

THE TROMBONE IN A: REPERTOIRE AND PERFORMANCE
TECHNIQUES IN VENICE IN THE EARLY
SEVENTEENTH CENTURY

by

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THESIS ABSTRACT

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Title: The Trombone in A: Repertoire and Performance Techniques in Venice in the Early Seventeenth Century

Music published in Venice, Italy in the first half of the seventeenth century includes a substantial amount specifying the trombone. The stylistic elements of this repertoire require decisions regarding general pitch, temperament, and performing forces. Within the realm of performing forces lie questions about specific instrument pitch and compositional key centers. Limiting this study to repertoire performed and published in approximately the first half of the seventeenth century allows a focus on specific performance practice decisions that underline the expressive elements of the repertoire. Using the trombone in A allows the performer several advantages over using the trombone in B-flat. Matching the instrument to the music is more than good decorum, it yields a more effective performance of the rhetorical and expressive elements imbedded in the music, satisfying the goal of music in this early seventeenth-century “modern” style.

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Dedicated to my muse, my angel, my mom,
Anita Alexander.

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CHAPTER I

INTRODUCTION

For the first half of its 600-year existence, from the early fifteenth century to the middle of the eighteenth century, the trombone was considered to be pitched in A. This contrasts with the modern conception of the trombone in B-flat. Surviving instruments of the period are, on average, the same length as modern instruments, which indicates that this is a difference on the part of the player's conception of the instrument rather than a difference in the instrument itself. Since the early music revival began in the 1950s, modern trombonists have been experimenting with playing reproductions of historical trombones in historic repertoires. The problem is not with the modern reproductions *per se*, but with the trombonists' conceptualization of the instruments in B-flat. The early trombone was in A. It is not that this information is unavailable. In this study, I rely heavily on the work of three respected scholars in the field of historic brass research. The first is David M. Guion, who has published two important books and numerous articles on the history of the trombone. He wrote the following already in 1980:

All trombonists with a serious interest in playing Baroque music should make similar experiments, playing as many different trombone parts as possible—both as written and transposed—to find out how practical the A trombone is. While it may be that the B-flat trombone is a convenience that no modern trombonist would want to be without, it is at least equally possible that the advantages of the A trombone would outweigh the nuisance of learning all new slide positions.¹

Another important scholar interested in the history of the trombone, Howard Weiner,

¹ □ David M. Guion, "The Pitch of Baroque Trombones," *Journal of the International Trombone Association* 8 (1980), 26.

wrote that “all of the sources... indicate that tenor and bass trombones in A and alto and *quint*-trombones in D, rather than instruments in B-flat and E-flat (or F) respectively, were the norm until around 1800.”² Stewart Carter has written similarly about modern trombonists playing trombones in A, “... for so many trombonists who play ‘early’ music, the question is not ‘when,’ but ‘if’. Few indeed are the tenor trombonists today who play even seventeenth-century music – a repertoire for which the instrument’s pitch is well established – with closed-position A.”³ The goal of my current project is to support and amplify these calls for rethinking our approach to the historical trombone and to encourage and convince modern trombonists to play in A in appropriate repertoire.

The focus of this research is the trombone in A, representing a different way of playing and conceptualizing the instrument from that of the modern instrument, which is in B-flat. I will examine the techniques for playing in A that differ from playing in B-flat. I will also analyze representative pieces of its repertoire published in Venice in the first half of the seventeenth century. I have chosen this repertoire because it is a rich source of music for the trombone. I claim that playing on the correct instrument is essential for the musical understanding of this repertoire.

The difference between the trombone in B-flat and the trombone in A is articulated in two parts. First is the conceptualization of the instrument by the player. Pitch flexibility means that the label we apply to a pitch is not dependent on frequency. In

2□Howard Weiner, “The Trombone: Changing times, changing slide positions,”*Brass Bulletin* 36 (1981), 52.

3□Stewart Carter, “Trombone Pitch in the Eighteenth Century: An Overview,”*Posaunen und Trompeten: Geschichte, Akustik, Spieltechnik* 19..Musikinstrumentenbau-Symposium in Michaelstein, November 20-22, 1998 (2000), 66.

early music, pitch can range from $a' = 375\text{-}520$ Hz,⁴ with some modern (and not necessarily historical) standardizations on 415 Hz, 440 Hz, and 465 Hz. A trombone is in B-flat only because the player conceives it in B-flat. That is, the player conceives the harmonic series in first position (slide all the way in) as being based on B-flat. Similarly, a trombone can be pitched in A when the player conceives the harmonic series in first position as being based on A. Each conceptualization has its advantages and disadvantages, and each has repertoire that is better suited to it.

The second part of the difference between the trombone in B-flat and the trombone in A is in the slide position system. Modern trombonists use a chromatic system with seven slide positions. The historical system that accompanies the conceptualization in A uses a diatonic system with four slide positions. Most of the natural tones are represented in the four positions, and accidentals are played in between, relative to the four positions. Sharp notes are raised from their natural but slightly lower than their “enharmonic equivalent” in order to provide the just interval that sounds so sweet. For example, *A* is in first position and *G* is in second. *A-flat* and *G-sharp* are both in between first and second position, but the *A-flat* is a little higher than the *G-sharp* in most unequal temperaments and tunings of the early modern period. The second chapter of this study provides a more thorough explanation of these systems based on historical treatises.

In order to achieve the goals stated above and convince modern trombonists to play in A, it will be necessary for them to understand the history of the trombone in A. My second chapter provides “A History of the Trombone in A.” I begin with the earliest

⁴ Throughout this thesis, I will use the Helmholtz system of pitch nomenclature. L.S. Lloyd and Richard Rastall, “Pitch nomenclature,” *Grove Music Online, Oxford Music Online*, Oxford University Press, accessed November 16, 2015, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/21857>.

appearances of the trombone in theoretical and pedagogical texts and follow it through its six centuries of repertoire, ending in the present. I trace the existence of one specific mistake as it was passed down from one treatise to the next. Along the way, I try to relate each author's description with our present understanding.

Through a comparison of performances of the same repertoire using the different approaches and conceptualizations to the trombone, I provide compelling evidence for the use of trombones in A for early repertoires. This comparison of repertoires accompanies a part analysis in my third chapter, in which I provide quantitative evidence for the efficiency of slide movement in some trombone parts when played on the trombone in A as opposed to the trombone in B-flat. My selections for part analysis represent the repertoire of the beginning, middle, and end of the first half of the seventeenth century; they have been selected from the list of early seventeenth-century Venetian music with trombones provided in Appendix A.

The fourth chapter consists of two analyses inspired by Elisabeth Le Guin's *Boccherini's Body*.⁵ The first analysis is on an experimental, performance level, in which I explore the phenomenology and my observations as a player when playing the trombone in A versus the instrument in B-flat. I relate the trombone in A with its seventeenth-century repertoire, and the aesthetics and mindset of the people with whom it originated. The second analysis comes in the form of a rehearsal "interview-narration" and discussion by the early music ensemble "à2," of which I am a member. We explore the challenging music of early seventeenth-century Venetian composer, Dario Castello,

⁵ Elisabeth Le Guin, *Boccherini's Body: An Essay in Carnal Musicology* (Berkeley: University of California Press, 2006).

and how his music relates to the aesthetics and *Zeitgeist* of his time and place.

A fifth and final chapter presents conclusions and imperatives. I expect that the vast majority of music composed for the trombone in this time period is in or near the key of A, and, as such, ought to be performed on a trombone that is conceptualized in A rather than in B-flat. This creates a more natural correspondence between the music and the instrument and more efficiently reflects the composers' intended affects with respect to performing forces and organological choices.

As stated above, the goal of this study is to encourage and convince modern trombonists of the value of utilizing the trombone in A for appropriate repertoires. While I look specifically at the early seventeenth-century Venetian repertoire, the principles apply to all historical repertoires. I will illuminate the benefits and obstacles in this endeavor. I provide historical, quantitative, and phenomenological evidence to support my thesis that music is best played on the instrument(s) intended and expected by the composer. I wish to convince the modern trombonist to explore and experiment with the possibilities, from instrument modification to alternate conceptualizations and systems for operating the instrument. The first step, however, is a thorough understanding of the historical basis for this approach, and that is provided in the next chapter.

CHAPTER II

A HISTORY OF THE TROMBONE IN A

The trombone, in other words, has not just one history but several.
--Trevor Herbert, *The Trombone* (2006)

The Proto-“Golden Age”

The earliest reference to the trombone in a didactical or theoretical text is by Johannes Tinctoris in 1487. In his *De inventione et usu musicae*, Tinctoris makes no mention of the fact that the trombone was played in A, only that it is called “*trompone* in Italy and *saque-boute* in France”⁶ and that trombonists played “harmoniously” with shawm players in the *alta capella*. Two other sixteenth-century treatises contribute to the pre-history of the trombone in A. Sebastian Virdung, in his *Musica getutscht und ausgezogen* published in 1511 in Basel, provides the first drawing of the instrument (see Figure 1). Martin Agricola, in his *Musica instrumentalis deudsch* published in 1529 in Wittenberg, provides the second drawing of the instrument (see Figure 2).

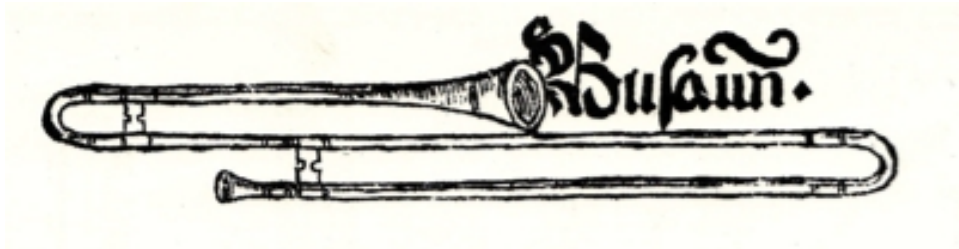


Figure 1: Virdung’s picture of the early trombone

⁶Anthony Baines, “Fifteenth-Century Instruments in Tinctoris’s *De Inventione et Usu Musicae*,” *The Galpin Society Journal*, Vol. 3 (March, 1950), 19-26.



Figure 2: Agricola's picture of the early trombone

Unfortunately, these works were meant for scholars rather than students, and, therefore, offer no instruction or description of performance technique. Agricola writes, "I shall not say much about them at this time, for I do not yet possess the proper fundamentals; but when I obtain them, you will receive them correctly from me."⁷

Virdung is similarly elusive, "As for which of these can have rules formulated for them and how one will be able to learn to play them, however, I will say no more about that here. Rather, in the other book I will say and write something on this subject [that is] new and not [generally] known."⁸ David M. Guion explains that musicians' guilds kept tight control over information related to playing technique in order to control the labor supply, and protect their livelihood.⁹ Agricola and Virdung, it would seem, did not come up through the guilds.

⁷ Martin Agricola, *The 'Musica Instrumentalis Deudsch' of Martin Agricola: A Treatise on Musical Instruments, 1529 and 1545*, translated by William E. Hettrick, (Cambridge: Cambridge University Press, 1994), 89.

⁸ Sebastian Virdung, *Musica Getuscht: A Treatise on Musical Instruments (1511)*, translated by Beth Bullard, (Cambridge: Cambridge University Press, 1993), 107.

