Multitracking, Arranging, and Website Creation

By

Devin Cobleigh-Morrison

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This written project is approved by the following members of the Final Oral Committee:

Daniel Grabois, Associate Professor of Horn
Jean Laurenz, Assistant Professor of Trumpet
Oriol Sans, Assistant Professor and Director of Orchestral Activities
Johannes Wallmann, Director of Jazz Studies and Professor of Music
Marc Vallon, Professor of Bassoon

In dedication to all who put their best foot forward each day.

Contents

Acknowledgements

Sincere gratitude goes to my supervisor, Professor Daniel Grabois, whose expertise and patience with me will never be taken for granted. Your listening and creative outlook have pushed me to explore my limits on the horn, but also allow me to continue my personal growth from a place of compassion, rest, clarity and curiosity.

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Abstract

March 13, 2021:

Multitracking, Arranging, and Website Creation arose from the impact that the COVID-19 pandemic had on my doctoral studies. As a wind player, my opportunities to practice and perform in person were eliminated due to health concerns and mandates. Regardless of situation, I was determined to keep progressing as a performer and educator. This project encompasses three sections:

1.) Seventeen multitrack recordings, all performed, mixed, and edited by me. The repertoire consists of original works, commissions, arrangements, and transcriptions from young arrangers, works that spark joy, and pedagogically relevant works from the band, orchestra, and choir canon.

2.) A written document explaining how recording and producing music has affected my growth as a musician and educator. Tips on mixing and planning recording workflow accompany this document.

3.) Three large scale horn choir arrangements implementing observations from the scores I have studied to perform and record.

This project is created not only to inspire, but to show that tasks such as arranging, recording, multitracking, and self-critique are not as daunting as they seem. Showcasing the horn's versatility through these arrangements and recordings is an added benefit. The creation of a concentrated resource for artists to be inspired, learn, and promote their craft through technological means is becoming more essential with each passing day, and this project shines a light on the beginning steps of this process.

A note to the reader- this project by no means suggests that we replace the use of collaborators, audio engineers, or specialists in the field. An ideal takeaway of this document is to further one's knowledge of recording, mixing, arranging, and more. The arts are an organic, flowing collaboration between colleagues and the world itself, and this project in no way should push creators to rely completely and entirely on themselves.

This document contains distinct sections within it, sometimes written as diary entries with collected thoughts and experiences. This serves to track growth and changing thoughts, and keep specific information concentrated in one area.

Introduction: How COVID-19 Changed My Path as a Doctoral Student

The before time

In January of 2020, UW had returned to campus after a lengthy holiday break. Concerts took place into February, the UW Symphony had just performed Johannes Brahms' Second Symphony, and the Wingra Wind Quintet had just performed its faculty recital. I'd also received a new horn from Dan Vidican at LukasHorns. My chamber recital and a few auditions were planned for the end of the month, and a performance of Arnold Schoenberg's Chamber Symphony No.1 was quickly approaching. An aspiring teacher and player's dream! However...

On March 11, 2020, the United States progressively shut down in an attempt to slow the spread of the COVID-19 virus. This announcement was made mid-day on campus. Buses flooded in to help people get to their homes, and of course there was a *slight* bit of hysteria in the Humanities building. Some classes were held to help prepare students and professors for online forms of schooling. Others went online immediately. Within a few days every hall and building was closed, stores were empty, and of course the lack of toilet paper was astounding.

Eventually those two weeks turned into months, and then a year.

As lockdown started, every person, family business, industry, etc., was devastated in a unique way. California became the first state to shut down completely except for essential trips, and the borders between countries were sealed.[1] Businesses began shutting down, leading to massive job loss. Schools and universities were closed, and in-person performances were a thing of the past. By July of 2021, concert halls were still closed, and outdoor concerts were *only now*

[1] Kathy Katella, "Our Pandemic Year: A COVID-19 Timeline," Yale Medicine, acquired March 9, 2021. https://www.yalemedicine.org/news/covid-timeline

beginning to blossom. As of September 2021, we were playing in person with masks and bell covers. As of January 2021, the masking policy is still in place.

When the world shut down, my family and I made a deliberate choice to take care of each other even more than usual. A few days into the shutdown, I found myself in Michigan for what we thought would be two weeks. There was nobody to perform with, and no recitals or career trajectory. Job searches were frozen and auditions indefinitely postponed. With the state of the world, I kept asking myself, "How do I finish my doctorate with minimal resources at my disposal? How do I do this from Michigan when I am a student in Wisconsin?"

After some personal grappling, I decided to take matters into my own hands. I aimed to see what I could do to keep myself on a stable, healthy, and productive track. It was my hope that with my own self in order, career development would follow.

I found myself thinking, "If I can't play in an ensemble, I'll produce one electronically." While this was conceived with the best of intentions, it came with a steep learning curve. I'm not someone who can play with recordings for a long period, so I decided to get the Acapella app for iPhone and record various excerpts that highlighted the horn. I started posting these on social media only to see that many musicians were doing the same. It was almost as if we were trying to create live music, but over a media news feed.

Within a month some stopped posting completely, while others turned into YouTube sensations such as ScottLeger _ horn, Fhornpatrick, Kate Warren, Military Trumpet Jobs, and more. Various podcasts such as *Untold Stories of the Concert Hall* were born as this time. Other podcasts have had an influx of views, benefiting from free time at nearly everyone's disposal. It was clear everyone was trying to stay involved with music.

The plan takes shape

As the country shifted deeper into isolation, I sank into my own mind and became restless. Confronting my demons from a multiple year injury cycle and a diagnosed metal allergy in July of 2020, I'd still not given myself the compassion to consider rest as an option for growth. I was so caught up in the physicality of performance and avoiding the injury again that I'd lost sight of physical and mental health, and therefore the love of music at large. I was piecing together Acapella videos but wasn't happy with their quality. This kept me on the horn all day just to post a 45 second quartet that I deemed acceptable. This was a tell-tale sign that it was time for change. However, the path of change wasn't clear.

I tried to make my own recordings by multitracking and mixing on digital audio workstations (DAWs). This ended up being incredibly useful, because, unbeknownst to me, I would go on to perform *every* recital for my doctoral degree over electronic means. While this came with a new stressor for recitals, I found that I grew from multitracking in many ways by:

- Understanding staples of the repertoire on deeper levels.
- Gaining a greater understanding of horn section excerpts in the orchestral canon, such as large-scale works by Dvorak, Brahms, and Strauss. This can be done by recording and playing each part in the section.
- Creating a multiple horn accompaniment from piano scores. This gave me the ability to truly understand each note of our standard repertoire from the pianist's perspective (if you don't care to arrange your music, the Kumamoto Horn Ensemble has a generous free library of many horn reductions of piano scores). [2]

[2] "Kumamoto Horn Ensemble," Original Arrangements, Last modified 2021. http://horn.xsrv.jp/50.html.

- Having access to unlimited playback of your current work, and how you sounded at the time of recording.
- Creating a reference recording library to monitor your progress over an extended period.

A New (to Me) Genre of Music and its Background

Due to current restrictions and minimal class accessibility, my minor changed from Kinesiology to Jazz. I found that studying jazz had a large and immediate impact on my mental health as a horn player. Jazz was a means to challenge how I hear music, and thus produce it. Being a predominantly ear-oriented (as opposed to notational) genre, jazz filled a void that was missing in my toolbox that can best be described in Miles Davis' words: "I'll play it first and tell you what it is later."[3]

To me, jazz represents what former principal hornist in the San Francisco Symphony, David Krehbiel, called "creative not caring." This concept entails knowing music so well that the player can let go of the technical struggles and put the musical message first. In Krehbiel's words:

> By not caring, I am able to let go of the struggling and worrying parts, so that my emotion, or how I feel about the music is the dominant driving force. Creative not caring then is really caring more about feeling the music. You cannot make it sound like you are struggling less by struggling more, or to say it another way you cannot make it sound easier by working harder. It doesn't take years of practice and experience to give yourself permission to play it right, which is of course… from the heart. If you argue for your limitations, sure enough, they are yours. [4]

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[3] Sandee LaMotte, "Jazz Improv and Your Brain: The Key to Creativity?," CNN Health, last modified April 29, 2018. https://www.cnn.com/2018/04/29/health/brain-on-jazz-improvisation-improv/index.html

[4] David Krehbiel, horn and narration, *Orchestral Excerpts for Horn*, Summit Records, 1993, Apple Music Streaming Audio.

Neurobiologists have studied jazz musicians' brains for quite some time. In 2008 a study was conducted on jazz musicians with the goal of observing how the brain functions while improvising. After multiple studies, Dr. Charles Limb found that the prefrontal cortex (the expression sphere) became more active while the dorsolateral prefrontal cortex (the self-control sphere) became more dormant. [5] In other words, jazz improvisation is a perfect example of "creative not caring."[6]

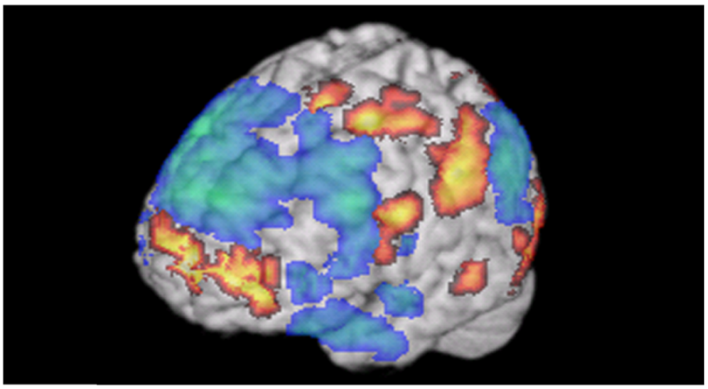

Figure 1: The medial prefrontal cortex (expression) is shown in yellow The dorsolateral prefrontal cortex (self-control) is inhibited and thus shown in blue.

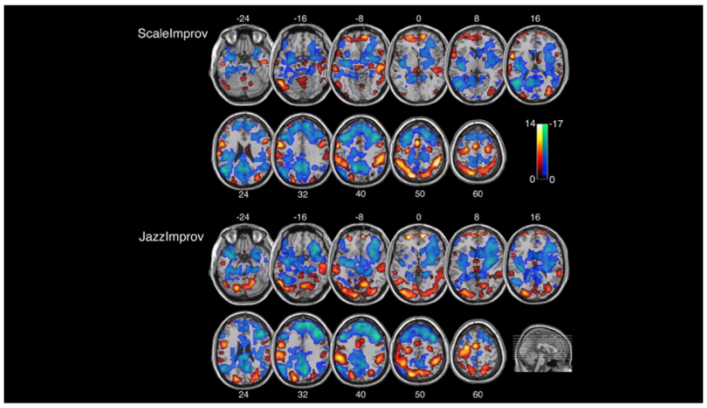

Figure 2: The same labeling and coloring apply. Scans of different musicians' brains as they play scales vs. improvisational music, as viewed from above.

I plunged into studies that come with jazz improvisation and its patterns, and eventually felt myself let go of needing music on a stand. I felt more aurally connected to music and more involved with music-making than ever before. While rehearsing and performing, treacherous

[5] Sandee LaMotte, "Jazz Improv and Your Brain: The Key to Creativity?," CNN Health, last modified April 29, 2018. https://www.cnn.com/2018/04/29/health/brain-on-jazz-improvisation-improv/index.html
[6] Ibid

entrances began to feel like jumping onto an already moving train instead of being a hitch in its tracks, preventing a smooth ride. I quickly grew to understand the value of this mindset. I learned to apply this mindset to the process of creating the recordings accompanying this document.

Chapter One: Repertoire Selection

Here are the criteria I used to select the works I recorded.

1. Artistic Considerations

The works recorded encompass a mixture of standard and excerpt-based repertoire, works that spark joy, works showing stylistic differences, and works from composers of varying ages, genders, and nationalities. I felt it important to include works from ensemble settings such as orchestra, wind band, acapella, solo voice, horn itself, opera, choir, big band, and modern hits. I also felt it necessary to include arrangers and composers of a wide age and experience level. At the time each work was finished, the youngest contemporary composer is Jacob White (who wrote one of the pieces at age 18 and one at 20). The more experienced composers are Wayne Lu (53), Arkady Shilkloper (64), and Frank Ticheli (64).

2. Technical Considerations

A. Time and Strength

The length of time it takes to prepare, polish, and perform a full work is the first consideration. Both physical health and positive attitude can easily be put at risk from overuse. As such, I recorded the most demanding pieces in the height of the pandemic, when I had fewer ensemble obligations and gigs.

B. Equipment and Time

Less expensive microphones, while easier on your budget, create problems for horn players. For example, the Yeti Blue microphone peaks very easily even at its lowest input setting. With the volume the horn produces, using the Yeti mic is not a workable option in a

small room. As such, recording in a larger room was required. For me, this meant finding time to use a shared space, and involved coordinating with roommates, family, and partners. This can box recording into undesirable times of the day, or foreshortened session lengths. By contrast, better microphones such as the Rhode matched pair do well in smaller spaces. With this microphone set, rooms such as a bedroom can work to create an acceptable recorded sound. This offers more time to record, and hopefully increases flexibility in scheduling.

C. Repertoire in Flux

With the above considerations, it was important for me to record various works simultaneously. If one work was quite strenuous and technically demanding, I would make sure to record another less demanding work at the same time. Having two works to toggle between can be helpful for various reasons, but especially for embouchure health.

D. The World Around Us

As I was recording from a private house rather than a soundproof studio, undesirable background noises and situations were often present. Examples I came across were lawn mowers, a garage door opening below my recording room, fear of waking up neighbors, or having a partner needing long periods of silence for a business call. When I was not at liberty to play loudly, I was still able to record works requiring hand stopping or mutes. Not only are these passages recorded at a lower decibel level, but they are often short in musical duration. Recording these in sound sensitive situations can help you stay on track with your deadlines.

E. Musical Considerations

For a full multitrack recording, there can 16+ parts to juggle, covering the full range of the horn. Uncomfortable ranges that sit in unhealthy extremes and dynamics are not uncommon. While I've chosen works to challenge me, some publications are unreasonable. As such, I have

occasionally edited passages for physical safety and musical success. Don't be afraid to make the work your own. If you are unwilling or unsure, ask the arranger or composer for advice.

2. Building Professional Relationships with Artists, Arrangers, and Composers

With each recording you release, you represent both yourself and the composer or arranger of the work. Reach out to these composers! Collaborate, ask for feedback, and engage them in your process. In November of 2020, Frank Starobin reached out to me after seeing my videos online. This sparked a conversation that resulted in a collaboration: I recorded his arrangements of Billie Eilish and Carl Orff. My recording of *When the Party's Over* accompanied his submission to Sheetmusicplus and is now published. After reaching out to Jacob White about recording his arrangements, he requested a broad legato sound for his arrangement of the Kings' Singers *Alleluia*. This resulted in recording a 12-piece horn choir exclusively on the F side of the horn due to its legato nature. Take these opportunities to strengthen connections with current and future colleagues, to get creative, and to challenge yourself. This will help you grow as a person and deepen your creativity as a musician.

Chapter Two: Recording with Strategy

I. Planning the Workflow

Gustav Holst/Sean Breseman: First Suite in Eb for Military Band

Instrumentation: Eight horns and optional percussion. Timpani is adapted to create horn 9.

This setting of Holst's *First Suite* for horn choir maintains the integrity of the original work by sparing no musical expenses. While the writing is idiomatic due to the key of Eb major, a comfortable key for horn, the total range of this work encompasses 4 ½ octaves from pedal D in horn 8 to F above the staff in horn 3. Additionally, horns 5 and 6 are scored to play muted in extreme high registers, which most players find difficult due to the excessive resistance mutes provide. While the original version of the work is kept intact, safety and endurance can pose large problems. Recording multiple takes and tracks can tax a player quickly due to the extreme *tessitura* this transcription demands, combined with lengthy passages and minimal rest. Some recording considerations follow.

1.1. Movement 1: Chaconne

A chaconne is defined as "a composition in a series of varying sections in a slow triple time, typically over a short, repeated bass theme."[7] After multiple attempts at piecing the work together, I realized the consistency of this theme (with pitch, sound, etc.) was the ticket to success. This theme is passed around to all parts in various forms and registers. The theme can be approached differently based on the context proceeding it-- for example by a large leap downward or from loud to soft. This poses various challenges to keep the chaconne consistent with regard to pitch, articulation, dynamic, and sustained pitches without wavering.

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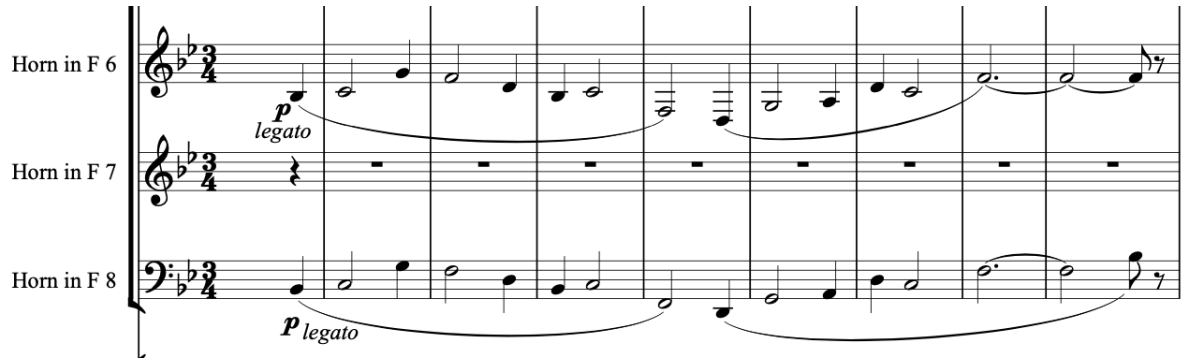
[7] Alexandar Silbiger. "Chaconne (Fr., chacony: it. ciaccona, ciacona: Sb chacona)," *Grove Music Online* (Janurary 20, 2001).

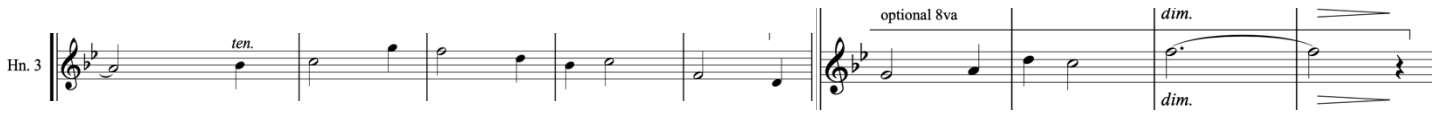
The solution to this came three months into my recording journey. To ensure consistency, I recorded the chaconne theme in a separate track. This idea served as a valuable reference. I used this as a check in with pitch, dynamic, and articulation as the chaconne theme moves throughout the ensemble. This extra track was especially helpful in a few sections:

The first of many examples starts at the beginning of the work in the 8th horn. Due to its extremely low *tessitura* and demand for a healthy air supply, this register is very difficult for hornists to sustain and center pitch. This passage is transparently scored, with horn 4 being one octave above it with no other context.



