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by

Paul Garza

May 2019

TOWARD A SEMIOTIC APPROACH TO
ANALYZING THE TROMBONIST'S REPERTOIRE

A Document

Presented to the Faculty of the

Moore School of Music

Kathrine G. McGovern College of the Arts

University of Houston

In Partial Fulfillment

Of the Requirements for the Degree of

Doctor of Musical Arts in Performance

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Abstract

This study seeks to develop a theory of musical gesture that incorporates idiomatic aspects of playing the trombone. Researchers of musical gesture have interrogated idiomatic physical aspects of performing music for voice, piano, and strings, but have mostly overlooked those qualities in brass instruments. Musicologists Trevor Herbert and David Guion have studied historical qualities of the trombone, usually discussing the trombone as a signifier of sacred topics. This view of the trombone is important but far too limited in scope. It seems appropriate that idiomatic aspects of playing the trombone should also be investigated and probed for gestural qualities that might project musical meaning.

Drawing on studies in musical gesture (Hatten 2004, Lidov 2004) and brass pedagogy (Fredericksen 1996, Steenstrup 2007), this study connects theories of vocal gesture with trombone performance, illuminating mental similarities in approach to performance as well as physical similarities in sound production between brass instrumentalists and vocalists to apply current research in vocal gesture (Frith 1996, Burns 2001, Heidemann 2016) to the trombone. This theory extends into the realm of embodiment analysis (Larson 2012), and I explore new ways to discuss embodiment as it relates to brass instrumentalists. These findings are applied and refined through analysis of four pillars of the trombonist's repertoire: Daniel Schnyder's bass trombone sonata, Arthur Pryor's *Blue Bells of Scotland*, Ferdinand David's Concertino for trombone, and Saskia Apon's trombone quartet.

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Dedication

To my father, Victor Garza, for taking me to every early morning band rehearsal, going to every one of my concerts and recitals for the last 15 years, listening to every analytical idea that popped into my head about pieces he has never heard of, and for supporting me in all my musical endeavors no matter the cost or the commitment.

Chapter 1: Devising a Methodology

Researchers of musical gesture have interrogated idiomatic physical qualities of various instruments but have mostly overlooked those qualities in brass instruments. Music for piano, string instruments, and even the voice occupy a large portion of the body of literature on musical gesture. Most analytical research concerning brass instruments lies instead in topic theory, where they are associated with various musical topics: the trumpet with military, the horn with the hunt or pastoralism, and the trombone with the sacred or supernatural.¹ The trombone in particular has a relatively small footprint in semiotic research.

Trombone scholars Trevor Herbert and David Guion have written extensively on this signifying role of the trombone from a musicological perspective.² This association with sacred and supernatural topics is a long-standing cultural coding of the trombone; Monteverdi, Gluck, Mozart, Beethoven, Schumann, Berlioz, and Mahler have used the trombone in this way in their operatic and orchestral literature, and elements of this association are still a part of modern trombone repertoire, seen in such solo and chamber works by Stjepan Šulek, Henri Tomasi, Juraj Filas, JacobTV, and John Mackey. Although this historical understanding of the trombone is well known, analytical perspectives on the trombone are sparse.

¹ Raymond Monelle, *The Musical Topic* (Bloomington, IN: Indiana University Press, 2006). Monelle only rarely mentions the trombone in this book, and, when he does, usually refers to the sacred “flavor” that the trombone offers.

² Trevor Herbert, *The Trombone* (New Haven, CT: Yale University Press, 2006); David Guion, *The Trombone, its History and Music 1697–1811* (Philadelphia: Gordon and Breach, 1988).

The stereotypical view of the trombone as a sacred or supernatural signifier is important but far too limited in scope. At the current stage of research in musical gesture, it seems appropriate that idiomatic aspects of playing the trombone should also be investigated and probed for gestural qualities that might project musical meaning. The trombone is the most visually striking wind instrument, and fundamental aspects of playing the trombone such as airflow, sound production, range, articulation, using mutes and operating the slide or valves could all be analyzed through the lens of musical gesture.

This study aims to build on semiotic methodologies in order to provide music theorists with more tools for analyzing the trombonist's repertoire. Such methodologies include studies on musical gesture by Robert S. Hatten (2004 and 2018), George Fisher and Judy Lochhead (2002), and David Lidov (2004), analysis of vocal gesture by Lori Burns (2001), Kate Heidemann (2016), and Simon Frith (1996), research in musical embodiment and energetics by Steve Larson (2012), and writings on brass pedagogy from members of the Chicago Symphony Orchestra of the mid-twentieth century.

This chapter is a review of literature and concepts that I will use to develop a theory of musical gesture that incorporates idiomatic qualities of playing the trombone and will be presented in three sections. The first part will cover pedagogical literature for brass instruments with a short history of the Chicago Symphony Orchestra school of brass playing to examine how modern brass pedagogues have discussed both physical operation of the instrument and mental approaches to playing. The next part of the chapter will take this information and investigate how it is helpful in relating writings on vocal gesture to analysis of gesture in brass instruments, specifically through connections

in sound production. Finally, part three will explore the primary differences between playing brass and singing and utilize embodiment analysis and energetics to further develop this theory. Specific analytical applications of these methodologies and musical examples are contained in chapter two.

Brass Pedagogy and the Singing Style

Most modern pedagogical literature written for brass instruments stems from the school of brass playing of the Chicago Symphony Orchestra in the mid-twentieth century. Players such as Adolph “Bud” Herseth, Phillip Farkas, Vince Chicowicz, Edward Kleinhammer, Charlie Vernon, and Arnold Jacobs helped popularize their ways of thinking about brass playing and, through their teaching and writing, changed the way that modern performers and teachers approach playing their instrument; this approach is often referred to as a “singing approach” to playing. Chicowicz’s famous “flow studies” are standard fare for all brass players, and books on playing brass by Farkas, Vernon, and Kleinhammer are still important pedagogical texts for trombonists. Indisputably, the most important figure from this group is Arnold Jacobs. His teaching has influenced the world of brass playing in many ways.

Arnold Jacobs did not publish much on his own, but contributed heavily to brass playing as a musician, teacher, and researcher. While principal tubist with the Chicago Symphony Orchestra, he was a world-renowned teacher with whom musicians of all instruments came to study. His philosophies about playing wind instruments and ways of discussing breathing and airflow were highly effective for students, teachers, and professionals. Fortunately, students and colleagues of Jacobs have made his teaching

available through biographies, recorded interviews and master classes, and pedagogical texts based on their personal experiences with Jacobs. Some of the most important writers and archivists of these materials are Jacobs' personal assistant, Brian Fredericksen, and well-known students of Jacobs', including Frank Campos, Luis Loubriel, Sam Pilafian, Patrick Sheridan, and Kristian Steenstrup.

In his book, *Arnold Jacobs: Song and Wind*, Brian Fredericksen worked closely with Jacobs to provide the most comprehensive source about Arnold Jacobs' life and approaches to teaching.³ The subtitle of the book, *Song and Wind*, refers to Jacob's now famous pedagogical approach. This philosophy is a key component in developing a theory of gesture for brass instruments because it helps create connections between brass players and singers in both their mental approaches to performance and physical similarities in sound production. With this connection, one can begin looking at how gestural analysis of the voice can relate to gestural analysis of the trombone.

With the song and wind approach, Jacobs wanted his students to "study the product, not the method" and "mentalize [sic] music."⁴ In other words, Jacobs' concept of *song* was the player's ability to mentally visualize (hence, mentalize) the sounds that they are trying to produce; players should sing with their instrument rather than their voice. Mentalization helps students avoid what he called "paralysis by analysis," a habit that inhibits many brass players. Essentially, when brass players focus on the physical aspects of sound production, they are harming their playing by trying to manage minute

³ Brian Fredericksen, *Arnold Jacobs: Song and Wind* (Grayslake, IL: Windsong Press, 1996).

⁴ Fredericksen, 138.

coordination between so many parts of the body (the hands, arm, lungs, tongue, lips, and many other unseen muscles involved with playing brass instruments). As Jacobs said:

If you wanna [sic] analyze anything, you analyze the music itself for its emotional musical content. But self-analysis, the old statement “Paralysis by Analysis,” which means simply that your brain is trying to ask questions at the moment it should be issuing statements....It is no longer stimulating the flow of electrons to the tissues that must function with the musical thoughts that must be expressed to your audience, which is what it should be [doing].⁵

Just as singers do not need to think about how to make a sound, brass players need not concern themselves with physical aspects of sound production.⁶

Furthermore, *song* involves the player’s ability to produce those sounds at will.⁷

Jacobs thought that brass players should be able to have their embouchure respond as effectively as their vocal cords. In his words, “instead of vocal chords in the larynx, we have vocal chords in the larynx of the tuba, which is the embouchure.”⁸ He discussed *wind* as an energy source, the fuel for the vibration of the lips that helped players manifest their sound.⁹ And, though he was considered an expert on breathing related to playing wind instruments, he wanted students to concern themselves with *song* more than anything else.

Jacobs commonly related this approach to one that singers have. As he explained:

⁵ Brian Fredericksen, “Paralysis by Analysis,” accessed April 15, 2019, www.windsongpress.com/paralysis-by-analysis/.

⁶ Fredericksen, 108.

⁷ Luis Loubriel, *Lasting Change for Trumpeters: The Teaching of Arnold Jacobs* (Naperville, IL: Scholar Publications, 2011), 18.

⁸ Fredericksen, 123.

⁹ Fredericksen, 139. Sam Pilafian and Patrick Sheridan have popularized many approaches to *wind* in their *Breathing Gym* exercises for brass players.

Now, the words Song and Wind are very important. Song has to do with the biocomputer and Wind is your motor force. Just like the bow is the motor force for the string family. The bow is just a bow without a string. Our string is our lips....The lips are a part of you, and they are tied to your nervous system....as a result, you have to associate your lips with your vocal chords [sic]. Then you get the picture. You sing with your lips....Mentally, a brass player is much closer to a singer than any other instrument. The more vocal your brass playing becomes, the better you'll sound.¹⁰

This singing approach to playing is still highly relevant in modern brass teaching and performance. Vocalises by Marco Bordogni and Giuseppe Concone, books like Vernon's *A Singing Approach to the Trombone* and Edwards' *Simply Singing for Winds*, and numerous etude books on lyrical or legato playing by Reginald Fink, Brad Edwards, Jaroslav Cimera, and others dominate the etude repertoire for brass players. And though the Chicago Symphony Orchestra helped to popularize it, they were not the first to discuss this connection. As far back as 1811, Joseph Froelich instructed trombone players to model their playing "entirely according to vocal teaching," especially considering how often trombonists doubled vocalists in performance.¹¹

As Jacobs illustrated, a singing approach to playing goes beyond musical phrasing and style; he wanted players to think like singers and train their embouchures to interpret signals from their brain as effectively and naturally as singers do. In this way, brass players can focus on means of expression rather than physical functions of playing. The physical connections to the voice, however, are more numerous than most brass players might be aware.

¹⁰ Loubriel, 19.

¹¹ Guion, 102.

Physical Connections with the Voice

Kristian Steenstrup has expanded on Jacobs' pedagogical philosophy and drawn physical connections between sound production in singing and playing a brass instrument. He writes: "the gist of Jacobs' thesis was that the lips of a brass player function quite similarly to the vocal cords of a singer, and that the use of the respiratory system is similar for singers and wind players."¹² Sound production for both vocalists and brass players happens when air travels between the vocal cords of the singer or the lips of the brass player and causes them to oscillate. This oscillation, paired with their respective resonator (the oral cavity for singers and the instrument for brass players), creates sound. Furthermore, when heard without their resonators, both the vocal cords and brass embouchure sound similar to each other.¹³

Changes in pitch happen similarly between vocalists and brass players as well. For vocalists, changes in pitch happen with changes in the shape and tension of the vocal cords. The subglottal pressure of the singer forces the vocal cords to open, and the negative pressure created between the vocal cords by the air moving through them causes them to close, a result of the Bernoulli effect. The laryngeal muscles respond to these changes in subglottal pressure and help to regulate the shape and tension of the vocal cords, which in turn changes the pitch. In general, a higher subglottal pressure is required to sing higher notes, and a lower pressure for lower notes; changes in speed of the airflow are responsible for changes in dynamic.¹⁴

¹² Kristian Steenstrup, *Teaching Brass* (Aarhus, Denmark: Det Jyske Musikkonservatorium, 2007), 14.

¹³ Steenstrup, 18.

¹⁴ Steenstrup, 30; Frederiksen, 152.

While sound production for brass players is mostly understood, the proponent of oscillation is not completely clear. However, Steenstrup surmises that it is most likely quite similar to that of vocalists. Pressure in the oral cavity (normally altered or controlled with the tongue or abdominal muscles) forces open the lips of the brass player, which makes them vibrate and produce a buzz, similar to the vibration of the vocal cords. Additionally, just as the muscles of the larynx control the shape and tension of the vocal cords, and thus pitch, for the vocalist, the facial muscles of the brass player are responsible for regulating the shape and tension of the embouchure.¹⁵ This shape and tension of the embouchure are responsible for changes in pitch for a brass player.

