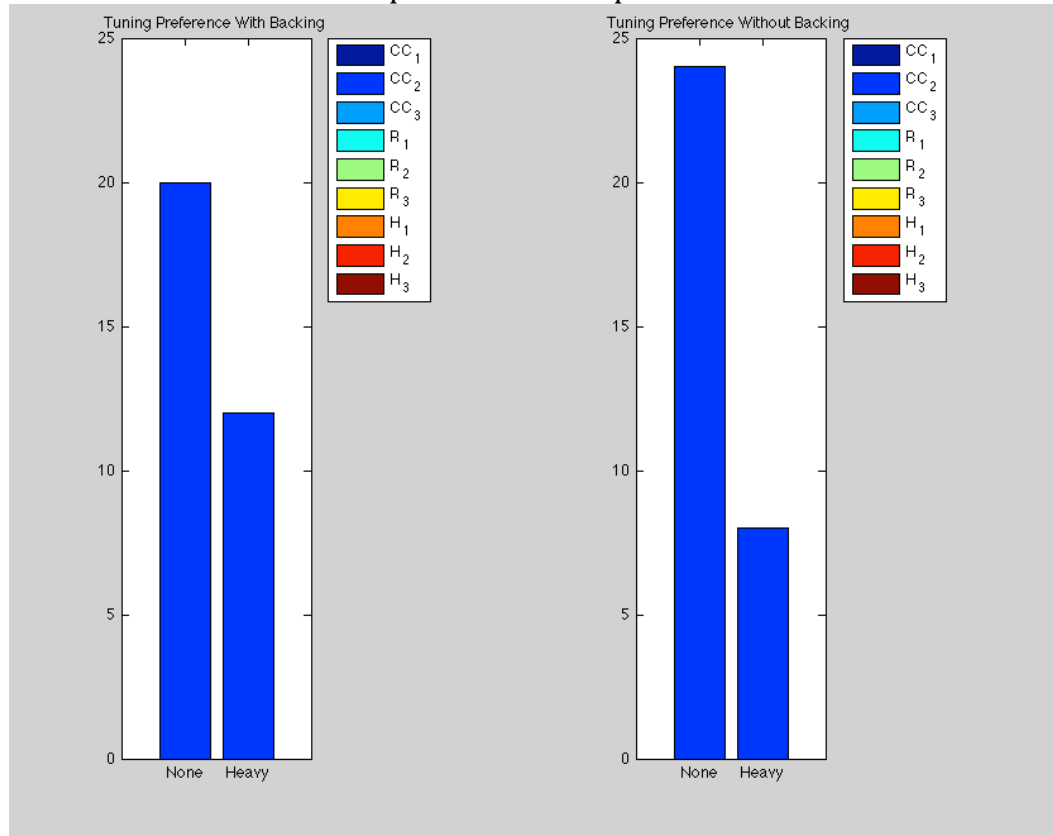
No preference for or against light Auto-tune with backing and strong preference for heavy Auto-tune without backing on "The Hero" Sample 2
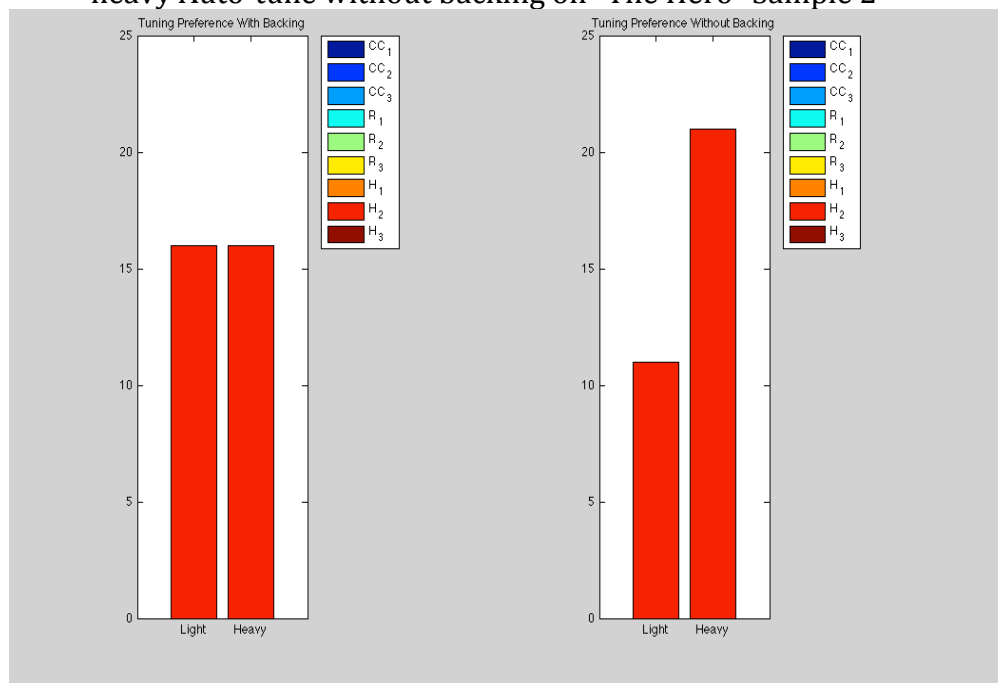
The dramatic (and inconsistent) preference for no Auto-tune, light Auto-tune, or heavy Auto-tune occurred across many of the individual song samples. So while the combined data across all song samples suggests no preference, looking at individual samples indicates strong preference for or against its presence on the lead vocal.

Because we had seen no indication of demographic influence on the results of the perception test, and due to time limitations, we did not process the results of the preference test in regard to the influence of demographics on the results.

DISCUSSION

In test 1, across the data of the preference test, there was no indication of preference for any particular level of Auto-tune. I had hypothesized that people would prefer less Auto-tune, which was not shown across the 27 song samples. However, some song samples indicated strong listener preference for more or less Auto-tune. These results indicate that the presence of Auto-tune had an across-the-board effect on the subject pool either for against Auto-tune on a sample-by-sample basis. Because there were such dynamic responses, further studies could examine in more detail what musical settings provoke listener preferences for the use of the effect.