Score example 1: Chaconne, opening. Horn 6 and 8. Gustav Holst and Sean Bresemann, *First Suite in Eb* (Veritas Musica Publishing), 1.

Third horn encounters the opposite problem in measure 50, where the chaconne theme is presented in the (optional) extreme high register. This passage is doubled down the octave in first horn.

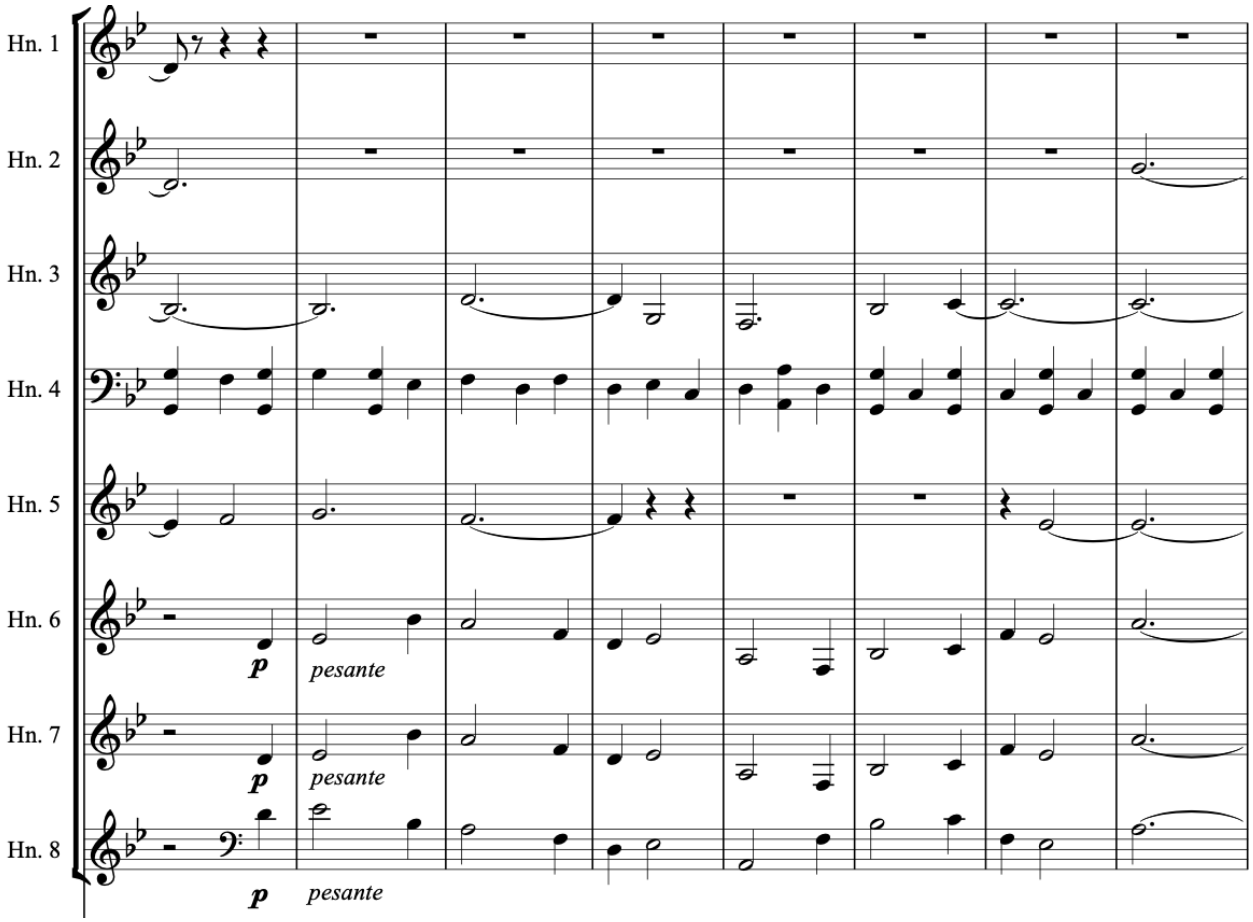


Score example 2: Chaconne, horn 3. MM.50. Gustav Holst and Sean Bresemann, *First Suite in Eb* (Veritas Musica Publishing), 1.

The recording workflow resulted in starting with the mid and low register horns.

First group: Horn 9 (timpani) - Horn 8 - Horn 4 - Horn 6

By recording the low horns with the reference track, I was able to keep the thick texture as in tune as possible and create a stable and clear foundation for the high horns to rest on. An example that required particular attention is below. This passage requires precise intonation at the octave, while horn 4 replicates the tuba line in the original work, written in the pedal register.

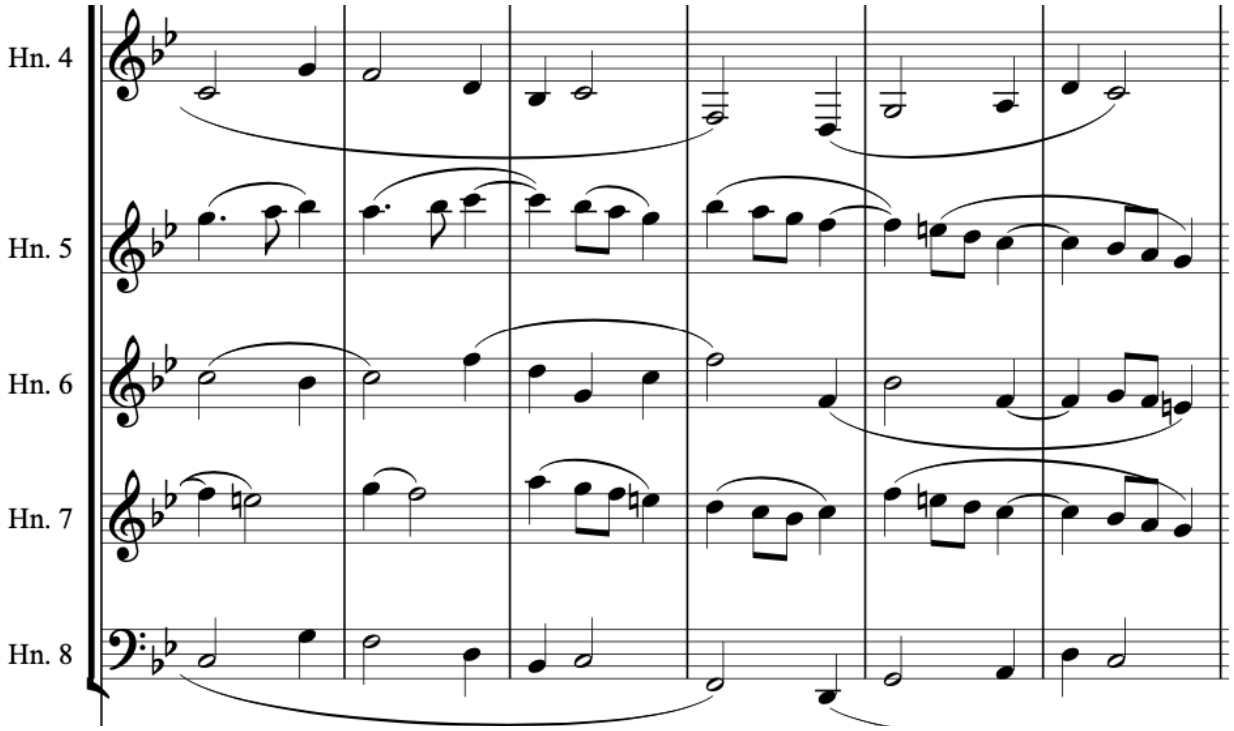


Score example 3: Horn 4 and dense textures. Gustav Holst and Sean Bresemann, *First Suite in Eb* (Veritas Musica Publishing), 16..

With the low horns recorded, the high horn workflow follows:

<u>Second group: Horn 7 - Horn 5 - Horn 2 - Horn 1</u>

With a solid foundation provided by the low horns, the rest of the work fell into place quickly. The above order was useful especially in measure 18: with horns 8, 4 (in octaves with 8) and 6 previously recorded, horn 7 then creates and even larger timbral cushion to support horn 5. Note the extreme registers at play so early in the work: Bresemann uses a large range from pedal F and D in horn 8, to high C in horn 5.



Score example 4: Recording order through Bresemann's use of extreme registers.
Gustav Holst and Sean Bresemann, *First Suite in Eb* (Veritas Musica Publishing), 3.

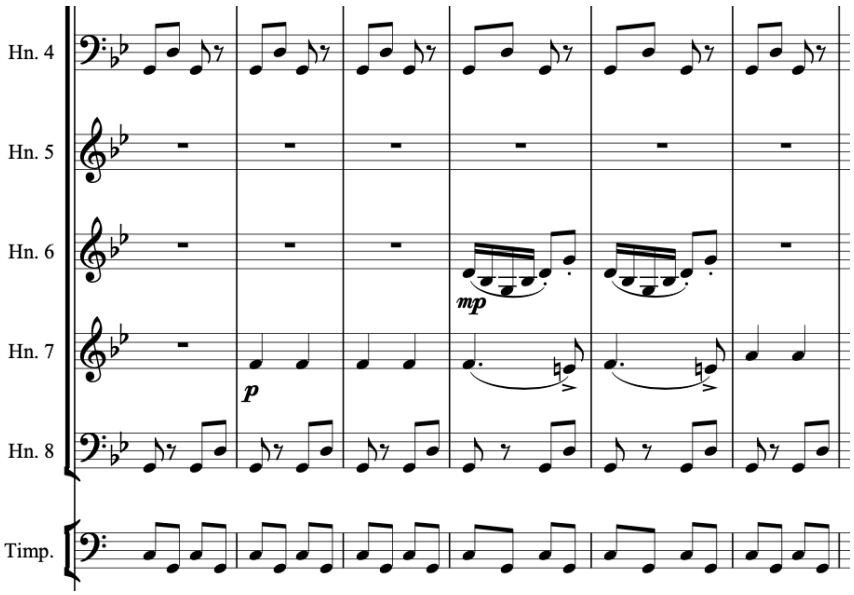
1.2. Movement 2: Intermezzo

This movement's scoring is like the first, staggering repeated material throughout the octet. Stylistically, the Intermezzo requires a brilliant staccato and strict attention to time and clarity at the 16th note level. The movement encompasses long flourishes over all registers, and as such, things can get unclear quite quickly. To help this, I recorded the low horns first. Low horn tends to speak late and cause clarity issues due to its pedal *tessitura*. This was recorded first to keep the texture tidy, before placing further technical passages into the mix. I also recorded the timpani part as an additional horn part (horn 9).

The low horn workflow is then:

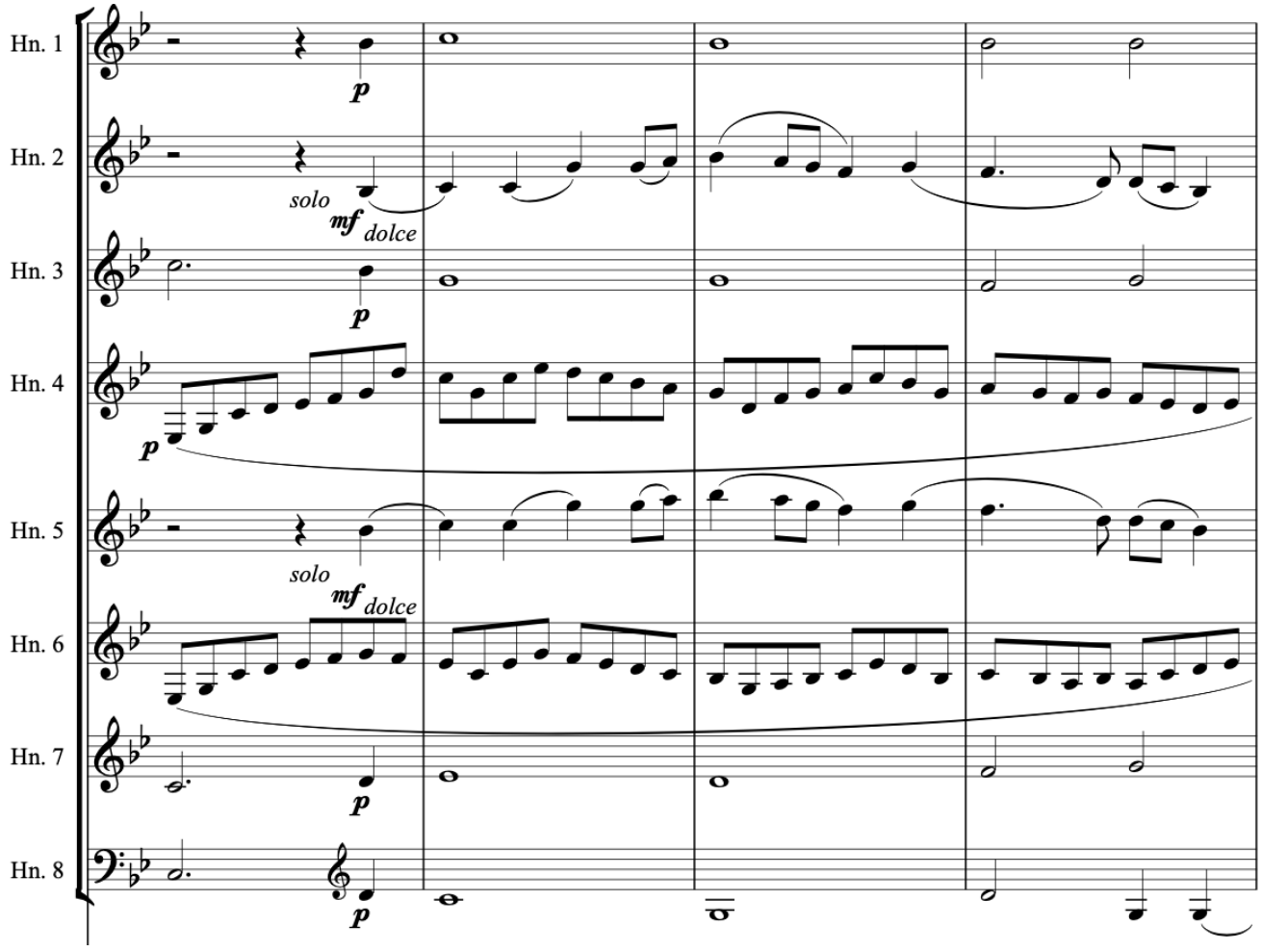
Horn 8 - Horn 4 - Timpani (horn 9) - Horn 6 - Horn 2

These parts are full of very low staccato passages that need to be short, clear, and directly in time. The timpani (horn 9) paired withs horn 8 and 4 is a good example:



Score example 5: Timpani (horn 9) has the combine line of horns 4 and 8, all in the pedal register.
Gustav Holst and Sean Bresemann, *First Suite in Eb* (Veritas Musica Publishing), 25.

Recording horn 2 was the next logical option. In various sections horn 2 curiously contains solo material directly placed in the same register as the accompaniment. In the section below, horn 6 plays off horn 4, both weaving through various registers at the eighth note level. This needed to be recorded first for clarity and dynamic control before adding the solo in horn 2.

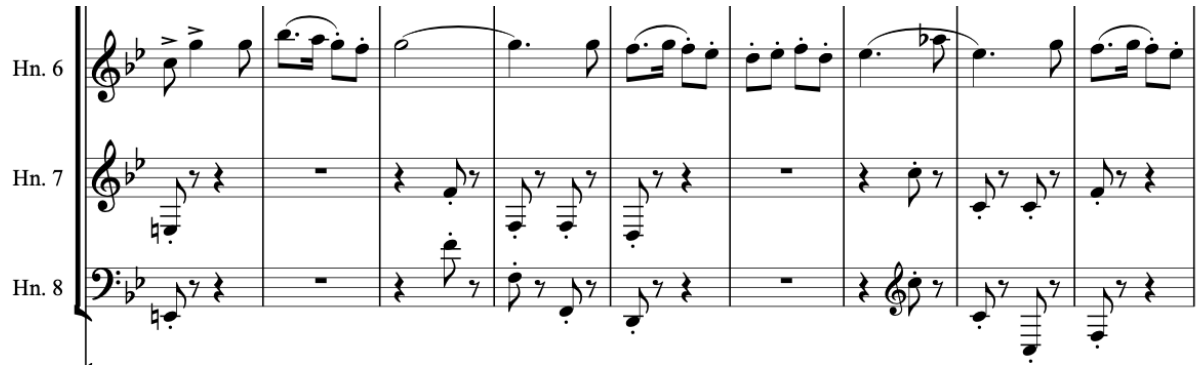


Score example 6: A solo in the second horn is curiously placed in the same register as the weaving background lines. Gustav Holst and Sean Bresemann, *First Suite in Eb* (Veritas Musica Publishing), 33.