The similarities in the functions of air pressure between vocalists and brass players are especially important for considering musical gesture in brass instruments. Arnold Jacobs describes *wind* as a combination of air *flow* (or the volume of air produced by the player, not to be confused with musical dynamic) and air *pressure*, and a specific combination of flow and pressure are required for every note on the instrument. In general, as notes get higher they require higher pressure and lower flow, and lower notes, lower pressure and higher flow. Interestingly, Jacobs' research showed that for all brass instruments, the same notes require essentially the same combination of flow and pressure. So, for trumpet, trombone, horn, and tuba, C4 requires approximately the same air flow and pressure.¹⁶

Because air pressure and flow are inversely proportional (according to Boyle's law), if the pressure is constantly changing based on what notes are being produced, so is

¹⁵ Steenstrup, 31.

¹⁶ Frederiksen, 120.

the flow.¹⁷ The required air pressure and volume for a note change based on the size of the aperture, which is the hole in the center of the lips that the air travels through, controlled by the facial muscles. Higher notes require a smaller aperture, so, because of the lower flow rate, the inter-oral pressure of the brass player needs to be higher. Conversely, for lower notes, the aperture is larger, so the greater flow rate requires a lower pressure. Based on all the relationships discussed thus far, it seems apparent that, at the very least, analysts can examine changes in the air flow and pressure related to pitch for brass players in the same way they do for vocalists.

Though the similarities in sound production are numerous, the differences between brass players and singers are important to recognize. From the perspective of the brass player, they have some additional requirements when compared to vocalists. The most important are precisely controlling their buzz to resonate with their chosen instrument and physically operating the instrument.¹⁸ Because of the natural resonating qualities of an open tube, only certain frequencies will resonate with the horn in any given configuration. For example, for a trombone in first position (meaning that the hand slide is all the way in), only the notes of the B \flat 1 harmonic series will sound (B \flat 1, B \flat 2, F3, B \flat 3, D4, F4, an out of tune A \flat 4 etc.).¹⁹

Though the end result between brass players and singers is similar—perfect execution of the correct pitches—the process is different for each party. Singers do not have to conform to the acoustic properties of an open tube but are free to produce any

¹⁷ Steenstrup, 87.

¹⁸ Steenstrup, 18.

¹⁹ Steenstrup, 22.

pitch they like at will. The same is mostly true for brass musicians, but brass players have to engage with the instrument in a different way to achieve the same goal. Brass players have to physically alter their instrument to be sure that it is configured to resonate with the pitch they are trying to buzz. To sing a B \flat scale, vocalists only have to sing the correct pitches. Brass players must simultaneously buzz the correct pitches and manipulate their instrument to resonate with each individual pitch. How performers operate the valves and slide on a trombone has great potential for gestural analysis as discussed by Hatten and Lidov. These perspectives will be discussed at a later point in this study.

The most important and obvious difference between trombone and other brass instruments concerns this physical operation of the instrument. Trombonists have three important points of operation on which to focus: the slide, the valves, and the bell. Every trombone has a hand-slide used to change pitch. The slide is held with the right hand and telescopically moves in and out, which increases and decreases the overall length of the instrument. For each *slide position* of the trombone, an entire harmonic series is available based on the length of the instrument. When changing notes, players might switch between different partials of the harmonic series while moving the slide, stay within a single partial, or move between partials in a single slide position. Seven slide positions are taught to most beginning trombonists, but there are many more than seven if one includes slight alterations to these positions, necessary for tuning different partials of the harmonic series and tuning the valves. These might be better understood as *slide zones* rather than explicit positions. The slide is the most unique aspect of the trombone and

allows the player to achieve perfect resonance for any note they are able to play if mastered.

Most modern trombones have one or more valves, operated with the thumb and/or the middle finger of the left hand. Large bore tenor trombones usually have one valve, an F-attachment), bass trombones, two (usually F and G-flat), and small-bore trombones, none.²⁰ Precise timing between, slide, embouchure, articulation, and valves is also important, especially when a note requires using two valves together.

Regarding the bell, the most important considerations are the material that the bell is made out of (yellow, gold, or red brass), the presence or absence of a mute, and what kind of mute is being used. Each of these will influence how the instrument sounds, responds, and feels. These and any other aspects of playing, such as coordination of the slide, valves, tongue, and embouchure, the changes of air pressure inside the slide, rigidity of the slide arm, copper content of the bell, mute construction, valve technique, and other advanced playing considerations, may be analyzed gesturally, but they are beyond the scope of this document; they may be subjects for future research.

The similarity in sound production and mental approaches between singers and brass players suggests two things for analysis. First, writings on vocal gesture can apply directly to analyzing musical gesture in brass music. Second, the unique aspects of playing brass instruments are important in distinguishing analysis of vocal music from

²⁰ While tenor trombones will almost always have a single F attachment, bass trombones have many different valve configurations available. Players might have *dependent* or *independent* valve sections. Dependent valves mean that the second valve can not be used without the first valve and can only be used with the first valve is already engaged. Independent valves can be used independently of each other. Independent valves are more common, but many players claim that dependent valves create less overall resistance and more resonance with and without the valves engaged.

There are also many tuning configurations available. Though F and G \flat are becoming the most common, some players will have F and E \flat or F and “ \flat G,” which puts an out of tune G in first position, or other custom tunings. Each of these configurations offer different slide positions for the player to choose from.

brass music. Exploring these two perspectives and how they relate to current research in musical gesture are critical for developing a theory of musical gesture that incorporates music for brass instruments.

Vocal Gesture and its Applications to Brass Music

The next stage in this theory investigates how analysts can apply theories of vocal gesture to brass music based on their aforementioned similarities. Lori Burns, Kate Heidemann, and Simon Frith have examined how elements of singing can be analyzed gesturally. In her article, *Feeling the Style*, Lori Burns lists three specific categories for looking at gesture in voice: quality, space, and articulation.²¹ She defines *quality* as the “features of vocal production that position the voice within the body....[such as] a rich vibrato [or] a shrill higher register.” Quality may be unique to performances, performers, instruments, or might relate to a particular musical style. *Space*, for Burns, is essentially tessitura: how high or low somebody is singing relative to the limits of their range. *Articulation* has to do with how singers enunciate the text in relationship to musical time.

An important consideration that Burns mentions for all of these facets of vocal gesture is musical coding. The audience for any given performance will have preconceived “musical codes” based on their awareness of the instrument, their knowledge of the repertoire, or even visual cues given by the player or the instrument. In this way, listeners engage with the performance based on their familiarity with the

²¹ Lori Burns, “Feeling the Style: Vocal Gesture and Musical Expression in Billie Holiday, Bessie Smith, and Louis Armstrong,” *Music Theory Online* 11, no. 3 (Sept. 2001): 12, accessed May 3, 2019, <http://www.mtosmt.org/issues/mto.05.11.3/mto.05.11.3.burns.html>.

instrument or even the piece itself.²² Arnie Cox calls this “mimetic engagement” or “mimetic participation.”²³ For brass players, both amateur listeners and trained musicians will have expectations for the relative space that the instruments typically occupy. In this way, space for brass instrumentalists is objectively viewable.²⁴ An audience for a trombone performance will certainly have preconceived expectations when listening. They might expect certain ranges based on the size of the instrument (alto, tenor, bass, etc.), certain colors from the type of brass used to make the instrument (red, gold, or yellow), certain tempi or interpretations based on their knowledge of the repertoire, and many other possibilities.

Analysis of brass music can benefit from all three of Burns’ categories of vocal gesture. *Quality* of a trombonist’s sound could be studied through timbre, as Kate Heidemann discusses in her article, *A System for Describing Vocal Timbre in Popular Song*. The timbre of a player’s sound inevitably changes throughout the range of the instrument.²⁵ For notes that require longer slide positions or more valves, extremely high and low notes, loud and soft notes, composers and performers can utilize a wide variety of different sounds. For example, a composer might write a relatively high passage for a bass trombonist. This sort of passage would not only resist coding and expectations of the instrument but would offer a mellower timbre in comparison to the same passage in the

²² Burns, 16.

²³ Arnie Cox, “The Mimetic Hypothesis and Embodied Musical Meaning,” *Musicae Scientiae* 5, no. 2 (Sept. 2001): 8.

²⁴ This also incorporates agency and how it is communicated to the audience through the player, and how the ideas that the player is communicating are all gestural in nature; this will be explored further in chapter two.

²⁵ For some players and some instruments, the changes in timbre might be more extreme than others, based on personal preference for the player and instrument construction.

tenor trombone. This change in timbre may be used as an expressive change of quality in a trombone ensemble or as a moment of lucidity in an otherwise low-range bass solo. If the dynamic is softer, perhaps this will invoke the singing style, if louder, a more heroic style.

Furthermore, through mimetic engagement, the listener will have a different reaction to hearing a specific timbre from a bass trombone player rather than a tenor player. Hearing a bass trombonist play particularly high will usually be surprising, while hearing a bass trombonist play very low is sometimes expected. Other considerations of quality might come with the ways that a piece calls for vibrato, the sorts of timbres that and qualities that show up when using such extended techniques as multiphonics or flutter tonguing, or even how the sound of a mute affects the quality of sound. Some of these aspects are discussed in Stuart Dempster's book, *The Modern Trombone*.

Articulation is seemingly less relevant than the other two categories, because brass players normally strive to have even-sounding articulations throughout the range of the instrument. However, changes in how the trombonist articulates could certainly be highlighted and examined gesturally. There are noticeable differences in articulation for the trombonist when moving between lower and higher pitches, softer and louder dynamics, or legato and detached playing. Brass players have to change how they articulate in order to keep an even sound through changes in each of these parameters. A loud, high passage that comes after something lower and softer would require a marked change in the position and relative strength of the articulation. Similarly, quick changes in style between lyrical or legato passages and more articulate or detached passages will require the trombonist to shift between two different styles of articulation.

Space is perhaps the most immediately relevant and applicable facet of Burns' research. The space that a vocalist occupies is always relative to their own range and highly individualized, whereas the space that a brass player occupies is less personal. One might consider that less developed players might have less range to work with, so space for brass players might be as individualized as it is for vocalists from a player-specific point of view. However, all brass instruments are constructed nearly identically to each other in their basic design, so it is expected that if a player is performing a work they have the range to play it. This study considers space for brass instruments mostly objective, because the median expected range is the same for all trombonists. Almost all will trombonists begin playing somewhere in the middle register of the horn (around B-flat 3) and gradually expand their range outwards, so higher and lower ranges based on player's ability are still made in comparison to this median range.

Analytically, Simon Frith offers ways to discuss how movement within vocal space can project meaning based on context. For example, he discusses how changes in vocal space can present gendered qualities for singers. Men singing high may seem effeminate in the right context, or rebellious in a different context.²⁶ Based on the situation, many similar considerations can be made about how a brass player occupies their vocal space. A soft-high passage might be seen as relatively delicate when contrasted with a loud melody in the middle range, as in the second movement of Grøndahl's trombone concerto. High forte passages with strong, quick articulations might be seen as heroic or valiant, while the same in the low register could be seen as sinister. Tunes that gradually shift higher and higher might project arduous difficulty to the

²⁶ Simon Frith, *Performing Rites: On the Value of Popular Music* (Cambridge, MA: Harvard University Press, 1996), 194.

audience, with which they can engage along with the player. Very high long notes among mostly middle register notes could be seen as akin to screaming or shrieking.²⁷ Likewise, sudden lower notes could be glottal utterances or grunts, depressed sighs, or relaxed and quiet, depending on the context. All of these perspectives can be used to analyze meaning in the context of range for trombonists and will be discussed in more detail in chapter two.

Extensions into Embodiment and Energetics

Thus far, perspectives from vocal gesture have offered ways to look at a trombonist's airflow, articulation, and timbre insofar that they relate to the similarities between vocalists and brass players. For a more comprehensive theory, it is important to explore those facets of playing that are unique to trombonists. In this section, I will describe those unique facets of trombone playing and relate them to Steve Larson's theory of musical forces.

The trombonist has four basic facets that they must consistently control and coordinate: airflow, embouchure, slide/valves, and articulation.²⁸ Airflow is necessary to create vibration in the embouchure, and the relative volume and speed of the air will change based on range and dynamic. The embouchure (or buzz, colloquially) must vibrate at or near the desired pitch, and the slide and valves, in precise coordination with

²⁷ Kate Heidemann, "A System for Describing Vocal Timbre in Popular Song," *Music Theory Online* 22, no. 1 (March 2016): 3.8, accessed May 3, 2019, <http://www.mtosmt.org/issues/mto.16.22.1/mto.16.22.1.heidemann.html>.