⁹ David M. Guion, *The Trombone: Its History and Music, 1697-1811*, (New York: Gordon and Breach, 1988), 14.

The “Golden Age”

The story of the trombone in A begins around the year 1600. An incomplete manuscript in black and red ink by Aurelio Virgiliano, titled *Il dolcimeolo*, includes a page near the end, titled *Nuova intavolatura di tromboni per sonarli in concerto* (in red ink).¹⁰ We are lucky that this page is as complete as it is, for it follows numerous blank pages that Virgiliano must have intended to fill in. Howard Weiner describes this text as “the earliest source to show the four diatonic slide positions of the tenor trombone in A.”¹¹ The *Schala del Trombone cō la mano* is a chart stretching across the top of the page: it depicts the trombone (with slide pointing down) on the left side and a four-line tablature stretching across the page to the right (see Figure 3). Each line represents a position on the trombone slide; the top line represents first position, while the bottom line represents fourth. On the top line are the letters A, E, A, C (preceded by a C clef), E, G (preceded by a treble clef), and A. The A is in the space between the top two lines, but it should be on the top line as it is played in first position. The first letter on the second line is G. It is preceded by a red cross and is the first letter in “Gamma ut” (in black ink), signifying its importance as the lowest note of the hexachord solmization system (see Chapter 4). The G is followed by D, G, B, D, and F on the second line. The third line has only three letters, F, C, and F. The last F is preceded by both the F clef and the bass clef, possibly indicating their equivalency. There are only two letters, E and B, on the fourth line. All of the clefs and the letters following them appear in red ink.

¹⁰ □ Howard Weiner, “Aurelio Virgiliano’s *Nuova intavolatura di tromboni*,” *Historic Brass Society Journal*, Vol. 23 (2011), 151-160.

¹¹ □ *Ibid.*, 151.

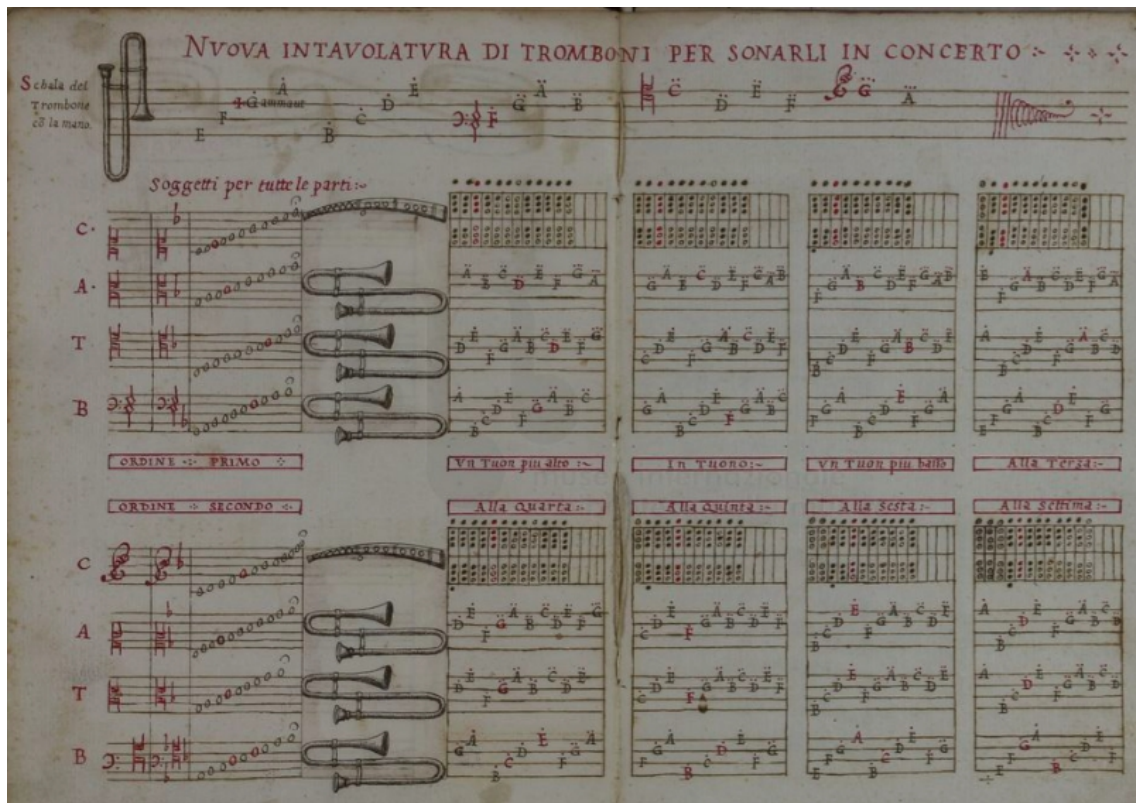


Figure 3: Virgiliano's page on the trombone

The rest of the page is filled with transposition charts for the typical ensemble instrumentation, featuring the cornetto on top of three voices of trombones (alto, tenor, and bass). These charts describe *chiavette* clef transposition, which was a useful and necessary skill for performing much of the music of the time.¹² Since this work is unfinished, Virgiliano's lack of an explanation for these charts can be excused. There is enough information in the charts themselves for later scholars to figure out what was meant by them.

The three-volume *Syntagma musicum* by Michael Praetorius was published between 1614 and 1620 in Wolfenbüttel, Germany. The first volume, *Musicae Artis*

¹²□Weiner discusses this at length in his article, 154-159.

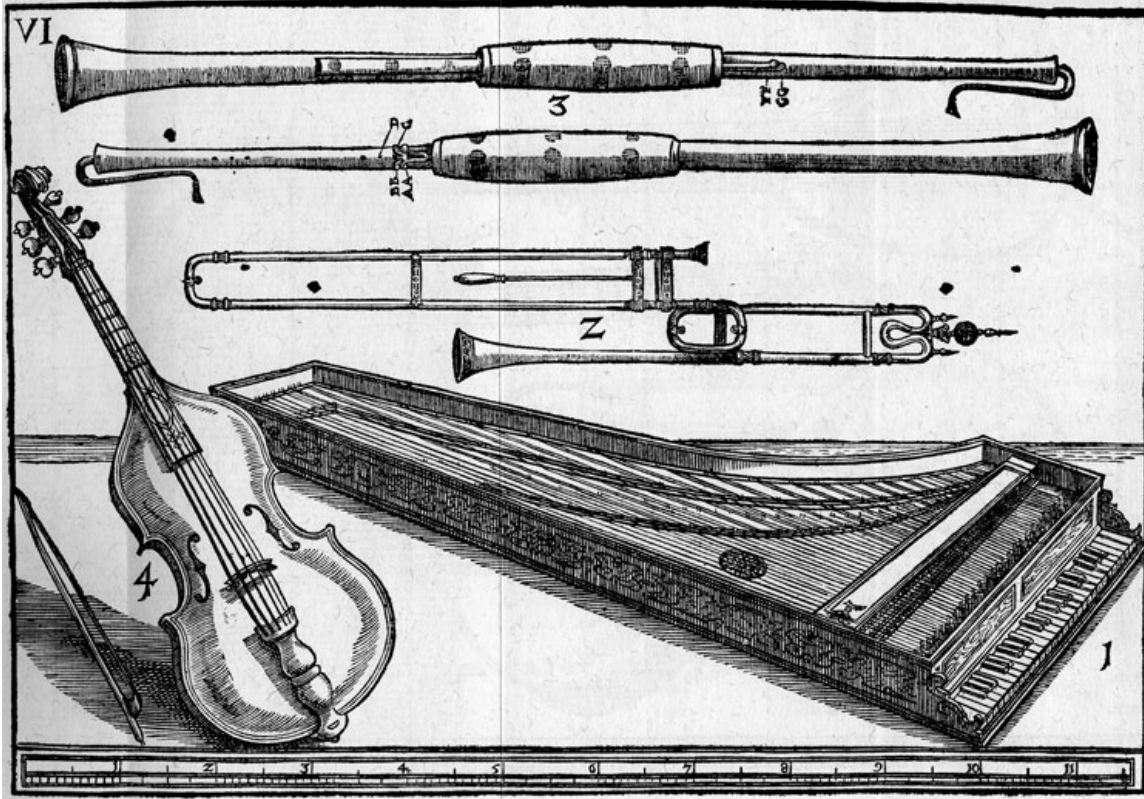


Figure 5: Bass instruments from Praetorius' *Sciagraphia*

The real gem in this appendix is on page eight: here is a collection of lip-reed aerophones, including three types of trumpets, five types of cornettos, and four types of trombones (see Figure 6). The trombones are labeled 1, 2, 3, and 4 from right to left. Praetorius indicates that both number 1 and 2 are *Quart-Posaunen*, though number 1 appears to have more tubing than number 2. Interestingly, Praetorius provides slide positions and note names for number 2 (see Figure 7). Praetorius calls the third trombone the *Rechte gemeine Posaun*. This is the commonly used tenor trombone. Significant in this engraving is the inclusion of two pieces of extra tubing, one straight and a little longer than the depicted mouthpiece, the other longer still, but coiled. These are known as

bits and crooks respectively, and were used to lower the pitch of the instrument in a time before the advent of the tuning slide,¹⁴ though Praetorius states that: “a skilled trombonist is able to modify the pitch . . . by means of the embouchure and mouthpiece without making use of crooks.”¹⁵ Praetorius’ collection of engravings is in the tradition of those of Agricola and Virdung, but he is more accurate and comprehensive: where Agricola and Virdung show one member of each family of instruments, Praetorius represents the entire family.

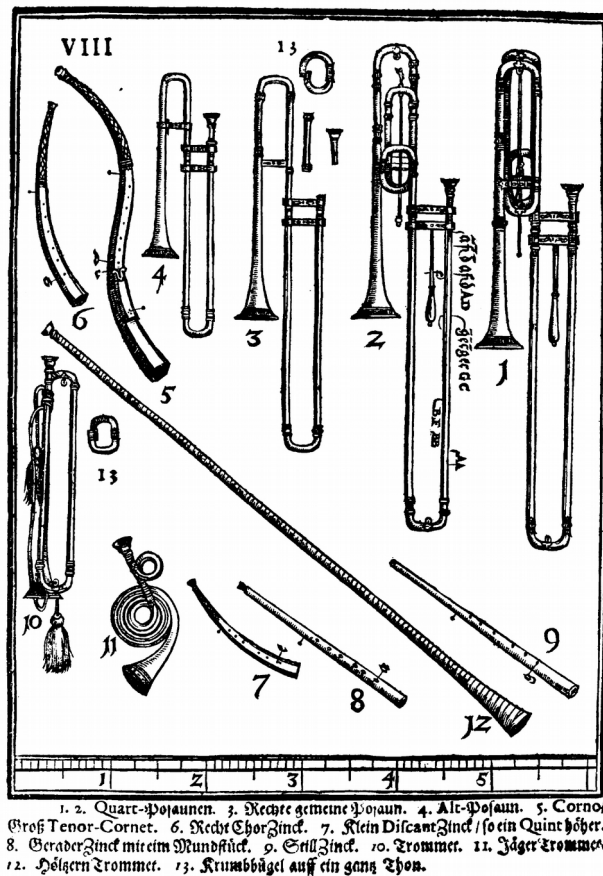


Figure 6: Trombones, cornetti, and trumpets from Praetorius’ *Sciagraphia*

14□The tuning slide was first depicted and described in André Braun’s *Gamme et méthode pour les trombones*, published between 1793 and 1797. See Trevor Herbert, *The Trombone*, (New Haven, CT: Yale University Press, 2006), 22.