In test 2, when full instrumentation is present, people are able to determine the presence of heavy Auto-tune but are not more than 50% accurate in deciphering between light or no Auto-tune. When there is no backing instrumentation, the majority is able to determine the presence of heavy Auto-tune (60% of subjects) and no Auto-tune (70% of subjects) but is actually worse than chance at identifying light

Auto-tune (38%). The data seems to suggest that the presence of backing instrumentation affects people's ability to determine the presence of Auto-tune. For producers, this finding may prove useful in deciding when to use the effect and how much of the effect to use. And the results showing that both with and without backing instrumentation, people were worse than chance at identifying the presence of light Auto-tune seems to suggest that even trained musicians cannot tell when light Auto-tune has been applied to a vocal.

Overall I had hoped to prove that people prefer little or no Auto-tune on a lead vocal in an acoustic setting when given a choice. This was not the case, however; sometimes they preferred more Auto-tune and sometimes they preferred less.

Literature Cited

See the overall thesis document's Literature Cited section

Conclusions

All generations have produced [singer-songwriters] who stretch the definition of the term: Frank Zappa's rambling creations, Laurie Anderson's machine-driven political songs, Kate Bush's virtuosic excursions into fantasy, Elvis Costello's collaborations with the Brodsky Quartet and Fretwork, Peter Gabriel's ventures into world music. What gives them coherence is the creative connection between music, text and listener . . . mediated by a single singer.
   —John Potter, *Grove Music Online*

   Along the long and winding pathway of self-producing my Tonmeister album I was challenged, stimulated, and educated. Together, my thesis document and the accompanying recorded musical work *Graceful Exit* are records of the creative artistry and music technology that coexist in a singer-songwriter-driven acoustic rock production. It is of interest that *Graceful Exit* is a significant departure from my previous recording projects: Transformer's *I Was Child of the 80's* was self-produced using large amounts of postproduction effects and copious editing, and I did not engineer or produce Kind Monitor's *Somebody Saves My Life Most Every Single Day*. *Graceful Exit* more closely aligns with the conventions that Potter describes in *Grove Music* of the singer-songwriter album than my previous works did, where here the focal point is the "connection between music, text and listener . . . mediated by a single singer."

   After deciding to follow Rusty Santos's suggestion to consciously choose a less-is-more approach on my self-produced album, I realized that I did not know what to expect on the other side. Because I had noticed in the past a minimalism in the production aesthetic on albums I greatly admire (by Leonard Cohen, Ani Difranco, and others), Santos's feedback facilitated me to realize that I had a strong preference for such spare production approaches. By then following a minimalist

production pathway, a primary assumption I made was that identifying and replicating salient aspects of productions I enjoyed would result in a recorded work that would be similarly enjoyable and would possess similarly desirable qualities.

Certainly, choosing to follow my "intentional simplicity" methodology drastically altered the trajectory of the production process and the content of the finished album. The tracks "Corpus Christi" and "Reunion" are especially provocative examples of what came about when I followed a production design that I had observed on the tracks by Chapman, Mitchell, and Neutral Milk Hotel. Turning up the lead vocals, deleting any potentially superfluous instruments, and leaving the remaining elements mostly free of sound effects led to songs that were quite different from how I had first imagined them. "Reunion" was originally envisioned as a toe-tapping acoustic folk song in the style of Jack Johnson, and "Corpus Christi" a massive stadium-rock track with huge booming drums. Post the application of my methodology, adjectives I would use to describe the finals mixes of "Corpus Christi" and "Reunion" include spare, intimate, vulnerable, imperfect, and exposed. Indeed I am not sure if I am totally comfortable with how raw and exposed the finished tracks sound. However, my intention was not to create a finished project that I was comfortable with, rather it was to demonstrate that authenticity that can be achieved in acoustic rock music by coupling expressive songwriting with simple instrumentation and minimal use of music technology in production and postproduction. In fact, once Madden and I began editing the tracks in the manner we had seen Santos use on "Reunion" I sought to take as impartial an approach as I could manage in regard to how "good" or "bad" the finished mixes might be.

The pilot study I implemented on listener ability to perceive Auto-tune and their preference for its inclusion left me with additional questions around this concept of intentional simplicity being a viable production methodology and further with broader questions about the variability of listener preference. For example, why did people strongly prefer the presence of Auto-tune on certain samples from the song "Reunion" and not on others? Why did they prefer it sometimes on the a cappella version of a sample of "Corpus Christi" and *not* prefer it on the version with backing instruments, and then switch on other song samples and prefer the opposite? Because no clear preference for the use of Auto-tune emerged across the data as a whole but there was such strong response for and against its use on individual song samples, I was only able to conclude that the use of a postproduction effect such as Auto-tune definitely impacted listener's preferences and perception of a song. And if they had such strong and varied response to the presence or absence of Auto-tune on lead vocals, I was left to wonder if they have similar response to the use of delay, reverb, distortion, phasing, compression, and other processes. On my thesis project, I willfully reduced or eliminated these sorts of postproduction effects. If the preference of listeners strongly varied from sample to sample in my study of their preferences for the amount of Auto-tune, it could suggest that they may have similarly variable preference about other music production processes that I chose not to include during postproduction.