With the low horns recorded, the high horn workflow follows:

<u>Horn 3 - Horn 7 - Horn 1 - Horn 5</u>

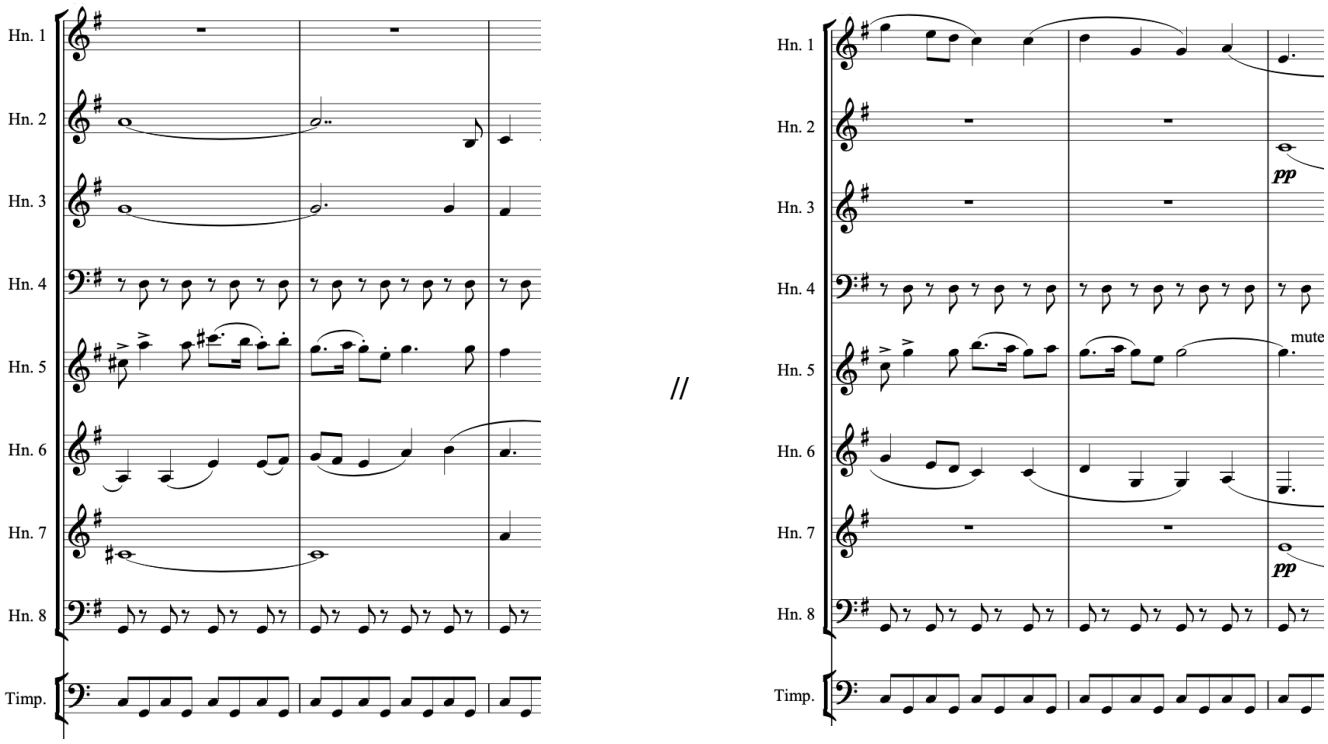
There are essentially two groups of three horns used in the Intermezzo. Third horn has many doublings with low horns 2 and 4 but is scored up the octave. Horn 7 shares the same qualities with low horns 6 and 8, but is scored in a higher, clearer register. As such, horns 3 and 7 were recorded first. This finished filling out the two groups of three horns. An example of horns 6, 7, and 8 grouped as a trio is below.



Score example 7: Horns 6, 7, and 8 are grouped as a trio presenting the melody and brief staccato interjections. Gustav Holst and Sean Bresemann, *First Suite in Eb* (Veritas Musica Publishing), 28.

This movement features high horn solos in the fifth horn, and this was recorded last. Recorded second to last was horn 1 as its less involved and offered rest before recording longer, higher solos in horn 5. This was decided merely for endurance considerations.

Horn 5 encounters solos written both for the open and muted horn and can easily overtax a player if recorded too many times. Due to the extreme resistance muted high register horn can provide, I recorded horn 5's muted passages separately, after adequate rest. Due to the extreme pitch discrepancies mutes can provide, I felt it best to record these extreme passages after the ensemble was locked into place. This not only gave me a stable target to hit, but let me relax more into the upper register.



Score examples 7 and 8: Strenuous (muted) solos written in horn 5. Horn 1 takes a secondary role.
Gustav Holst and Sean Bresemann, *First Suite in Eb (Veritas Musica Publishing),* 41-42.

1.3. Movement 3: March

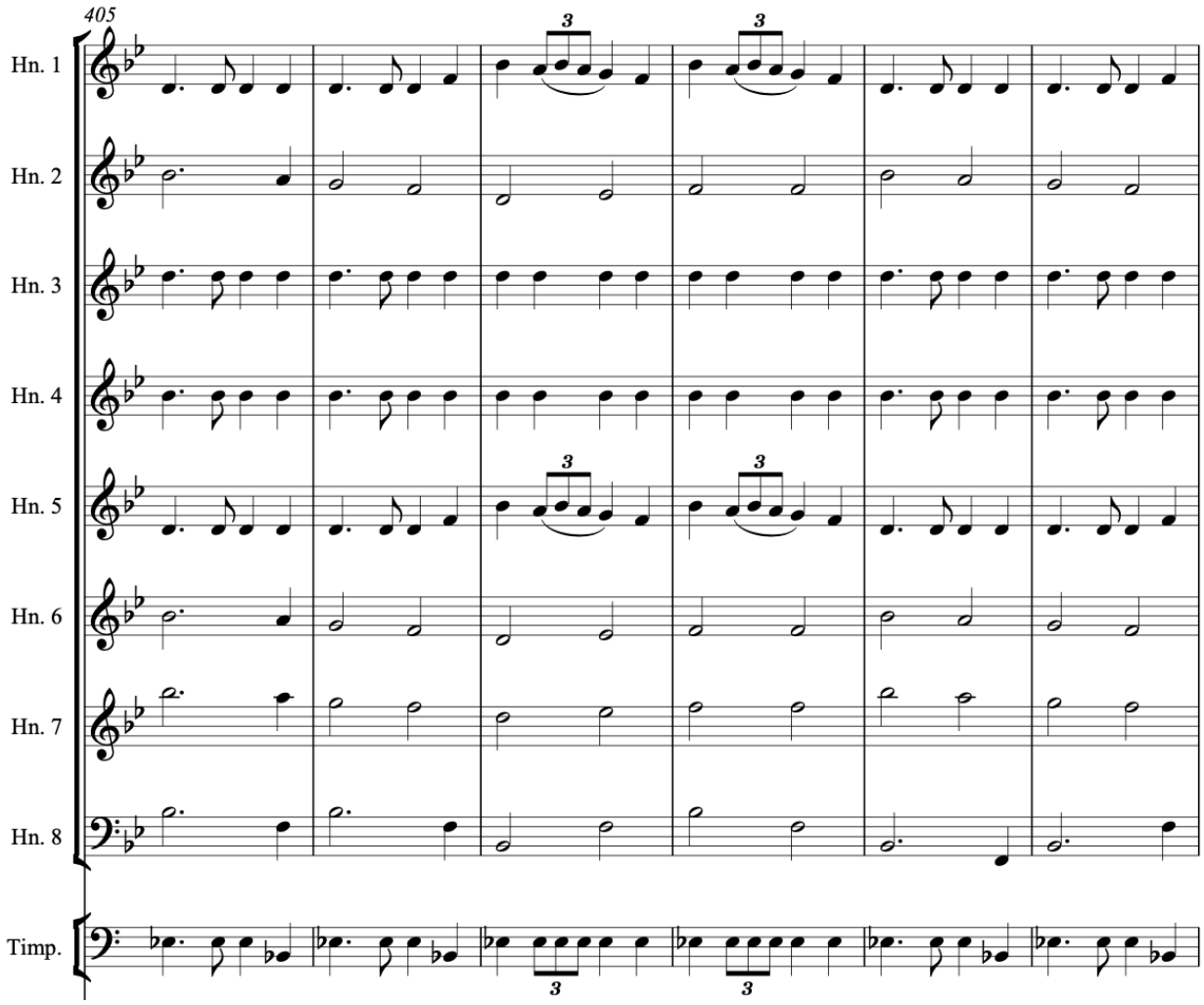
This movement is arranged with two quartets playing off each other. Horns 5 - 8 play the trio and transition themes, while horns 1- 4 have the march theme and various flourishes originally scored in the woodwinds. As such, the workflow used was:

<u>First quartet: Horn 7 with timpani inserts- Horn 6 - Horn 8- Horn 5</u>

<u>Second quartet: Horn 4 - Horn 2 - Horn 3 - Horn 1</u>

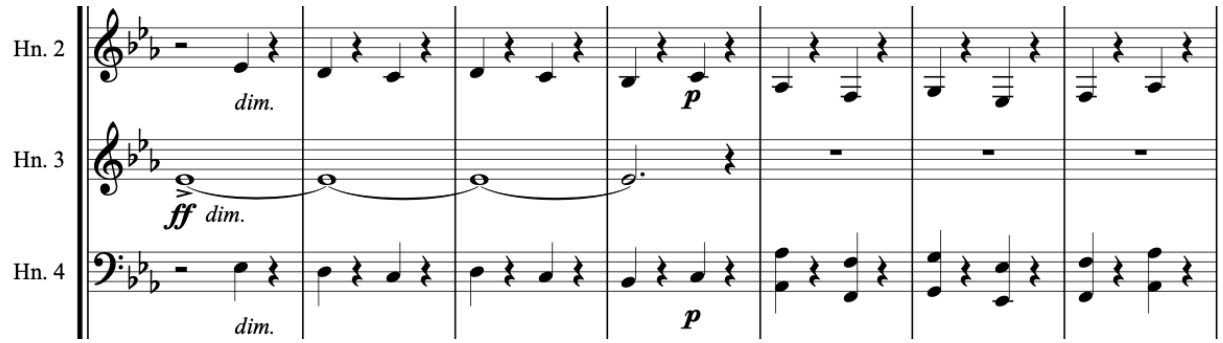
Horn 7 is the only part that contains the trio theme every time it is presented. I proceeded as I had done in the first movement. The horn 7 track provided consistency of time, timbre, and pitch. The other three parts fell into place quickly with this constant reference of the melodic material.

In the second quartet, I recorded horn 4 first. This part contains many harmonic roots of Holst's chords. A good example is in bar 405, scored in Eb major.



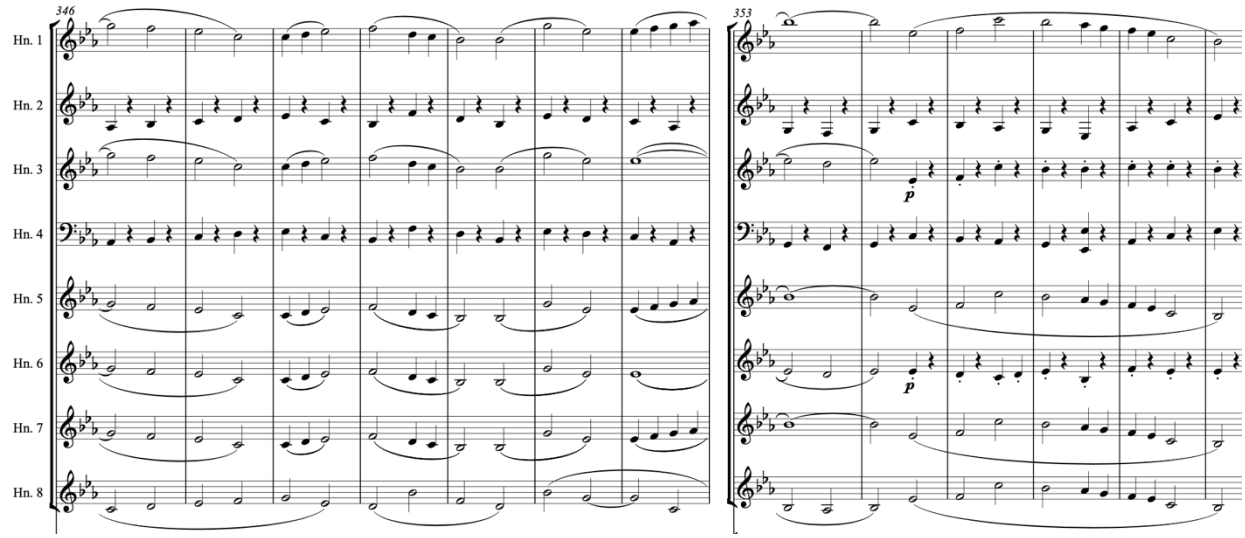
Score example 9: Horn 4 emphasizes the root of Eb major. Gustav Holst and Sean Bresemann, *First Suite in Eb (Veritas Musica Publishing),* 65.

Horn 2 is regularly placed an octave over horn 4, especially in the trio theme. This was recorded next for intonation, balance, and timing. An example is on the following page.



Score example 10: Horn 2's octave placement above horn 4. Gustav Holst and Sean Bresemann, *First Suite in Eb (Veritas Musica Publishing),* 51.

Horns 3 and 1 are often paired and fell into place quickly with the pulse, pitch, and style stated six previous times.



Score examples 11 and 12: Horn 3 and 1 float on top of the ensemble for the trio theme. Gustav Holst and Sean Bresemann, *First Suite in Eb (Veritas Musica Publishing),* 56-57.

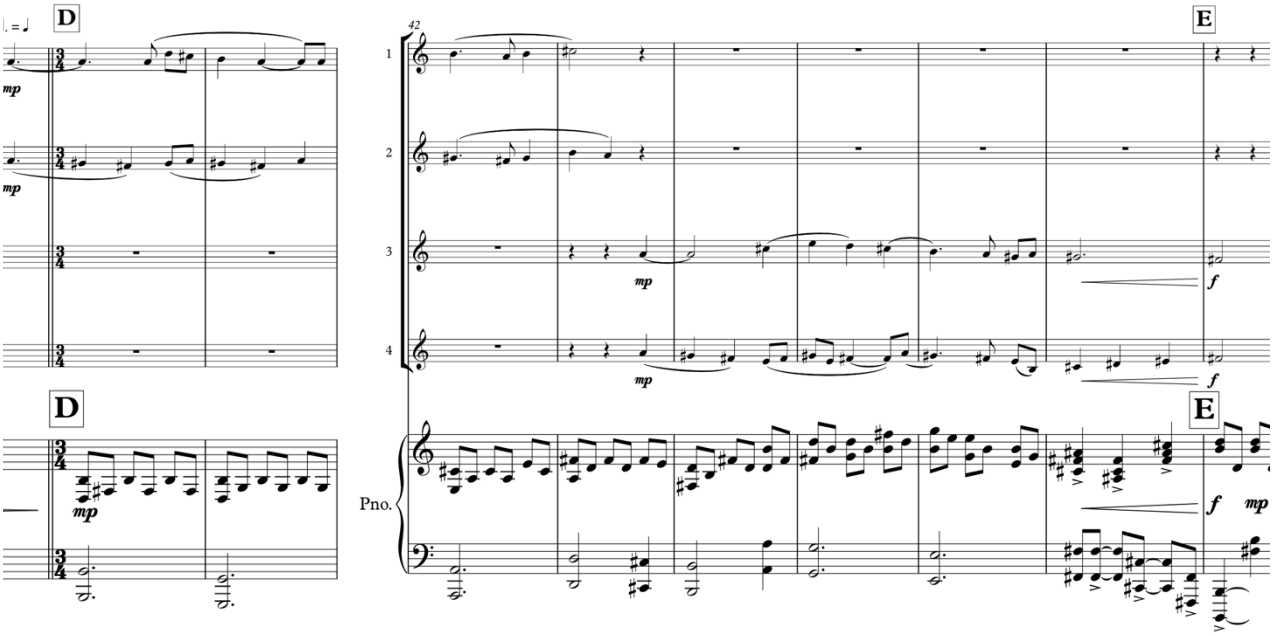
1.4. James Naigus: *Sanguine Fall*

Instrumentation: Four horns and piano

This work provides a straightforward recording experience as the composer has supplied the piano track, available for free on his website. With the tempo and harmonic emphasis already supplied in his own piano recording, I choose the following workflow:

Horn 1 – Horn 3 – Horn 2 – Horn 4

I started with melodic material to follow the phrases already recorded by the composer. Horn 1 fills this role. Horn 3 plays off horn 1 as the secondary soloist. Horn 2 came third as it acts as a duet partner for horn 1, and Horn 4 came last as the duet partner to horn 3.

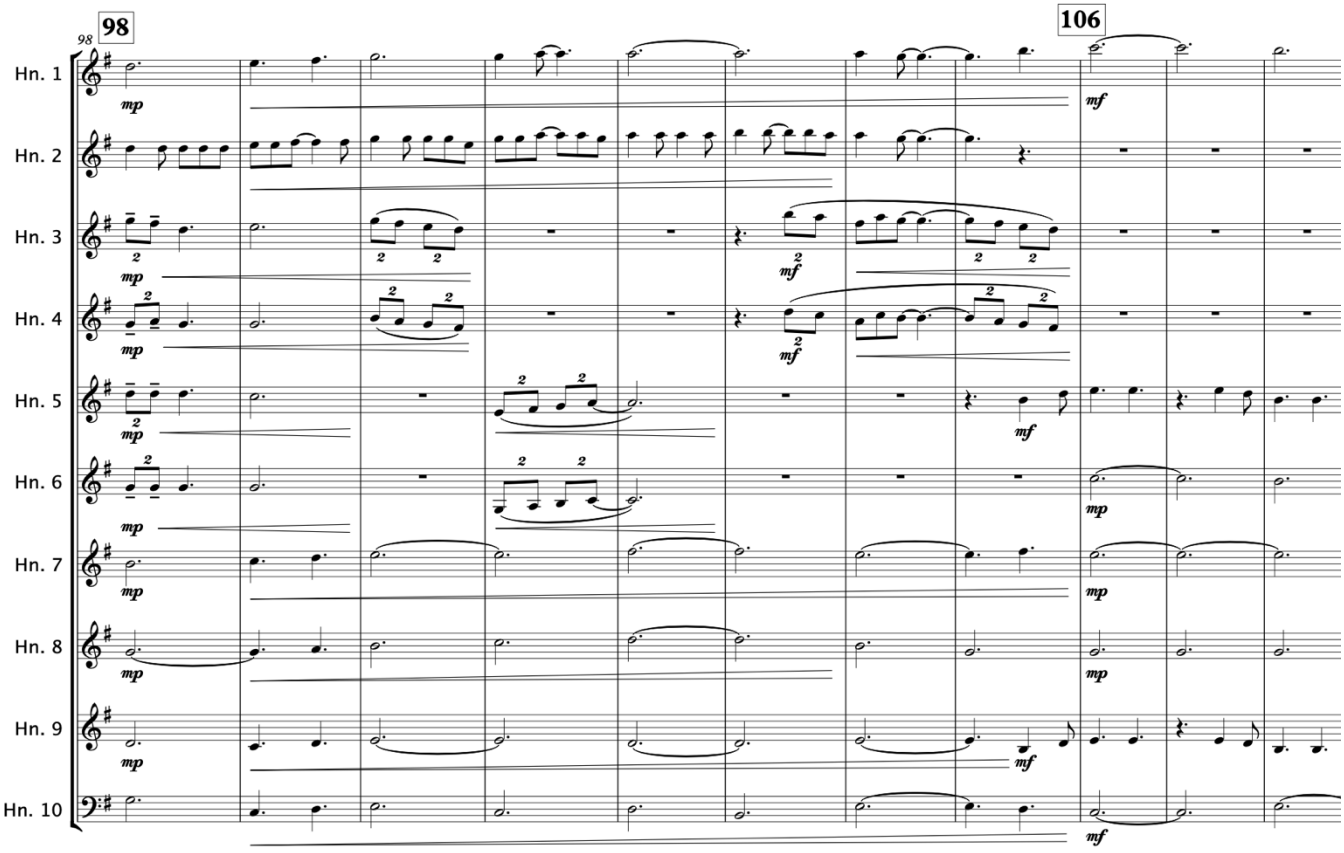


Score examples 13 and 14: 2 pairs of horns- 1 and 3 lead. James Naigus*, Sanguine Fall* (self-published), 5.