15□Ibid., 22.

Sadly, neither Praetorius' engravings, nor his prose mention whether the trombone was played in A. However, the slide position and note name indications on the *Quart-Posaun* engraving on page eight do provide some indication as to instrument pitch (see Figure 7).

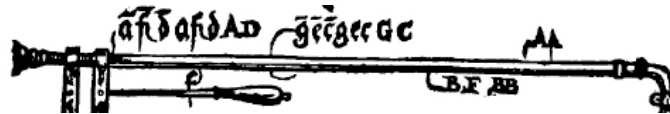


Figure 7: Detail of Praetorius' slide position and note name indications

To make sense of the order of note names one must read them from right to left. In first position are the notes: *D, A, d, f(#), a, d', f'(#), and a'*. In second are *C, G, c, e, g, c', e'*, and *g'*. In third are *B', F,* and *B,* and in fourth is *A'*. This gives us a *Quart-Posaun* pitched in D, a fifth lower than the tenor trombone in A. Modern versions of this instrument are pitched in E-flat or F (a fifth or fourth below the modern tenor in B-flat), but historical instruments would have been pitched in D or E.

The trombone next appears in the Fifth Book of Wind Instruments in Marin Mersenne's *Harmonie Universelle*, published in Paris in 1636. The trombone is addressed in Proposition XXI: "To explain the shape, material, range and use of the Sackbut, or the *Trompette harmonique*."¹⁶ The entry features an ornate engraving with letter labels for all the important parts (see Figure 8).

¹⁶ Marin Mersenne, *Harmonie Universelle: The Books on Instruments*, translated by Roger E. Chapman, (The Hague: Martinus Nijhoff, 1957), 341.

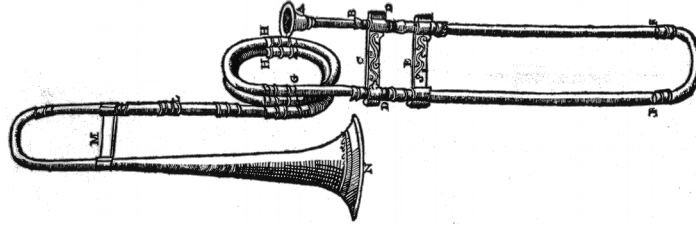


Figure 8: Mersenne's sackbut

Mersenne describes each part with an eye towards function, including the enormous crook seen in the image: “Now experience indicates that the winding part being added causes the sackbut to lower a fourth lower than its natural pitch, so as to perform the bass in concerts performed with oboes.”¹⁷ Thus, we discover from Mersenne that the use of a large crook to turn a tenor instrument into a bass instrument was common practice. Like Agricola and Virdung, Mersenne excuses himself from a full explanation of the playing method, while suggesting a kinesthetic approach to problem solving:

“As to the method of sounding it, it is necessary to learn from experience, inasmuch as it is almost impossible to make it understood perfectly enough through discourse alone as a lot of difficulty is found in experience. This always occurs in the arts which consist of action and movement, and which seem to have practice as their goal and their perfection.”¹⁸

After Mersenne came a break of some fifty years before we find the next treatise that discusses the trombone. In 1687, the first edition of Daniel Speer's treatise, *Grundrichtiger kurtz- leicht- und nöthiger Unterricht der musicalischen Kunst*,¹⁹ was published

17□Ibid., 341-341.

18□Ibid., 343.

19□Translated by Guion as *A Fundamental, Short, Easy, and Necessary Introduction to the Art of Music*, 13.

by Georg Wilhelm Kühnen in Ulm, Germany. A second edition appeared ten years later with the longer title, *Grund-richtiger kurz- leicht- und nöthiger jetzt wol- vermehrte Unterricht der Musicalischen kunst oder Vierfaches musicalisches Kleeblatt*.²⁰ Speer was able and willing to reveal the trade secrets of playing the trombone that previous authors avoided for two reasons: first, because he was trained as and worked as a *Stadtpeiffer*, and, second, because his treatise was intended for students and teachers rather than for scholars.²¹

Speer begins his entry on the trombone by answering common questions before proceeding to his description. His first diagram shows the notes that are playable in first position (see Figure 9), and it is immediately clear that he is describing a trombone in A.



Figure 9: Speer's diagram for notes in first position (*Erster Zug*)

The first note he shows is known today as the “pedal A” (A'), which is the fundamental tone of the harmonic series for the trombone in A with the slide in first position. This note had only previously been described in Praetorius' *Quart-Posaun*, but Speer's inclusion of it here shows that it was in practical use on the tenor instrument by the end of the seventeenth century. The other notes he shows are A, e, a, c', e', and g'.

²⁰ Translated by Guion as *A Fundamental, Short, Easy, Necessary, Now Greatly Enlarged Introduction to the Art of Music, or, A Fourfold Musical Coverleaf*, 14.

²¹ Ibid., 14.

should be played “two *Querfinger* forwards, in the same position *f#*’ is found.”²² As we can see, he also writes the note letters under each note. Interestingly, he writes *g#*’ under the note *g*’ (top line of the alto clef staff), and he lists *a*’ after the *g#*’, but does not show it on the staff. As David M. Guion notes, Speer’s inclusion of *g#*’ in the list is an error. Based on the quote above, I agree with Guion that it should be an *f#*’. Although Virgiliano listed *g* in first position in his *Schala del Trombone cō la mano*, Speer’s practical experience as a *Stadtpeiffer* would have shown him that *g*’ is too flat in first position to be useful.

Speer’s second diagram shows the notes found in second position (see Figure 10). These notes (*G, d, g, b-natural, d*’) are consistent with my practical experience and Virgiliano’s chart. Speer locates the second position next to the bell section (*beim Hauptstück*). He also notes that the *b-flat* must be played two *Querfinger* (Guion suggests three inches) beyond this position.

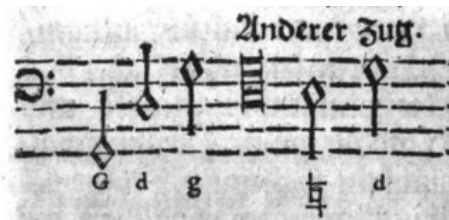


Figure 10: The notes in second position (*Anderer Zug*) according to Speer

The range shrinks again for third position, where Speer lists and shows only the notes *F, c,* and *f* (see Figure 11). These notes are all shown on the bass clef staff, whereas his previous diagrams used the tenor and alto clefs in addition to the bass clef. Speer

²² Daniel Speer, *Grund-richtiger kurtz- leicht- und nöthiger Unterricht der musicalischen Kunst*, (Ulm: Georg Wilhelm Kühnen, 1687), accessed on October 21, 2015 at <https://books.google.com/books?id=oj1DAAAACAAJ>, 109. See Guion’s discussion on *Querfinger* as a unit of measurement, 15-16.

writes that the third position is located four *Querfinger* (six inches) beyond the bell section.



Figure 11: The notes in Speer's third position (*Dritter Zug*)

Speer continues, "On a tenor trombone the fourth position, in which one plays the bass part, is almost out as far as one's arm can be extended..."²³ The notes he shows and lists for fourth position (see Figure 12) are *E*, *H* (*B-natural*), and *B* (*flat*). The *B-flat*, he writes, "must be played with the slide extended somewhat further beyond the *E* and *B-natural*."²⁴



Figure 12: Speer's notes in fourth position (*Vierdte Zug*)

The notes and positions Daniel Speer describes here are consistent with those we have seen described by Aurelio Virgiliano earlier and exactly what we would expect from a description of the trombone in A. If the tenor trombone he describes had been in B-flat, then we would expect to see *B-flat*, *F*, *b-flat*, *d'*, and *f'* in first position. Not only does

²³□Translated by Guion, 19.

²⁴□Ibid.

Speer describe the notes and their positions on the tenor trombone in A, he goes on to describe the diatonic slide position system:

How are the semitones played?

The hard, sharp-notated semitones are played two *Querfinger* higher than their natural pitch; but the lower semitones, notated with a flat, must be played two *Querfinger* lower.²⁵

The “white” notes, or the notes of the *Gamut*, are mostly played in the four positions described above, while the “accidentals” are played in between, but with reference to the note being altered. Of Speer’s entry on the trombone, Guion writes, “[it] summarizes and expands important earlier writings on the instrument, and thus serves as the culmination of early- and middle-Baroque writing about it.”²⁶ While Speer was not the first to describe the trombone in A, he was the first to provide detailed instruction in playing it, which is likely because of his practical experience as a *Stadtpeiffer* and member of the guild. In order to understand the way the trombone was played at the time, modern trombonists who wish to play music of the seventeenth century would be well served by perusing Speer’s treatise.

The next publication featuring the trombone in A is Friedrich Erhard Niedt’s 1706 *Musicalischer Handleitung*. This treatise was famously revised by Johann Mattheson and republished in 1721 by Benjamin Schiller’s widow and Johann Christoph Rifner in Hamburg. Guion describes this revision as a summary of “all previous writings.”²⁷ Niedt offers only a brief entry (see Figure 13) on the trombone, but he mentions its range from *contra A*’ to *d*’ or *e*’, making it unlikely he was describing anything other than a trombone in A.²⁸

25 □ Ibid., 19-20.

26 □ Ibid., 13.

27 □ Ibid., 26.

28 □ Friedrich Erhard Niedt, *Musicalischer Handleitung*, (Hamburg: Benjamin Schillern, 1706), (106). Accessed October 28, 2015 at [http://imslp.org/wiki/Musicalische_Handleitung_\(Niedt,_Friedrich_Erhardt\)](http://imslp.org/wiki/Musicalische_Handleitung_(Niedt,_Friedrich_Erhardt)).

Pofaune, ist ein blaſent Instrument, mit zweyen Auffgestecken oder Zügen / man hat Alt, Tenor und Baſs-Pofaunen, bey den Kuuſt-Pfeiffern oder Stadt-Muficanten werden ſolche Instrumenta gebrauchet; die Baſs- und Tenor-Pofaune hat von contra A/biſſ ins \bar{d} und \bar{e} / und die Alt-Pofaune von c 4. Fuß Thon biſſ ins \bar{c} .

Figure 13: Niedt's brief entry on the trombone

Mattheson's much expanded entry includes a definition and a technical description, but no images of the instrument.²⁹ The technical description appears to be borrowed from Speer because the $g^\#$ (*gis*) included in the list of notes in first position, as discussed above, had to have been an error (see Figure 14).

ſonos angibt / nemlich: Daß *contra A*, groß A, e, a, \bar{c} , \bar{e} , , *gl* (*gis*) und \bar{a} . Bey

Figure 14: Mattheson's list of notes playable in first position

Interestingly, Niedt and Mattheson both refer to the first note in first position as *contra A*, (Mattheson calls the second note *groß A*). These are the first uses of these terms (that I have found) to describe notes on the trombone.³⁰ But the important fact here is that the author and revisor describe a trombone in A, rather than a trombone in B-flat.