By my own judgment, the song "On Every Sunday" is one of the most successful tracks on *Graceful Exit* – the strings arrangement by Montgomery feels nuanced and compliments the lead vocal, the backing instrumentation is simple and

energized and serves the dramatic build of the song, and overall the track has a

comfortable flow to my ears. It is worth noting that although the song seems to

exemplify my intentional simplicity process, it is rather heavily modified from its

raw version and thus exists on the far end of the spectrum of "minimal"

postproduction processing. For example there is Auto-tune on the lead vocals in

three different areas of the song to resolve pitch errors. The drums, acoustic guitar,

and electric bass parts were edited in Pro Tools using elastic audio to adjust for

rhythmic inconsistencies. The string and drum parts were reversed in some sections

and the strings were multi-tracked and looped in the song's first section. Prellwitz

describes his process of mixing "On Every Sunday" (see attached Images 14-16):

> Much like "Corpus Christi," I was very pleased with the recorded quality of the tracks I received for mixing. On the finished mix of "On Every Sunday" the vocals are left bone dry in regards to any sort of ambience. However they are still processed: they are EQed, dressed and compressed rather heavily. I processed the strings with a light compression and light EQ and panned around the field with a little 'small room ambience' added.
>
> The acoustic guitar had a nice sound and the two close mics are lightly compressed but not EQed. However the room mic is fairly heavily EQed and deNoised and panned hard left while the two close mics on the acoustic guitar are primarily panned right.
>
> As far as the drums go, I kind of pictured a tight, punchy, crisp 'Radiohead drums' kind of sound. To achieve this, I eliminated the hi-hat, ride and overhead A&B mic tracks, keeping the other dozen or so percussion tracks for the mix. I did rather extensive EQ'ing, compressing and limiting of the individual tracks with the heavily compressed 'kik head' track being a key ingredient to the sound.

As the song's producer I feel that "On Every Sunday" sounds natural,

authentic, and professional, even though I know how much it was altered during

editing and postproduction. Perhaps it can serve as a representative example of the

amount of massaging that goes into creating seemingly pristine recorded works and

can indicate that the concept of intentional simplicity is best taken with a grain of salt. As Frere-Jones say in the *New Yorker*:

> At this late date, it's hard to see how the invisible use of tools could imply an inauthentic product, as if a layer of manipulation were standing between the audience and an unsullied object . . . . Even a purely live recording is a distortion and paraphrasing of an acoustic event.

I am left with many questions that are difficult or impossible to answer about the process I followed: Did following Alex Forbes' songwriting process strengthen my songwriting (and are the songs on *Graceful Exit* "good")? Did working with David Howell to increase the resonance and presence of my vocalization make for a better quality vocal performance on the album (and am I a "good" singer)? Do the production and instrumentation decisions I made with Andrew Madden and Jessie Montgomery best serve the finished versions of the songs? Did I make the correct choice to sing the songs from beginning to end in the studio and then only spot Auto-tune during editing? Would the album have been better if I had included backing vocalists, if I had hired another producer, if I had chosen other songs during that first step of initial song selection?

If I want answers to these questions I could possibly design other listening tests to gather information about listener preferences around these various areas of curiosity. For now I will return to my original motivation: with this album and accompanying documents, I wanted to present musical artists a methodology to consider when self-producing their albums. After engaging the various steps I have described in my intentional simplicity methodology I am confident that I have applied a consistent approach across a body of recorded work and have made my efforts available for others to dissect.

Literature Cited

Ankeny, Jason. "Joni Mitchell's *Blue*." http://www.allmusic.com/album/blue-r13209

Ankeny, Jason. "Neutral Milk Hotel's *In the Aeroplane Over the Sea*." http://www.allmusic.com/album/in-the-aeroplane-over-the-sea-r334039/review

Chadabe, Joel. Electric Sound: The Past and Promise of Electronic Music. Upper Saddle River, N.J.: Prentice Hall, 1997.

Campbell, Joseph. The Hero with a Thousand Faces. Princeton: Princeton University Press, 1949. p.23.

"Chapman, Tracy." *Encyclopedia of Popular Music*, 4th ed. Ed. Colin Larkin. *Oxford Music Online*. 28 Nov. 2011 <http://www.oxfordmusiconline.com/subscriber/article/epm/4726>.

Cooper, Kim. In the Aeroplane Over the Sea. The Continuum International Publishing Group. New York: November, 2005.

Erlewine, Stephen Thomas. "Tracy Chapman's *Tracy Chapman*." http://www.allmusic.com/album/tracy-chapman-r3633

Frere-Jones, Sasha. The Gerbil's Revenge. June 9, 2008. http://www.newyorker.com/arts/critics/musical/2008/06/09/080609crmu_music_frerejones?currentPage=all#ixzz0xQ5JSSvB

Griffiths, Dai. "Mitchell, Joni." In *Grove Music Online. Oxford Music Online*, http://www.oxfordmusiconline.com/subscriber/article/grove/music/45943

Guthals, Joshua. Interview of Aaron Prellwitz, mixing enginer. 2011.

Guthals, Joshua. Interview of Alex Forbes, songwriter. 2011.

Guthals, Joshua. Interview of Barret Anspach, composer and songwriter. 2011.

Guthals, Joshua. Interview of David Allan Howell, vocal trainer. 2011.

Guthals, Joshua. Interview of Jeffrey Norman, mixing engineer. 2011.

Guthals, Joshua. Interview of Jessie Montgomery, arranger and violinist. 2011.

Guthals, Joshua. Interview of Rusty Santos, mixing engineer, 2011.

Hong, Philip. "Joshua (from Kind Monitor): An acoustic spirit in a digital world." July, 2010. SRN Mediaworks Broadcasting, York, Canada. http://148.ca/fab/indie/monito.html

Howard, David N. Sonic Alchemy: Visionary Music Producers and Their Maverick Recordings. Milwaukee, WI: Hal Leonard, 2004.

Huber, David Miles with Robert E. Runstein. Modern Recording Techniques. Burlington, MA: Focal Press, 2005.

Lockwood, Annea. A Sound Map of the Hudson River. New York: Lovely Music, 1989.

Lockwood, Annea. A Sound Map of the Danube. New York: Lovely Music. 2008.

Mitchell, Joni. "All I Want." *Blue*. Warner Bros. Records, 1971.