²⁸ These facets were discussed in a personal lesson with Scott Hartman, professor of trombone at Yale University at the time of writing. Though professor Hartman was rather succinct in his approach, other trombone pedagogues discuss playing the instrument similarly.

the embouchure, must be in the correct position for each note. Finally, the tongue must interrupt the airflow to shape articulations for each note.²⁹

There are also some external qualities that players cannot adjust or alter during performances that might affect how the trombonist responds to their instrument: the basic construction of the instrument (what kind of brass is used for the bell, slides, and crooks, the placement of the braces, the bore size, etc.) or materials used in various mutes. Resistance from a mute or specific construction of an instrument might also affect how one chooses to play. For example, straight mutes made from differing materials might dramatically change the feedback a player feels when they play, influencing their performance.

Steve Larson approaches embodiment analysis in terms of musical energy; his three musical forces—melodic gravity, melodic magnetism, and musical inertia—are strongly rooted in musical gesture and embodied performance. Performers and listeners understand music that they play and hear through these musical forces. A note that exhibits musical agency in “wanting to move” toward another note can be explained in the context of musical forces. Furthermore, Robert S. Hatten has expanded on Larson’s research to include additional perspectives on musical agency, to be discussed in more detail in chapter two.

By melodic gravity, Larson means “the tendency of a note (heard as ‘above a stable position’) to descend.” Listeners feel music descend due to melodic gravity, and the familiar descending shape of tonal melodies reflects this “motion within a

²⁹ From a practical perspective, many brass players are not aware of the precise changes in their airflow, embouchure, and articulation. Jacobs’ philosophy strictly advises that players focus on the product and not the process. However, these minute changes will certainly happen for every player.

gravitational field.”³⁰ Though Larson’s analyses of magnetism relate to expectations of melody and analyzing the shape and strength of melodic patterns (especially hearing a note as higher than a stable position), trombonists might understand gravity in a different way. Because many players think of the middle register as a “home base” for the horn, higher and lower notes for the trombonist tend to “orbit” more than they do simply fall. In other words, playing farther away from the middle register of the instrument is generally more difficult for trombonists, and physical aspects of playing passages in the extreme registers of the horn could project gestural meaning.

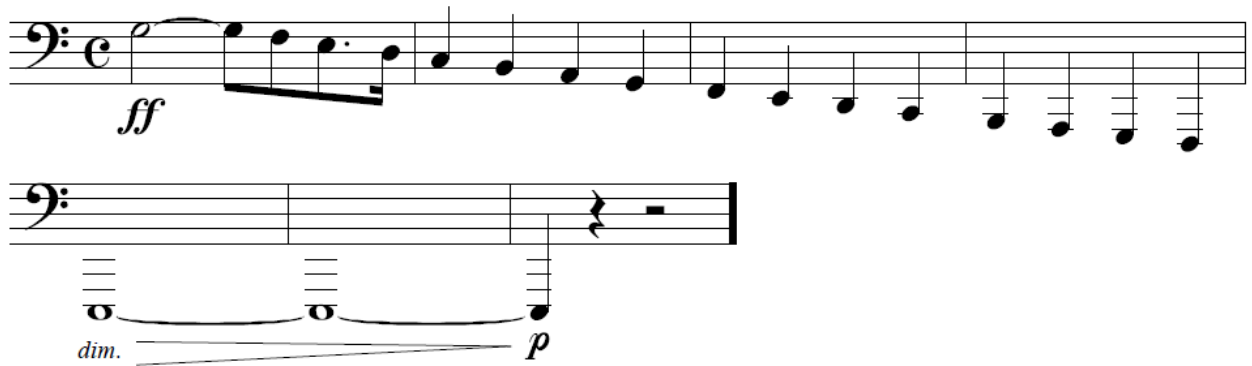
All of Larson’s observations of musical gravity are still true of melody in trombone music. I do not surmise that most listeners would hear an iconic excerpt like Wagner’s Spear Motive (Example 1) as anything but a descent to a more stable and satisfying note. However, because brass players often think of “stretching” their range out from the middle of the instrument outwards, the relative difficulty of this excerpt increases as notes move away from the middle range.³¹ In this way, players work against the gravitational center of their instrument in order to satisfy the gravitational demands of the melody. Though this concept does not offer a direct application of Larson’s theory, this is an adaptation for brass players that describes a sensation in playing that every brass player knows and experiences. The middle register of any brass instrument is almost universally more comfortable for the player than the very high or very low registers. Many solo works written for the trombone end in the middle register of the

³⁰ Steve Larson, *Musical Forces: Motion, Metaphor, and Meaning in Music* (Bloomington, IN: Indiana University Press, 2012), 83.

³¹ Stretching is literal in this sense, as the muscles of the embouchure must expand or contract to change pitch.

instrument; those that end in a different register are marked. How composers work with or against anticipated cultural codes of the trombone can project musical meaning.

Example 1: Wagner's spear motive from *Das Rheingold*. A common excerpt for bass trombonists.



In relation to Larson's musical analogy to the physical force of gravity, a more appropriate (albeit somewhat grandiose) analogy might come from Einstein's theory of special relativity. The player might embody a different sensation of *spatial gravity* that might relate to or directly oppose the melodic gravity of the music. The audience may hear a melodic descent to a more stable position, but the player may simultaneously feel motion away from their most stable range. Because the stable range of a player might be fairly large, no single note should be considered the specific gravitational center of the trombonist's range, but general motion away from the middle register of the instrument could project meaning in gestural analysis.

Larson's definition of melodic magnetism is the "tendency of an unstable note to move to the closest stable pitch."³² This means that listeners will hear some notes as

³² Larson, 88.

wanting to move toward another note, like a tendency tone. Larson notes that this is evident in the way theorists approach part-writing, in the way that certain tendency tones want to resolve to specific notes, and that as notes get closer to the gravitational center of a melody magnetism becomes stronger. Robert S. Hatten discusses how this is related to musical agency. Magnetism *compels* a note to move in a certain direction. As he writes, “the tendency to hear musical motion as embodied depends on our hearing a succession of pitches as motivated by an energetic agency that can counteract as well as give into the virtual environmental forces of gravity, magnetism, and inertia.”³³

For trombonists, I offer a technical viewpoint of magnetism based on harmonic partials of the instrument. Because brass players must conform to the notes of the harmonic series for each given position (rather than having free command of their pitch like vocalists), their buzz must be accurate enough to produce the pitch. However, the instrument will force the player towards certain pitch based on what the player buzzes. For example, on this author’s personal bass trombone, any note buzzed between D3 and Ab3 will produce an F3 while the slide is in first position; the horn *pulls* the player towards the pitch.³⁴ Though every instrument is different, a similar range is true for most instruments. Because of this, beginner trombonists find it quite easy to play F3. However, the further away that a player is from buzzing the actual desired pitch, the worse the tone quality will be, so most beginners will have a rather unpleasant sound compared to professionals.

³³ Robert S. Hatten, *A Theory of Virtual Agency for Western Art Music* (Bloomington, IN: Indiana University Press, 2018), 49.

³⁴ This is from my personal experience with the instrument. I find that many trombones respond in this way.

How the trombonist experiences this might be better described as *synchronization* of instrument and body rather than magnetism. Though brass players certainly might embody the melodic magnetism that Larson describes, the analogue of synchronization that emerges might prove useful for analysis. Trombonists maintain a constant feedback loop through the instrument in which they must synchronize several parts of their body with the instrument. The player's arm moves the slide, which changes the length of the instrument. The specific harmonic series of the instrument changes based on the slide position, and the player responds by altering their embouchure, airflow, and articulation for the desired pitch. A player's tone quality and *resonance* are directly related to how well the player *calibrates* their embouchure to the harmonic series of the instrument. The more precise the coordination, the better the resulting tone quality and resonance.

To create greater resonance with the instrument, a player's embouchure would ideally buzz the precise frequencies that best resonate with the instrument for every pitch. Similar to how an archer would ideally like to hit a bullseye on every target. However, because the instrument will *pull* the player towards the correct pitch, brass players can still hit their "targets" (pitches) with a generous margin of error. Some players might even choose to forego a precise buzz and "let the horn do the work for them."

Desynchronizing the body and instrument can be useful for more difficult passages. A perfect example is seen in Arthur Pryor's *Blue Bells of Scotland*, a theme and variations piece based on the familiar folk song. The passage in Example 2 asks the player to move through each partial of the horn with the slide in sixth position.

Example 2: A passage from Pryor's *Blue Bells of Scotland*



Instead of trying to play every note individually, most trombonists will simply just put the slide in sixth position, buzz continuously from the highest note downward, and let the natural *magnetism* of the horn's harmonic series dictate the notes that come out. Because the partials pull the player's buzz towards the notes of the harmonic series, the written notes will sound rather than a continuous buzz. Trombonists could play this passage in more "primary" positions but playing everything in sixth position is less physically demanding, though tone quality and intonation suffer. Playing the pictured passage in this way is not just a technical strategy for the performer, but a musical gesture specifically requested by the composer, an accomplished trombonist. More considerations about synchronization and desynchronization with the instrument may also be made in how trombonists approach trills, alternate positions, and valve technique. For example, players might choose to use an alternate position for a passage to decrease the distance that they need to move their slide in order to make a legato passage smoother or a technical passage more approachable.³⁵

³⁵ Because some trills are difficult or near impossible on a trombone, it is also common for trombonists to prioritize the gestural aspects of a trill rather than the specific notes and "fake" them; this is particularly common in the middle and low register.

Trombonists understand how to coordinate their slide arm and embouchure based on the feedback they receive from the instrument. Furthermore, the gestalt of how a trombonist understands their specific instrument and embodies various musical forces is based on this feedback loop. Players intuitively alter every facet of their playing based on what they hear and feel through this feedback loop; how the body naturally responds to these changes is the primary means by which trombonists embody spatial gravity, direction, and synchronization with their instrument. Our interpretations of musical gestures are not only conceptualized through our understanding of the body and the instrument, but that they are defined by this embodied reasoning.³⁶

Finally, Larson's describes his concept of musical inertia as "the tendency of pitches or durations to continue in the pattern perceived."³⁷ He relates inertia to often certain patterns might appear in a musical passage or work and how those patterns affect the relative strength of a melody. For Larson, musical inertia "tends to carry musical motions beyond the stable positions that serve as goals for other forces" and help "create smooth motions that tend toward a state of equilibrium with other forces."³⁸ For trombonists, this might analogize directly to the inertia of both the slide and airflow of the player.

In the following passage from Rossini's overture from *William Tell*, the physical inertias of the trombonist's slide and airflow directly mirror the inertia of the musical

³⁶ Arnie Cox, "Hearing, Feeling, Grasping Gestures," in *Music and Gesture*, ed. Elaine King and Anthony Gritten (New York, NY: Routledge, 2016), 46.

³⁷ Larson, 2.

³⁸ Larson, 100.

line. The energy of the eighth notes moves towards a musical goal. The chromatic line and repetition of this pattern create an exciting and dramatic musical inertia.

Many trombonists have difficulty with this passage because they are trying to play every note in precisely the right position, which often gives the player a rigid slide arm with a non-continuous airflow. More advanced players usually approach this excerpt with a “smooth” slide technique, meaning they do not stop moving their slide in each position, but instead move the slide continuously. They coordinate their articulation and airflow with the constantly moving slide.³⁹ Paired with continuously increasing airflow, the player feels a strong sense of physical inertia that mirrors the musical inertia of the work. The energy of the airflow increases along with the musical energy, and the player’s body works in coordination with the airflow to play the excerpt. For brass players, a more familiar word might be *direction*.⁴⁰

Example 3: A popular trombone excerpt from Rossini's Overture from *William Tell*.



To summarize this theory as discussed thus far, I offer a conceptual model that

³⁹ Another consideration would be how the air pressure inside the slide responds to moving the slide in and outwards. Moving the slide inwards compresses the air inside the slide, moving it outwards the opposite.

⁴⁰ In discussing Larson’s approaches to embodiment as they relate to the trombone, I often mention that the player must somehow work against the instrument. This has grounding in Joseph Straus’ disability theory. Straus fuses his ideas of embodiment and disability theory to discuss how music might project difficulty or disability in performance. This relationship to playing the trombone, concerning how the player must work against the instrument to perform difficult passages might benefit from Straus’ perspectives, and, though it is beyond the scope of this study, would be a great next step for this theory.