1.5. Leonard Cohen/Jeff Buckley/King's Singers/Jacob White: *Hallelujah*

Instrumentation: Ten horns

This project consisted of recording every note on the F side of the double horn. The F horn is the longest set of tubing on the double horn and is known for being incredibly resistant to the airstream, but extremely legato and rich in overtones. Due to the resistance the F horn provides, this is the only workflow determined exclusively endurance. Luckily, the arrangement lends itself to recording from the top down. This places strenuous parts first with horns 1-2 being the sopranos, and bass parts such as horns 9-10 at the end. In the middle of the scoring horns 6-8 trade off registers. An example is on the following page.



Score example 15: Part construction of Hallelujah. Horn 6 trades register roles with horn 8 in bar 106.
Leonard Cohen, Pentatonix, Jeff Buckley and Jacob White, *Hallelujah* (publicly accessible), 5.

Recording from the top down also placed horns 6-8 in middle of my recording workload. This was helpful as I did not overtax any register for too long. This is a logical, well written work for its context, but most of the time planning workflow is never this straightforward.

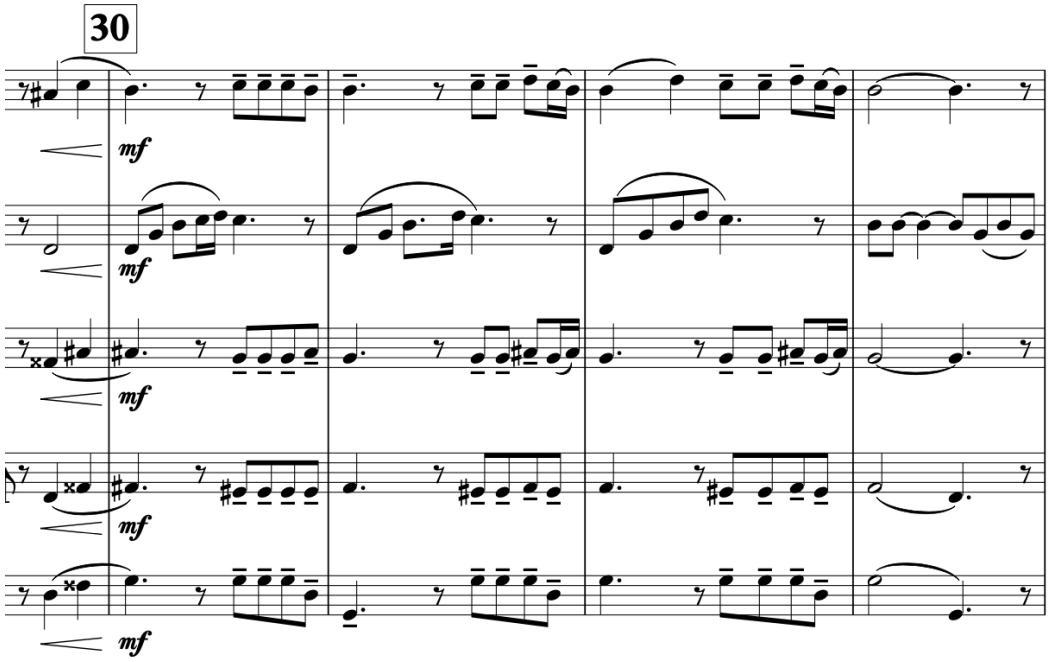
1.6. Elvis Presley/Pentatonix/Jacob White: *Can't Help Falling in Love*

Instrumentation: Five horns

This workflow is basically recorded from the top down, but the melody is exclusive to the second horn. As such, the workflow reflects a subtle change:

<u>Horn 2 – Horn 1 – Horn 3 – Horn 4 – Horn 5</u>

This order lets the second horn shape the line. After completion, horn 1 can then set style or shape, leading the ensemble when horn 2 is less active. This surfaces in measure 30.



Score example 16: First horn leads the ensemble as a group, responding to the second horn soloist.
Elvis Presley, Pentatonix, and Jacob White, *Can't Help Falling in Love* (publicly accessible), 2.

Georges Bizet/Kerry Turner: Selections from *Carmen* for four horns

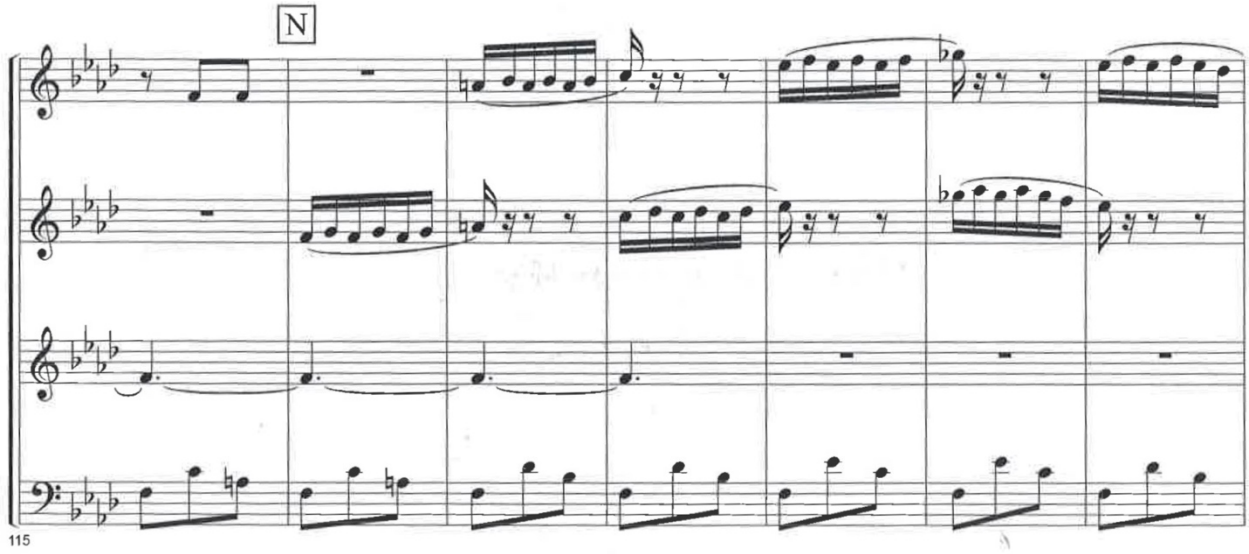
Instrumentation: Four horns

Kerry Turner's *Selections from Carmen* is derived from a previous work that's best known from the Berlin Horns' Album, "Opera!" This is the only arrangement on this list that is a reduction, condensing the well-known horn octet into a quartet. Turner maintains the integrity of his original score, condensing many staggered lines from his octet into lines twice the length for each horn in the quartet. This creates a powerful arrangement for four horns, but one with minimal rest and a frequent use of extreme registers.

1.7. Movement 1: Entr'acte

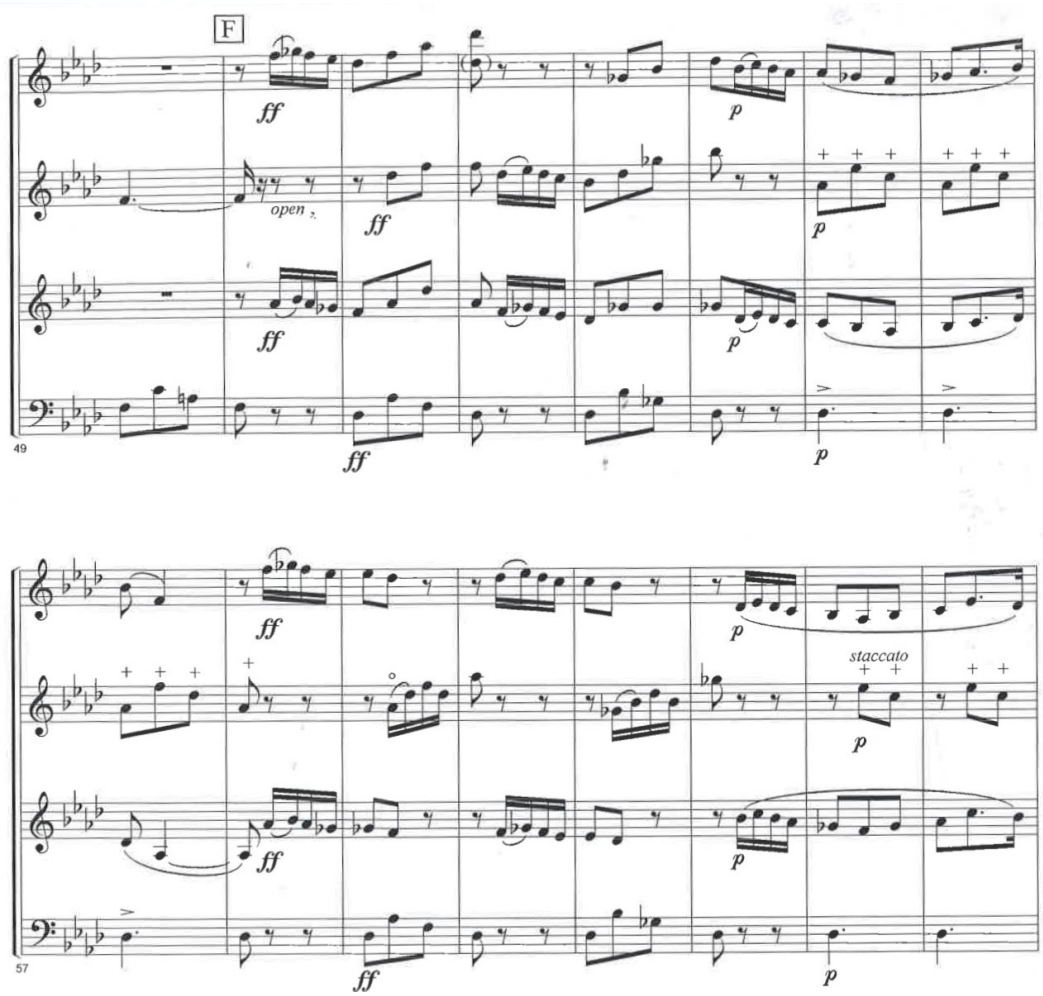
Workflow: Horn 4- Horn 1- Horn 3- Horn 2

The workflow in movement one was the easiest to decide. Horn 4 maintains the pulse and leads tempo changes with its constant eighth notes. It was a logical choice to record this first.



Score example 17: Fourth horn maintains the pulse at the eighth note level throughout the work.
Georges Bizet and Kerry Turner, *Selections from Carmen: I. Ent'racte* (Phoenix Music Publications), 6.

With the pulse locked down, I chose to record horn 1 second as it contains a vast amount of solo material. Horn 3 regularly plays in harmony with horn 1 and was recorded third. Horn 2 came last due its acrobatic stopped horn passages. As stopped passages often speak late and are difficult to tune, I felt it necessary to record the rest of the ensemble first to make sure the rhythmic and pitch integrity of the 2nd horn were intact. The role of each part is seen on the following page:



Score example 18: Roles of the quartet: Fourth horn- pulse. Third horn - assisting melody. Second horn- stopped passages and responsorial figures (stopped passages are marked with a +). First horn- lead.
Georges Bizet and Kerry Turner, *Selections from Carmen: I. Ent'racte* (Phoenix Music Publications), 4.

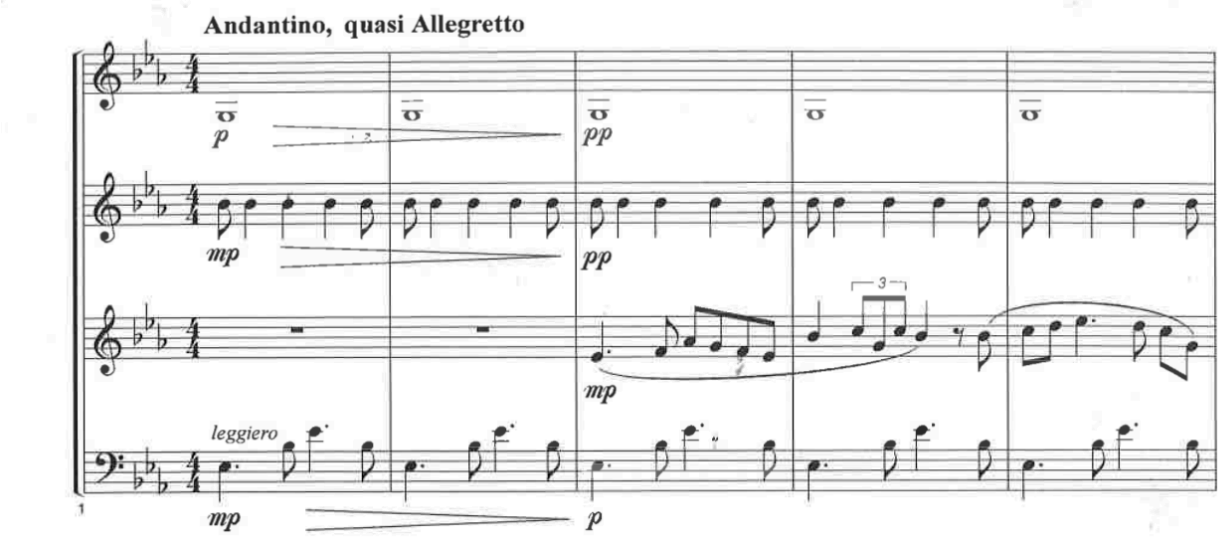
1.8. Movement 2: Intermezzo

This workflow requires a different approach from previously mentioned workflows. This workflow is divided into four sections. The leader of each section of music either leads a gradual tempo change, or contains a harmonic pedal that I used for intonation. The rest of the workflow follows from this.

Section 1 (mm. 1-13)

Horn 3- Horn 4- Horn 2- Horn 1

Horn 3 opens this movement with a famous melody. I've opted to record it first to help pace *ritardando* lines and allow myself some freedom within the click track to make this line a bit less metronomic. Horn 4 contains a pedal Ab bass line and was recorded next to help horns 2 and 1 with intonation. Horn 2 has many 5ths with the Ab drone and this came third. Horn 1 gently fills in the major third between horn 4 and 2 in a middle register. With the melody and fifths in place, the major thirds in horn 1 were easier and more effective to place.

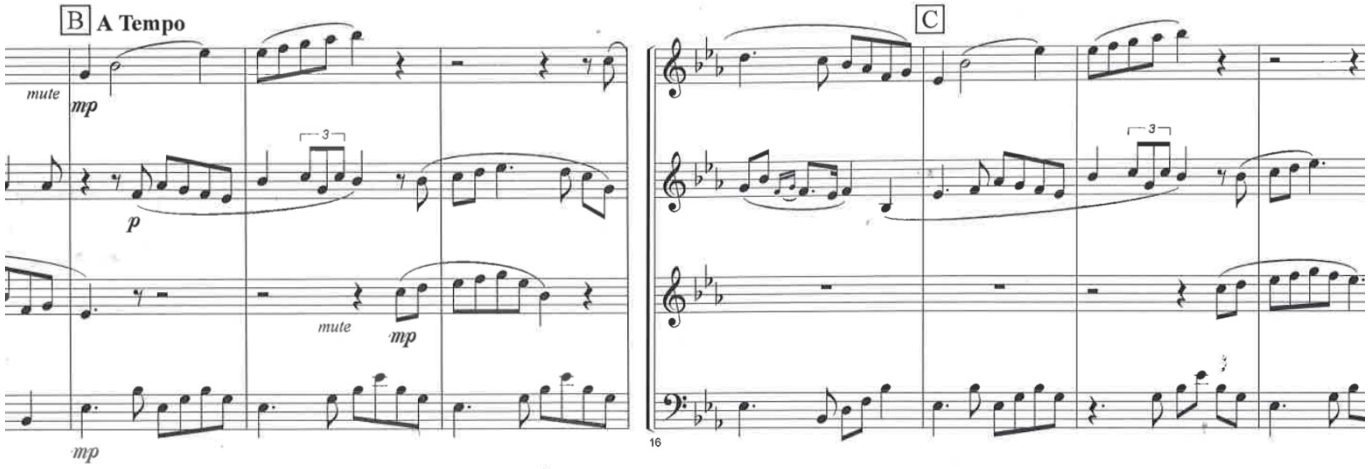


Score example 19: Second movement opening and recording order. Third horn- solo. Fourth horn- roots of Ab major. Second horn- 5th of Ab major. First horn- whole notes, 3rd of Ab major. Georges Bizet and Kerry Turner, *Selections from Carmen: III. Intermezzo* (Phoenix Music Publications), 13.

Section 2 (mm. 13-24)

Horn 2- Horn 4- Horn 1- Horn 3

While the themes in this section are identical to the first, Turner writes a slightly busier texture in the second section. A change in workflow is required to accommodate role trading in the score. In this section, horn 2 has the melody, horn 4 stays on the bass but is more active, horn 1 contains many 5ths (written Bb), and horn 3 responds briefly around the major third (written G).

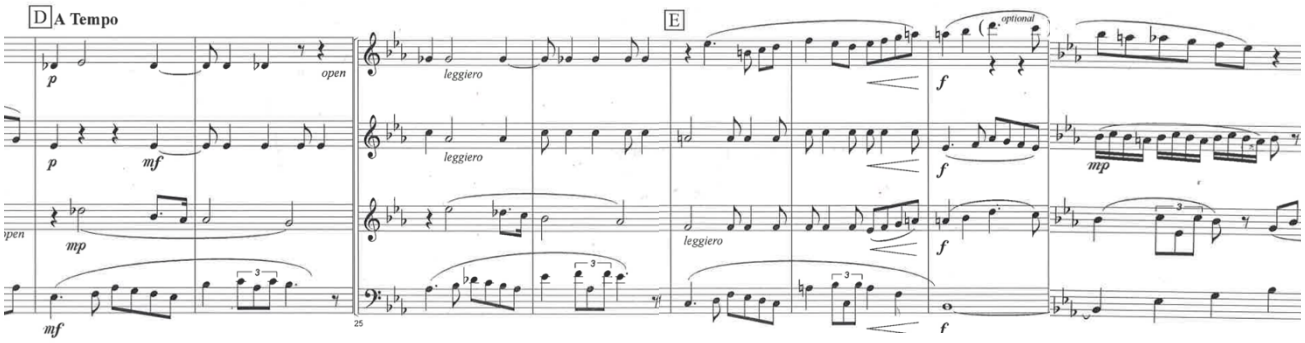


Score example 20: Horn 2- solo. Horn 4-bass (developed). Horn 1-5ths (developed). Horn 3- responses around the 3rd (brief). Georges Bizet and Kerry Turner, *Selections from Carmen: III. Intermezzo* (Phoenix Music Publications), 13 and 14.