In practical terms, the use of the trombone by this time had died out in many

²⁹ Friedrich Erhard Niedt, *Musicalischer Handleitung*, 3 vols., 2nd ed. ed. Johann Mattheson (Hamburg: Benjamin Schiller's Wittve and Johann Christoph Rifner, 1721), vol. 2, 112-13. Accessed October 28, 2015 at [http://imslp.org/wiki/Musicalische_Handleitung_\(Niedt,_Friedrich_Erhardt\)](http://imslp.org/wiki/Musicalische_Handleitung_(Niedt,_Friedrich_Erhardt)).

³⁰ Further research may yield interesting results.

places around Europe. By analyzing the keys used in oratorio arias with obbligato trombone from the first half of the eighteenth century in Vienna, Stewart Carter identifies 1707-08 as the time when Viennese trombonists likely switched from playing the trombone in A to playing in B-flat, or at least when Viennese composers began to acknowledge and write for a trombone in B-flat.³¹ Trombonists in Leipzig, however, likely continued playing their trombones in A until the middle of the century.³² Niedt's original publication of 1706 came just before the change in Vienna, and Mattheson's 1721 publication in northern Germany may explain his ignorance of the changes in Vienna.

Johann Gottfried Walther's *Musikalisches Lexikon* and Joseph Friedrich Bernhard Caspar Majer's *Museum Musicum Theoretico Practicum* were both published in 1732. Walther's treatise has the appearance of a modern dictionary. His entry is found under "Trombone" despite the fact that the dictionary is in German, though "Posaune" is listed as a synonym.³³ Walther provides no images of the instrument, and his text is taken almost entirely from Mattheson's revision of Niedt (including the mistake).

Majer's treatise, also published in 1732, provides a short description, borrowed from Speer and Mattheson, two charts (one for tenor [see Figure 15] and one for alto and bass), and a final paragraph on performance practice.³⁴ It is significant that Majer is the

31 □ Stewart Carter, "Trombone Pitch in the Eighteenth Century: An Overview," *Posaunen und Trompeten: Geschichte, Akustik, Spieltechnik* from the 19. Musikinstrumentenbau-Symposium in Michaelstein, 20-11 November, 1998, (2000), 53-66.

32 □ Ibid., 66.

33 □ Johann Gottfried Walther, *Musikalisches Lexikon* (Leipzig: Wolfgang Deer, 1732), 619. Accessed October 28, 2015 at [http://imslp.org/wiki/Musikalisches_Lexikon_\(Walther,_Johann_Gottfried\)](http://imslp.org/wiki/Musikalisches_Lexikon_(Walther,_Johann_Gottfried)).

34 □ Johann Friedrich Bernhard Caspar Majer, *Museum musicum theoretico practicum* (s.l.: Georg Michael Majer, 1732; facs., Kassel: Bärenreiter, 1954), 43.

only writer to have caught and fixed the mistake in the chart for the first position, showing *g* instead of *g#*.



Figure 15: Majer's position chart for the trombone in A

Majer's paragraph on performance practice is too valuable to omit (see Figure 16).³⁵ In it, he refers to the performance of major and minor semitones, trills, and sound production.

³⁵ Die Semitonia majora werden von ihrem natürlichen Ton hinein wärts: Die Semitonia minora aber um 2. Quer-Finger hinaus wärts gezogen. Die Triller werden, wie bei Trompeten und Wald-Hörnern, also auch hier mit dem Rinn gemacht. Theils schleissen den Posaunen-Schall mit dem Athem, es kommt aber besser heraus, wann der selbe mit der Zungen sein frisch gestoffen wird, welches bei allen blasenden Instrumenten zu bemerken ist. Die Moderation im forte und piano, wird durch den starken und schwachen austaffenden Athem gemacht, wie auf allen geblasenen Instrumenten gebräuchlich.

Observatio: Die Semitonia majora werden von ihrem natürlichen Ton hineinwärts: Die Semitonia minora aber um 2. Quer, Finger hinauswärts gezogen. Die Triller werden / wie bey Trompeten und Wald, Hörnern / also auch hier mit dem Kinn gemacht. Theils schleiffen den Posaunen, Schall mit dem Athem / es kommt aber besser heraus / wann derselbe mit der Zungen fein frisch gestossen wird / welches bey allen blasenden Instrumenten zu bemerken ist. Die Moderation im forte und piano, wird durch den starken und schwachen auslassenden Athem gemacht / wie auf allen geblasenen Instrumenten gebräuchlich.

Figure 16: Majer's "observation" on performance practice

My translation follows:

The major semitones are inwards from their natural tone; but the minor semitones are drawn outwards two finger-widths. The trill is made, like trumpets and forest horns, with the chin. The trombone sound is partly made with the breath, but it comes out better when the breath is crisply articulated with the tongue, which should be noted in all wind instruments. The control of forte and piano is made by strongly and weakly exhaling the breath, as in all wind instruments in use.

Here, Majer is paraphrasing and clarifying Speer. The most significant difference is that Majer refers to major and minor semitones in the first sentence, whereas Speer discusses semitones notated with sharps as opposed to those with flats.

Another musical dictionary followed the model provided by Walther, but smaller and, thus, more useful. The *Kurtzgefaßtes musicalisches Lexicon* was published by Johann Christoph and Johan David Stöbel in 1737 in Chemnitz. It is unclear whether it was compiled by the Stöbels or possibly by one "Barnickel."³⁶ This work contains two entries, one under "Posaune" and one under "Trombone." The entry "Posaune" occupies almost two pages and presents the same material going back to Speer, while the entry "Trombone" is not much more than a sentence long, but seems to opine that the trombonist should imitate the horn rather than the trumpet (see Figure 17).³⁷

36□James B. Coover and John C. Franklin. "Dictionaries & encyclopedias of music." Grove Music Online. Oxford Music Online. Oxford University Press, accessed October 29, 2015, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/51332pg3>.

37□Johann Christoph and Johann David Stöbel, *Kurtzgefaßtes musicalisches Lexicon* (Chemnitz: Stöbel, 1737), 407.

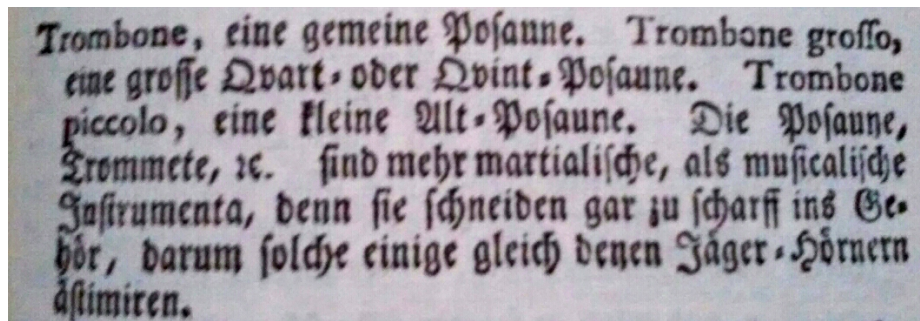


Figure 17: Brief entry on the “Trombone”

Guion translates the passage as follows:

Trombone: an ordinary trombone. Trombone grosso: a large quart or quint trombone. Trombone piccolo: a small alto trombone. The trombone and trumpet are more martial than musical instruments because they cut too sharply in the ear, therefore, such few like the hunting horn should be preferred.³⁸

The complaint about cutting in the ears is one that has only gained subscribers over the interceding three hundred years. The proposed solution (to play more like the hunting horn) should serve as an inspiration to modern complainants. In describing this passage Guion writes, “No other eighteenth-century article makes a comparison between the trombone and the horn.”³⁹ However, just such a comparison can be seen in Majer’s paragraph on performance practice above (see Figure 16). If Guion had not dismissed Majer’s text as merely copying Speer, he would have caught it.

The *Musicus autodidactos, oder der sich selbst informirende Musicus* was compiled by Johann Philipp Eisel and published in Erfurt in 1738. Guion rightly

38□Guion, 39.

39□Ibid., 37.

questions the quality of Eisel's work therein.⁴⁰ His entry for the trombone is substantial at nearly five full pages long, and it consists primarily of text, though he does include two charts, both in reference to the *Quint-Posaune*.

He begins by ascribing responsibility for the trombone's invention to "God's beloved prophet Moses around the year 2400 of the world,"⁴¹ but this is surely based on a mistranslation of the word for trumpet. Unfortunately, this story of the origins of the trombone was to be repeated by later authors. Eisel then continues through the standard description, which originated with Speer and was copied by nearly every author thereafter.

Eisel is the first author to include *c#*' in the list of notes in first position, though he also mentions that the standard *c*' must be played in lowered first position. He seems to get a little confused in his use of the unit *Querfinger* to describe relative distances for positions (as we all do). This unit of measurement is used in many eighteenth-century treatises going back to Speer. Further investigation reveals this term is used most commonly in medical texts, and its use can be dated to the fifteenth century.⁴²

The first half of the story of the trombone in A ends with the eighteenth century and the publication of André Braun's *Gamme et Méthode pour les Trombones* sometime between 1793 and 1797. This method book, the first of its kind for the trombone, describes seven positions and shows the harmonic series based on B-flat rather than A for

40 □ Ibid., 41.

41 □ Ibid.

42 □ "Querfinger," Deutsches Rechtswörterbuch, accessed November 16, 2015, <https://www.rzuser.uni-heidelberg.de/~cd2/drw/e/qu/erfi/nger/querfinger.htm>.

first position. This is also the first description of a chromatic approach to the trombone (using seven positions instead of four).⁴³ Braun's chart clearly shows this new approach, especially in comparison with previous charts (see Figure 18).⁴⁴

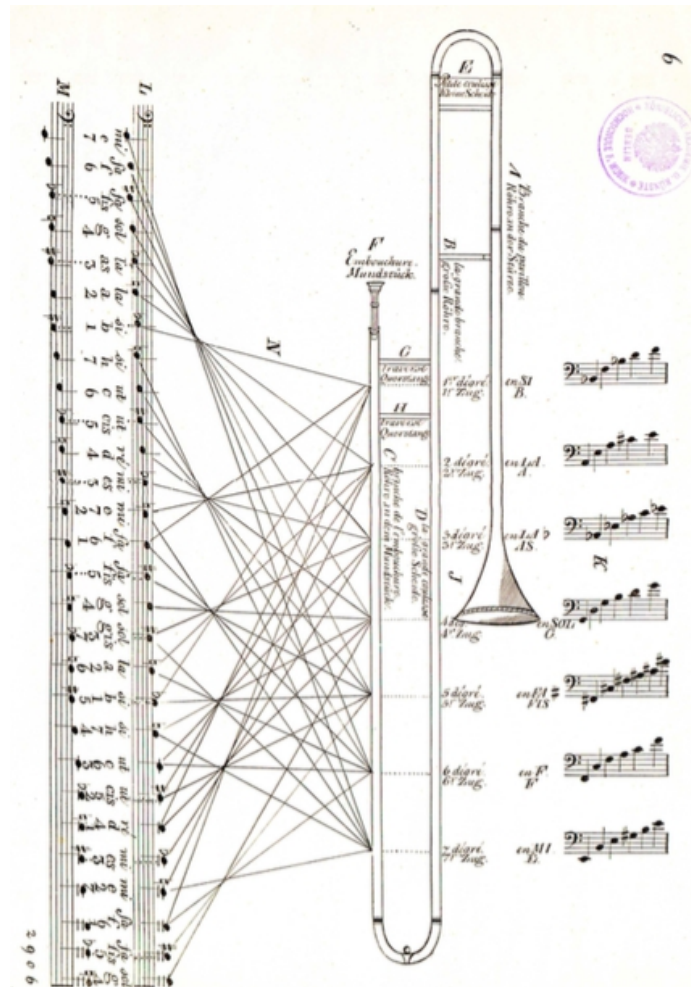


Figure 18: Braun's chart of slide positions and a new approach

The last mention of the trombone in A appears in Heinrich Koch's *Musikalisches*

43 □ André Braun, *Gamme et Méthode pour les Trombones* (Paris: Jean-Georges Sieber, 1793-97), 6.