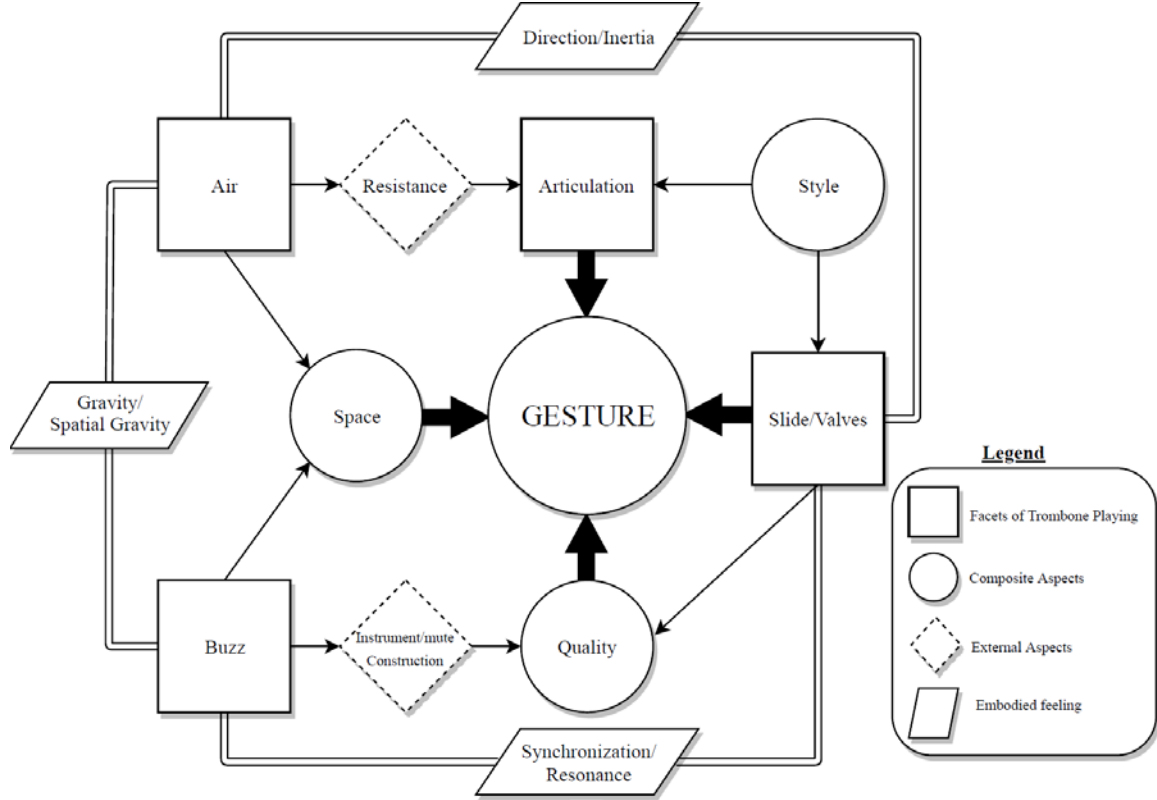
Joseph Straus, “Normalizing the Abnormal: Disability in Music and Music Theory,” *Journal of the American Musicological Society* 59, no. 1 (Spring 2006): 113–184.

dynamically integrates the various parameters of gesture I have discussed into a single gestalt. This follows Lawrence Zbikowski's general model for cross-domain mapping as seen in his book *Conceptualizing Music*, and Timothy Koozin's conceptual model for musical gesture as seen in his article, *Guitar Voicing in Pop-Rock Music*.⁴¹ My model places musical gesture in the center as a musical gestalt made up of the composite aspects of *space* and *quality* and two facets of playing the trombone, articulation, and slide/valves; this relationship is indicated by the large arrows. The space and quality of a gesture are directly influenced by the buzz, airflow, and slide, as indicated with the smaller arrows.

There are some additional aspects to consider that can help to refine these facets even further. The given style for a piece (legato, bebop, march, etc.) informs how the player will move their slide or shapes articulations; a lyrical piece in the high register will feel completely different than something more detached in the lower register. External aspects like instrument construction and resistance shape the impact of air and buzz on articulation and quality, respectively. The embodiment terms I have discussed—gravity (or spatial gravity), synchronization/magnetism, and direction/inertia—are located next to the spaces that they are most closely related. This model can be used to understand the many parts that a musical gesture might encompass and to visualize how the various musical, physical, and embodied aspects of music all combine to create a gestalt of musical gesture.

⁴¹ Lawrence Zbikowski, *Conceptualizing Music: Cognitive Structure, Theory, and Analysis* (Oxford: Oxford University Press, 2002), 79; Timothy Koozin, "Guitar Voicing in Pop-Rock Music: A Performance-Based Analytical Approach," *Music Theory Online* 17, no. 3 (October 2011): 7, accessed May 3, 2019, <http://www.mtosmt.org/issues/mto.11.17.3/mto.11.17.3.koozin.html>.

Figure 1: Conceptual model of the various domains of trombone gesture as discussed thus far.



In this chapter, I have set the foundations for developing a theory of musical gesture that incorporates idiomatic aspects of playing the trombone. By exploring both mental and physical approaches to playing the instrument, as discussed in the pedagogical approaches of Arnold Jacobs and other musicians of the Chicago Symphony Orchestra, one can draw connections between brass players and singers. The singing approach to playing a brass instrument dominates modern pedagogy, and the similarities in sound production are numerous. These parallels are useful for building a theory of musical gesture that incorporates the trombone and creating a foundation for understanding airflow, musical space, and articulation from gestural perspectives.

Furthermore, this chapter went beyond this framework of relating music with voice to look at physical aspects of playing the trombone as they relate to Steve Larson's concepts regarding musical energetics. Spatial gravity, direction, inertia, synchronization, resonance, and other aspects are important considerations for understanding how trombonists embody musical energy and emotion. Finally, I provided a conceptual model to visualize the many varied aspects of musical gesture as discussed in this chapter; this model maps the complex relationships between the various domains that gesture for trombones encompasses. In chapter two, I will use this conceptual model to explore how to discuss specific analytical applications of this theory to further develop different ways of looking at literature written for the trombone.

Chapter 2: Refining the Methodology Through Analysis

This chapter will utilize the basic approaches to analyzing gesture in trombone playing discussed in the last chapter to further develop a theory of musical gesture in trombone music. Four analyses of representative examples from the trombonist's standard repertoire will be used to show how interrogating gesture in trombone music can reveal musical meaning in a variety of ways. These analyses will also investigate how one might combine perspectives from a gestural analysis with other analytical methodologies, including analysis of rhythm and meter, form analysis, and topic theory. The four pieces are Daniel Schnyder's Sonata for Bass Trombone, Arthur Pryor's Variations on *Blue Bells of Scotland*, Ferdinand David's Concertino for Trombone, op. 4, and Saskia Apon's First Trombone Quartet.

My analysis of each work will focus on a specific topic to demonstrate various approaches to analyzing gesture in trombone. For example, in Daniel Schnyder's Sonata, I will discuss how one can describe the physical qualities required to perform a musical passage, which I call *technical requisites*. For each theme, I look at the four facets of playing trombone described in the last chapter to find such technical requisites. This analysis will touch on how style and gesture can help understand form. Similarly, in Arthur Pryor's *Blue Bells of Scotland*, I investigate how Pryor wrote variations that sound virtuosic but are approachable for performance; this is an important step in figuring out what it means for something to "fit the slide well."

In Ferdinand David's Concertino I explore applications of vocal gesture and how they relate to embodied emotion. Additionally, I discuss how the overall musical form suggests a narrative in which a fallen hero depicted in the first movement is mourned in

the second movement. Looking at such qualities of vocal gesture discussed in the first chapter (space, quality, and articulation) will help to illuminate how the trombonist embodies the emotions expressed in this mournful elegy. Finally, my analysis of Apon's first trombone quartet will demonstrate how one could approach a narrative analysis of the work by integrating gesture and musical topics as they relate to the trombone.

Technical Requisites, Muscular Gesture, and Form: Daniel Schnyder's Sonata for Bass Trombone, mvt. i, "Blues"

Daniel Schnyder's Sonata for Bass Trombone is one of the most difficult works in the bass trombonist's repertoire. Viciously quick, complex rhythms and exceedingly difficult musical lines are common in Schnyder's music, and this sonata is no exception. In this analysis, I discuss the physical qualities required to perform each theme, what I call the *technical requisites*, and discuss how they relate to musical style and gesture. I then use these findings to discuss how one might understand the form of this movement through musical gesture and style rather than through melody or thematic content. It is not my goal to arrive at any absolute conclusions on the form of this work, but instead to show how one could use the qualities discussed in this analysis to begin an interpretive analysis.

Swiss composer and jazz musician Daniel Schnyder (b. 1961) is well-known amongst trombonists for abstracting and integrating many musical styles into his works. In many ways, he follows the trends of postmodern music as described by Jonathan Kramer.⁴² His music is exciting, eclectic, dynamic, and usually challenging. Because his

⁴² Jonathan Kramer, "Postmodern Concepts of Musical Time." *Indiana Theory Review* 17, no. 2 (Fall 1996): 21–22.

music is so eclectic and full of many musical styles, it is important to consider how the style of a piece informs how player approach their technique. Whether consciously intended by the performer or not, there will certainly be differences in articulation and how players move the slide. This analysis recognizes this relationship between musical gesture and style and does not suggest that the two should be viewed separately. However, for purposes of establishing a theory of musical gesture that incorporates idiomatic physical properties of playing the trombone, this analysis attempts to separate technique from style or musical expression to more closely examine what trombonists do when they play.

The first chapter of this study worked towards describing of what aspects a musical gesture be comprised. This section asks a different question, what *must* be present in a musical gesture? Music theorists such as David Lidov, Robert Hatten, Arnie Cox, and others have contributed to the rich discourse about what musical gestures are and how they can signify emotional content. David Lidov ponders this question in this book, *Is Language a music?* He asks: “what are the universal (or innate) characteristics of gesture...and how do these relate to an emotional feeling?”⁴³ From one point of view, musical gestures are indexical, meaning that they suggest certain motions that may be mapped onto physical actions or specific parts of the body. These might project musical meaning based on their *sentic form* (as described by Clynes and Lidov), their *emotional* or *referential expressions*, or by some other means.⁴⁴ From another angle, musical

⁴³ David Lidov, *Is Language a Music?* (Bloomington, IN: Indiana University Press, 2004), 133.

⁴⁴ Lidov, 133–36; Robert Hatten, *Interpreting Musical Gestures, Topics, and Tropes: Mozart, Beethoven, Schubert* (Bloomington, IN: Indiana University Press, 2004), 104.

gestures directly correlate to physical motions actions that performers *must* do in order to perform a musical passage.

This analysis focuses on the latter of these two perspectives: what are the innate physical actions required for a musical gesture on the trombone? Arnie Cox ponders this relationship, writing that “musical gestures are musical acts, and our perception and understanding of gestures involves understanding the physicality involved in their production.”⁴⁵ George Fisher and Judy Lochhead also discuss their idea of *performance gesture* as “a variety of phenomena, including the physical movements necessary for sound production.”⁴⁶ David Lidov calls such physical actions that one must perform for a particular musical gesture a *muscular gesture*. He writes that “gesture encompasses all brief, expressive molar units of motor activity, be they of the limbs, the digits, the larynx, the torso, units which are whole but not readily subdivisible.” For Lidov, muscular gestures are isogenous with musical gestures.⁴⁷ This analysis begins with an excursion into the form of this first movement, one that is certainly atypical. Table 1 shows the different themes from the first movement from two perspectives.

The first groups themes based on their thematic content, showing a design suggestive of rondo. Given the title of this piece, this would likely lead one to believe that this is a sonata-rondo, or a Type 4 sonata.⁴⁸ However, a gestural grouping of these reveals

⁴⁵ Arnie Cox, “Hearing, Feeling, Grasping Gestures,” In *Music and Gesture* ed. Elaine King and Anthony Gritten (New York, NY: Routledge, 2016): 45.

⁴⁶ George Fisher and Judy Lochhead, “Analyzing from the Body,” *Theory and Practice* 26 (2002): 48.

⁴⁷ Lidov, 152.

⁴⁸ For a discussion on the various types of sonata form, see James Hepokoski and Warren Darcy, *Elements of Sonata Theory* (Oxford: Oxford University Press, 2006), 344–355.

that the form is closer to Type 2 sonata. To understand how this is so, further examination of the primary theme, secondary themes, and transition are necessary.

Example 4 shows the primary theme from Schnyder’s bass trombone sonata. The theme is rhythmically complex (similar to funk or Latin music), utilizes the entire chromatic scale freely, and mostly centers around D as a pitch center. Schnyder emphasizes “blue” notes related to D (like F and A-flat), reinforcing the title of the movement, and the “falls” in m. 16–17 are common ornaments in jazz, particularly in the blues style.⁴⁹ Schnyder also incorporates elements of jazz with some common improvisatory techniques, as described by Jerry Coker in his book, *Elements of the Jazz Language for the Developing Improvisor*. These include outlining a harmony (m. 9), *enclosure* (m. 9, 17, 19), sequence (m. 11 and 12), and bebop-inspired chromaticism (m. 20 and 21). Table 2 lists the physical requirements to play this passage based on the four facets of playing the trombone discussed in chapter one: embouchure (buzz), air, articulation, and slide/valves.

Table 1: Two different ways of viewing the form of Schnyder’s Sonata, mvt. i, “Blues”

	1	9	23	43	95	109	132	178	195	213
Thematic grouping	Intro.	A	A'	B	A	Cadenza	C	D	A	Coda
Gestural grouping with “Type 2” Sonata design	Intro.	P	TR	S	P	Cadenza	Episode	S	P	
		Exposition			Development			Recap.	Coda	

⁴⁹ If one considers each pair of 7/16 measures to be one larger hyper-measure, this passage also loosely follows a 12-bar blues pattern.