Section 3 (mm.25-34)

Horn 4- Horn 3- Horn 2- Horn 1

Section 3 is the most harmonically complex section of the movement. Horn 4 not only has the melody, but also emphasizes different harmonic flavors as the melody moved upward in each phrase. Horn 3 then introduces a new countermelody and was recorded second. Horn 2 follows, making a trio of support for the soprano lines in horn 1, ascending to a high concert G.

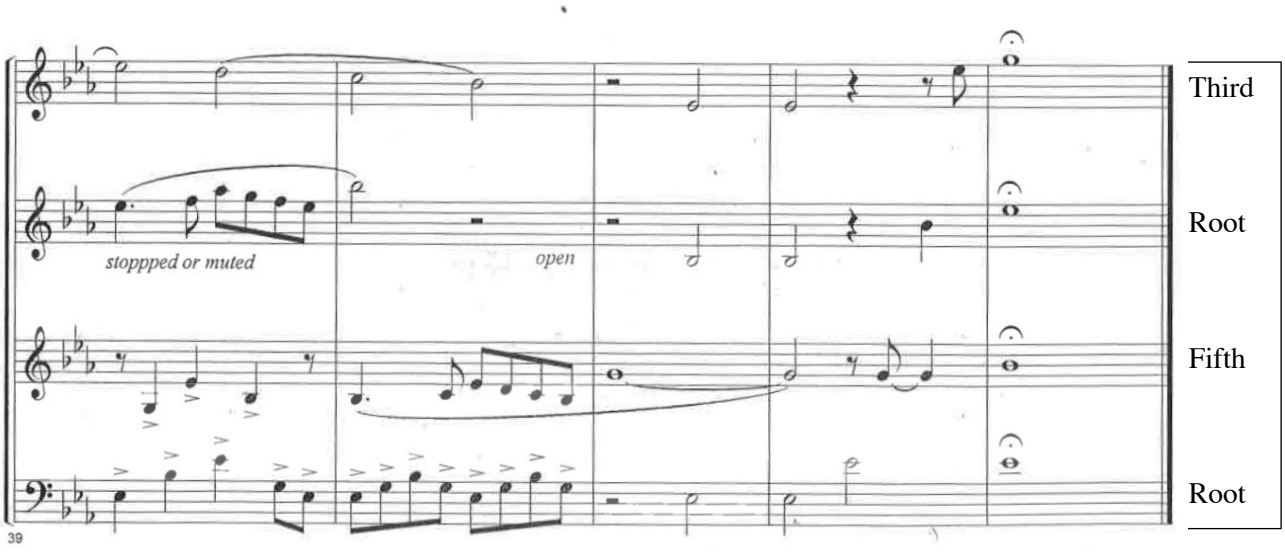


Score example 21. Fourth horn solo. Third horn counter melody. Second horn accompaniment. First horn high register. Georges Bizet and Kerry Turner, *Selections from Carmen: III. Intermezzo* (Phoenix Music Publications), 14-15.

Section 4 (final 7 bars)

Horn 4- Horn 2- Horn 3- Horn 1

I began by recording horn 4 to ground the ensemble in Ab major. The order of horns 1-3 is influenced by the last measure and is seen in the picture below. Horn 4 and 2 have the roots of Ab major, 3 has the fifth (Eb), and 1 has the third (C) placed in a high register. Tuning the octave Ab was a logical place to start, then fifth, and lastly the third.



Score example 21. The spelling of the last measure dictates the workflow. Georges Bizet and Kerry Turner, *Selections from Carmen: III. Intermezzo* (Phoenix Music Publications), 15.

1.9. Movement 4: Chanson

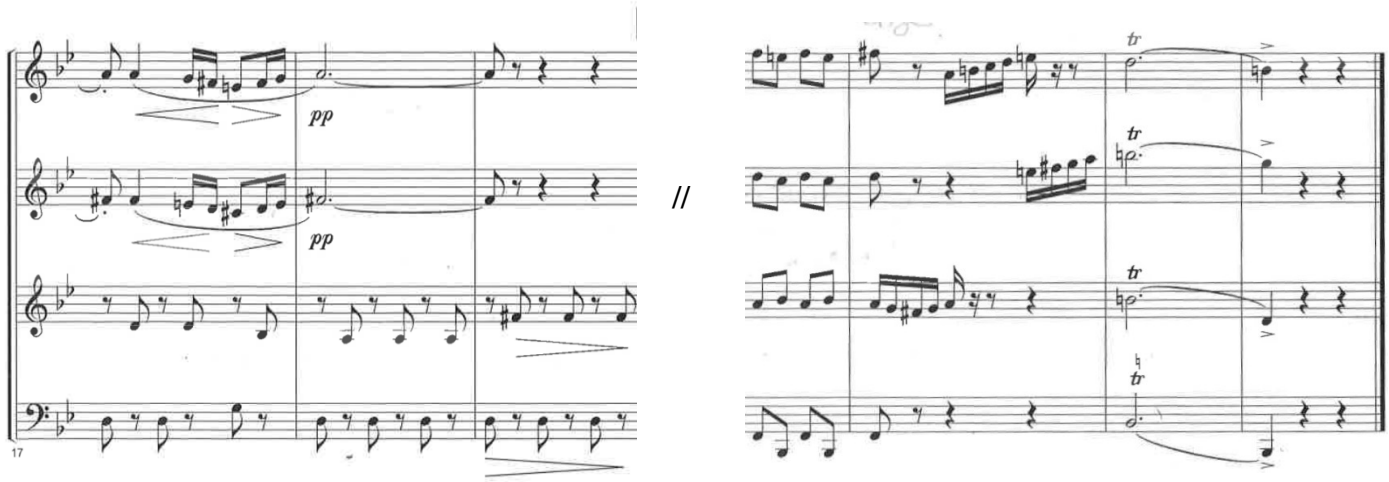
This workflow takes an order that involves splitting second horn into segments:

Horn 4 – Horn 2 (for tempo changes) – Horn 1- Horn 2 (remaining) - Horn 3

I recorded horn 4 first as it has an eighth note bass line that grounds the work harmonically and maintains the pulse, like the first movement. Horn 2 sets up every tempo change by briefly taking the motor rhythm from in horn 4 and these small sections were recorded after fourth horn to complete the motor for the entire movement before adding further parts.

After a rhythmic flow was established, horn 1 and 3 were layered on top. I chose horn 1 first as it sets the style of each new section with solo lines. Horn 3 simply followed suit with style, and finally the remainder of horn 2 filled in the holes. Like most of Turner's writing, the first three horn parts trade roles regularly, but have deliberate jobs such as leading tempo changes (horn 2) or leading new material (horn 1). While one could argue that the remaining part of horn 2 or horn 3 could be recorded in any order, pitch considerations motivated me to record horn 2 last. This part often cadences on the thirds of chords: the third, needing to be 14 cents flat, is often difficult to place well without a root and fifth that are in tune. As such, I've opted to build a full foundation before adding the rest of horn 2 due to these considerations.

Two examples are below:



Score examples 21 and 22: Harmonic considerations for second horn (note high written B in penultimate measure). Georges Bizet and Kerry Turner, *Selections from Carmen: IV. Chanson* (Phoenix Music Publications), 17 and 24.

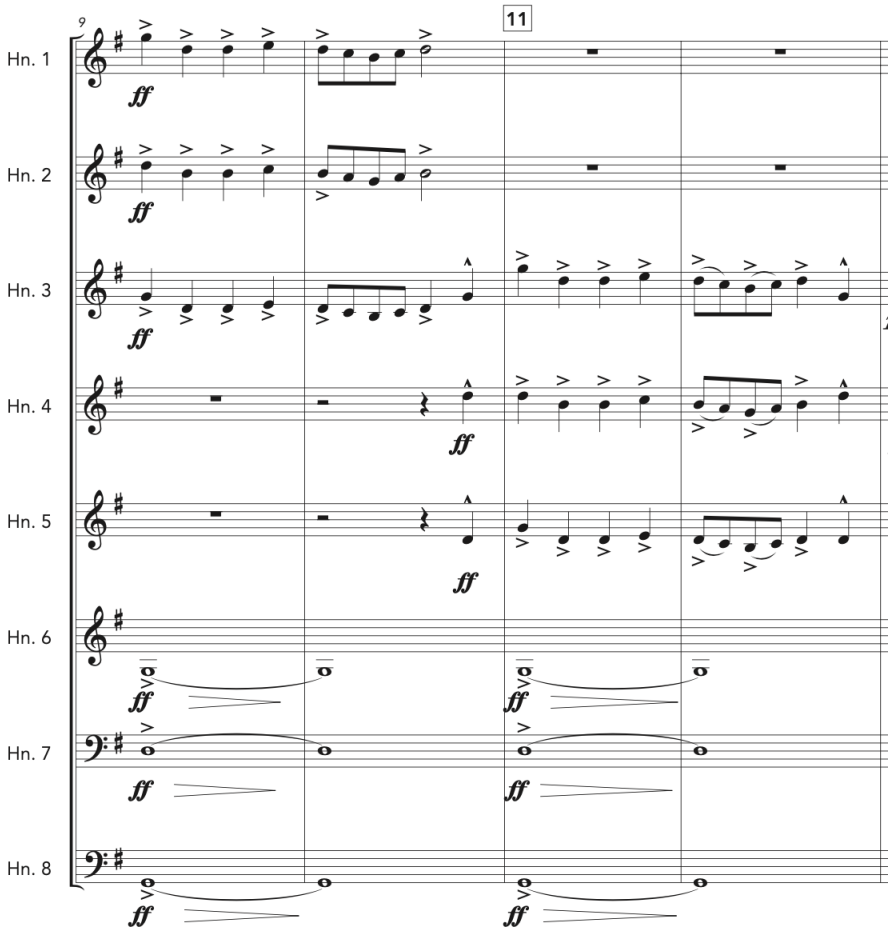
Carl Orff/Frank Leonard Starobin: Selections from *Carmina Burana*

Instrumentation: Eight (or nine) horns

1.10. Movement 1: Were Die Werlt Alle Min

Order: Horn 3 - Horn 4 – Horn 5 – Horn 8 – Horn 7 – Horn 6 – Horn 1 – Horn 2

This exciting movement features a simple call and response style fanfare with minimal harmonic twists, making it straightforward to record. As most of this work involves trading off repeated material, I used the part that has the most material as an anchor and recorded from there. Horn 3 is that part and is intelligently used as a timbral glue between two trios and a quartet of horns, within the octet. The trios are horns 3/2/1 and 3/4/5, and the horn quartet is 3/4/7/8. With this construction, the only horn part horn 3 isn't paired with is horn 6. For variety, I decided to record horn 6 in the middle of the workflow to keep my brain refreshed.

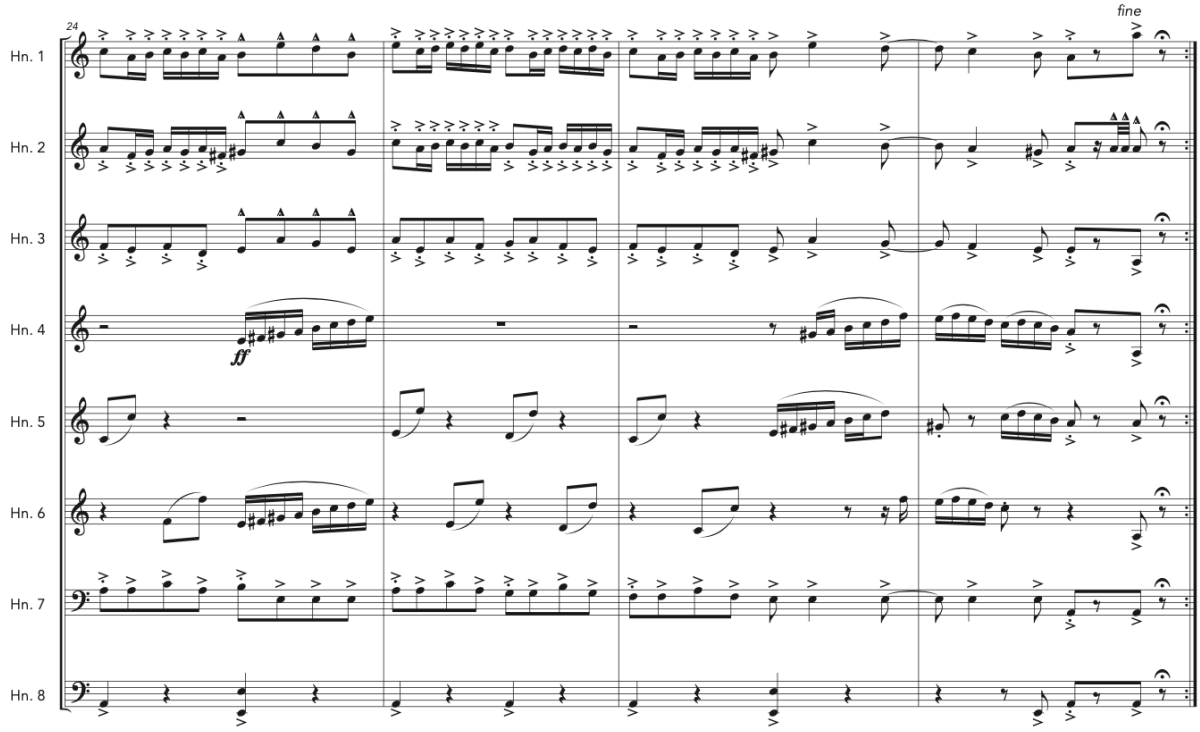


Score example 23: Third horn connecting the timbral glue between two trios of horns (1/2/3 and 3/4/5). Carl Orff and Frank Starobin, *Selections from Carmina Burana: 1. Were Die Werlt Alle Min* (unpublished), 2.

1.11. Movement 2: Fortuna Plango Vulnera

Horn 8 - Horn 7 – Horn 4 – Horn 5 – Horn 6 – Horn 3 – Horn 2 – Horn 1

Most of this movement, like many others in *Carmina Burana,* features a singable melody over straightforward harmonic changes and drones. I recorded horns 7 and 8 first as they provide this drone for most of the movement. Horns 4, 5, and 6 came second and they are grouped as a trio, staggering technical passages throughout. I recorded horns 3, 2, and 1 last. These three top off the work by presenting the opening melody in thirds, and contain stopped trio interjections later in the work. They go on to end the movement as a group, scored with technical fireworks representing the trumpet lines in the original score.



Score example 24: Three groupings of horns (horns 1/2/3, 4/5/6, 7/8) complete the octet. Carl Orff and Frank Starobin, *Selections from Carmina Burana: 2. Fortuna Plango Vulnera (*unpublished), 5.

1.12. Movement 6: O Fortuna Imperatrix Mundi

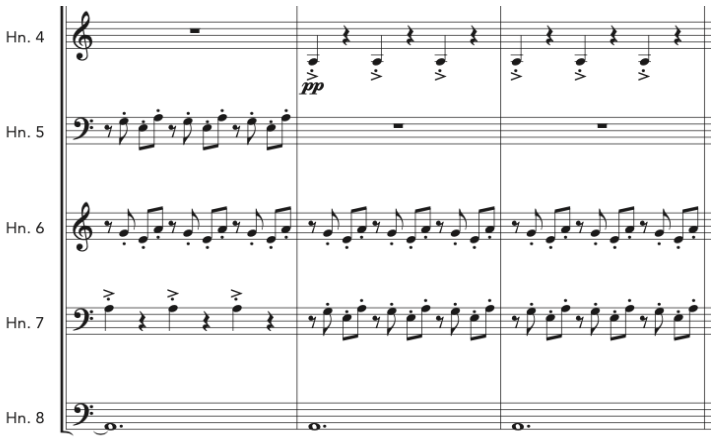
This famous movement from *Carmina Burana* features a repeated singable melody, a rhythmic ostinato, and a concert D drone that lasts from measure 4 to the final bar. At first, this movement was recorded once from the bottom up, and came out quite unstable in pitch. Like the Holst *Chaconne*, this movement needed a more stable sense of pitch that was more exclusive to one track for continuity.

As an experiment, I recorded the movement again with the concert D drones in one track. This tracked was just labeled "drone." Once this was complete, I dragged the drones into their respective measures in each horn part. As this was established, the workflow took the following shape and showed itself in two distinct groups:

<u>Second group: Horn 8 – Horn 5 – Horn 7 – Horn 4</u>

<u>Third group: Horn 6 – Horn 2 – Horn 3 – Horn 1</u>

The rest of the workflow is produced based on what part regularly supports the drone. Horn 8 has a lot of drones and supportive material, so this was a logical place to start. The first group of horns 8, 5, 7, and 4 is influenced by this idea. An example on how this group demands stability can be observed in measure 8:



Score example 25: Horn 8 drone. Horn 7 at the octave (passing to horn 4). Horn 5 contains 8th notes emphasizing the drone up an octave (that pass to horn 7). Carl Orff and Frank Starobin, *Selections from Carmina Burana: VI. O Fortuna Imperatrix Mundi* (unpublished), 13.

Horns 6, 2, 3, and 1 had more involved material and loud muted passages than the other parts. I recorded these parts last to gauge how loud the muted passages had to be after the open horns were recorded. Additionally, using the more stable pitch center the open horn provides helped me slot the more unpredictable pitch tendences of the muted horn.

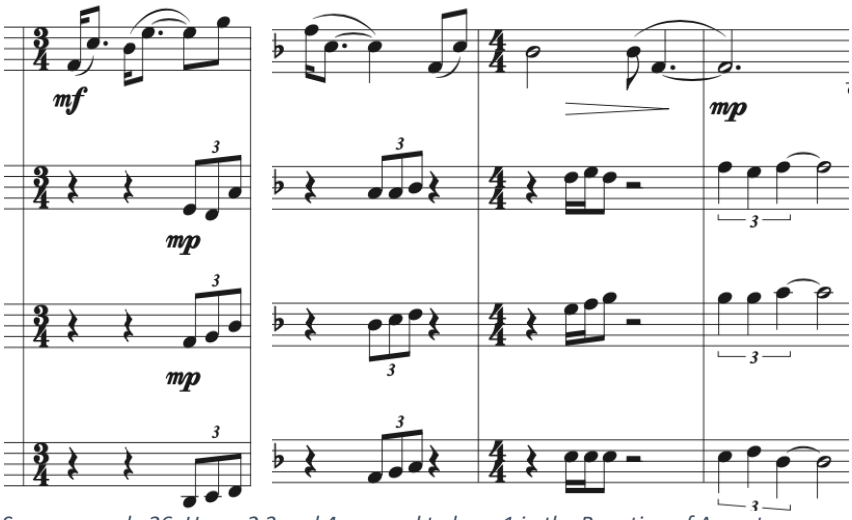
1.13. Wayne Lu: *Ascent*: *Dedicated to Devin Cobleigh-Morrison*

Instrumentation: Four horns

This new work for horn quartet features various tone clusters over a staccato melody that highlights each horn part distinctly. Horn 1 starts the work with the melody and passes the lines down through the quartet. I chose to format the workflow in an SATB manner for rhythmic integrity and clarity of articulation. The high register is often easier to achieve clarity on, so I started from the top to create a clear sound and matched it accordingly.