McCartney, Andra. "Soundscape Composition and the Subversion of Electroacoustic Norms", eContact! 3.4 (July 2000) <http://cec.concordia.ca/econtact/Histories/SoundscapeComposition.htm> (May 2002).

Montague, Stephen. "Annea Lockwood Interviewed by Stephen Montague," London 21 February 1989. Contemporary Music Review 6-1, 1991: 147-150.

Moylan, William. Understanding and Crafting the Mix: The Art of Recording. Burlington, MA: Focal Press, 2007.

"Neutral Milk Hotel." *Encyclopedia of Popular Music*, 4th ed. Ed. Colin Larkin. *Oxford Music Online*. 29 Nov. 2011 <http://www.oxfordmusiconline.com/subscriber/article/epm/70939>.

Pirsig, Robert. Zen and the Art of Motorcycle Maintenance: An Inquiry into Value. New York: Bantam Books, 1974.

Potter, John. "Singer-songwriter." *Grove Music Online*. *Oxford Music Online*. 29 Nov. 2011 <http://www.oxfordmusiconline.com/subscriber/article/grove/music/46855>.

Q lists. www.rocklistmusic.co.uk/q1001_songs.htm#q250

Savage, Mark. How Commonplace is Auto-tune? August 23, 2010. http://www.bbc.co.uk/news/entertainment-arts-11056840

Tyrangiel, Josh. Auto-Tune: Why Pop Music Sounds Perfect. Feb 5, 2009. http://www.time.com/time/magazine/article/0,9171,1877372-2,00.html

Whitesell, Lloyd. The Music of Joni Mitchell. New York: Oxford University Press, 2008.

X Factor admits tweaking vocals. August 23, 2010. http://www.bbc.co.uk/news/entertainment-arts-11056050

APPENDIX I: Musical Analysis

In this section I analyze the music of two songs: "The Hero" and "On Every Sunday." There is an in-depth analysis of "The Hero" and briefer examinations of "On Every Sunday." These analyses consider the interplay between the lyrics and the music, discussing the instrumentation and arrangement choices taken with the songs. I mention production aspects when relevant. My musical analysis was aided by the input and collaborative support of three professionally trained musicians: "Corpus Christi" co-writer Barret Anspach, band mate Ilana Worrell, and arranger Jessie Montgomery, all of whom I acknowledge for their significant insights. (NOTE: Refer to Appendices II and III for the lyrics and charts for "The Hero" and "On Every Sunday".)

The Hero:
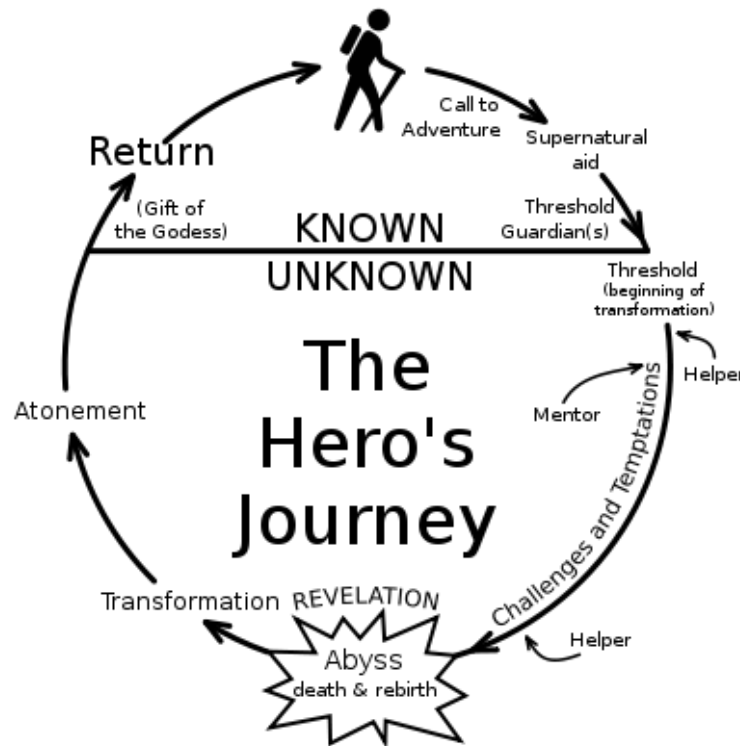
Selected lyric: *"I wanted to be the hero/I thought I could be the man/
That everyone wants to know"*

As author Joseph Campbell describes in *The Hero With a Thousand Faces*:

> A hero ventures forth from the world of common day into a region of
> supernatural wonder: fabulous forces are there encountered and a decisive
> victory is won: the hero comes back from this mysterious adventure with the
> power to bestow boons on his fellow man (23).

The song "The Hero" centers on the narrator's sense that he is a failure. Lyrically it explores the grief, disillusionment, and disappointment he is experiencing as he fails at his journey to become, well, a hero. During the editing of mixing of "The Hero," Rusty Santos performed a dramatic cutting and re-editing of parts, including deleting an entire drum kit part and most of the electric bass part and electric guitar part. He also moved around parts of Jessie Montgomery's strings arrangement and muted out many portions. His primary intention was to simplify the song to let the lead vocal stand out and communicate the song's meaning. He chose the more expressive and poetic moments of the electric bass, electric guitar, and strings parts as mood-triggering motifs, especially a series of rhythmic bursts on the electric guitar that he brings in only a few times as rather dramatic punctuations.

Symbolically this version created during editing could be said to represent the uncertainty of the hero's journey, where anything can happen at any moment to challenge, confound, and antagonize. By starting with just acoustic guitar and then bringing in the other instruments in somewhat abrupt ways, Santos creates a mysterious and unfolding sensation where the listener is not sure when musical elements will appear or disappear, and is left to guess if the narrator's melancholic

narration confirms he has truly failed his mission or perhaps merely communicates a moment of self-doubt along the way.