44 □ Howard Weiner, "André Braun's *Gamme et Méthode pour les Trombones* Revisited," *Historic Brass Society Journal* 11 (1999): 93-106. This article offers a thorough exploration of the various publishers and editions of this method book.

Lexikon (1802), which was published after Braun's method. Koch relies heavily on previous texts and even perpetuates the *g#* error originated one hundred years earlier by Speer.⁴⁵ New to Koch's entry is a reference to the pioneering use of the trombone in Mozart's *Zauberflöte* and hope that it will reinvigorate interest in the trombone.⁴⁶

Authors after Koch refer only to the trombone in B-flat and the chromatic approach to the instrument, but the story of the trombone in A does not end there. As music scholars recently rediscovered these historical treatises, they began to include reference to the early history of the trombone, when it was played in A. This information has appeared numerous times in the last hundred years, and yet, inexplicably, modern performers of the historical trombone continue to play in B-flat with a chromatic approach.

The Modern Revival of the Historical Trombone

While the first edition of the *Encyclopedia Britannica* was published by the Society of Gentlemen in Scotland in 1771, it was not until the ninth edition, published in 1888, that the trombone in A returned to public knowledge. Victor Mahillon cites Virdung, Praetorius, and Mersenne in his lengthy entry. Eventually, he mentions among the trombones in present use, "the tenor in B-flat (formerly in A)."⁴⁷

William Stone is credited with authoring the entry for "trombone" in the first

⁴⁵ □ Heinrich Christoph Koch, *Musikalisches Lexikon* (Frankfurt am Main: August Hermann dem Jüngere, 1802) published in facsimile (Hildesheim: Georg Olms Verlagsbuchhandlung, 1964), col. 1163-65.

⁴⁶ □ Guion, 83.

⁴⁷ □ Victor Mahillon, *Encyclopedia Britannica*, 9th ed., s.v. "Trombone," accessed November 2, 2015, <http://www.libraryindex.com/encyclopedia/pages/cpxl7hik31/trombone-slide-instrument-bell.html>.

edition of Sir George Grove's *A Dictionary of Music and Musicians* (1890). While Stone does make reference to Mersenne and Praetorius he writes that "the Trombone has been made in every key, from A to B-natural" implying they were built to different sizes to account for the different pitches. Stone makes no other mention of the trombone being played in A.⁴⁸ In the 1910 edition of *Grove's Dictionary of Music and Musicians* D.J. Blaikley edits Stone's entry slightly and instead of referencing specific pitches for the trombone simply suggests "every register" and "every key."⁴⁹

Kathleen Schlesinger edited Victor Mahillon's entry for the eleventh edition of the *Encyclopaedia Britannica* (1911). She adds references to additional primary sources, highlighting the iconographical value of the works of Ottmar Luscinius (1515) and Martin Agricola (1529) and relying on information from Eisel's *Musicus Autodidactus* of 1738. Schlesinger also cites the earliest mention of *Posaun* in the 1470 German translation of Vegetius' *De re militari* (c. 430-5) and suggests two contemporary sources, Galpin's article "The Sackbut, Its Evolution and History" (1906) and Mahillon's own book *Le Trombone, son histoire, sa théorie, sa construction* (1907).

At the thirty-third session of the Royal Musical Association in 1906, F. W. Galpin presented a paper titled "The Sackbut, Its Evolution and History. Illustrated by an Instrument of the Sixteenth Century." This was published in the *Proceedings of the Musical Association* by Taylor & Francis, Ltd. on behalf of the Royal Musical Association in 1906-7. Galpin begins with an etymological exploration of the term

48 □ Grove, Sir George. *A Dictionary of Music and Musicians*, 1st ed. (New York: MacMillan and Co., 1890).

49 □ *Grove's Dictionary of Music and Musicians*, 1910 ed. (New York: The MacMillan Company, 1910).

“sackbut,” including an explanation of the term “sambuca,” with which there was much confusion. He then describes the history of the trombone, through its appearances in iconography and documents, up to his own time. Galpin concludes with a comparison of “measurements and details between Neuschel’s Sackbut of 1557 and a high-grade B-flat Tenor Trombone of 1907.”⁵⁰

In 1939 Adam Carse published his *Musical Wind Instruments*, which was described as “the most scholarly one-volume survey of its subject.” by Himie Voxman.⁵¹ He continues, “Fact (in so far as it can be ascertained) is carefully distinguished from conjecture.”⁵² Such lofty ideals can never be fully satisfied, especially given the accumulation of knowledge over time. As many before him, Carse set out to do the best with what he had. Looking back on his scholarship now, it is not difficult to find “facts,” that are, instead, quite conjectural.

Carse does an admirable job of explaining the history of the trombone. But when he discusses instrument pitch levels, he quickly moves from fact to conjecture. He writes, “The standard size of the trombone was then, as now, the tenor in (9 feet) B-flat.”⁵³ We know now that it was then considered in A, though standard size was roughly nine feet long. He expands this notion a little later when describing surviving seventeenth-century trombones in German collections as coming in three sizes, “the alto in E-flat or F, the

50 □ F. W. Galpin, “The Sackbut, Its Evolution and History. Illustrated by an Instrument of the Sixteenth Century,” *Proceedings of the Musical Association*, 33rd Sess. (1906-1907): 1-25.

51 □ Himie Voxman, “Introduction,” in Adam Carse, *Musical Wind Instruments* (New York: Da Capo Press, 1965), vii.

52 □ Ibid.

53 □ Ibid., 253.

tenor in B-flat, and the *quart* or *quint* bass trombones in F or E flat.”⁵⁴ The problem is one of modern perspective. Carse lived during a time of relatively standardized pitch ($a' = 440$ Hz), but Bruce Haynes has shown that pitch levels were wildly variable during the seventeenth century.⁵⁵ Carse likely based his pitch levels on measurements of the surviving instruments. Trombones of nine feet in length will produce the same frequency, but where a modern listener may hear a B-flat, a seventeenth-century listener may have heard an A.

Carse’s scholarship gets more questionable as we read on. He makes reference to Praetorius, Mersenne, and Speer, and then he writes, “Praetorius knew four sizes of trombone...” including an alto in F, a tenor in B-flat, bass in F and E-flat, and contrabass in BB-flat.⁵⁶ Praetorius never referred to these pitches (see above), and it is clear that Carse has not been completely honest. In his discussion of Speer’s slide positions, he provides the following:

..	=1st pos. (B flat)
<i>Erster zug</i>	=2nd pos. (A)
<i>Anderer zug</i>	=4th pos. (G)
<i>Dritte zug</i>	=6th pos. (F)
<i>Vierde zug</i>	=7th pos. (E)

Unfortunately, he continues trying to map the historical descriptions onto his modern concept of the trombone in B-flat. In doing so, he never considers the possibility that the

54 □ Ibid.

55 □ Bruce Haynes, *A History of Performing Pitch: The Story of “A”* (Lanham, MD: The Scarecrow Press, 2002).

56 □ Carse, 254.

trombone was in A rather than B-flat.

In 1971, Arnold Fromme, professor of low brass at Jersey City State College and sackbut player with New York Pro Musica, penned an article for the *International Trombone Association Journal* with the title, “Evidence and Conjectures on Early Trombone Techniques.” He begins by lamenting the “paucity of direct evidence and documentation concerning Renaissance trombone styles and techniques.”⁵⁷ This may explain the conjectures that follow as he continues: “There is practically no difference of shape, pitch, range or mechanics between the tenor trombone of the sixteenth and seventeenth centuries and that of today.”⁵⁸ If this is true, one wonders why Fromme has written this article. Further along Fromme writes, “In addition to the tenor in B-flat, the trombone was manufactured in four other sizes...” Fromme continues the falsehood begun by Carse in equating instrument size with pitch, and he likely does it for the same reason. He later refers to Tinctoris, Praetorius, and Mersenne. Perhaps if he had seen Speer’s treatise, he might have reconsidered his description of the pitch level of early trombones.

In 1975, the *Brass Bulletin* published an article by Austrian trombonist Heinrich Huber, who was a founding member of *Musica Antiqua* and instructor of historical trombone at the *Schola Cantorum Basiliensis*. In the article, titled “The Trombone: Changing Times, Changing Slide Positions,” Huber discusses the different approaches to the slide required by different historical repertoires for the trombone. He writes, “In

⁵⁷□Arnold Fromme, “Evidence and Conjectures on Early Trombone Techniques,”*International Trombone Association Journal* Vol. 1, Winter (1971-72): 3.

⁵⁸□*Ibid.*, 4.

music of the avant-garde, the trombone has as many as thirteen slide positions, with which quarter-tones are produced. Normally, seven positions are used, corresponding to our ideas of chromaticism within the well-tempered system of tuning. During the Renaissance and Baroque periods, however, only four positions were used.”⁵⁹ He clearly understands the diatonic approach to the trombone, but he insists on perpetuating the myth that the early trombone was in B-flat. He even repeats Carse’s chart that placed Speer’s *Erster zug* in modern second position. With Huber, it appears to be two steps forward, one step back.

Out of this darkness emerges the bright candle of Anthony Baines, whose *Brass Instruments: Their History and Development* was published in 1976. Baines’ entry on trombones spans some thirteen pages and includes discussions of history, construction, acoustics, and didactic publications. He begins the section on positions and pitch with a discussion of Speer’s description of positions, but unlike Carse and Fromme, Baines takes Speer at his word. Baines does not try to make the historical description fit with the modern conception of a trombone in B-flat. He states plainly that, “The old German tenor trombone was in A, but a very sharp A.”⁶⁰ He even mentions the variety of pitch levels of historical organs, *Cornett-ton*, and *Chorton*. At this point we can posit that the history of the trombone in A is taking off again.

Perhaps it was Baines’ rigorous scholarship that inspired the first article by David M. Guion, “The Pitch of Baroque Trombones.” It appeared in the *International Trombone*

⁵⁹□Heinrich Huber, “The Trombone: Changing Times, Changing Slide Positions,” *Brass Bulletin* Vol. 11 (1975), 90.

⁶⁰□Anthony Baines, *Brass Instruments: Their History and Development* (New York: Dover Publications, 1976), 115.

Association Journal in 1980. Guion positions himself as the arbiter between factions of scholars who, on one side, assert that early trombones were pitched in B-flat and, on the other that they were in A. He writes, “Hardly anyone has presented evidence to support either hypothesis; the conclusion has merely been asserted.”⁶¹ He does, however, highlight Baines, among the scholars on the side of the trombone in A, for his use of supporting evidence. Guion also points to “at least eleven other scholars [who] have written that the tenor trombone was in B-flat.”⁶²

Guion acknowledges the variety of pitch levels in the sixteenth and seventeenth centuries, relying on Arthur Mendel, also looking at various primary sources. He begins with Virgiliano, continues with Praetorius, and concludes with Speer. He continues with an analysis of historical music for trombone. In 132 trombone parts, he found 603 instances of B-naturals and 304 instances of B-flats. He concludes: “the A trombone is much better suited to playing Baroque trombone parts than is the B-flat trombone,”⁶³ which is consistent with my own findings. This article is the standard-bearer for all scholarship on the trombone in A.