Example 4: The primary theme from Schnyder's Sonata, mm. 9–22.

(A)

These technical requisites add up to a very specific set of techniques for the trombonist. There are several important reasons why these details should be considered. First, these specific technical requisites can be used to look at specific molar units of motor activity and how they relate to the larger gestalt of musical gesture. Second, there is a substantial contrast with the secondary theme (or “B” theme, seen in example 5) creating a stark binary opposition in style and gesture.

The secondary theme is markedly different from the first. The melody from the primary theme is present in the piano part and abstracted as a walking bass line with many varied and unpredictable meter changes. The trombone part is higher, more legato, and there are considerably more written ornaments. This is less like the funk or blues style of the primary theme and more like what one might hear in bebop or swing. The changing meters influence the weight and groupings of notes, and the emphasis on chromaticism resembles Coker's “bebop lick.”⁵⁰ While Schnyder is probably not quoting

⁵⁰ Jerry Coker, *Elements of the Jazz Language for the Developing Improvisor* (New York, NY: Alfred Music, 1991), 40.

any specific solos or melodies, some of these patterns are likely abstractions of such musical motives one might hear in bebop. The muscular gestures imply and project a musical style and the changing meters, and written ornaments and techniques that would normally belong in those styles allow the player to feel the style via their own embodied reasoning.

Table 2: Technical requisites for the primary theme of Schnyder’s Sonata

1. **Buzz** relatively lower notes, from mostly D2 to Bb2. For some players, this will require a different embouchure “setting” than higher notes.⁵¹
2. Manage the **air** appropriately for low notes. In this case, the air will be relatively low in pressure but high in volume. There is also some resistance from the valves, which might be used in a variety of ways in this passage.
3. **Articulate** quickly and efficiently in the low register, with possible multiple tongue. There are some slurs mixed in with normally articulated notes. For many players, tongue placement in the lower register is farther forward than it is for higher or middle register notes.⁵²
4. Move the **slide** nimbly, quickly, and accurately, with some minor exceptions (written glissandi and falls). This passage also requires adept valve technique in precise coordination with the tongue and slide.

The differences between the technical requisites for each theme create a marked contrast in style, and therefore gesture. Interestingly, the differences in style between the two themes are synthesized in the transitional theme, seen below in example 6. The

⁵¹ A different “setting” means that a player might utilize different facial muscles, moves the mouthpiece up or down, or somehow changes their embouchure in some way to produce the note.

⁵² More information on tongue placement and general information on the oral cavity of a trombonist can be observed in the videos Doug Yeo has recorded using an MRI machine.

Douglas Yeo, “Seeing the Unseen: Trombone Playing Through the Eye of a MRI Scanner with the MRI Brass Repository Project,” accessed April 4, 2019, <https://thelasttrombone.com/2017/08/22/seeing-the-unseen-trombone-playing-through-the-eye-of-a-mri-scanner-with-the-mri-brass-repository-project/>.

piano part (not pictured) exactly repeats the primary theme while the trombonist diverges thematically and gesturally, hence the A-prime label in the initial chart of the form. The trombonist occasionally plays along with the theme but more gestures similar to the secondary theme begin to appear.

Table 3: Technical requisites for the secondary (“B”) theme of Schnyder’s Sonata

1. **Buzz** mostly higher notes, which generally requires more tension in the embouchure and a smaller aperture.
2. The **air** must be faster, with lower volume and higher pressure compared to the first passage. Due to the numerous rests and sustained tones, the air stream is also more sporadic and restless when compared to the more continuous air stream required for the first theme.
3. **Articulation** is much more legato, notated glissandi are common, position of the tongue will likely be different (higher in the mouth) from the primary theme. Some slurs are still present.
4. The **slide** should actually be much *less* accurate than the primary theme, sometimes desynchronized with the buzz. Additionally, no valves need to be used for this theme until the transition back into the primary theme at C.

In this example, passages labeled with an alpha (α) symbol are related to the primary theme, and those labeled with a beta (β) are more closely related to the secondary theme. As the theme progresses, more β motives appear, suggesting motion towards this new style. Analyzing this passage gesturally illustrates how it fills the role of a transition between the primary and secondary themes. The normal roles of a transition in a classical sonata are to modulate to the new key for the second theme and to create energy while the theme moves toward the medial caesura.⁵³ There is no obvious medial caesura here and certainly no clear modulation; both themes use almost the entire chromatic scale and

⁵³ Hepokoski and Darcy, 93.

center around D as a pitch center, so this is not a “normal” transition for a sonata form.

However, this theme does fill some transitional role, especially if one changes their perception of sonata form through incorporating musical gestures into a sonata analysis.

Example 5: The secondary (“B”) theme from Schnyder’s Sonata, mm. 43–95.

(B) $\text{♩} = \text{♩}$
dolce
mp

45

55 *mf*

63 *mp*

72 *p cresc.* *f*

82 *dim.*

91 *p* *mp* (C) $\text{♩} = \text{♩}$

Example 6: The transitionary theme from Schnyder's Sonata, mm. 23–42.

The musical score for the transitionary theme from Schnyder's Sonata, measures 23–42, is presented in five staves. The key signature is one flat (B-flat), and the time signature is 2/4. The score includes various dynamic markings and articulations:

- Staff 1 (Measures 23–25):** Starts with *a tempo* and *p subito*. Dynamics include *cresc.*, β , β *mf*, *p*, β , and *mp*.
- Staff 2 (Measures 26–30):** Features *mp*, α , β , and α .
- Staff 3 (Measures 31–34):** Includes β , *f*, β , *p*, and *f*.
- Staff 4 (Measures 35–38):** Shows *ff*, β , *p*, and *mf*.
- Staff 5 (Measures 39–42):** Contains *cresc.*, *f*, and α .

The classical sonata form focuses on the problem of having the secondary theme happen first in an off-tonic key (usually the dominant or relative major, depending on the mode) and later in the tonic key. In his book, *Remaking the Past*, Joseph Straus describes this as “a two-part structure shaped by contrasting harmonic areas” for eighteenth century sonatas. This is what most musicians are first taught about sonata form, but the form has certainly had a rich evolutionary history since the eighteenth century. On this, Straus writes that nineteenth century sonatas are “determined by thematic contrast and thematic repetition.”⁵⁴

⁵⁴ Joseph Straus, *Remaking the Past: Musical Modernism and the Influence of the Tonal Tradition* (Cambridge: Harvard University Press, 1990), 96–97.

He argues that as music evolved, composers found new ways to adapt the sonata principle to fit growing trends in music. Straus uses sonatas by Igor Stravinsky, Béla Bartók, and Arnold Schoenberg as examples to show how these composers specifically approached this issue in the twentieth century. Rather than focusing on harmonic divergence, they change to unexpected pitch centers or change transpositions of commonly used pitch-class collections.

Schnyder invokes the trend of the nineteenth-century sonata by using radically different themes throughout the piece but borrows from the twentieth-century composers by changing musical gestures and styles between themes to create the structure of promise and accomplishment of a sonata form. This goal of this analysis is to discuss how one might begin to interpret form through gesture in this eclectic work. The gestural and stylistic polarities of themes in this sonata are suitable for a variety of interpretations when looking at the physical qualities that are required to perform them.

The return to the secondary theme in this sonata is more nuanced than a repeat of thematic content in the tonic key. At first glance, what I have labeled as the secondary theme of this sonata form (example 7) is unrelated to either the primary or secondary theme. However, consider that the return of the secondary theme of a classical sonata form combines the thematic content of the secondary theme with the key area of the first. Though limited, there are elements of both themes in the return of the secondary theme.

In some ways, one could view this theme as a combination of gestural characteristics of the secondary theme (“B”) with the primary theme. The median range is a middle-ground between the two themes, so the player’s *buzz* would lie in the middle of

the two themes. The *articulation* requisites are a combination of the occasional slurs of the secondary theme with the quick rigorous rhythms of the first theme.

Example 7: The recapitulatory second (“D”) theme in Schnyder’s Sonata, mm. 178–190.

The musical score for Example 7 consists of five staves of music in bass clef, 6/4 time. The first staff (measures 178–181) begins with a 'muted' marking and a piano 'p' dynamic. It contains several triplet markings over eighth and sixteenth notes. The second staff (measures 181–184) continues the triplet patterns. The third staff (measures 184–187) also features triplets. The fourth staff (measures 187–190) concludes the phrase with a final triplet. The fifth staff (measure 190) shows a final chord with a fermata. The score is characterized by frequent triplet markings and slurs, indicating a complex rhythmic and phrasing structure.

From another perspective, this work could be viewed similarly to how Straus discusses Stravinsky’s octet. Straus writes that the secondary theme “does not create a polarity; it merely directs the music along a large-scale motivic path...”⁵⁵ Perhaps one could interpret this form as exploring various styles and techniques before returning to the primary theme. The gestural and stylistic polarities need not fit neatly into a well-

⁵⁵ Straus, *Remaking the Past*, 201.

defined form but are clear and suitable for interpretation when looking at the physical qualities that are required to perform them.

This analysis has shown one possible way that dissecting the technical requisites for a theme or group of themes can be used in a hermeneutic analysis. For Schnyder's sonata, these physical qualities are useful in determining the form of the first movement. Certainly, other routes and methods of interpretation could arise from such a perspective, and hopefully these perspectives prove useful for any one beginning an analysis of music written for the trombone. This movement certainly does not align with normal sonata expectations and invokes elements of postmodernism. It suggests a rondo form when viewed purely thematically and is similar to a Type 2 sonata form when viewed gesturally.

Kramer discusses characteristics of postmodern music in his article, "Postmodern concepts of musical time," and a few of his characteristics apply to Schnyder's piece. In particular, Kramer writes that postmodern music avoids "totalizing forms," (meaning the composer "does not allow an entire piece to be tonal or serial or cast in a prescribed formal mold), braces contradictions, references music of many traditions and cultures, encompasses pluralism and eclecticism.⁵⁶ Schnyder defies traditional expectations of form with this work, and instead focuses on style, drama, and eclecticism.⁵⁷

⁵⁶ Kramer, 21–22.

⁵⁷ In a personal email, Daniel Schnyder stated that he thinks in "tonal centers, post-serial structures, scales, sounds, and drama." He also emphasized how important it is for him to use many musical styles in his music to create contrast and drama.

Slide Technique Schemata in Arthur Pryor's *Blue Bells of Scotland*

Trombone virtuoso Arthur Pryor (1869–1942) was soloist with the Sousa band, leader of his own band, and a prolific composer of band and solo trombone music. His musical ability was so highly regarded that he has been called the “Paganini of trombone,” and Pryor’s technique was so formidable that members of the Gewandhaus Orchestra once requested to inspect his trombone to check for any “Yankee tricks” after a particularly impressive concert.⁵⁸

Pryor’s works are dazzlingly impressive for audiences and difficult for trombonists. They are a rite of passage for young trombonists and learning how to play in his unique style is practically required for every collegiate trombonist. His most popular work for solo trombone is his set of variations on the folk song *Blue Bells of Scotland*. Many trombonists will agree, however, that the variations sound much harder than they are. How was it that Arthur Pryor was renowned for his remarkable virtuosic performances, but the same music is accessible to younger players? The answer does not lie in “Yankee tricks,” but in how Pryor made the seemingly impossible possible by writing idiomatically for the trombone.

This analysis looks at how Pryor utilized basic slide schemata to make this virtuosic piece more approachable for himself and other players. The key, melodic patterns, ornaments, and specific arpeggios are especially idiomatic for the trombone. I do not intend to discuss how this writing is important in signifying expressive qualities. I am more interested in looking at how composers write for the slide and working towards understanding what makes a composition for the trombone particularly idiomatic or not.

⁵⁸ Daniel Frizane, liner notes to *Arthur Pryor, Trombone Soloist of the Sousa Band*, Arthur Pryor, Crystal Records, CD451, CD, 1997, 7.

Arthur Pryor had an intimate knowledge of playing the trombone and was aware of what sort of passages would be easier to play for the slide and embouchure. Slide technique is usually discussed by modern pedagogues in terms of minimizing rigidity of the slide arm, managing speed and accuracy for legato and detached styles of playing, and on whether or not to include a flexible wrist. For example, David Vining writes that players should minimize “isometric tension” in their slide arm and avoid disrupting the embouchure by maximizing fluid, smooth slide motion.⁵⁹ Teachers often summarize this by saying that the slide arm should not be “rigid” or tense.⁶⁰ Below are three primary schemata that I have identified in *Blue Bells of Scotland*. Unsurprisingly, these schemata promote a smooth slide technique and work towards avoiding disrupting the embouchure.

Table 4: Three basic schemata used by Pryor in *Blue Bells of Scotland*.