Santos and I listened through several hours of field recordings that I made on Peaks Island in Maine and we chose two elements to include in the song: 1) a child giggling and calling out with glee while she walks down the beach with her parents, 2) a recording I made of my bicycle's front wheel as I biked down a long steep hill picking up speed. These elements are each used twice in the song with the intent to indicate surprise, excitement, and the building of speed.

"The Hero" is one of the more harmonically and rhythmically adventurous tracks on the album. It is a track designed around the drone-like possibility that results from using a (relatively uncommon) double dropped D tuning on the acoustic guitar. The resulting tuning of the guitar is (from low to high): D-A-D-G-B-D. The guitar is then fretted mainly only along the fret board of the G and B strings and all six strings are strummed together throughout most of the song. As such a D5 chord is present nearly continuously during the four-and-a-half minute track, and the sound stage of "The Hero" is dominated by the ringing out of three open D strings (and usually the A string) from beginning to end. The open D is the pedal point that binds the song; Joni Mitchell frequently employs this pedal technique in songs like "Urge for Going" and "All I Want." The chords of "The Hero," such as E minor, G minor, and C major, end up having at a low D note underneath them causing interesting dissonance and contrast as the song progresses.

The musical hook of the song is a two-measure strumming pattern on the guitar that moves back and forth between a D chord and a D major(13, #11) chord.

This two-measure back-and-forth pattern is used as a unifying "turn around" gesture frequently through the song: it appears at the end of each half verse, prior to bridges, before the chorus, and before and during the four subsections of the B section of the song.

The first half-verse of each verse section of "The Hero" is four measures long with an additional two measure of turn around. The second half-verse is four measures with only one measure of the turn around before entering the chorus. The choruses are three measures long with two measures of turn around, which results in a verse-chorus combination that adds up to a standard sixteen bar-long section, with the goal of creating a sense of completion by reaching the standard sixteen measures before moving into the bridges (4+2+4+1+3+2=16). The bridge sections have a much more standard eight-measure length made up of two-measure of progression followed by the two-measure music hook (4+4=8).

The B section of "The Hero" is 16 measures long, containing four repeated sections each comprised of three measures plus one measure of turn-around. Its emphasis of the G major 7 chord hints at movement to the tonality of the IV chord. Frequent returns to the D chord for the now familiar hook remind the listener of the overarching tonality.

At various points throughout the song, the melodies of the lead vocal, strings, and backing instruments slip between Ionian and Lydian scales; sometimes the melodies are consonant and sometimes they rub against each other dissonantly.

The very energetic, movement filled guitar rhythm and unusual chord progression provided the inspiration for Montgomery's orchestral arrangements for

"The Hero." In Baroque music the descending bass line called "lament bass" is used to describe grief. The main progression in "The Hero" shares some similarities with that familiar Baroque progression (that is also seen with some modification in flamenco music). Here though it is in a major key, an interesting modification of this sort of progression. Montgomery sensed rhythmic and harmonic interest to play against with the strings parts and designed an arrangement for the violin and viola that she called "intricate, wholesome, and folksy" and "sinuous and strident in a sophisticated way."

In regard to the specifics of the strings arrangement, Montgomery wanted to emphasize the chord progression of the verses and augment the turn-around figure on the guitar that she felt added interesting Lydian-hued moments throughout. She saw that the song centered on "bright" moments occurring when the raised 4th scale degree would appear that were promptly followed by a "deflation" or "falling" back into the major scale; a harmonic pattern made her think of Smashing Pumpkins' music. She wrote strings parts which would play with this relationship between bright and dark by having F#, the major third in the key, rub against the G# that had been added to the major scale in the guitar part.

In the bridge sections she amplified the suspension occurring in the lead vocal by adding strings playing harmonics as a furtherance of the lifted sensation brought on by the vocal suspension. The strings play these harmonics during the first half of the bridge sections, two octaves higher than the voice, following the scales of the major IV , then V,and then I. As the vocal suspension starts to fall

toward resolution during the second half of the bridge, the strings play a darker scale that follows a chord progression of minor iv to I.

A highlight in the strings part occurs in verse two of the song when the viola and the violin follow a self-contained musical idea that fleshes out the harmonic implications and provides rhythmic contrast to the guitar's steady strumming. (See Figure 2 for Montgomery's notations of this section.) It is a 16th-note-based duet in which the viola and violin develop their own distinct motifs, edging their way downward before coming together at the end of the verse for a dramatic two-beat-long 16th-note run on the G minor scale with raised 4th degree, harmonizing in thirds. In this section Montgomery sought to enhance the lyrics of the first half of the verse: "Throwing it all away/ I want to move to an island/where there's wind and sand and time." However the strings' flourish occurs during the second half of the lyric in which the narrator says: "But they stop you at the border/And say, 'that was then and this is now.'" By having the strings complete their playful flourish during an emotional downturn of the lyrics, it creates an interesting contrast between words and music, perhaps affecting the listener's interpretation of the lyrics.

On Every Sunday:

If "The Hero" examines the harmonic potential provided by the pedal note in the acoustic guitar, it can be seen that " On Every Sunday," broadly speaking, explores harmonic widening. The song is in 4/4 with a 12/8 feeling in some sections. The opening sections have a G pedal similar to the D pedal in "The Hero" which gives way to increasing harmonic complexity as the song moves forward,

modulating between G-major and A-flat major and then ending somewhat abruptly in A major. This can be seen as a nod toward the interval expansion used by classical composers such as Bach and Bartok. In the rock music setting of "On Every Sunday," the frequent use of power chords allows a freedom to move around chromatically, because these chords avoid upon the harmonic implications of the third scale degree.

At the opening of the song the protagonist has "acquired a habit of keeping on/ So he'll keep on." In the middle section of "On Every Sunday" however he has realized that "if now you're tired/They look away as you fall" and at the close of the song we learn that "his big plan over the next few years/ Is to lose control." The lyrics suggest the emergence of self-awareness on the part of the protagonist as he moves from acting merely due to habit "On Every Sunday" to creating an oxymoronic multi-year goal to lose control.