As a follow-up to Heinrich Huber’s article, the *Brass Bulletin* published an article of the same title by Howard Weiner in 1981. Interestingly, since Huber’s article appeared, the *Brass Bulletin* has switched to a format of printing articles in three languages side-by-side. Weiner begins by explaining that his article is intended as a sequel to Huber’s, and

61 □ David M. Guion, “The Pitch of Baroque Trombones,” *International Trombone Association Journal* Vol. 8 (1980), 24.

62 □ *Ibid.*, 25.

63 □ *Ibid.*, 26.

that he found new information in numerous sources unmentioned by Huber. Weiner's thesis is that "tenor and bass trombones in A and alto and *quint*-trombones in D, rather than instruments in B-flat and E-flat (or F) respectively, were the norm until around 1800."⁶⁴

Weiner spends most of the article correcting Huber's (and others') assertion that the early treatises were describing trombones in B-flat. He looks at Virgiliano, Praetorius, Mersenne, Speer, and others. He takes a close look at Majer, even reprinting his chart and translating his description. Weiner eventually provides his own chart equating "Old Positions" with their "Approximate Modern Positions" and the Harmonic Series of each (see Table 1).

Table 1: Weiner's table of position equivalency

Old Positions	Approx. Modern Positions	Harmonic Series
1st	1st, 2 finger widths out	A
2nd	3rd	G
3rd	5th	F
4th	6th	E

Weiner makes the important point that, had the trombones been in B-flat, the sources would have shown B-flat in first position, but "*B-flat* was played not in first position as on the modern instrument, but "somewhat further out" from fourth position or approximately modern seventh position."⁶⁵ He points to the *Vollständige Theoretisch-*

⁶⁴□Howard Weiner, "The trombone: Changing times, changing slide positions," *Brass Bulletin* 36 (1981), 52.

⁶⁵□*Ibid.*, 58, quoting Baines, apparently.

praktische Musikschule by F. J. Fröhlich (Bonn c. 1811) as the “earliest known source”⁶⁶ describing the tenor trombone in B-flat with seven chromatic positions, though we now know (thanks to Weiner’s own research) that the moniker should go to André Braun’s *Gamme et Méthode pour les Trombones*. Weiner continues by explaining the fact that nearly all surviving trombones are pitched in B-flat at $a' = 440$ Hz. If these trombones were in A (as we know they were), then the frequency of A must have been one half step higher (i.e., $a' = 460-465$ Hz).

I posit that 465 Hz was the upper limit of a spectrum of frequencies, at which the trombone in A could play, and that the trombonist could always add tubing, by way of bits and crooks, to lower his pitch (even as much as a fourth⁶⁷). Weiner describes a transposition process, wherein trombone parts were written down a whole step, to allow the $a' = 465$ Hz (*Chorton*) trombones to play “at” $a' = 415$ Hz (*Kammerton*) with the rest of the ensemble, though, he cautions that “it is important to keep in mind that in earlier times there was no standard pitch and that pitch levels varied according to time and place.”⁶⁸

Weiner concludes that the solution for modern trombonists playing early music is to play in A ($a' = 465$ Hz) and transpose everything at $a' = 440$ Hz up a half step. I agree that transposition at any interval is an essential skill, but this solution ignores the many images and descriptions (Praetorius and Mersenne, among others) of bits and crooks accompanying tenor trombones. I am convinced that we should be making better use of

66□Ibid., 58.

67□Mersenne, 341-342.

68□Weiner, 60.

these tubing extenders, which is why I have inserted the bits that came with my sackbut so that I can play it in A at $a' = 440$ Hz.

George Fischer, in his book *The Renaissance Sackbut and Its Use Today*, includes a brief discussion of bits and crooks in his section on tuning.⁶⁹ He includes images of surviving instruments with rather large crooks inserted between the slide and the bell section for large pitch adjustment. He also includes a discussion of the use of bits between the mouthpiece and the slide for finer pitch adjustment. Fischer's sixty-one page book is thoroughly researched, demonstrating his familiarity with recent articles (e.g. Guion's in 1980) along with such old treatises as Speer and Praetorius. Fischer describes the early trombone in A and Guion's arguments for it, but he wonders if "two systems of positions were in use."⁷⁰ The evidence for this is unconvincing. He questions Guion's conclusions by performing his own analysis of repertoire from the late fifteenth century. He finds, contra Guion, that B-flats outnumber B-naturals, but his analysis was not performed on trombone parts (as Guion's was) and the time period of his repertoire predates by a century the earliest treatise to describe the trombone in A (Virgiliano's). This would have been an excellent resource when it was published, but today it appears outdated.

David M. Guion's scholarship appears all over this thesis. Arguably, his most important contribution to trombone scholarship is his *The Trombone: Its History and Music, 1697-1811*, published in 1988.⁷¹ The dates in the subtitle are important, as Guion's

69 □ George Fischer, *The Renaissance Sackbut and Its Use Today* (New York: Metropolitan Museum of Art, 1984), 24-28.

70 □ Ibid., 6.

71 □ David M. Guion, *The Trombone: Its History and Music, 1697-1811* (New York: Gordon and Breach,

goal is to illuminate the trombone's role in the eighteenth century, about which little had previously been known. 1697 is the year Speer's treatise was republished in expanded form, and 1811 is the year Fröhlich's was published.

The trombone in A is recognized on the second page of the first chapter. He explains Speer's description of the four positions and their notes in his discussion of the instrument in the seventeenth century. He concludes the introductory chapter by comparing Speer's trombone with that of Fröhlich. He writes:

Two important changes can be seen from a mere glance at Fröhlich's treatise. First, the trombone is described as having seven chromatic positions instead of four diatonic ones. Second, it is no longer in A, but in B-flat.⁷²

He includes Speer at the beginning of his chapter on eighteenth-century treatises and devotes nine full pages to explaining, translating, and interpreting Speer's work. The chapter ends with Fröhlich because it was thought that his was the first treatise to describe the trombone in B-flat. It was later determined that a different treatise filled that role.

That information appeared in Howard Weiner's 1993 article "Andre Braun's *Gamme et Methodé pour les Trombones*: The Earliest Modern Trombone Method Rediscovered."⁷³ His opening sentence codified modern understanding of the trombone in A, "The trombone of the Renaissance and Baroque was considered to be in A with four

1988).

72□Ibid., 7.

73□Howard Weiner, "Andre Braun's *Gamme et Méthode pour les Trombones*: The Earliest Modern Trombone Method Rediscovered," *Historic Brass Society Journal* Vol. 19, (July 1993): 288-308.

diatonic slide positions...”⁷⁴ But this is not an article about the trombone in A, as the slightly sensationalist title indicates. Rather, this article seeks to establish an endpoint to the story of the trombone in A. Instead of the 1811 date of Fröhlich’s treatise, Weiner proposes 1792-1795 as the period in which Braun’s method was published, and, therefore, when the trombone in A was officially abandoned. Weiner includes a full translation of the method along with all the diagrams. This is a useful article for understanding this earliest modern trombone method.

Our story of the trombone in A continues with an article published in the journal *Early Music* in 1994 by Keith McGowan titled “The World of the Early Sackbut Player: Flat or Round?”⁷⁵ McGowan writes: “A survey of the principal theoretical descriptions of the sackbut in its early history shows clearly that it was considered to be in A...”⁷⁶ His discussion includes the usual suspects: Virgiliano, Praetorius, Speer, Niedt, Eisel, Koch, and Braun. McGowan also discusses the use of bits and crooks, pointing to a surviving instrument made by Anton Schnitzer in the collection of the Accademia Filarmonica in Verona, which appears to still possess its bits and crooks. The single-coil crook lowers the pitch by a whole tone to G, writes McGowan, and this instrument “was known as the *Secund-Posaun*.”⁷⁷ He suggests that the use of the single-coil crook would bring the low B-flat into a more secure third position from its previous lowered fourth position. This could be useful for pieces that feature numerous instances of this note, such as Viadana’s *O*

⁷⁴ Ibid., 288.

⁷⁵ Keith McGowan, “The World of the Early Sackbut Player: Flat or Round?” *Early Music* 9, No. 3 (Aug. 1994): 441-466.

⁷⁶ Ibid., 451.

⁷⁷ Ibid., 459; though, I question if this instrument was conceptualized in G or if it was conceptualized in A at a lower frequency (e.g. $a^2=415$ Hz or 390 Hz).

Bone Jesu and *Canzon Francese*.

McGowan concludes by asking, “is the sackbut in A destined to become another feature of historical brass playing, more mythical than factual, like the extreme side-embouchure, or the trumpet without finger holes?” I would answer that historical brass performance simply needed to catch up to historical brass scholarship, for we now have excellent natural trumpeters playing without holes (e.g. Jean-François Madeuf and his students in Lyon and Basel), fine cornettists playing from the side (e.g. Gilbert Cline), and fantastic trombonists playing in A (e.g. Adam Woolf).

In 2000, Stewart Carter published the article “Trombone Pitch in the Eighteenth Century: An Overview”⁷⁸ with the purpose of determining a more precise end date for the trombone in A. He begins by declaring, “At the end of the seventeenth century the tenor trombone was considered to be in A with four diatonic positions...”⁷⁹ Gone are the days of problematizing this simple fact because of modern perspective. Carter accepts it and moves on.

In this article, Carter presents organological, musical, and didactical evidence. His list of surviving instruments is more useful than others because he includes precise measurements of the instruments rather than their assumed key based on modern pitch levels. His repertoire list highlights the key areas of pieces with trombone parts from the beginning of the seventeenth century through two-thirds of the eighteenth century. The pieces composed in the seventeenth century are in the key areas of G, D, A, and E, while

78 □ Stewart Carter, “Trombone Pitch in the Eighteenth Century: An Overview,” *Posaunen und Trompeten: Geschichte, Akustik, Spieltechnik*, 19. Musikinstrumentenbau-Symposium in Michaelstein, 20-22 November 1998 (2000): 53-56.

79 □ *Ibid.*, 53.

the later pieces are in E-flat, B-flat, F, and D. But as Carter states, “our attempt to correlate closed-position pitch with tonal centers has failed to get us across the 1700 dividing line on one end, and reaches back no farther than about 1760 on the other.”⁸⁰

In his discussion of treatises, Carter highlights those of Speer and Braun as important markers on either side of the switch from A to B-flat. He is able to push back the date of the trombone in B-flat by about twelve years, to 1785. This is based on loose-leaf manuscript additions of slide-position charts Francoeur received from Braun, found in a copy of Louis-Joseph Francoeur’s *Diapason général de tous les instruments de vent* at the Bibliothèque Nationale in Paris.⁸¹

Carter then ventures into the “murky quagmire of pitch standards,”⁸² but he eventually returns to a discussion of repertoire, specifically the repertoire of Viennese trombone obbligato arias composed between 1666 and 1739.⁸³ “Up to 1707,” Carter writes, “all of these arias are either in sharp keys or C major; but in 1708 (Marc’Antonio) Ziani wrote *La Passione nell’orto*, which has one such aria, *Se die pur senz’aita*, for alto voice, alto trombone, and continuo. It is in E-flat major, a perfect key for an alto trombone in E-flat. And after 1708, almost without exception, arias with obbligato trombone in Viennese oratorios are in flat keys.” This aria by Ziani is significant in the history of the trombone by marking the earliest date at which composers wrote for the trombone in B-flat instead of A.