- Σ-1. Two or more consecutive notes in a single slide position, usually paired with lip slurs.
- Σ-2. Quick, vacillating motion between two adjacent slide positions.
- Σ-3. Simple “in-out” slide motion that spans multiple positions, usually paired with scalar motion.

These three motoric possibilities for the slide seem obvious; either the slide moves between several positions, moves to an adjacent position, or doesn’t move at all.

⁵⁹ David Vining, *What Every Trombonist Needs to Know About the Body* (Flagstaff, AZ: Mountain Peak Music, 2010), 100.

⁶⁰ Vining also encourages players to use five separate fulcrum points in their slide motion to maximize smooth slide motion: the fingers, wrist, elbow, shoulder, and sternoclavicular joint. Using every fulcrum point in the slide arm helps minimize the rigidity of the slide arm, and helps players use the appropriate groups of muscles for the required slide motions. This is relevant to this analysis of this work because it suggests that one could start looking at how players switch between different fulcrums or muscle groups to minimize tension in the slide arm.

However, how Pryor utilizes these basic motions in his compositions is what help these pieces feel so idiomatic for performers. All three of the aforementioned schemata are seen in the passage below, taken from the second variation of the piece.

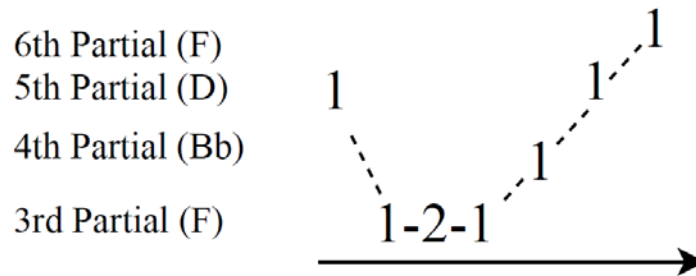
Example 8: A passage from the second variation of *Blue Bells of Scotland*, mm. 78–79.



Beats three and four of the first measure, labeled Σ -1, of example 8 fit into the first scheme.⁶¹ These notes mostly require the slide to be in first position, with the exception of E, a minor “flick” to second position. The four notes on beat four can be lip slurred, a common fundamental technique for brass players. The trombonist can either accurately buzz each of the four notes (*calibrating* their embouchure with the harmonic series of the instrument) or may just increase the speed of their buzz and allow the harmonic series of the instrument to “correct” the inaccuracy of the buzz (*desynchronizing* with the instrument). In either case, Pryor simplifies the slide motion in exchange for a more complicated embouchure motion. This data is summarized in figure 2, below.

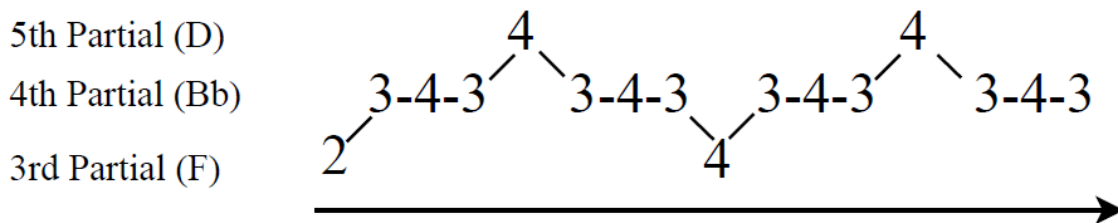
⁶¹ I have chosen to label this with the Greek Sigma and corresponding scheme, hence Σ -1, 2 and 3.

Figure 2. The slide positions and partials for beats three and four measure 78 of *Blue Bells of Scotland*.⁶²



Measure 79 utilizes alternate positions (suggested by the composer) to oscillate between two adjacent slide positions, or Σ -2. This passage of notes sounds quick and impressive, but the physical demands are approachable. Figure 3 maps out the slide positions and partials for measure seventy-nine.

Figure 3: The slide positions and partials for measure 79 of *Blue Bells of Scotland*.



Compared with Σ -1, Σ -2 asks the player to move the slide back and forth between two adjacent slide positions, rather than simply keeping the slide in one position. For Σ -1, the demands of the embouchure are greater and the slide lesser. For Σ -2 the slide motion

⁶² Each number is the slide position, and the relative position denotes which partial it belongs to. A solid line denotes that the slide moves between those positions and a dotted line denotes that the slide is stationary.

is more demanding but demands on the embouchure are lesser. Pryor balances out the demands of the slide motion with those of the embouchure to make this passage more approachable.

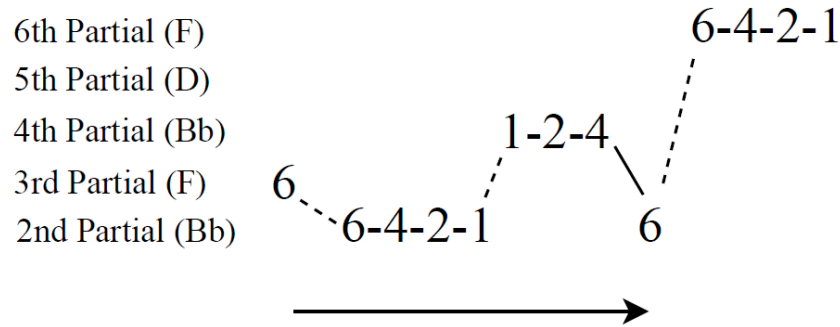
Finally, the remaining notes in beat two of the first measure have the trombonist move their slide from first to third position and back in even succession, utilizing Σ -3. He writes the chromatic C \sharp to avoid “jerky” slide motion. A better passage that uses this scheme of utilizing larger motions to minimize quick, rapid turnarounds of the slide is seen below in example 9 and summarized in figure 4. This passage requires that the player move the slide to sixth position (using the alternate sixth-position-F to simplify slide motion), move to first, back to sixth, and back to first position. With one exception, the player only changes partials when the slide is stationary.

Compared with Σ -1 and Σ -2, Σ -3 minimizes the job of the embouchure when the player moves the slide between two non-adjacent positions. This rather difficult passage is made more approachable by focusing either large slide movements or large changes in embouchure. This measure is still difficult for any trombonist, but by focusing on one task at a time, either moving the slide or changing partials, the passage is made more approachable.

Example 9: Measure 102 of Pryor’s *Blue Bells of Scotland*.



Figure 4: The slide positions and partials for measure 102 of *Blue Bells of Scotland*.



This short analysis observed how Arthur Pryor used idiomatic qualities of the slide to create basic slide schemata to make the piece more accessible while maintaining its virtuosic sound. I define three basic slide schemata that Pryor uses to make performing this piece much more approachable. While the examples for Σ -1 and Σ -3 had some minor exceptions that kept them from “perfectly” utilizing the techniques I described in table 4, it is likely that very few passages would perfectly fit these patterns. However, based on this author’s personal performance experiences, it is likely that, at least in Arthur Pryor’s work, schemata like these are essential in discovering what it means to understand how a piece might “work well for the slide.” More considerations on this topic could explore how other composers utilize similar schemata to write for the slide, to determine whether a piece written for another instrument (like a cello transcription) would work well for the trombonist, or to explore how specific schemata or slide positions might emphasize different timbres or tone qualities of the instrument to project musical meaning.

Space, Quality, and Articulation in Ferdinand David's Concerto, ii: "March Funebre"

Ferdinand David's trombone concerto is one of the most commonly performed and important pieces for the trombone. The piece was originally to be written by Felix Mendelssohn for Gewandhaus Orchestra trombonist Karl Traugott Queisser, a close friend of Mendelssohn.⁶³ Queisser was known for being a talented multi-instrumentalist and performed in Mendelssohn's personal string quartet. Mendelssohn eventually appointed the composition to his concertmaster, Ferdinand David.⁶⁴ The piece was premiered in 1837 with Queisser performing and Mendelssohn conducting. It is now highly regarded among trombonists and is the most commonly requested audition solo for tenor trombonists.

This analysis of the concerto's second movement will explore how one can apply current methodologies in vocal gesture, such as those by Heidemann, Burns, and Frith, to examine this piece from a gestural perspective. Part one of this analysis looks at the role of the funeral march in the larger form of the piece. Part two discusses how vocal gesture can inform an analysis of this work, specifically when observing the space that the trombonist occupies within their range and how their airflow and articulation change in the various ranges of the instrument. The player not only mimics the physical actions of grief in this funeral march, but also embodies the emotions of the work.

⁶³ Christian Lindberg, "Ferdinand David Concertino for Trombone," accessed April 4, 2019, <http://www.tarrodi.se/cl/ruta.asp?show=15>.

⁶⁴ It is rumored, that Mendelssohn may have helped with writing and looked over the piece after David wrote it, but, as far as this author is aware, no concrete evidence for this exists. For more information, see Carl Lenthe, "Konzertino for Trombone and Orchestra, opus 4," accessed May 3, 2019, <http://www.indiana.edu/~trombone/LentheLessons/david.htm>.

The role of this movement in the larger form of the work is interesting, and even the larger form has some issues of contention. The piece is divided into three sections. Double-bars separate the sections, and new tempo markings suggest further division of the form, but all three sections appear to be part of the same single form. However, most trombonists refer to each section as a movement, and, to keep matters simple, I will refer to the sections as individual movements.

The first and third movements of the concerto closely resemble the exposition and recapitulation of a Type 5 sonata form (sometimes called concerto-sonata form) with some unique qualities.⁶⁵ First, the orchestral introduction does not present the entire exposition, only the secondary theme and a long dramatic closing zone that transitions to the primary theme. This is particularly interesting because it saves the heroic primary themes for the trombonist.

Second, there is a trimodular block in both the exposition and recapitulation of this work, seen below in example 10. A trimodular block is a common “S-complication” discussed by James Hepokoski and Warren Darcy in their book, *Elements of Sonata Theory*. This pattern has three essential stages, hence the *tri*- prefix. Stage one (often abbreviated TM1) involves a theme that takes the expected place of the secondary theme after the medial caesura in a sonata form. In stage 2, or TM2, the attempted secondary theme fails to cadence and is redirected, either by change in key, mode, or some other method. This leads to another transition and a second medial caesura that sets up the “real” secondary theme of the piece, or TM3.⁶⁶

⁶⁵ For more information on the Type 5 Sonata, see James Hepokoski and Warren Darcy, *Elements of Sonata Theory* (Oxford: Oxford University Press, 2006), 430–467.

⁶⁶ Hepokoski and Darcy, 171.

For this work, TM1 begins at rehearsal B; the theme is heroic and fanfare-like but fails to cadence, instead landing on an arpeggiated G-flat major triad thirteen bars later (TM2). The theme then gains energy and heads toward the onset of the “real” secondary theme at rehearsal C, the one heard at the beginning of the orchestral exposition. This inclusion of a tri-modular block and the resulting thematic failure is an important consideration for understanding the musical narrative of this piece.

Example 10: The expository tri-modular block from David’s Concertino, mm. 64–83.

The image displays a musical score for Example 10, consisting of four staves. The first staff, labeled TM1, shows a melodic line in bass clef with various ornaments and a 'cresc.' marking. The second staff, labeled TM2, continues the melodic line with more ornaments and a 'poco ritard.' marking. The third staff, labeled MC2, shows a melodic line in bass clef with a 'dimin.' marking and a 'C a tempo' marking. The fourth staff, labeled TM3 Solo, shows a melodic line in bass clef with a 'Solo.' marking. The score includes various musical notations such as notes, rests, and dynamic markings like 'cresc.', 'poco ritard.', 'dimin.', and 'a tempo'.

TM1 shows up again in the orchestral accompaniment after the exciting display episode, beginning at the EEC in measure (20 after C). The theme “fails” again and leads to the closing zone material originally heard in the orchestral exposition. This time, however, the transitional material that originally led to the primary theme leads to the dramatic cadenza; this is a common trait found in a Type 5 sonata’s recapitulation, but not often in the exposition.

Instead of the cadential six-four harmony in E-flat major that one would normally expect at the beginning of a cadenza for this piece, there is a pair of fully-diminished

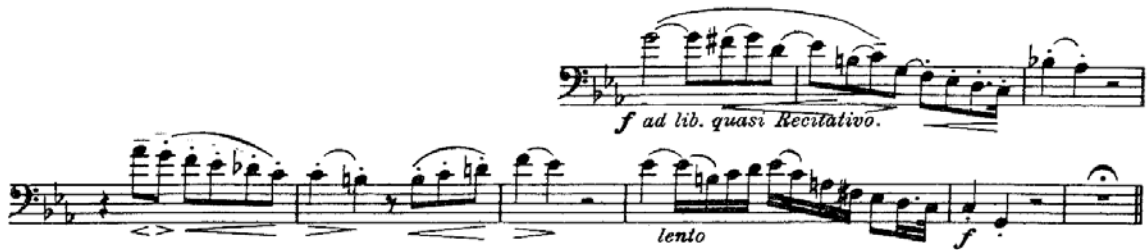
seventh chords that introduce the cadenza followed by a C-minor six-four chord. This harmony feels especially surprising following the triumphant ending of the exposition in E \flat major, heard only a few bars before. The fully-diminished-seventh chords interrupt the harmonic path of the closing zone and the recitative-like style of the cadenza establishes the mood for the next movement. The dramatic cadenza reflects on the failed TM1 theme and sets up the shift to the minor mode seen directly after.