The primary function of Montgomery's arrangement in "On Every Sunday" is to provide harmonic color. The opening section of the song, built around the pedal G, features only acoustic guitar, a plaintive lead vocal, and a quavering violin. During the second section, the rest of the instrumentation appears and picks up energy but the violin maintains the melancholy of the song's opening through its simple lyrical slides from the tonic to the third scale degree. Though the song is transitioning into a feeling of triumph, the violin holds on to the previous section's energy. Slowly the violin begins to gain a rhythmic profile that matches the intensity of the band. There is a harmonic thickening on the strings in the middle section of the song that mixes

in with an additional contrapuntal violin line and during this section the full

instrumentation reaches a place of high intensity.

The song abruptly shifts downward in energy as the lead vocal is suddenly

only accompanied by electric bass and a simple cymbal-focused jazz waltz from the

drums; the song modulates to A-flat major. The bass line moves back and forth

between A-flat major and G major and Montgomery plays a single ascending line

that draws notes from both scales. As the bass and vocal teeter between G and A flat,

the ascending string line can be seen as foreshadowing movement to a brighter

tonality.

At the close of the song, the drums suddenly are reversed to play backward

and the prior harmonic oscillation from A-flat major to G major expands to whole

step movements between G and A (the aforementioned interval expansion) with the

song ending on rather hopeful sounding A major. These sudden shifts of

instrumentation and harmony are startling. They can be interpreted to parallel the

protagonist's choice to "learn to lose control." In both the story and the music, the

song starts in one place and ends somewhere completely different.

APPENDIX II: Selected Song Lyrics

The Hero
Lyrics by Joshua Guthals

I wanted to be the hero
I thought I could be the man
That everyone wants to know

But this station has an agent
and everyone knows who he is

And everyone knows his name
And everyone speaks his language
And everyone knows his rules

Throwing it all away
I want to move to an island
where there's wind and sand and time

But they stop you at the border
and say – "that was then: this is now"

Now everyone knows his name
and everyone speaks his language
and everyone knows the rules

If pain is all there is
If pain is all we are
Let's go dancing,
have a drink — I'm buying

I wanted I could be the hero
I thought to be the man
that everyone wants to know

On Every Sunday
Lyrics by Joshua Guthals

On every sunday
He made a call
Made a call

White painted miles
In any case
Make the call

He acquired a habit
A habit of keeping on
So he'll keep on

Stand to a full height
The judges know
Special skill

And if now you're tired
They look away
As you fall

There's a story of
A girl who strips naked
Hey I think you should

You've got a little kick to you
No one can turn away
No one can turn away
No one can turn away
When you move

I understand his big plan
Over the next few years
Is to lose control

Corpus Christi
Lyrics by Joshua Guthals and Barret Anspach

Your father doesn't
He doesn't know you like I do

How'd he keep
A hold on you, haunting you
Hold on you

I'd never live in a mountain city (holding you, haunting you)
I couldn't live in a mountain city

I know you love him
The things he said they aren't true
Go to sleep the hurricane
It passes through, passes through
Passes through

1916 water crashing it filled the land (I'd never live in a mountain city)
(passes through)
Lightning slashes all along the gulf of Mexico (I couldn't live in a mountain city)

Deep salt water
Had I known
I'll never leave my home

Corpus Christi down along the water's edge (I'd never live in a mountain city)
I'll sing you a lullaby soothe your head

I saw a part of you
Dissolve in two when he left your room

It's better we're left this way
Come watch the surf
Drink wine all day, wine all day
Wine all day

1916 water crashing it filled the land (I couldn't live in a mountain city)
(wine all day)
Lightning slashes all along the gulf of mexico (I'd never live in a mountain city)

Deep salt water
Had I known
I'll never leave my home

Corpus Christi down along the water's edge (I'd never live in a mountain city)
I'll sing you a lullaby soothe your head (I couldn't live in a mountain city)
(holding you haunting you)
Corpus Christi down along the water's edge (I'd never live in a mountain city)
(holding you haunting you)
I'll sing you a lullaby soothe your head (I couldn't live in a mountain city)
Soothe your head, soothe your head, soothe your head

Oooooooooh to end

Probably
Lyrics by Joshua Guthals

You took me there to say that though we climbed all those rooftops
It's over

We started home
I watched the moon through the roof of the car
You were driving

And in my mind we talked all the while

About that seed we planted deeper than all the reasons
You gave me

Then in that car I caught a star turned light
All light, all light

And in my mind we still talk all the while
We talk all the while

You can say there's nothing wrong
Just didn't care now but that hides all we are

I still think probably
It's me

My life was all about a wall between love and a lover
Then I met you

You offered love, you offered hope, and the light
A light, A light

And in my mind we still talk all the while
We talk all the while

And you say there's nothing wrong
It's just why then that I care, so I hide

I still think probably
It's me

Graceful Exit
Lyrics by Joshua Guthals and Jennifer Guthals

Naked and graceful we are, we are my love
Born of the water we are, we are my love
He was the sky, I the night owl finally taking flight
The form of the waves hides the deep
Its furtive longing

So we make a graceful exit
Riding, riding moving hiding
Town forgotten he found where it can't hurt
The water below

Gracefully
We run from the town and I walk the moors by his side
We labored in silence then chose this night of our lives
To find there's a heaven above, I don't even lie
They'll kill us with the frowns and retreat
There's no belonging

So we make a graceful exit
Riding, riding, moving hiding
A precipice is something final
Hand in hand we found the will to die
He believed in love eternal
I only wanted to be by his side
So he made a graceful exit
Moving hiding I am left behind
If I'd made the graceful exit
Done it fully, I'd have found it too
World forgotten he's down where it can't hurt
The water below

Gracefully

APPENDIX III: Selected musical charts

THE HERO, p. 1, written by Joshua Guthals

The Hero

Joshua Guthals

a tempo

D   C/D   Gmi/D   D

7   D   C/D   Gmi/D   D   (Dadd13♯11)   D   (Dadd13♯11)

"I wanted to be a hero..."