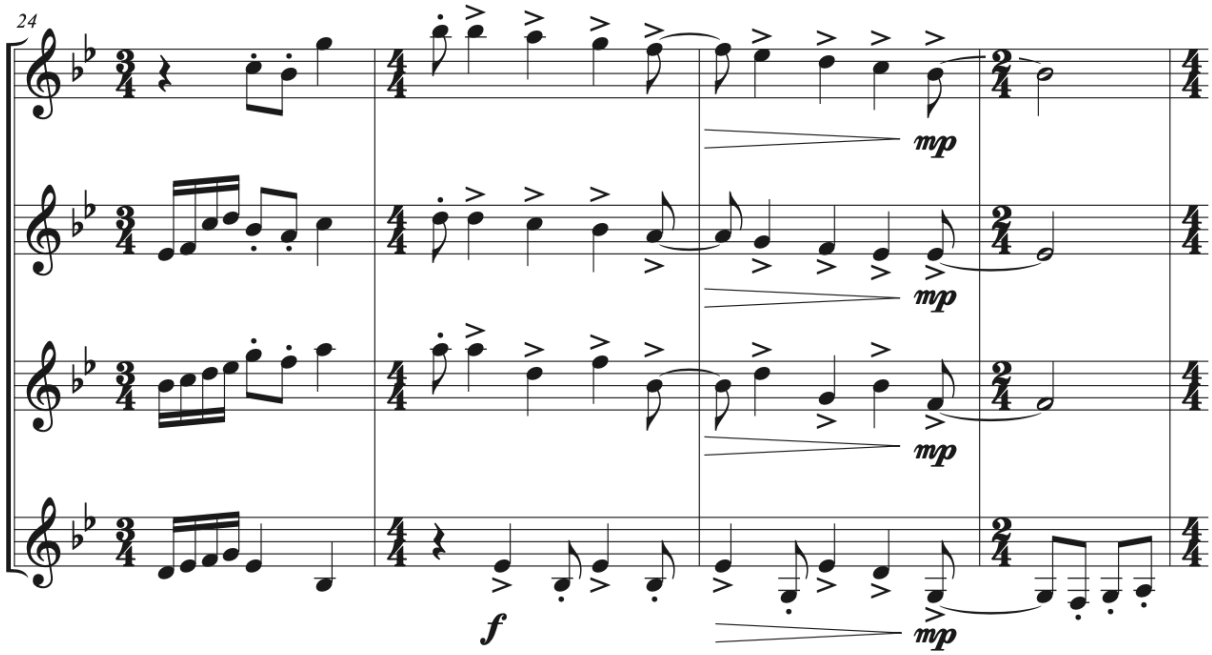
<u>Horn 1 – Horn 2 – Horn 3 -Horn 4</u>

This workflow also leaves horn 1 expressive freedom in the B section as the solo voice. Horns 2-4 play off this free line as a trio in time. An example is below:



Score example 26: Horns 2 3 and 4 respond to horn 1 in the B section of Ascent.
Wayne Lu, *Ascent* (Veritas Musica Publishing), 9.

In many cases, horn 4 briefly separates from the texture in loud passages. Having recorded horns 1-3, I had a clear picture of how to balance these parts when horn four veers away from the quartet.



Score example 27: Horn 4 briefly is displaced from the quartet. Wayne Lu, *Ascent* (Veritas Musica Publishing), 4.

1.14. Billie Eilish/Frank Starobin: *When the Party's Over*

Instrumentation: Four horns

Like the Holst, *When the Party's Over* features repetitive bass figures and harmonies. The bass line is exclusive to horn 4, and the melody trades off through the rest of the parts. There is, however, a section where two roles trade distinctly. I recorded in two halves to accommodate this:

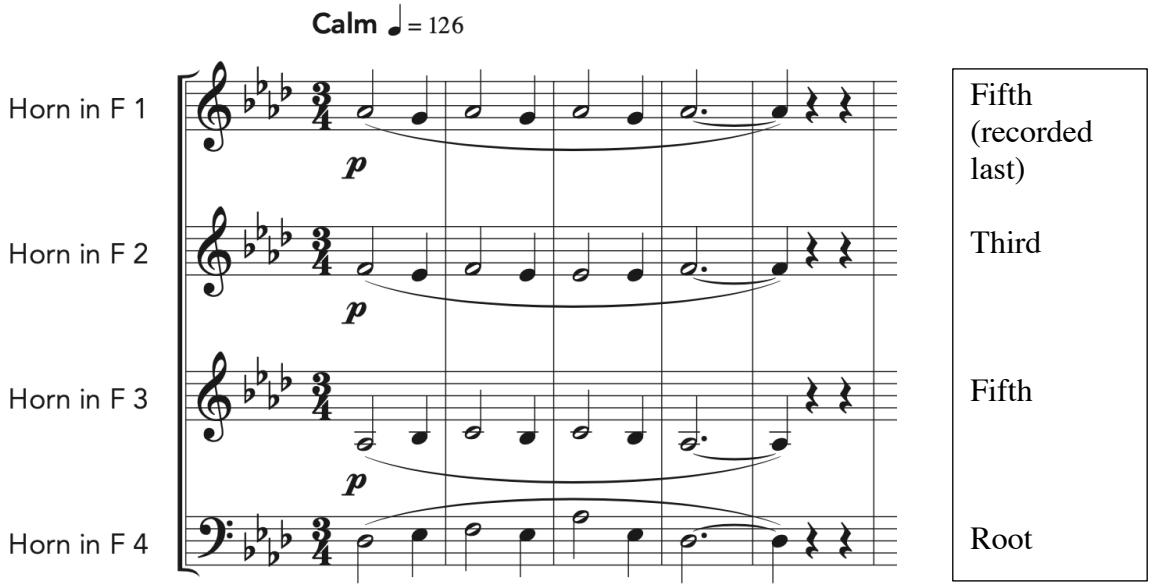
Horn 4 – all

First half (mm.1-54): Horn 3 – Horn 2 –

Second half (mm.54- end): Horn 2 –Horn 3

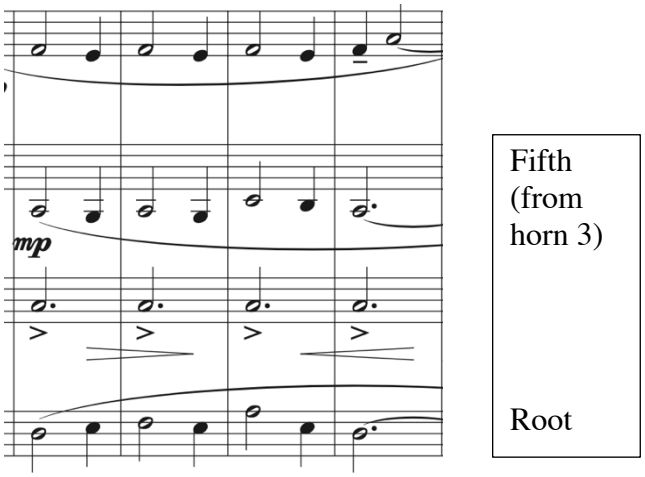
Horn 1 -all

In the first half of the work, horn 3 hovers around the fifth of each chord. With intonation, a concern, I decided to record the bass in horn 4 and then horn 3 to secure the fifths. Horn 2 can be placed more accurately, following up with the major third. Horn 1 floats on top.



Score example 28: The opening motive, repeated throughout the work. Billie Eilish and Frank Starobin, *When the Party's Over* (sheetmusicplus), 1.

The second half of the work features horn 3, leaving horn 2 to fill its previous role. An example of this role trade is in mm.59.



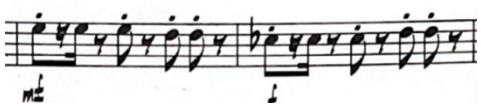
Score example 29: Horn 3's previous role is now scored in horn 2. Billie Eilish and Frank Starobin, *When the Party's Over* (sheetmusicplus), 2.

1.15. Arkady Shilkloper/Steve Schaugnecy: *Not Yet*

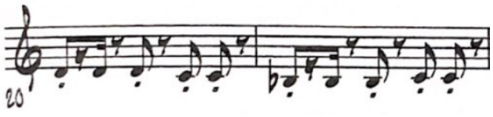
Instrumentation: Four Horns

Order: Horn 4 – Horn 2 - Horn 3 - Horn 1

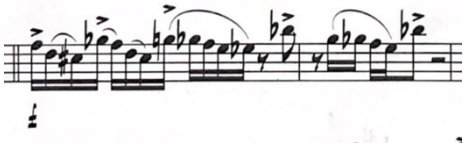
This jazz-inspired horn quartet puts horn 4 on the bass groove for the entire piece. As there is no percussion or keyboard in this jazz work, I recorded the groove first. I then recorded horn 2, as that part adds some harmonic color to the established bass grove. Horns 3 and then 1 were done last. They engage in melodic conversation and intertwine themselves with technical and demanding rhythmic passages, complementing the off-kilter groove recorded previously.



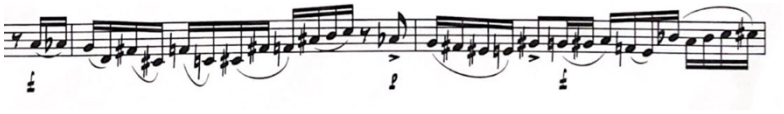
Score example 30: 4th horn groove (bass clef)



30B. 2nd horn groove (treble clef)



Score example 31: 1st horn material. (treble clef)



31B. 3rd horn material (treble clef)

Arkady Shikloper and Steve Schaugnecy, Not Yet (Phoenix Music Publications).

1.16. Vernon Duke/Yip Harburg/Wild Bill Davis/Trans. Rob Lowden: *April in Paris*

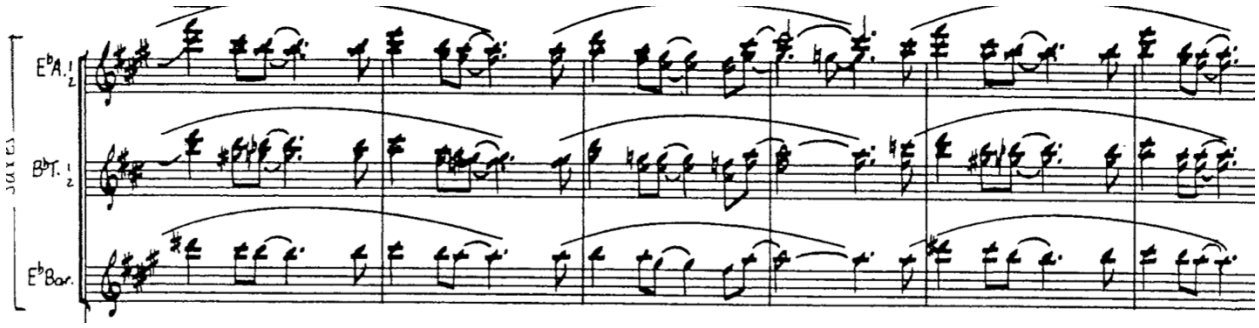
Instrumentation: 4 Trumpets, 2 Alto Saxophones, 2 Tenor Saxophones, Baritone Saxophone, 3 Trombones, Bass, Keyboard, Drum set. *All saxophone parts played on horn*.

The workflow for this was inspired the Jazz Ensemble class I took in 2020 led by Professors Wallmann, Dominguez, and Thimmig, and Nicholas Moran. The drum set, keyboard, and bass parts were established first and performed by Matt Anderson, Luke Leavitt, and Charles (Charlie) Palm respectively. This is to establish a steady pulse, harmonic foundation, and grove. The trombone tracks were then recorded by Cole Bartels and emphasize the bass sound for this

piece. Charlie Palm then recorded the trumpet parts to match the style from the trombones, and to set the melodic style, articulation, and sound. I then recorded the saxophone parts not only to follow the previously set flavors, but to use the ensemble as a cushion to float in what is an extreme register for the horn when recording Alto 1. The saxophone parts were recorded in the following order:

<u>Alto 1 – Alto 2 – Baritone – Tenor 2 – Tenor 1</u>

The reason for this is both physical and musical. I recorded the high alto parts first as they are the leaders of the saxophone family, and the saxophones tend to be their own unit for a large part of the work. This choice was also made because the alto parts transpose to the horn being in a <u>very</u> high, sustained register.



Score example 32: High register lines (to transpose Eb Alto Saxophone to F horn, transpose notes down a whole step and remove two sharps (#) from the current key signature. Example: first printed note in Alto 1 is a high E natural. To transpose Tenor Saxophone to F horn, transpose down a perfect fifth and remove one sharp from the key signature. Example: first printed note of tenor 1 is a G natural). To transpose Baritone Saxophone to F horn, transpose notes down a 9th and remove two sharps from the key signature. Example: first printed note is a C# in the staff). Vernon Duke and Rob Lowden, *April in Paris* (Warner Bros. Inc), 9.

I recorded the baritone saxophone part to relieve facial muscles and get a more direct sound to match the trombones. Lastly, I recorded the tenor saxophone pair from the bottom up.

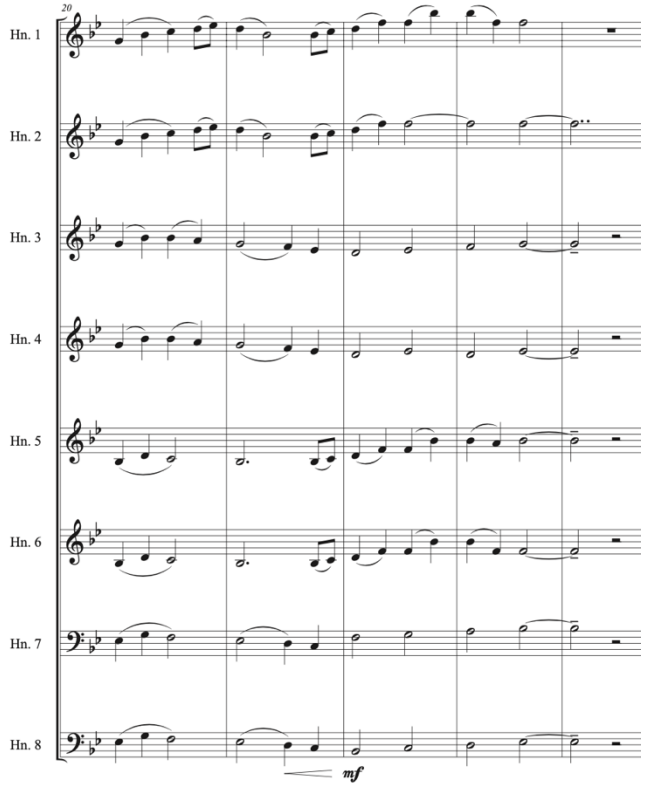
1.17. Frank Ticheli/Devin Cobleigh-Morrison: Earth Song

Instrumentation: 8 horns

This famous work by Frank Ticheli takes on two forms: *Earth Song* is composed for 8 voices in an SATB choir, and a heavily expanded version titled *Sanctuary* is scored for advanced wind band. Ticheli assigns two voices to each part in the SATB choir, resulting in many doublings. As such, careful attention to the perfect unison is vital. This work is full of harmonic parallelism, and to help with intonation the root of each moving harmony needed to be recorded first. The work order follows:

<u>Horn 8 – Horn 7 – Horn 6 – Horn 5 – Horn 4 – Horn 3 – Horn 2 – Horn 1</u>

In this adaption for horns, horns 7-8 act as the baritones, 5-6 as the tenors, and so forth. This respects Ticheli's original request of two voices per group in the SATB instrumentation. Horns 1-2 rest on top of the ensemble as soloists for most of the work. An example is below.



Score example 33: *Horns 1 and 2 float above a sustained ensemble texture.* Frank Ticheli and Devin Cobleigh-Morrison, *Earth Song* (unpublished), 5.

2. Pedagogical Use of Recording

This journey in multitracking and production has changed the way I practice and teach in the following ways:

A. Prioritizing sound, comfort, and musical plan

Without a sound that's easily matched, a multitrack project goes from enjoyable to difficult. Additionally, crafting a musical plan with direction and style is paramount for the other parts to follow a large musical picture. To me, this combination of sound, comfort, and executing a plan can be summarized as *conviction*.

B. Gaining Benefits from Playing with a Metronome/Click Track

As musicians, we always hear "play with a metronome!" Playing with a click track has shown me tendencies in rhythm I didn't know I had, such as always playing just behind the beat. The benefit of changing notes truly in time, at the same time as these around you, brings that much more uniformity to a strong ensemble. Playing with a click track strengthened my ability to subdivide while hyper focusing on other musical concepts such as changing my oral cavity faster and more immediately, thus playing more efficiently. With a this newly found efficiency, it is easier for me to stress musical flow and worry less about the body. I have made this a higher priority in my teaching and playing.

C. Further Understanding Instrumental Tendencies

During the recording and mixing process, I was able to keenly observe the tendencies of the horn in a large ensemble. Trends I've encountered include low horn speaking late, stopped and muted passages speaking even later, and how over-supporting the air in the upper register sounds flat and diffuse. I have taken these concepts into my personal ensemble playing. I am

more proactive with regard to this when I run sectionals for the University of Wisconsin-Madison's horn sections, when rehearsing a horn choir, or running a studio class.

D. Establishing a Good Relationship with the Recording Device

I care deeply about using a recording device as a fun and informative tool. Instead of using the microphone as an incriminator, teaching myself and students to use the device to enjoy the growth process by regular recording is important. This can be done by recording ensemble excerpts over the Acapella app with a friend or colleague. I'd like to use these means to get students excited to play for their worst critic, themselves, in hopes of fostering confidence and inform them of their own playing in a non-detrimental, musically driven way.