The third movement gives the hero in this work a chance at redemption. In the final closing ritornello of the piece, the soloist repeats the exciting TM1 theme, which finally comes to a cadence at the end of the work, seen below in example 12. Overall, this form follows a redemptive arc. A heroic figure fails in the exposition and the hero is redeemed in the recapitulation.

So how does the funeral march of the second movement fit into this larger narrative? The funeral march replaces the development section and can be understood as a lament for the fallen hero depicted by the failure of TM1 in the first movement.⁶⁷ In some ways, this lament could be interpreted as a sung elegy. The shift to the minor mode, invocation of the funeral march topic (seen in the rhythm and style of the piano), and legato, song-like melody all support this interpretation. The remainder of this analysis will focus on how this movement can be viewed through the lens of vocal gesture to understand how the trombonist embodies the emotions portrayed in this funeral march.

⁶⁷ Though it is likely inconsequential, the opening theme of the second movement exactly mimics the slide positions of TM1 for six notes.

Example 11: The cadenza from the first movement of David's Concerto, mm. 166–174.



Example 12: TM1 in the coda of movement three of David's Concertino, mm. 338.

The first theme below, shown in example 13, occurs at the first musical climax of the funeral march. Up until now, the trombonist has played a mostly legato line in the middle to high register of the instrument and at a medium dynamic level. The pictured passage extends the volume, high range, and low range of the work dramatically and creates an exciting climactic moment.

For the trombonist, the rising pitch and dynamic in measures 23 through 25 require a dramatic and abrupt increase in air flow, volume, and pressure. Additionally, this passage is marked by being articulated with “default” articulation rather than a

legato one.⁶⁸ This articulation is intensified due to the higher tessitura of the passage. Because the pressure of the airflow is higher (because the notes are higher), the articulation has to be slightly firmer to accommodate. Physically, the lurching increase of flow and harsher articulation is akin to what one might do when they scream or yell; here, this would specifically be a crying out in anguish. This sort of gesture combines perfectly with the aforementioned tragic topoi to contribute to expressing grief.

Immediately following this outburst of emotion, David contrasts the high-energy cry of anguish by writing the exact opposite of what just happened: a low defeated sigh and a reactionary drop in energy.⁶⁹ The lower softer melody in twenty-six not only reverses the massive change in air flow seen in the measures leading up to the high-C5 but calls for less air flow and pressure than those measures.

The theme-agent of the work is dramatically crying out in grief and sighing in despair while mourning the fallen hero of the exposition. Because the increased and decreased air flow, pressure, and volume for both parts of this climax are required produce the written notes, any trombonist performing this piece adequately will embody the actions performed by the theme-agent. The trombonist will likely embody the intense musical *inertia* that moves towards the highest notes following the increase of the air flow for the big changes in dynamics. The physical sensation of wanting to return to the middle register and working against spatial gravity to sustain the high C5 at such a volume are personified by the responsive musical and physical sigh.

⁶⁸ Many players refer to a default articulation as a “Ta” syllable, and legato as a “Da” syllable. This is unique to every player and musical situation, but typically a default articulation is farther forward in the mouth and firmer than a legato articulation.

⁶⁹ In many performances of this work, players often add a caesura after the high-C to heighten the drama between the outburst and reactionary sigh.

Example 13 and 14: mm. 19–27 and 51–61 from mvt. ii of David’s Concertino. Two similar gestural trajectories.

The image displays two musical staves from a score. The first staff, labeled '19', shows a bass line in 4/4 time. It begins with a half note, followed by a quarter note, and then a half note, with a rest following. The second staff, labeled '23', continues the first staff's melody. It features a half note, a quarter note, and a half note, followed by a rest. The third staff, labeled '51', shows a bass line in 4/4 time. It begins with a half note, followed by a quarter note, and then a half note, with a rest following. The fourth staff, labeled '57', continues the third staff's melody. It features a half note, a quarter note, and a half note, followed by a rest. Both passages include dynamic markings (mf, cresc., ff, p, morendo) and articulation marks (accents, slurs).

Finally, the passage seen in example 14 has a curious quality. The thematic material is quite different from example 13, instead repeating the opening theme of the movement transposed down an octave. The lower transposition of the opening theme is dramatic and resigned compared to the song-like opening. This is a contrast that many vocalists would have difficulty achieving, considering the large shift in range, but most trombonists would find quite simple. The curious quality lies in comparing the gestural content between the two passages. David expands the intense gestural pattern of the first passage and creates an exciting end to the movement in the second passage.⁷⁰ This sort of

⁷⁰ Similar aspects of vocal space or quality and expanding musical gestures are seen in the second movement of Grøndahl’s trombone concerto, *Quasi una Leggenda*, as well. In this movement, changes in space and quality help depict “otherness,” between the sections; the A section is brash and heavy in quality and the drastic changes in space and quality of the B section help contrast the heavy A section. Additionally, the gestural repeat and expansion in Grøndahl’s Concerto instead depict the growing trials of the hero, an interesting parallel with David’s concertino.

“gestural repeat” has been discussed by Fisher and Lochhead and is similar to Kramer and Hatten’s idea of *expressive doubling*.⁷¹

This analysis has shown how one can incorporate research in vocal gesture discussed in the first chapter into an analysis of music written for trombone. The second movement of this work already incorporates elements of a sung elegy, and information concerning vocal gesture helps to illuminate the relationship between the theme-agent and how the trombonist embodies the emotions of this agent. Furthermore, following Cox, the listener will understand this expression through mimetic engagement. The embodied reasoning felt by the trombonist, expressive qualities of the music, and mimetic participation of the audience all align in this work to communicate a sung elegy mournful of a fallen hero.

Musical Narrative in Saskia Apon’s First Trombone Quartet, mvt. i

I look to Saskia Apon’s first trombone quartet for the final analysis of this document to show how one might incorporate musical gesture into a larger narrative analysis using methodologies from Byron Almén’s *A Theory of Musical Narrative*. I first interrogate how Apon uses a troping of the pastoral and clockwork topics to establish the initial order-imposing hierarchy of this work; this includes an in-depth explanation of the clockwork topic. I then integrate George Fisher and Judy Lochhead’s research on gesture and embodiment to examine how musical gestures, embodied qualities, and agency fit into this narrative to illuminate a comic narrative archetype.

⁷¹ George Fisher and Judy Lochhead, “Analyzing from the Body,” *Theory and Practice* 27 (2002): 56; Hatten, 39.

Saskia Apon (b. 1957) is a self-taught composer and arranger who has made significant contributions to chamber literature for brass instruments. Her unnamed trombone quartet has become a staple of the trombone quartet repertoire.⁷² The quartet was written for four undesignated trombone parts, with the first three parts switching between bass and tenor clef. The third trombone part, however, stays almost completely in the staff for both movements, and looks more like a part written for the bass trombone due to the mostly lower register. This analysis will assume that standard performance practice for trombone quartets, which typically consists of three tenor trombones and a bass trombone.

Perhaps the most important part of Byron Almén's approach to analyzing musical narrative involves determining the hierarchy between musical agents of a work.⁷³ He bases his four narrative archetypes (romantic, tragic, comic, and ironic) on the events that occur between an order-imposing hierarchy and a transgressive agent that attempts to topple this hierarchy; each agent may be positively or negatively inflected, and hierarchical changes between musical agents are especially important. On a narrative level, conflict between the order and transgressive agent determine the sort of narrative archetype the piece follows. So, what is the initial order-imposing hierarchy for this work? Two perspectives can help with determining this, one from Byron Almén, and one from George Fisher and Judy Lochhead.

⁷² To this author's knowledge, no program notes written by the composer exist for this work; the unnamed and lack of a written program for this work certainly add an air of mystery to the piece.

⁷³ Byron Almén, *A Theory of Musical Narrative* (Bloomington, IN: Indiana University Press, 2008), 66.

Byron Almén writes that musical topics “significantly constrain and influence interpretation” of a narrative analysis.⁷⁴ The opening passage of this quartet (pictured below in example 15) tropes, or combines, elements from two musical topics: pastoral and clockwork. The synthesis of these topics produces an *emergent meaning* of a damaged pastoralism challenged by the mechanical nature of the clockwork topic.

The pastoral topic is signified in several ways. The sustained notes of the bass trombone are reminiscent of the droning bass so commonly seen in the pastoral topic, and the consecutive eighth notes create mostly parallel thirds and sixths, another common pastoral signifier.⁷⁵ Dotted rhythms, gentler compound meters (related to the *siciliana*) also invoke the pastoral topic, and, the slow tempo and expansive melody—similar to a horn call—help solidify the pastoral landscape.

Nested within these pastoral signifiers are essences of the ballade topic. Rosen writes of the “sense of an old story” that a ballade invokes, and this piece certainly embraces that aesthetic.⁷⁶ The six-four meter signature and expressive melody are reminiscent of Chopin’s romantic ballades. The ballade traces growing tension for a character and in many ways could imply an epic journey or call to action. To be discussed in a later section, this piece certainly evokes feelings of an adventurous protagonist in the face of adversity.

⁷⁴ Almén, 67.

⁷⁵ Raymond Monelle, *The Musical Topic* (Bloomington, IN: Indiana University Press, 2006), 208.

⁷⁶ Charles Rosen, *The Romantic Generation* (Cambridge, MA: Harvard University Press, 1995), 323.

All of these signifiers create a rich matrix of pastoralism, but more important than determining signifiers is determining what is signified. Monelle writes the following on pastoralism in music:

The pastoral is about finding perfection in innocence, heaven in the uncorrupted, true morality in the irresponsible, the mystic vision of maturity in an allegory of youth and simplicity. These are the meanings universally expressed by composers of all ages, from the pellucid Monteverdi to the overheated Strauss, from the clear-edged Vivaldi to the lyric Brahms...[to] the sensualist Debussy and the agnostic Vaughan Williams.⁷⁷

Pastoralism represents purity, myth, nostalgia, and simplicity. There are many kinds of pastoralism, but this topic is always idealized. In Apon's quartet, the simplicity and uncorrupted innocence of the pastoral topic are challenged by tragic topoi. The minor mode detracts from the normally sweet-sounding parallel thirds and sixths, and the occasional dissonance between the melody and the droning bass corrupt what could be elegant simplicity.⁷⁸ Even the mechanical construction of the modern trombone challenges the pastoral topic in some ways. The most important way that the pastoral topic is challenged in this piece, however, concerns the presence of the "clockwork" topic. In order to continue with this analysis, a moderate detour to discuss the clockwork topic is necessary.

⁷⁷ Monelle, 271.

⁷⁸ The work is mostly in D-minor, the relative minor to the often-pastoral F-major.

Example 15: Saskia Apon, First Trombone Quartet, mm. 1–16

$\text{♩} = 80$ C.S.

1 *pp* C.S. *pp* *p* *mp*

6 *p* *p* *crescendo* *mf* *mf* *mf*

12 *dim.* *p* *dim.* *p* *mf* *dim.* *p*

The clockwork topic is discussed briefly in Leonard Ratner's *Classic Music* and has been further discussed by Robert Hatten.⁷⁹ For Ratner, this topic is about mechanical sounding textures that imitate a physical clockwork. "Clockwork instruments themselves are parodistic, operating in rather limited registers with tones that lack a sense of human presence."⁸⁰ He cites the first four bars of Mozart's sonata, K. 545, the second movement of Haydn's "clock" symphony, the third movement of Beethoven's A-major string quartet, op. 18, no. 5, and the final measures of Beethoven's *Eroica* symphony as prime examples of this topic.

There are some apparent signifiers for the clockwork topic that I have identified using Ratner's chosen musical examples as a starting point. Most important, it seems, are short repetitive musical cells. These repetitive patterns are important for creating a brilliant and mechanical sounding rhythmic texture (perhaps incorporating hocket technique). This might include an Alberti bass line, or something similar that alternates between lower and higher notes, like a clock might. Additionally, higher and softer passages that signify the smaller parts in a clockwork are also a common trait.

The repetitive aspect of the clockwork topic is the most striking and curious. Imitative processes like *fugue* certainly do not overtly signify the clockwork topic, and, while the minimalistic textures that came two hundred years later relate more closely to this topic, there is still a definite difference between the two. The motivic and repetitive musical cells of these examples are not ostinatos, like one might hear in a *chaconne* or a

⁷⁹ Robert Hatten, *Interpreting Musical Gestures, Topics, and Tropes* (Bloomington, IN: Indiana University Press, 2004), 282.

⁸⁰ Leonard Ratner, *Classic Music: Expression, Form, and Style* (New York, NY: Schirmer Books, 1980), 391.

passacaglia. They are also not repetitive musemes that one might see in a minimalist texture. There is focus on purely rhythmic repetition or process rather than both rhythm and harmony. The clockwork topic is not a repeated harmonic or melodic structure, but one that imitates the mechanical nature of a clock through structural patterns; after all, the topic began as a sonic representation of the order and complexity of a clock.