13   D   C/D   Gmi/D   D   D   D   (Dadd13♯11)

But the station...

19   D   C/D   Gmi/D   D

Everyone knows his name   everyone speaks his language everyone knows his name

24   D   Emi   D   Emi   D   Emi   D   (Dadd13♯11)   D   (Dadd13♯11)

29   Gma7   Gma7/A   D   (Dadd13♯11)   D   (Dadd13♯11)

33   Gma7   Gma7/A   D   (Dadd13♯11)   D   (Dadd13♯11)

Throw it all away

37   D   C/D   Gmi/D   D   D

But they stop you

43   D   C/D   Gmi/D   D

Everyone knows.. everyone speaks their language

48   D   Emi   D   Emi   D   Emi   D   (Dadd13♯11)   D   (Dadd13♯11)

53   Gma7   Gma7/A   D   (Dadd13♯11)   D   (Dadd13♯11)

57   Gma7   Gma7/A   D   (Dadd13♯11)   D   (Dadd13♯11)

THE HERO, p.2, written by Joshua Guthals

Graceful Exit

Joshua Guthals & Jennifer Guthals

GRACEFUL EXIT, p. 2, written by Joshua Guthals & Jennifer Guthals

Every Sunday

Every Sunday

Corpus Christi

PROBABLY, written by Joshua Guthals

Probably

FIGURE 1. COMPARISIONS BETWEEN TRACY CHAPMAN's "Fast Car," JONI MITCHELL's "All I Want," and NEUTRAL MILK HOTEL's "Two-Headed Boy"

In all songs – carefully written, intimate vocal delivery, few acoustic instruments, simple arrangements, prominently feature an expressive and mostly unadorned lead vocal, and use very few postproduction effects.

Song	Text (Lyrics)	Individual musical parts, groupings of instruments and voices	Dynamic Relationship of instruments	Pitch, duration, loudness, timbre of lead vocals
Chapman's "Fast Car"	Political, strident, personal, direct, melancholic	Prominent lead vocal, no vocal harmony, acoustic guitar loop, full drums in chorus, bass	Lead vocal is clearly heard but balanced with acoustic guitar, main hook/loop on guitar is dominant	Clear melody, precise vocal delivery, consistent performed dynamic of medium-loud, in tune, light reverb
Mitchell's "All I want"	Personal, confessional, contemplative, intimate, poetic, precise	Has few musical parts, prominent vocal, no vocal harmony, guitar, bass, light percussion	The lead vocal proportionally is quite loud, the other instruments are very balanced, elegant	Clear melody, extremely precise delivery (pitch and rhythm), extensive dynamic variation, in tune, little effects treatment on lead vocal
Neutral Milk Hotel's "Two-Headed Boy"	Abstract, esoteric, evocative, heartfelt, odd, strident	Has only acoustic guitar and lead vocal, no vocal harmony	Vocal is almost screamingly loud, guitar is saturated and strident	Bone dry and loud in recording, dynamic variation in performance, close miked, sometimes off pitch, vocals crack and break, very spectrally dense vocals

Additional notes on musical texture and form:
Chapman's "Fast Car": 4/4 time, medium tempo. the instrumental riff (guitar, percussion) for at least half the song might be a loop. Except for vocals, the verses and choruses sound virtually the same. The only change between the verses that precede and follow the first chorus is a quiet note on a steel guitar. There's no change in dynamics or intensity throughout the song.
Mix: Vocals and bass is down the center, drums stereophonic, especially cymbals. When the voice comes in the guitar loop (main riff) pans over slightly to the left.

Mitchell's "All I Want": 4/4 time, medium-up tempo. A stereophonic array of live-sounding (as opposed to studio-recorded sounding), expressive musicians. Guitar parts reacts to the vocal part, and vocals react to the guitar. Musical elements have a harmonious integrated relationship.
Mix: Lead vocal down the center, dulcimer down the center or slightly to the right, low drum panned mostly left, supporting guitar part is panned hard right.

Neutral Milk Hotel's "Two-Headed Boy": 4/4 time, medium-up tempo until outro, which suddenly slows down and modulates to 3/4 time. Constant downward 8th-note strumming and heavy, wide range of frequencies present in vocal track recording. The verses are atypical in structure – 14 measures. The bridges vary in length (6, 10, or 16 measures). The choruses are more standard, at 16 measures. The song is most typified by Mangum's aggressive, driving guitar playing and his pained, howling vocal delivery.
Mix: vocals down center, very close in the sound field to the listener, guitar mostly down center.

FIGURE 2: SAMPLE STRINGS ARRANGEMENT BY JESSIE MONTGOMERY

The Hero

arr. J.Montgomery

IMAGE 1. MICROPHONE CONFIGURATION FOR TRACKING ROOM AMBIENCE:
A Neumann M150 microphone was placed in the reverb radius of the room during tracking of elements including vocals, guitar, strings, and grand piano. I have included only one photo of the microphone as it was placed in virtually the same position regardless of which element was being recorded. This photo shows in particular the placement of the M150 during recording of the strings sections on "The Hero".

IMAGE 2a, 2b. MICROPHONE CONFIGURATION FOR TRACKING LEAD VOCAL:
I sang directly into a Neumann U87 microphone, with an overhead DPA 4011 (or KM 184) pointing directly downward at my nose and mouth:

IMAGE 3a, 3b. MICROPHONE CONFIGURATION FOR TRACKING GRAND PIANO:
In the final mixes, 2 DPA 4011 microphones were directed at a 30-degree angle at the mid and high strings of the piano as recommended by DPA's website.

IMAGE 4a, 4b. MICROPHONE CONFIGURATION FOR ACOUSTIC GUITAR:
I played the guitar in a seated position. 2 DPA 4011 microphones were directed
approximately 12 inches from guitar: one at the 12th fret and one at the bridge.