E. Developing the Inner Chameleon

This process has shined a light on the importance of adaptability in an ensemble. Growing what my old teacher, Randy Gardner, calls your "inner chameleon" to adjust to any circumstance is a vital skill to have as a working musician. It is my hope that by using a recording device, we can understand and embrace our own tendencies, and become responsive to them in our own playing, for example, anticipating being sharp on a concert G and bringing down the pitch slightly. This can be developed into understanding the tendencies of your colleagues around you, and how your personal tendencies work with theirs. By knowing ourselves, we can more easily listen to the sounds around us and be a better, quickly adaptable team player. This process is especially important in mixed ensembles like the wind quintet, in the final round of an audition, or in a professional engagement with minimal rehearsal.

Chapter Three: Basic Concepts of Mixing

1. Panning

"Panning is the process that positions an audio signal spatially between the stereo field created by two speakers."[8] By varying the intensity of a track in a specific speaker, we can trick ourselves into hearing the track in question on any side of the stereo field in varying intensities. In Logic Pro, panning is labeled with a plus or minus sign. The minus sign (-) means the track is shifted left, while the plus (+) sign shifts the track right. With this, +0 means a track is coming through both speakers equally, and can be heard from the center of the stereo field. I pan my mixes similarly to how a horn choir is arranged on stage, with the lowest part on the left:

Horn 8 – 7 – 6 – 5 – 4 – 3 – 2 – 1 — Assist (A1) (if applicable)

The panning in this setting can vary, but often looks like the following:

Horn 8 (-20) – 7th(-15) – 6th (-10) – 5th (-5) – 4th (+0) –3rd (+5) –2nd (+10) – 1st (+15) – A1(+20)

When panning, don't be afraid to pan tracks to the extremes of the stereo field. Using the LCR (left, center, right) option can be a good way to get comfortable with this.[9] As the name suggests, this function places tracks at the extremes of the stereo field. Using this to start mixing can be a helpful tool to avoid what is called narrow stereo spread, or in other words, a track not panned wide enough.

Something to consider: in horn ensemble, we face an issue in that our bell faces backwards. When panning a horn choir in the stereo field, the low horns could be perceived as too soft. The difference between a mixed track and live music is the direction of the bell: the low horns' bells will be facing outward toward the audience if the choir is seated in a semi-circle. As

[8] "Panning Music: How to Pan Tracks for a Wider Sound," LandR Mix Tips, YouTube, Created March 27, 2019. https://www.youtube.com/watch?v=xT1tQgqBWyU&t=5s
[9] Ibid.

such, I would advise incrementally increasing the volume of this track and tracks near it to emulate a sound that we would observe in person.

2. Equalization

Equalization (EQ) is a fundamental part of the mixing process. Hours can be spent adding or subtracting filters to achieve the sound you want, however, when it comes to EQ most engineers live by the phrase "less is more." There are many filters under this blanket term: [10]

High and Low Pass Filter- These filters can rule out unfocused low sounds or piercing high end resonance on the extremes of your spectrum.

Bell Filters- these are standard tools for boosting and cutting parts of the sound. This filter is a must for changing tone and contains many variables that can be manipulated (see below).

Shelving filters- these filters boost or cut all frequencies above or below corner frequencies (sounds on the outside edges of your stereo field). This filter is helpful for broad vast tonal changes in a mix.

Quality Filters (Q)- This filter controls how the size of a filter is used. A small Q filter will affect a small range of overtones and aid in a hyper selective boost or cut to the sound. A larger filter will result is a broader, less specific change to the sound being edited. This will show as the width of the EQ band pictured below.

(large band) **(small band)**[11]

[10] "EQ Explained in 4 Minutes: How to EQ For a Better Mix," LandR Mix Tips, YouTube, created January 24 2019. https://www.youtube.com/watch?v=34lHk6lfpkI&t=2s
[11] Ibid

Gain- Gain measures the amount of boost applied to your EQ. Measured in decibels, a gain with a positive number will indicate a boost in sound and a negative number will represent a cut in sound.

Frequency- this is the center of an EQ band's action, and its extreme shows the range and specificity of where boosting or cutting will occur. [12]

Making small changes to the sound will result is a purer sound than one heavily edited. For example, if you need more middle sounds of your track, consider boosting this brief spectrum of your EQ instead of lowering those around it.

3. Compression

"Audio Compression is the process of reducing a signals dynamic range. Compression should be used to strike a balance so that louder and quieter parts of the sound can be heard clearly." [13] There are multiple parts of a compressor, with two important parts being attack and release. These do not measure the sound, but rather the duration needed for the compressor to do its job on a given sound. When using the compressor, listen for dynamic clarity over timbre. Timbre can be adjusted with EQ (see above).

[12] "EQ Explained in 4 Minutes: How to EQ For a Better Mix," LandR Mix Tips, YouTube, created January 24 2019. https://www.youtube.com/watch?v=34lHk6lfpkI&t=2s
[13] "What is Audio Compression? How to Use a Compressor," LandR Mix Tips, YouTube, created August 16, 2018. https://www.youtube.com/watch?v=XtOadLDsccM

4. Reverb

Reverb can be described as a fading reflection of sound. Lengthy reverb can easily create a muddy mix, with lingering sounds clashing with upcoming chords or changes. On many DAWs, there are preset reverb options. Start here and slowly dial in effects to your liking. As with your EQ settings, less is more.[14]

[14]"How to Use Reverb: Basic Techniques and Settings," LandR Mix Tips, YouTube, Created November 1, 2018. https://www.youtube.com/watch?v=Bd7jdro-cqM

Chapter Four: Reflection to Action- Arrangements of My Own

I once read that, "An arrangement is a way of looking at a piece from several angles and carves away the excess to support what's already working."[15] While I agree with this statement, I strive for my scores to encompass educational aspects for the ensemble that I'm working with.

1. How Multitracking Works Changed my Arranging

Many hours of work were dedicated to score study, planning workflows, and performing every note of the recorded works in chapter 1. After studying these through the lens of a professor, arranger, performer, and mixer, I started to re-evaluate my own scores and launched new projects.

I started by studying my old work. I quickly observed the general range of the ensemble being too wide for too long. Parts were well balanced, staggered, and had the educational value that I strive for; but the package as a whole was too large too much of the time. As a growing arranger looking back, I observed that using a large range for a large portion of the work caused the music to lose its power, giving away too much too soon for too long. This comes from oversaturating the audience and players in a large soundscape for an extended duration. I have decided to only use extended ranges in the climaxes of my new works, or in places that absolutely require it.

Secondly, I wasn't using enough doubling in my work. While this can be fine, it also can create a thin sound and limit the players' places to breathe without sacrificing the music at hand. This can be particularly distracting in legato works, or those requiring a seamless wall of sound.

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[15] "The Art of Arranging a Song," Hyperbits Music, 2021. https://hyperbitsmusic.com/the-art-of-arranging-a-song/

Additionally, this can overtax a player by putting unreasonable demands on breath support and extended phrases when under pressure. This has also been evaluated and remedied.

The use of extended techniques such as hand stopping or longer muted passages has always been something I have avoided as a published arranger. After recording works of Frank Starobin and Kerry Turner, I made a conscious decision to include more passages with these techniques (when appropriate) in the works below. This has eased my uncertainty in writing muted passages and encouraged me to explore how colors of the muted horn pair with other timbres.

2. Personal Goals in Arranging

A. Equality. Endurance and Range Considerations: There is no secret that horn writing involves a different approach to that of a piano or string instrument. Requiring adequate rest, a horn choir should utilize proper distribution of workload and the skill of an arranger to condense the original work within a range that doesn't use excess highs or lows for a long period of the work. I aim for scores to be challenging, but not unreasonable and ideally workable on a large program. Each part contains an even work-to-rest distribution, so that each player receives a well-balanced and stimulating experience both in rehearsal and on the concert hall stage. If the work has repeated sections or places to omit music, this will be taken into consideration with the piece's previous demands on endurance.

B. Key Signature: While arranging technical works for horns, I guarantee that they key of the work is suited to the idiomatic valve changes the instrument demands. In other words, a work in E major might be moved to Eb major for horn choir. This is to eliminate

technical demands with valve changes, so technical passages can use alternate fingerings to flow faster and more effectively. Fingering suggestions are marked in my scores.

C. Staggered Passages: After looking at the key signature, I sift through demanding lines in a score to determine how to distribute them between players. It is my hope that dividing one line between musicians is less demanding on the body. I use this tool to ensure the performers are keeping their ears locked into where these lines are traveling within the ensemble.

The demands on maintaining a homogenous sound as lines weave through the ensemble aid in blending and matching skills. These are vital skills for musicians to have in the working world. Changes in line can occur during a register change, sequence, or repeated figure, or to aid in endurance considerations. Lines will shift to another player during an important harmonic change or at important parts of the phrase it is following.

D. Use of Mutes and Hand Stopping: The use of mutes and hand stopping are used to provide a contrast in timbre to the ensemble. In rare cases, I use mutes to provide extra security to the musicians in high, soft dynamics. I make sure that there is plenty of time to get mutes in and out of the bell. For hand stopping, this time is slightly reduced. Mutes can also be used to add an extra buzzy quality of a line if a muted horn is doubling an open horn line in unison.

E. Doubling: Doubling plays an important part in my scores, either giving support to dominant lines, or providing emphasis on particular chord tones to aid in ensemble intonation. For example, lines can be doubled at the octave to emphasize a broad melody, or in unison to let the players of the line relax into the larger sound without working too hard. Harmonically, I place an emphasis on the root and fifths of the chords, being careful

not to double the third or seventh of sustained sonorities. This helps eliminate pitch issues, as thirds and sevenths require a larger adjustment.

F. Trading Roles: As my scores require each musician to quickly move from one part to another (example: from melody to harmonic support), voice crossing and smooth transitions must be considered. I regularly look for places for parts to seamlessly move between roles in the ensemble by the smallest interval possible. It is my hope this will keep the performer feeling secure, not having to worry about excessive shifts in range and role within the ensemble on a regular basis.

These new and refined goals are reflected in the following scores, attached as separate documents. The three works present different styles of music and playing, and focus on the points mentioned previously.

2.1 Frank Ticheli: *Earth Song*

Instrumentation: 8 horns (or mass horn choir, doubling each part as needed)

Ticheli's *Earth Song* is my recent work to develop how I use doubling in my scoring. The work is written for 8 horns, written in pairs of two. The first and second horn are the soprano voice, third and fourth are the tenor, and so on. While there are brief moments where the score divides 8 ways, giving each part its respective voice, the application of doubling comes in handy mostly in the recording process for the work.

Because I recorded the work from horn 8 to horn 1, I explored how doubled lower voices affect the sound of a singular top voice above it. For example, I could hear how doubling of the bass voice (horns 7 and 8) effects the sound of a singular tenor voice (horn 6, without the

doubling of horn 5), and so on. When the work was finished, I could then, on playback, mute one or two voices of the 8 and hear first-hand how the lack of doubling either helps or hinders the timbre of the ensemble.

Part of this experiment shows on the first few pages of the score. As the ensemble slowly weaves its way through the work's introduction, each pair of horns slowly is reduced to one on a part. The attached two images show this process in 2 measure increments:

- Bars 1-2: Tutti
- Bars 3-4: 7 horns (horn 6 out)
- Bars 5-6: 6 horns (horns 5 and 4 out)
- Bars 7-8: 5 horns (horns 1, 3, and 6 out)

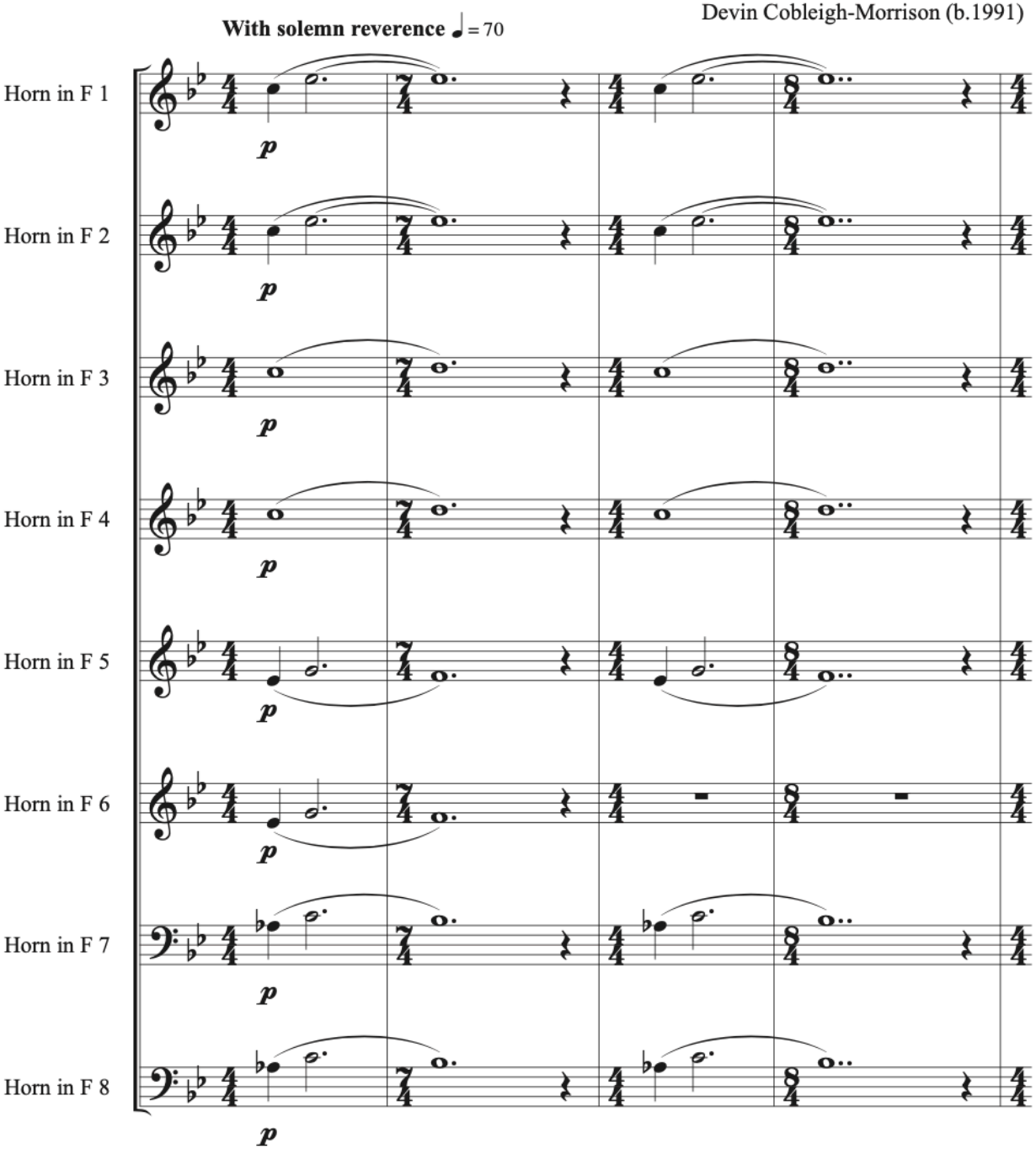
The end texture results in 1 soprano, 1 alto, 1 tenor, and 2 bass voices (*divisi*) on the last iteration of the introductory material. The musical context follows on the next two pages.

Score

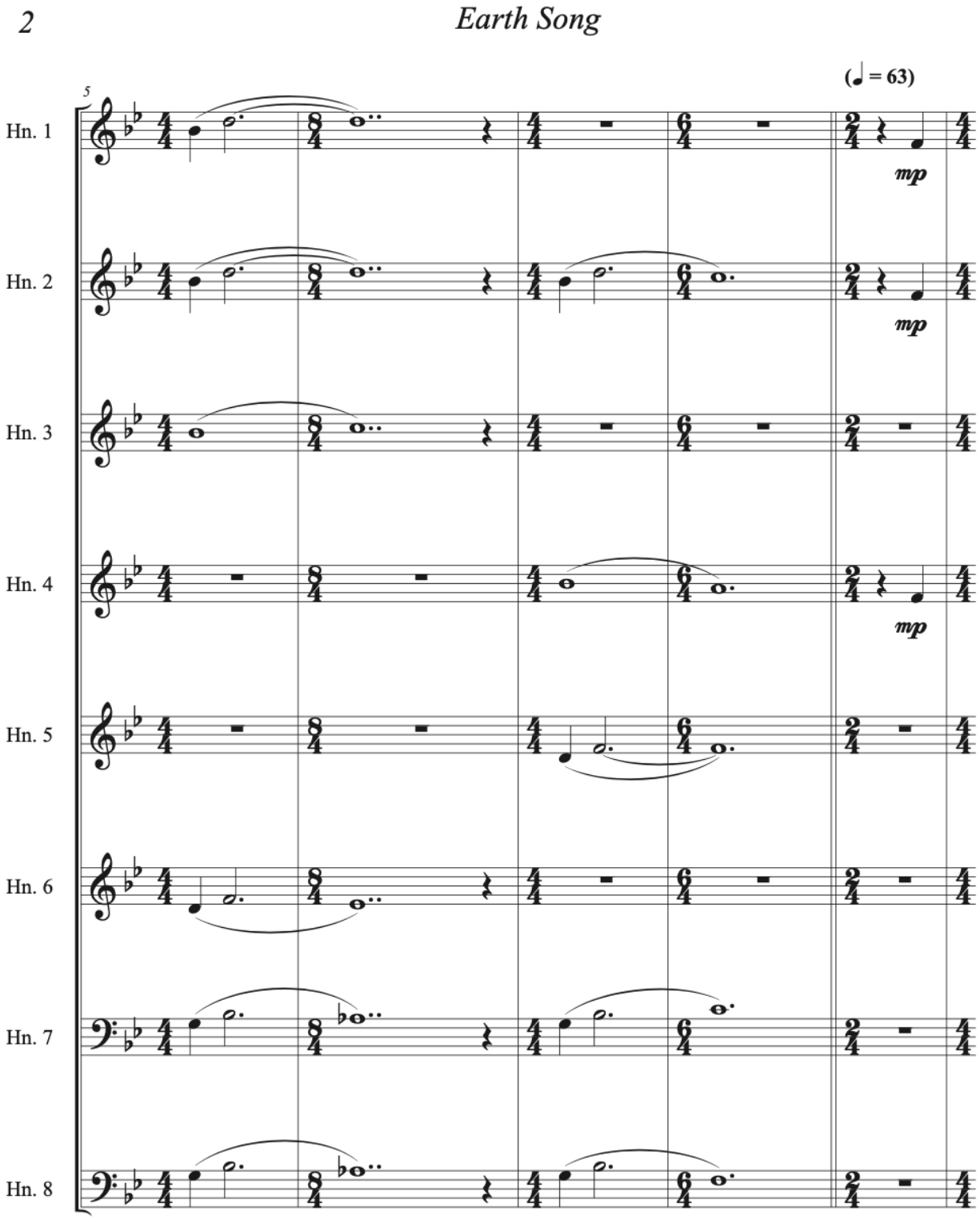
Earth Song

If this work is used for a mass horn choir, double all passages except the muted sections in measures 26-35.