Example 16: Tchaikovsky, Symphony no. 5, mvt. iv, mm. 128–33.

The musical score for Example 16, Tchaikovsky's Symphony no. 5, mvt. iv, mm. 128–33, is presented in a standard orchestral format. The score includes staves for the following instruments: Fl 1-2, Ob. 1-2, Cl. 1-2, Bsn. 1-2, Vln. 1, Vln. 2, Vla., Vc., and Cb. The key signature is one sharp (F#) and the time signature is 3/4. The score begins at measure 128. The woodwinds (Fl, Ob, Cl) play a melodic line with slurs and accents, starting at *mf* and ending at *f*. The strings (Vln. 1, Vln. 2, Vla., Vc., Cb.) play a rhythmic pattern of eighth notes, starting at *mf*. The Bsn. 1-2 part is mostly silent, with a few notes at the end.

I find this topic is exemplified in the finale of Tchaikovsky's fifth symphony, example 16.⁸¹ The strings create a mechanical-sounding complex pattern of repeating rhythms that accompany the simple high lyrical melody in the woodwinds. There is also a gestural component to this topic. The musicians performing this work enter into a motoric state of being and repetition; the physical actions associated with this gesture have the player embody the mechanical nature of the clockwork topic.

For more insight on repetitive processes and what they may signify, I look to Rebecca Leydon's article, *Toward a Typology of Minimalist Tropes*. Leydon refers to several minimalistic tropes that capture various essences of how repetitive processes invoke different soundscapes. Of most relevance to this study is her "aphasic" trope, where "musematic repetition suggests a cognitively impaired musical subject." She also refers to "motoric" and "totalitarian" tropes, which suggest that repetition could represent indifferent mechanized processes and involuntary states of unfreedom, respectively.⁸²

Apon's quartet will likely not remind any listener of a literal clock. However, the repetitive processes used in both movements of the work are certainly mechanical. The melody that is heard almost constantly throughout the piece (bars 1–5 of example 15) is essentially a six-note rhythmic pattern repeated over and over again, and the response of the first and second trombones to the third trombone's melody becomes predictable and robotic. Furthermore, the consecutive patterns of eighth notes starting in measure eleven are both musically and physically mechanical, requiring that the player move their slide

⁸¹ Some other examples of works that invoke similar repetitive processes are Schubert's *Gretchen am Spinnrade*, Schumann's "Ich Grolle Nicht" from *Dichterliebe*, and John Beckwith's *Stacey*.

⁸² Rebecca Leydon, "Toward a Typology of Minimalist Tropes," *Music Theory Online* 8, no. 4 (December 2002), accessed May 3, 2019, <http://www.mtosmt.org/issues/mto.02.8.4/mto.02.8.4.leydon.html>.

in a monotonous rigid pattern for long stretches of time. This process limits the players expressive potential and invokes Leydon's motoric and totalitarian tropes.

Another example, Schubert's famous lied, *Gretchen am Spinnrade*, relates to Leydon's aphasic trope. In this work, the repetitive pattern in the piano represents Gretchen spinning her wheel. Like her spinning wheel, her desire to be with Faust is an emotional constant. The repetitive mechanical spinning represents not only her physical anxiety, but her obsession with Faust. In the instances where she loses herself in her fantasy, the wheel ceases to spin for a moment, but the return of the spinning wheel in the piano suggests that her obsession continues.⁸³ In this sense, it is also possible to read the repetitive process as projecting madness.

Because of the troping of the pastoral and clockwork topics, I think the hierarchy of this work could be understood as a single melodic agent represented in two different ways. The melody represents the main musical agent, the protagonist, and the repetitive patterns seen in both the melody and the rest of the texture are the opposing agents, representing either obsession, desire, or some other internal quality of the melodic agent that challenges their own mental health, meaning that the opposing agents are *above* the melody in the hierarchy.

In their article, "Analyzing from the Body," Fisher and Lochhead discuss the idea of *Performance Gesture*, quoted below.

⁸³ An oft-quoted cliché defines "insanity" essentially as doing the same thing over and over and expecting different result. While this is not accurate, there are some semblances of truth to the idea that repetition can be indicative of obsessiveness or madness. In this way, I believe that the repetitive processes of the clockwork topic might signify insanity, madness, obsession, or even mental illness.

An interesting perspective on the possibility of portraying mental illness might benefit from methodologies set forth in Joseph Straus, "Normalizing the Abnormal: Disability in Music and Music Theory," *Journal of the American Musicological Society* 59, no. 1 (Spring 2006): 113–84.

Performance gesture encompasses a variety of phenomena, including the physical movements necessary for sound production, the coordinating and cuing activities, of ensemble playing, other bodily motions of the performers associated with musical expression, and the feelings or sensations of directed motion that performers experience during the course of a performance. Such a notion allows us to discuss under the same conceptual umbrella both the physical motions associated with tone production in different instruments...and the physical sensations associated with more general and dynamic aspects of musical performance.⁸⁴

Fisher and Lochhead look at performance gesture on multiple planes, including how players interact within an ensemble and the feelings players experience during a performance. In this piece, the primary melody of the piece has trombonist embody the difficulty of continuously trying and failing to reach a goal.

The three eighth notes at the end of each measure consistently *reach* for a sustained pitch, one that is constantly rising. The trombonist moves from the low A to E, F, and G, but fails to attain the octave A, instead falling to land on D, a pitch lower than even the initial rise toward E. The airflow of the trombonist also mimics the energy and trajectory of the melody. As the melody rises in pitch or volume, the airflow of the trombonist increases; the struggle of the musical inertia of the work is mimicked in the musical *direction* that the trombonist feels. Furthermore, the melody is usually either fairly low or very high for the tenor trombone. Whichever player is performing the melody will typically have to work harder to be heard, especially amongst three other players playing in their more comfortable ranges. This melody is challenged further by the other instruments in the texture (seen above in example 15) that, in some ways, mock the third trombone. The first and second trombone parts span an entire octave, reaching

⁸⁴ Fisher and Lochhead, 48.

the high A that the melody is trying to achieve, and the bass trombone creates a dissonant tritone with the low A when the melody has already resigned. All of these different perspectives of performance gesture accumulate to a situation where the ensemble and melody work against each other. Just as the primary musical agent is struggling, the trombonist embodies this exhausting struggle.

This struggling melody tries to reach the octave four times before the first cadence. The second attempt (beginning in measure fifteen) extends the falling action of melody toward D, but ultimately has the same fate. For the third (measure twenty-two), the melody is transposed up two octaves in the second trombone and doubled at the lower octave in the first trombone. This melody is in a range that is equally or more uncomfortable for the trombonist, and the *fortissimo* dynamic requires that the trombonist work much harder to play this melody. This could be interpreted as a frustrated reaction to the initial failures, and the loud, high melody is reminiscent of the anguish-fueled “outburst” discussed earlier in the analysis of David’s concertino. Similarly, the falling eighth notes following the third failure of this melody are also similar to the resigned sigh seen in that movement.

The most important part of determining the narrative archetype for this movement lies in the fourth attempt, seen below in example 17. Here, the melody in the first trombone part changes slightly, but is still recognizable. The melody in the first trombone is slightly altered, but recognizable because of the rhythm and the “rising” quality. The “golden” moment of the piece (figuratively and literally) happens when the melody joins in with the opposing musical agent in measure thirty-five, embracing the opposition, and finally overcoming the opposing agents to reach the high A in measure 37. This is

immediately followed a peaceful repeat in the first trombone part; the pastoral melody is unchallenged and for a brief moment the piece cadences in C-major.

Example 17: Saskia Apon, First Trombone Quartet, mm. 32–41.

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So how do these melodic and gestural details depict a single melodic agent facing internal struggle? The key lies in defining the order-imposing hierarchy. The repeated melody of the trombone along with both the musically portrayed and physically

embodied difficulty of attaining a goal suggest that this melody begins fairly low in the narrative hierarchy. The rising lines in the first and second trombones that “mock” the melody in the beginning of the work (example 15) are actually *extracted* from the melody of the third trombone. The continuously rising half notes are an abstraction of the internal qualities of the melody and are used directly against it; Robert Hatten calls this sort of melodic counterpart that stems from the primary melody *refractive counterpoint*.⁸⁵ The musical agent that begins higher in the narrative hierarchy is not the melody, but these negatively inflected patterns extracted from the melody. In this case, the melody acts as the transgressive agent, trying to over-take those negative qualities, and is eventually triumphant in overcoming feelings of obsession, depression, or madness.

Concerning the narrative archetype, the initial order-imposing hierarchy of this work is negatively inflected. The troping of pastoral and clockwork topics signify a damaged pastoralism, one that might represent a cognitively impaired individual dealing with emotional issues of obsession or madness. The melody is a transgressive agent, attempting to over take the flawed initial hierarchy. As seen in example 15, this transgressive agent eventually succeeds in overcoming the order-imposing hierarchy, and the piece work ends with a positive outcome. This most closely aligns with Almén’s *comedy* archetype. Almén writes that comedy is “the narrative of renewal, moving upward from experience to recovered happiness.”⁸⁶ This piece certainly has a sense of renewal and recovered happiness. The comic archetype doesn’t necessarily represent a

⁸⁵ Robert Hatten, *A Theory of Virtual Agency for Western Art Music* (Bloomington, IN: Indiana University Press, 2018), 21.

⁸⁶ Almén, 65.

“transgressive hero figure,” but instead a story of overcoming one’s personal demons and issues.

Like any work, many valid interpretations are possible. The goal of this analysis was to explore how one can use findings in musical gesture, embodiment, and agency to support other methods of analysis. I chose to focus on how the normally pleasant pastoral topic is challenged by the mechanized clockwork topic; the two work together to signify a yearning or desire for inner peace. Based on the exhausting struggle of the melody that the trombone quartet embodies when playing this piece combined with the refractive qualities of the other lines, the narrative of this work seems to portray a single melodic agent opposed by its own madness in a comedy archetype.

Conclusions

This study sought to explore new ways to look at the trombone from an analytical perspective. Although music historians have studied the signifying role of the trombone in classical and romantic music for several decades, I wanted music theorists to have more tools and techniques to look at music for brass and to understand these perspectives as they are understood by a brass player.

Evidence set forth in the first part of this study showed how studying popular methods of teaching brass, including Arnold Jacob's famous *Song and Wind* philosophy, helps establish parallels between singers and brass instrumentalists in their sound production and mental approaches to playing and singing. Because of this strong mental and physical connection, it makes sense that current research in vocal gesture were an appropriate starting point for looking at musical gesture. Burns' three aspects of space, quality, and articulation are as useful for study of vocal music as they are for study of brass music.

The embodiment considerations from the end of chapter one also showed new ways one could understand embodiment from the viewpoint of a brass player. Feelings like the pressure of moving away from the middle-range of the horn (spatial gravity), the energy required to keep a musical phrase "alive" (direction/inertia) and the perfect balance between having full control of the instrument and allowing the natural qualities of the instrument to take over (calibration and de/synchronization) are known by all brass players. I hope that analysts can use these ideas as seeds for further understanding the

unique experiences that brass players have when playing their instrument compared to any other instrument family.

The four analyses in chapter two sought to integrate concepts from the first chapter with other well-defined methods of analysis, such as form, narrative analysis, and topic theory. In each analysis I also attempted to show a new direction into which one might extend a theory of musical gesture that includes trombone. With Schnyder's Sonata, I set out to identify the physical qualities of playing in trombone apart from any stylistic or musical considerations to lay a groundwork for analyzing those qualities. Though other theorists, including Lidov, Cox, and Fisher and Lochhead have discussed such ideas in their writings, an example of an analysis that integrates these ideas seems useful, especially for new territory like analyzing gestural qualities of the trombone.

In my analysis of *Blue Bells of Scotland*, I began answering a question that all trombonists have asked when playing a particularly difficult transcription: why do certain pieces work better for the trombone than others? It is my hope that, by establishing basic schemata for motoric possibilities of the slide, future research on the subject could integrate these ideas and study more of Pryor's works or work towards finding more complex schemata that composers use to take advantage of the trombone's most unique characteristic.

The goals of analyzing David's concerto and Apon's quartet were to focus on topic theory and various qualities of embodiment to show how they can depict specific emotions or even musical narrative. David's concerto was especially useful in seeing how those specific aspects of embodiment can help represent a specific emotion from the

work, in this case grief. In contrast, the analysis of Apon's quartet leaned more toward tracing how such aspects change throughout a work to project a comic musical narrative.

Though the goal of this study was to develop a theory of musical gesture that incorporates the trombone for music theorists, performers may also benefit from the analytical methodologies presented here. Furthering one's analytical abilities can only enhance one's interpretive capabilities regarding musical performance. Hopefully, trombonists and music theorists will use the information and methodologies discussed in this document to delve deeper into understanding the trombonist's rich and expressive repertoire.

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