⁸⁰ □ Ibid., 59.

⁸¹ □ Ibid., 60.

⁸² □ Ibid., 61.

⁸³ □ Ibid. Carter examined this repertoire in an earlier article, “Trombone Obbligatos in Viennese Oratorios of the Baroque,” *Historic Brass Society Journal* 2 (1990): 52-77.

Carter turns philosophical in his conclusive remarks as he asks, “Does it matter?” Indeed it does, as he points to the low B-flat lying in “first position under the new system, but at the opposite end of the slide under the old.”⁸⁴ He ends, like McGowan, distraught by the current state of performance, “Few indeed are the tenor trombonists today who play even seventeenth-century music – a repertoire for which the instrument’s pitch is well established – with closed-position A.”

In 2006, one of the most important books for trombonists was published: Trevor Herbert’s *The Trombone* appeared as part of the Yale Musical Instrument Series, and it serves as the trombonist’s bible. He describes his perspective as follows:

Though makers and composers have at various times been prominent in fashioning the instrument’s idiom, it is the players who have put the culture into the trombone. It is they who, in all epochs, have given it a voice and positioned it in its soundscapes and cultural contexts. This judgement is shaped in roughly equal proportion by my experience as a player and my experience as an academic. My instincts as a player tell me it is true because I have always believed that the trombone is primarily what its players make of it, but the academic in me prompts a somewhat more rational analysis, if for no other reason than that histories are never as simple and uncluttered as our instincts would have them be.⁸⁵

Herbert features chapters on the instrument and its parts, performance practice, history, ensembles, genres, variations, and recordings. He also includes six appendices detailing lists of surviving instruments, composers for the instrument sorted by time and place, method books, trombone section personnel, and advertisements. Herbert presents what is probably the most thorough history of the trombone in publication. Of course, much of this history takes place before the first description of the trombone being in A

84□Carter, 66.

85□Trevor Herbert, *The Trombone* (New Haven: Yale University Press, 2006), 1.

(Virgiliano, 1600). Yet, Herbert's discussion of Virgiliano and of Speer, do not include their prescriptions for playing the instrument in A. Instead, this information is found in his second chapter, "Trombone technique," in the section on *Slide positions and pitch*. Here, Herbert describes the modern system in B-flat with seven chromatic position and then, in contrast, the old system in A with four diatonic positions. Herbert provides a thorough discussion of the relevant treatises, including Virgiliano and Speer, and relies heavily on the work of Stewart Carter and Howard Weiner.⁸⁶ He concludes with a more general end date for the trombone in A, "By the final quarter of the eighteenth century there was a wide understanding of the tenor instrument as being in B-flat..."⁸⁷

Another invaluable book to trombonists appeared just four years later. David M. Guion's *A History of the Trombone* was the first book published in the American Wind Band Series by The Scarecrow Press.⁸⁸ Guion divides his book into two sections: "Development of the Instrument" and "Performance History" because, as he writes, "... I could not give my subject the treatment it deserved with a single chronological narrative."⁸⁹

Guion delves into the primary sources in every chapter of this book. He reproduces the now-famous chart from Virgiliano's *Il Dolcimelo* in full and includes an explanation of Virgiliano's depiction of the trombone in A.⁹⁰ He then proceeds through a

86□Herbert, 35-38.

87□Ibid., 38.

88□David M. Guion,*A History of the Trombone* (Toronto: The Scarecrow Press, 2010).

89□Ibid., xv.

90□Ibid., 31.

discussion of seventeenth-century treatises, including Praetorius, Mersenne, Speer, and a few others, before proceeding to André Braun and his “new description of the trombone... in B-flat rather than A, with seven chromatic positions instead of four diatonic ones.”⁹¹

In a later section devoted to pitch, Guion offers the best explanation of the trombone’s contentious pitch history. He discusses the variability of pitch levels in the Renaissance and Baroque periods as well as the various historians who got it right and got it wrong. He reproduces a full page taken from Speer’s treatise, where he explains which notes are played in the various positions. Guion directs his discussion at the modern trombonist coming from the perspective of the trombone in B-flat, and, in this way, offers an excellent resource for the modern trombonist. Guion’s second book could serve as an interesting coffee table book, but the level of scholarship and thorough research make it much more than that.

In 2011, Howard Weiner’s article, “Aurelio Virgiliano’s *Nuova intavolatura di tromboni*,” was published in the *Historic Brass Society Journal*.⁹² The article is devoted, not to explaining the famous chart running across the top of the page, but to the several charts, titled *Soggetti per tutte le parti*, appearing on the rest of the page that show how to perform the expected transposition of *chiavette* or high clefs. As his *Schala del Trombone co[n] la mano*, Virgiliano’s *Soggetti per tutte le parti* charts hold answers to long-posed questions regarding performance practice, and it is up to the right scholar to come along and unlock them.

91 □ Ibid., 35.

92 □ Howard Weiner, “Aurelio Virgiliano’s *Nuova intavolatura di tromboni*” *Historic Brass Society Journal* 23, (2011): 151-160.

In its second edition, published in 2012, Jeffery Kite-Powell revised and expanded Stewart Carter's *A Performer's Guide to Seventeenth-Century Music*.⁹³ On the story of the trombone in A there are two relevant chapters: Bruce Dickey's "Cornett and Sackbut" and Stewart Carter's "Trombone". These chapters provide a short instruction on matters related primarily to performance.

Dickey's chapter is divided between the two instruments, but the information on the sackbut is useful and reliable. He begins his discussion of the sackbut by using Praetorius' description of the four sizes of trombones, including the "*Gemeine rechte Posaun*, a tenor, pitched in A."⁹⁴ Dickey mentions Virgiliano's description of only two sizes of trombones, but does not rely much on him or reprint his *Schala del Trombone co[n] la mano*, as so many others have done. Instead he proceeds with an explanation of the diatonic slide position system and the equivalency between the trombone in B-flat at $a' = 440$ Hz and the trombone in A at $a' = 466$ Hz. He continues with a discussion of virtuosity and the use of the trombone for bass and tenor parts in convents.

Carter's chapter overlaps Dickey's somewhat, namely in the areas of playing techniques and repertory. However, Carter supplies the theoretical discussion that was lacking in Dickey's chapter. Carter reproduces several woodcuts taken from Praetorius' *Syntagma Musicum II* to accompany his discussion of Praetorius' writings on the trombone. He also includes Mersenne's image of the trombone with the double-loop crook along with a brief description of Mersenne's treatise. Carter mentions

93 □ Stewart Carter, ed., *A Performer's Guide to Seventeenth-Century Music* (Bloomington: Indiana University Press, 2012).

94 □ Bruce Dickey, "Cornett and Sackbut," in *A Performer's Guide to Seventeenth-Century Music*, ed. Stewart Carter (Bloomington: Indiana University Press, 2012), 107.

“seventeenth-century sources”⁹⁵ that refer to the *Sekund-Posaun* and *Terz-Posaun*, which Carter describes as being a step and a third below the trombone in A, respectively, but he does not provide the names of these sources. These instruments have been described as the *trombone alla bastarda* elsewhere, because of their baritone range.⁹⁶ Carter continues with such practical matters as selecting an instrument and mouthpiece. In his section on playing technique, Carter repeats the equivalency posed by Dickey. However, this equivalency simplifies the matter too much because, as we know from Bruce Haynes, performing pitch was all over the place, not just at $a' = 466$ Hz. Their explanations leave no room for the use of bits and crooks to adjust pitch, which were essential to the early trombonist.

2012 turned out to be a busy year for Stewart Carter (and the trombone!), as his monograph *The Trombone in the Renaissance: A History in Pictures and Documents* was also published.⁹⁷ The book is organized chronologically, with the first part dedicated to the long fifteenth century and the second to the sixteenth century, as well as geographically, with chapters dedicated to Italy, France, the Low Countries, Germany, Spain, Portugal, England, Scandinavia, Eastern Europe, Asia, Africa, and the Americas. As the subtitle implies, Carter depends almost entirely on primary sources in this book rather than, as he puts it, “by means of a continuous narrative.”⁹⁸ At the end of his

95 □ Stewart Carter, “Trombone,” in *Ibid.*, 122.

96 □ Ercole Nisini, “Die ‘Trombone alla Bastarda’ – über die Posaune um 1600,” *Internationale Posaunen Vereinigung-Printjournal* 5, no. 19 (Autumn 2010): 8-9.

97 □ Stewart Carter, *The Trombone in the Renaissance: A History in Pictures and Documents* (Hillsdale, NY: Pendragon Press, 2012).

98 □ *Ibid.*, 1.

introductory chapter, Carter writes, “According to Aurelio Virgiliano’s *Dolcimelo* (ca. 1590), the tenor trombone was considered to be pitched in A, with four diatonic positions, approximately equivalent to modern first, third, fifth, and sixth positions, respectively.”⁹⁹ Virgiliano’s is the only treatise to discuss the trombone in A that fits into the timeframe of Carter’s book, so it is no surprise to find it here. Carter has a reserved writing style, rarely inserting himself into the prose.

The final leg of my journey into trombone history is a collection of nineteen seventeenth-century Italian motets with trombones in modern edition with an introduction by Linda Pearse.¹⁰⁰ This collection is only a year old at the time of this writing, and, as such, is the most recent published writing on the trombone in A. Pearse writes, “Both Daniel Speer and Virgiliano describe the diatonic system of four slide positions that was probably used throughout the sixteenth and seventeenth centuries and well into the eighteenth.”¹⁰¹ She seems to make the same mistake as Dickey and Carter above in only discussing “high pitch” ($a' = 466$ Hz) and modern pitch ($a' = 440$ Hz), not allowing for other pitch levels nor, more importantly, the use of bits and crooks for adjusting pitch levels. Pearse then spends a good amount of space discussing the diatonic position system, focusing mostly on Speer’s explanation. She includes a section on pitch, and here she allows for three pitch levels ($a' = 466$ Hz, 440 Hz, and 415 Hz) that the modern trombonist might encounter. She writes, “When playing at A 466 the player ‘thinks’ the

⁹⁹ Ibid., 8.

¹⁰⁰ D. Linda Pearse, ed., *Seventeenth-Century Italian Motets with Trombones* (Middleton, WI: A-R Editions, 2014).

¹⁰¹ Ibid., xx.

trombone into A.”¹⁰² And later she writes,

When playing at A 415, plugs or a longer tuning bow can be inserted to lengthen the instrument so that it is lowered to the proper pitch. The disadvantage is that the slide positions are stretched with the longer instrument and that the seventh position is sharp and not always usable (a longer instrument requires a correspondingly longer slide). The sound of the instrument can suffer when using these methods.