Frank Ticheli (b.1958)
Devin Cobleigh-Morrison (b.1991)



Score Example 34: Frank Ticheli and Devin Cobleigh-Morrison, *Earth Song* (unpublished), 1.



Score Example 35: Frank Ticheli and Devin Cobleigh-Morrison, *Earth Song* (unpublished), 2.

2.2 Johannes Brahms: *Variations on a Theme by Haydn*, Op.56a

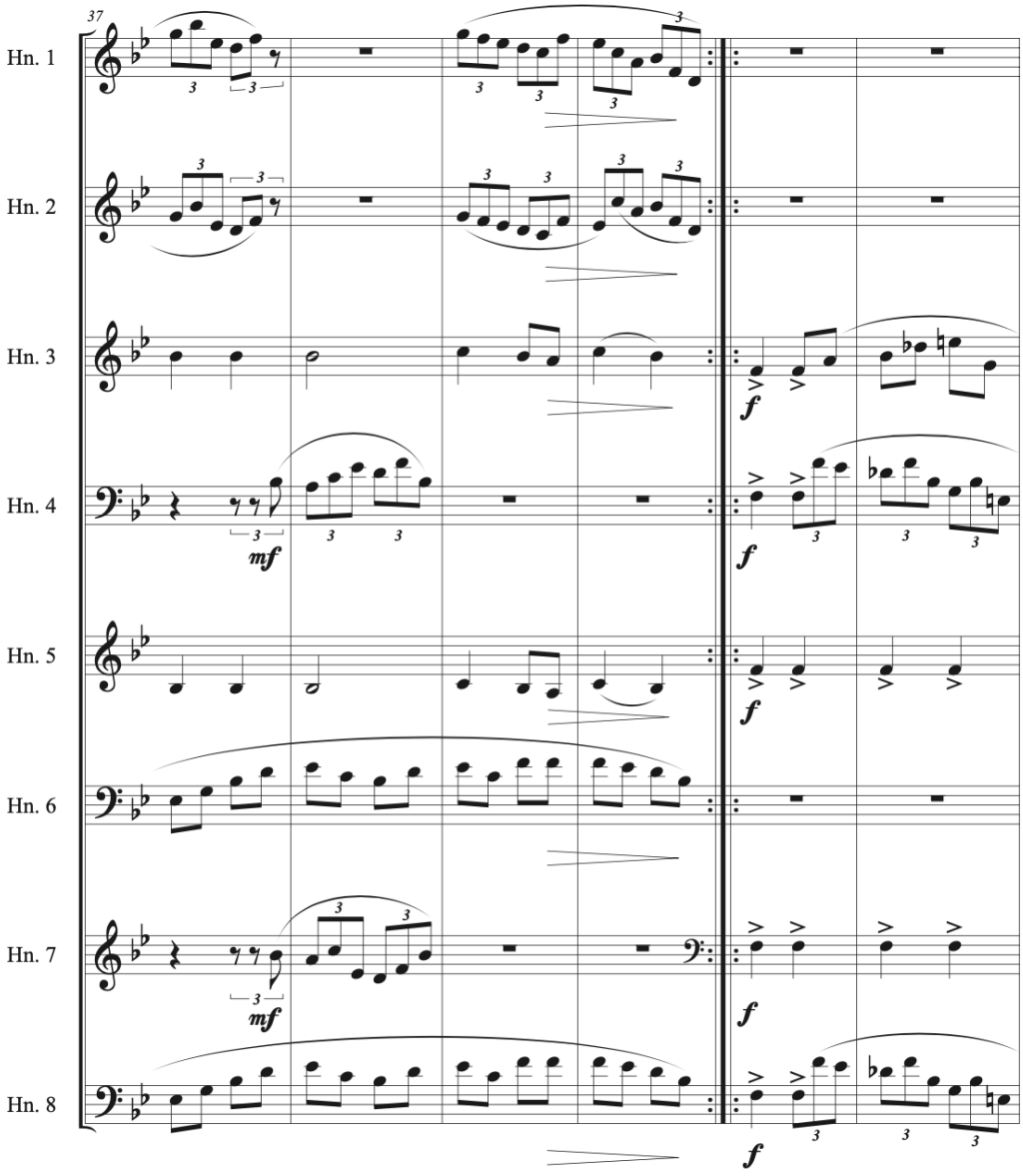
Instrumentation: 8 horns (+ assistant)

This score was a study in navigating dense textures and staggering technical and strenuous passages. My old tendencies in arranging were to place the bulk of any staggered passages in the middle of the ensemble. This way the players don't have to listen across the entire ensemble to receive or send off a line in question, especially when things are moving quickly. With a piece like this, I thought that method worked… until I extracted the parts and noticed an incredibly inconsistent workload on the outer parts (1-2, 7-8) and an extreme demand on the middle horns (horns 3-6). For the second draft, I re-imagined the entire role of each part in the ensemble, referring more to how Mahler or Strauss writes for an 8-horn section. The high register workload is now placed on horns 1-3-5-7, low register is placed on 2-4-6-8, and the more flexible parts are horns 2 and 6 (the second horn in each respective group of four, often being known as the acrobat in an orchestral horn section). This model led to the following:

a. Distributing rests and difficult passages more equitably.
b. Creating parts geared towards certain goals. Horns 1 and 5 address high range, horns 3 and 7 address endurance, horns 2 and 6 address flexibility, and horns 4 and 8 address the lower register.
c. A score that works in two seating setups- a long arch/ line, or a staggered setup with horns 1-4 placed in a row before horns 5-8. This way each role mentioned above is placed directly in front of or behind the corresponding part. For example, the flexible roles in horn 2 are placed in front of horn 6.
d. Each high part is surrounded with an appropriate timbral cushion, or lower part, to make treacherous entrances and solos feel less exposed.

e. With each part designated to a more specific role, staggered passages can be handed off more predicably. For example, if a line is flexible at first and descends into the low register, horn 2 would start the line and hand it off to horn 4 as it moves into the lower *tessitura*.

This can be seen in measures 37-42, on page 6 of the score:



Score example 37: Johannes Brahms and Devin Cobleigh-Morrison, *Variationen uber ein Theme von Joseph Haydn* (Veritas Musica Publishing), 6.

With this model observed and applied to multiple variations of the same theme, I then wanted to explore a more ambiguous set up where parts could be interchanged more accessibly, this time through a legato and sustained setting. The result was the following:

2.3 Pyotr Ilyich Tchaikovsky: Adagio lamentoso from Symphony No.6 in B minor, Op.74 "Pathétique"

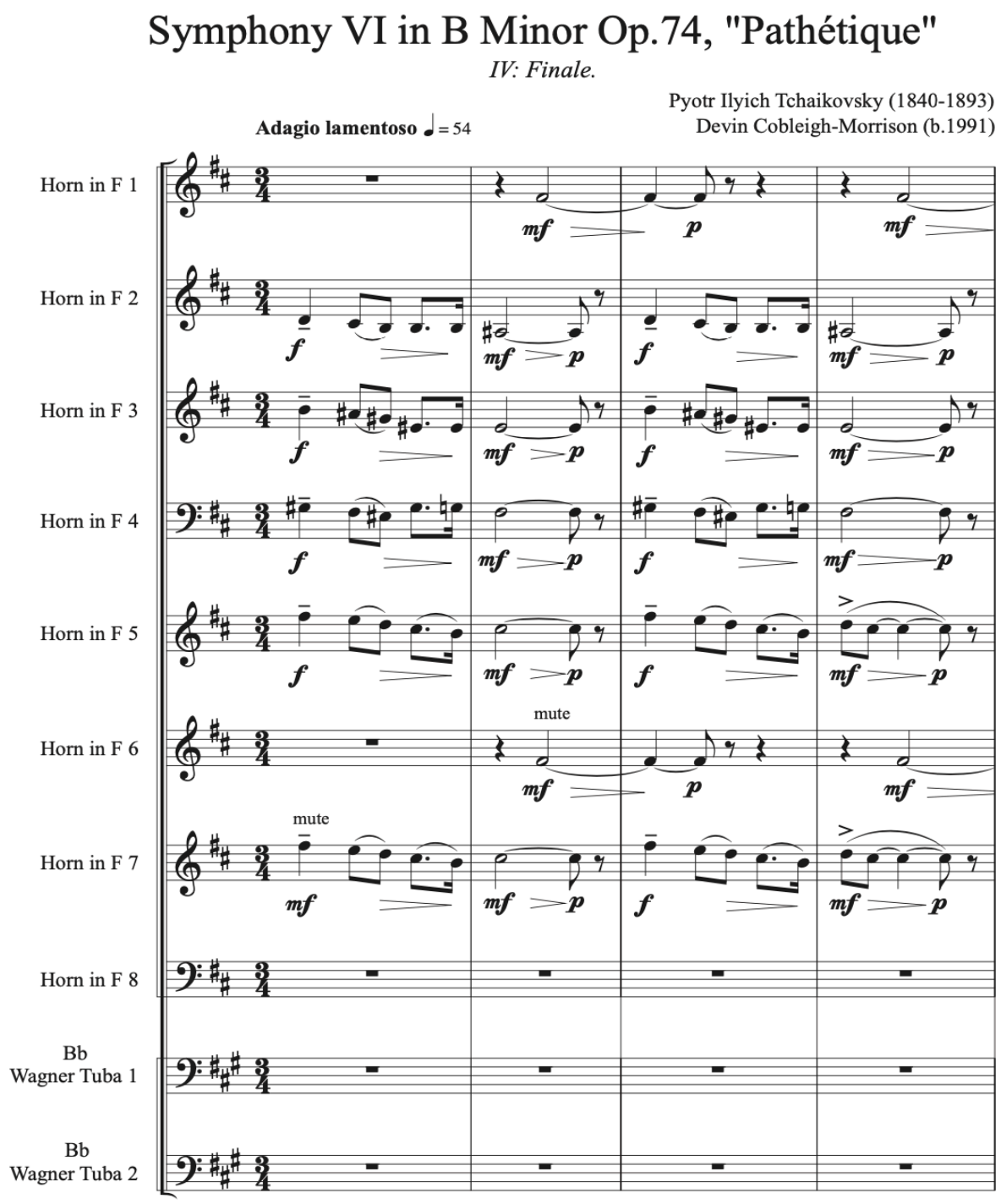
Instrumentation: 8 horns, 2 Bb Wagner tuben

This arrangement takes a similar approach of the above score, but the work is more confined in range and uses 2 Wagner tuben to add a difference in color. Some differences on doubling between this work and the previous two are:

a) Doubling is often used on the higher octave for the sake of keeping an already condensed texture less muddy.

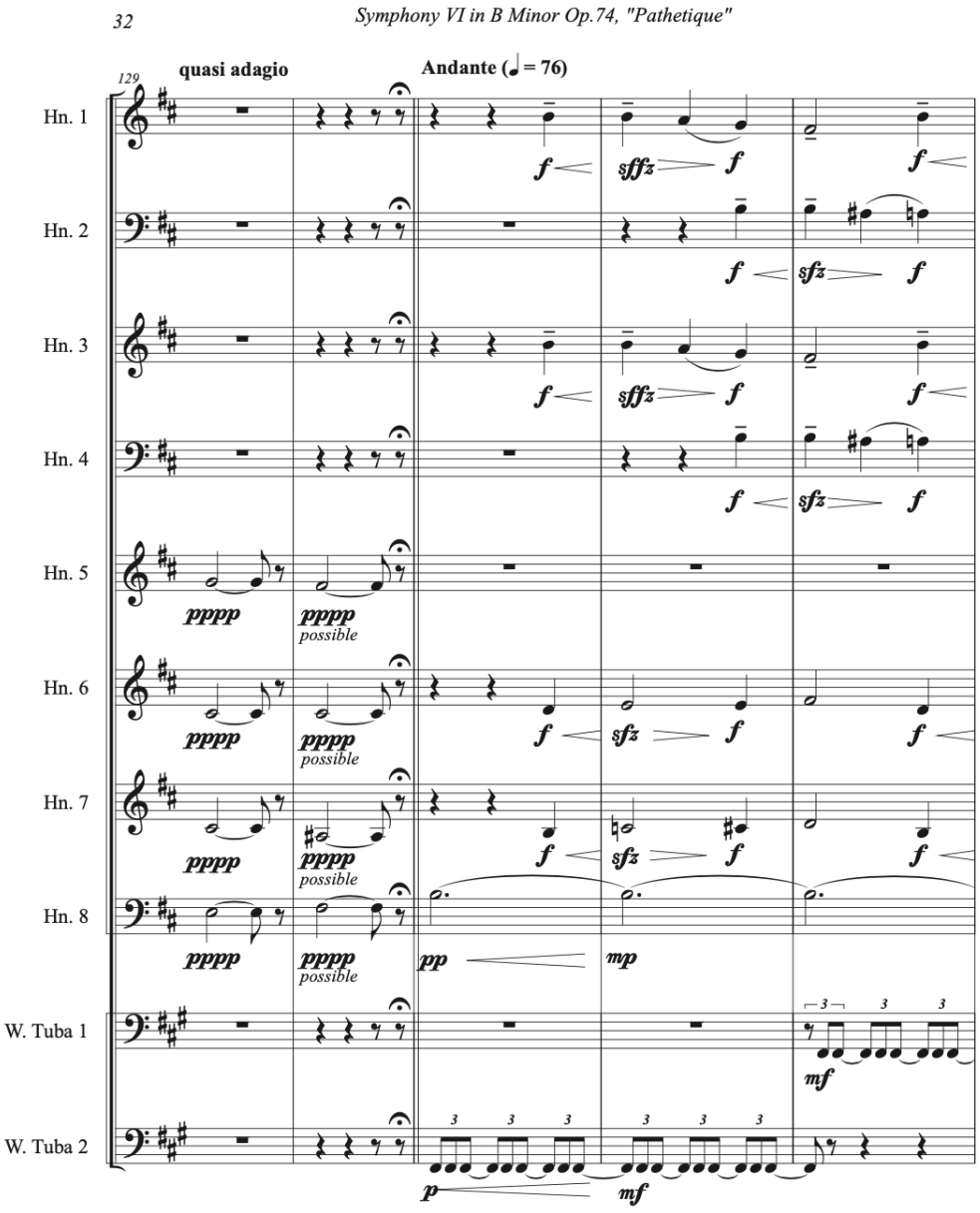
b) Another form of doubling comes with the use of mutes. To achieve the windy but reedy sound of the flute and bassoon doubling in the original score, I used the open horn and muted horn doubled at the unison. This appears in many places but starts in the very opening of the piece.

Score



Score example 38: Pyotr Ilyich Tchaikovsky and Devin Cobleigh Morrison, *Adagio Lamentoso from Symphony No.6 in B minor "Pathetique"* (Veritas Musica Publishing), 1.

The Wagner tuben are often paired due to their difference in sound. This can prove helpful with timbral clarity, such as distinguishing the pulsing ostinato figure from the dense harmonies happening over it. In this case, the mellow sound of the tuben, although staggered, provides some timbral contrast to the already thicker texture created by the horns in the mid and mid low register. Measure 131 starts to show this difference:



Score example 39: Pyotr Ilyich Tchaikovsky and Devin Cobleigh Morrison, *Adagio Lamentoso from Symphony No.6 in B minor "Pathetique"* (Veritas Musica Publishing), 32.

Chapter Five: Reflection

"Whether we remain the ash or become the Phoenix is up to us."

- Ming-Dao Deng

The impact the COVID-19 pandemic had on my craft was and is one of becoming aware of self-respect, diversifying, reorganizing, and simplifying. Through the gift of time, the recording process, and learning a new genre of music, I discovered things that had held me back both musically and mentally such as unhealthy standards (with lack of rest as a result) and loss of my own musical message. Observing and recording a new genre of music, having recordings to track growth, and checking back in with myself served to completely recreate the process of how I play and teach and play. Having the time to step back and review my work for its structure, educational considerations, and intricacy is something I had been chasing for years because this is what I thought my work lacked. To step back and observe these things on a large scale, yearlong project, has been not only freeing but informative and encouraging of this new path of assurance, simplification, and further integrity.

1. Suggestions for Continued Progress

1) Keeping a time-stamped document to refer to and track progress has helped keep me motivated and healthier. I've described this to my friends as the equivalent of progress pictures while exploring a change in body composition. These pictures are an objective way to look back and see where you are and how far you've come. Having these timestamps can be helpful when one's confidence or standards wanes. It is my hope that keeping these small timestamps can

instill a more gradual progression, instead of one that jumps and flatlines in extremes. This, to me, is a healthier way of growth.

2) Continue to discover the benefits of proper rest. For example, due to over-playing, I had no idea that I had been allergic to silver for so long. To have a contact allergy that is so severe but masked by building up such an immunity to the allergen by over-playing was jarring to me. This has changed the way I incorporate rest into my practice, teaching, and writing. It has shown me that time away is just as important as the work you put in. Balance was a missing part of the equation, so much so that I was unknowingly masking things that were extremely unhealthy to me. I strive to incorporate proper balance, whatever that is to me and those around me at that time, now and in the future.

3) Trust your instincts and examine all sides of your situation. In my case, I knew things were uncomfortable and not working as well as they could, so my solution was to address the problem directly. This resulted in playing more, creating more fatigue, and not being able to meet my standards which were rising when my ability was not. I've grown the skills to examine all parts of the source of discomfort by not dwelling on the problem at hand, taking time away to understand where the problem could be arising, and coming back with a few creative approaches to address the issue. To me this ended up in discovering the aforementioned metal allergy, and discovering I was also using a mismeasured mouthpiece shank that is incompatible with my instrument.

Through this process, I've discovered endless information on equipment, how to use it, and how to match it with your anatomy, which is not something I'd believed in previously. I've

learned how to treat myself with kindness when I can't immediately fix a problem, and how to step back and reevaluate what I can do differently as things progress.

4) Keep discovering new ways to let go. In my case this came with the struggle of learning the mentality of jazz, and how to use that creative flow to further let go of the disciplined rigor the horn is mostly used in. This has resulted in the lack of hyper-focusing on technique, allowing myself to focus more on my musical message. As someone pursuing teaching, this is a powerful tool to have, and a powerful thing to see in students. This has resulted in completely reimagining my approach to audition and recital preparation. I now focus on what I want to say as a musician, versus simply exaggerating what the page says. It is my hope that my students and I will continue to feel energized by communicating our musical voices through performance, infusing our individuality into all that we play.

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