IMAGE 5a, 5b. MICROPHONE CONFIGURATION FOR FLUTE & UKULELE:
The flute and ukulele were both miked overhead with a Neumann U87 and then close miked with 2 spaced DPA 4011 microphones.

IMAGE 6a, 6b. MICROPHONE CONFIGURATION FOR ELECTRIC GUITAR:
Jeff set up his guitar pedals as desired and plugged into the Rivera Amplifier. The Amplifier was then miked with Royer 121 Ribbon mike, an SM57, and a DI Box.

IMAGE 7a, 7b. MICROPHONE CONFIGURATION FOR VIOLIN & VIOLA:
The violin and voila were each miked overhead with a Neumann U87 and then each close miked with 2 spaced DPA 4011 microphones directed at instrument's bridge and body.

IMAGE 8a, 8b. MICROPHONE CONFIGURATION FOR TRACKING DRUMS:
A larger number of microphones were used to record the drums. A partial list includes Kick Head: Sennheiser: MD421, Kick Hole: Sennheiser E602, Snare Top: SM57, Snare Bottom: SM57, Tom 1: MD421, Tom 2: MD421, Tom 3: MD421, HiHat: Neumann KM184, Ride: KM184, Overhead A: Neumann U87, OH B U87, OH X: Schoeps CMC6, OH Y: CMC6.

IMAGE 9. MICROPHONE CONFIGURATION FOR DRUMS & ELECTRIC BASS:
The left side of the monitor from the control room shows the drummer, whose set was miked with the mikes listed in Image 8. The right monitor shows the bassist, whose amp was miked with an SM7. The bass was also plugged into a DI-box.

Selected postproduction effects performed by Aaron Prellwitz

IMAGE 10: Vocal Delay (Post Reverb) on "Corpus Christi":

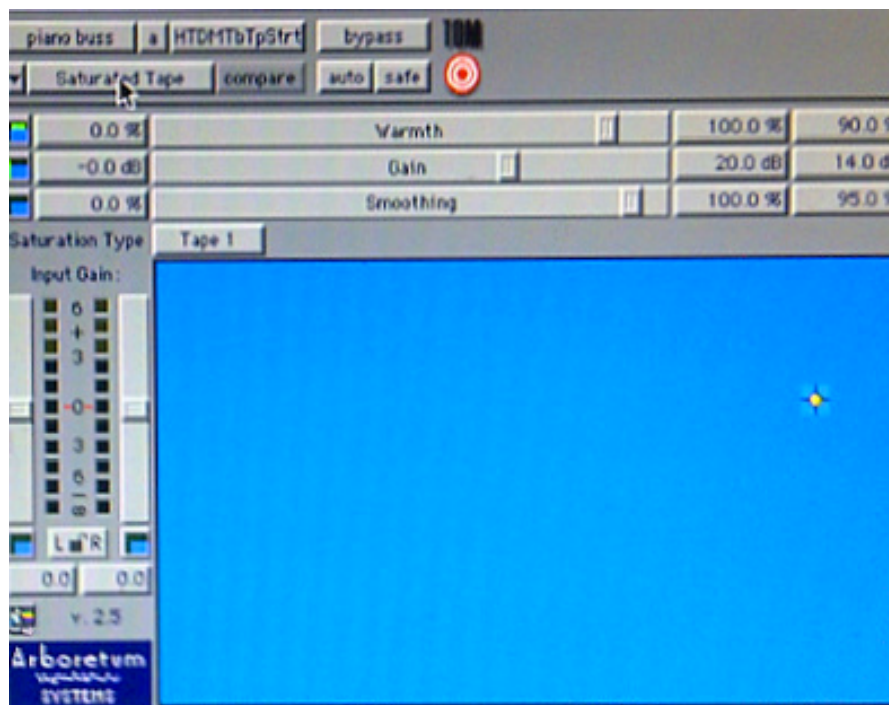**IMAGE 11. Piano Tape-Saturation Effect on "Corpus Christi":**

IMAGE 12. Compressor used across vocal buss on "Corpus Christi":

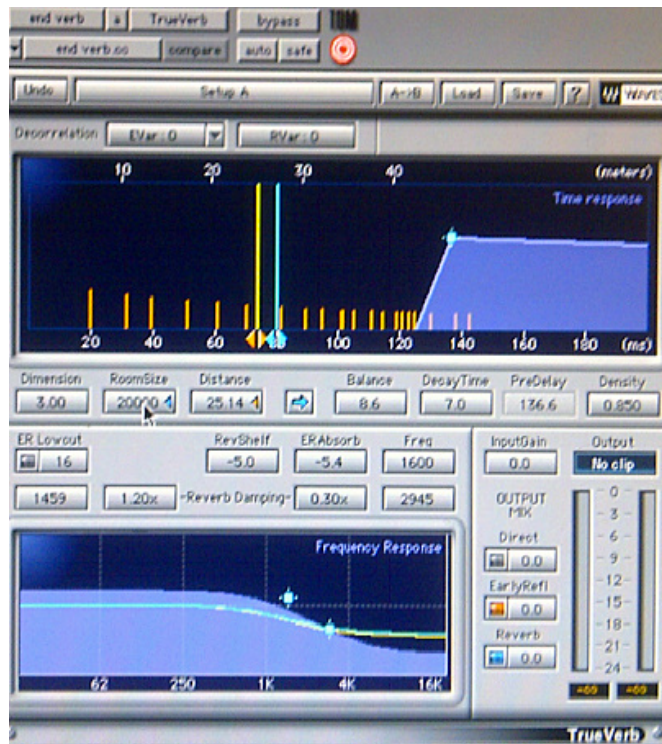**IMAGE 13. Reverb on end choral portion of "Corpus Christi":**

IMAGE 14. De-esser on Lead Vocals on "On Every Sunday":

IMAGE 15. Vocal Compression on Lead Vocals on "On Every Sunday":

IMAGE 16. EQ on lead vocals on "On Every Sunday":