She does not mention the fact that there is ample evidence to suggest that this was the common practice in the seventeenth century.¹⁰³ Instead, she continues, “The best solution is to write out transposed parts a whole-step down or, alternatively, do as musicians did in the early seventeenth century: play at high pitch and transpose the parts at sight down a tone.” Unfortunately, she provides no evidence to support these two options. The written transposition option has been written about elsewhere, but I have not read a primary source that describes the mental transposition she suggests. Furthermore, she provides no option for the modern trombonist playing at $a' = 440$ Hz. Does she believe we should play our trombones in B-flat? This is the worst option in terms of historical evidence. Should we play in A at $a' = 466$ Hz and transpose down a half step? This could get quite confusing. Why not play in A all the time, using bits or a crooks to adjust pitch, as was depicted in several seventeenth-century treatises?

This chapter is a story of the trombone in A. It is my story of the trombone in A, through six centuries of writings, drawings, descriptions, and prescriptions. Histories inevitably are works of fiction. Events of the past cannot fully be represented with ink on

102 □ Ibid., xxii.

103 □ See Praetorius’ image of the tenor trombone, pictured with a bit and crook.

paper. Therefore, I have described only that which appeared in ink on paper originally. What kind of story is it? Hayden White identifies four modes of emplotment in histories: Romance, Tragedy, Comedy, and Satire.¹⁰⁴ If this story of the trombone in A had ended in a century ago, it would certainly be considered a Tragedy. As it is, we should probably describe it as a Comedy, because our modern writers and performers offer hope for the triumph of the trombone in A. And who knows? A century from now, this story may become a Romance with the trombone in A as hero. Though, if we run out of time, its fate may be doomed to Satire.

¹⁰⁴ Hayden V. White, *Metahistory: The Historical Imagination in Nineteenth-Century Europe* (Baltimore: Johns Hopkins University Press, 1973), 7.

CHAPTER III

REPERTOIRE AND PART ANALYSIS

The repertoire specifying the trombone published in Venice between 1600 and 1650 includes pieces by many well-known composers including Lodovico Viadana, Biagio Marini, Giovanni Battista Buonamente, Tarquinio Merula, and Maurizio Cazzati. The genres represented in these published collections range from small-scale sacred concertos and instrumental pieces to large-scale masses and polychoral pieces. Through an examination of this repertoire, it can be shown that the primary key areas are G, A, and C. Whether they know it or not, modern trombonists have a choice to make, to use a trombone in A or one in B-flat to perform this repertoire. There is no evidence that this repertoire was originally performed using trombones in B-flat, and I posit that modern performances ought to reflect that reality.

Of the more than thirty names in this catalog, the most prolific composers for trombone were Giovanni Picchi, Biagio Marini, and Dario Castello (see Figure 19). I was able to examine facsimile editions (or modern editions, when no facsimile was available) of 79 of the 127 pieces that specify trombone and that were published in Venice between 1600 and 1650. For each piece I recorded the key signature (either one flat or no flats or

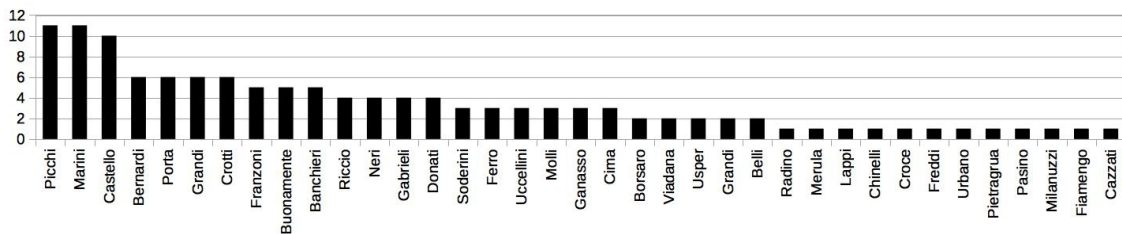


Figure 19: Composers ranked by number of pieces specifying trombone

sharps) and the “key” of the final cadence. Of the 79 pieces, 61 had no flats or sharps, while 18 had one flat (see Table 2). My analysis of final cadences paints a more colorful picture (see Table 3).

Table 2: Key signatures for selected repertoire

Key Signature	Number	Share of total
One flat	18	23%
No flats or sharps	61	77%

Table 3: Distribution of Final Cadence “Keys” in available repertoire

Final Cadence “Key”	Occurrences	Share of total
A	15	19%
B	0	0%
C	14	18%
D	9	11%
E	1	1%
F	8	10%
G	32	41%

As the example makes clear, the “key” of G dominates with fair showings from the “keys” of A and C. These three “keys” comprise 78% of the examined repertoire. One can imagine a tendency on the part of composers to use “keys” that would be friendly to the performing forces. If the original performers used trombones in B-flat, we might expect to see pieces in “keys” such as B-flat, F, E-flat, and A-flat. The only one of these that garners any results is the “key” of F, which includes only 10% of the results.

In exploring the necessary performance technique for this repertoire on the

trombone in A as opposed to the trombone in B-flat, I present case studies of three pieces, one from the beginning, one from the middle, and one from the end of the period under consideration. In doing so, I hope to provide persuasive arguments for modern trombonists faced with performing this repertoire.

Case Study #1

The first trombone part I examine comes from *Canzon Francese* from Lodovico Viadana's 1605 collection *Cento Concerti Ecclesiastici*. The piece is written for violin, cornetto, two trombones, and basso continuo. The trombone parts are similar in range, pitches, and rhythms, only being offset by a few measures to create a polychoral effect. I will examine the trombone part found in the "Tenor" part book.

Viadana's collection was the first of many collections of small-scale sacred concertos to appear in the seventeenth century, and, significantly, it was the first collection of sacred music to include basso continuo parts. Of interest to trombonists are the two pieces that specify trombone, *Canzon Francese* and *O Bone Iesu* for two trombones, tenor voice, and basso continuo. This collection was so successful for Viadana that he published two additional collections of *Concerti Ecclesiastici*. Viadana's melodic style comes from the *a cappella* tradition, but his use of basso continuo is more "modern."

The trombone part is labeled "Cornetto. A Quattro voci" at the top of the page, but that must be a printer's error. The actual cornetto part can be found in the "Altus" part book. The trombone part is notated in bass clef with one flat in the key signature and "cut

C” as the time signature. There are no bar lines in the entire part, save the double after the final note. The range of the trombone parts spans an octave and a fourth, from *F* to *b-flat*. Note lengths range from eighth notes to whole notes, and there are several long rests throughout.

This is an interesting example to begin with because the part appears to lie well for a trombone in B-flat. In addition to the *B-flat* in the key signature, Viadana uses many *E-flats* throughout the piece. The most important factor in this piece is the frequency of the pitch *B-flat*. On a trombone in B-flat the note is played in first position, whereas on a trombone in A the note is played in lowered fourth position, which is the furthest position out on the slide.

While the trombone in B-flat may seem like the better choice, there are other factors to consider. Because the *B-flat* pitch is in an extended slide position on the trombone in A, it tends to be high compared to $\frac{1}{4}$ -comma meantone tuning. Whereas, on the trombone in B-flat, the note tends to be low compared to $\frac{1}{4}$ -comma meantone tuning—using *B-flat* to tune their instruments leads modern trombonists down a long road of intonation problems when playing non-equal tempered early music.¹⁰⁵

Another factor to consider is the distance the player’s arm and slide must travel between successive pitches. For ease of playing successive positions should be as close as possible. Figure 20 below shows the succession of positions for the trombone in B-flat. As can be seen, there are numerous instances of leaps of three or four positions, most often first to fourth or second to sixth.

¹⁰⁵ See Ross Duffin, *How Equal Temperament Ruined Harmony (and Why You Should Care)*, New York: W.W. Norton, 2007.

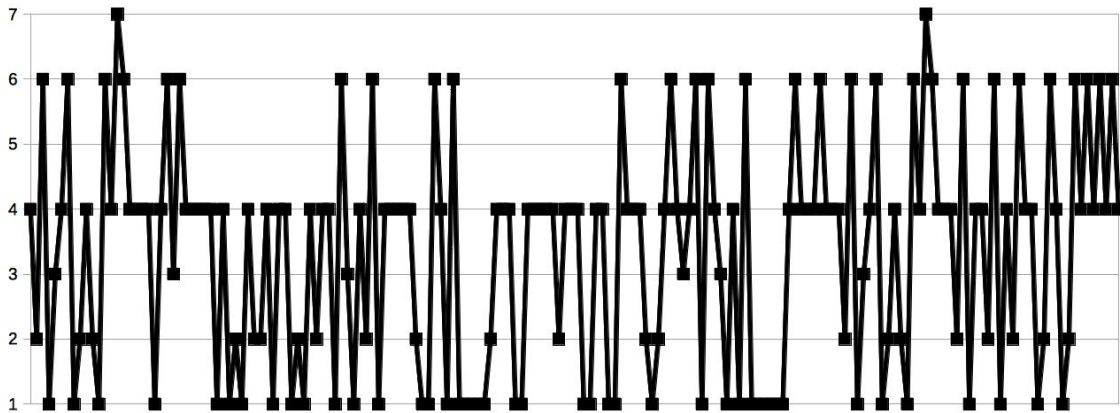


Figure 20: Positions for *Canzon Francese* for trombone in B-flat

In Figure 21 below, we can see numerous leaps from first to lowered fourth (the entire length of the trombone slide). This is because of the numerous occurrences of that B-flat discussed earlier. However, we can also see constant movement throughout the piece between second and third position.

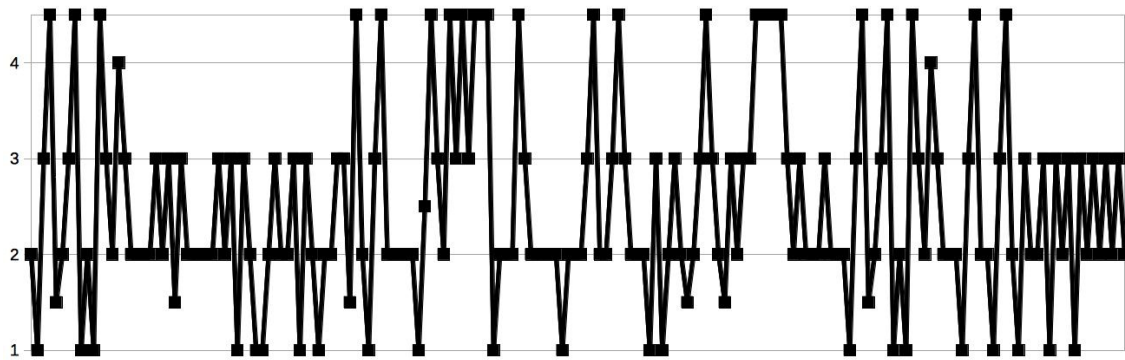


Figure 21: Positions for *Canzon Francese* for trombone in A

If we look at the frequency rates of each position on the trombone in B-flat, we see that 25% of the notes are in first position, while 41% of the notes are in fourth position (see Table 4).

Table 4: Frequency rates of positions on trombone in B-flat

Position:	1	2	3	4	5	6	7
Number:	44	22	6	73	0	29	2
Rate:	25%	13%	3%	41%	0%	16%	1%

More than 95% of the notes are in either first, second, fourth, or sixth position. Looking at the position frequency rates for the trombone in A (see Table 5), we see that the most frequently used position is second with 41%, while first position is used for only 13% of the notes. 95% of the notes are either in first, second, third, or lowered fourth position.

Table 5: Frequency rates of positions on trombone in A

Position:	1	1.5	2	2.5	3	4	4.5
Number:	22	6	73	1	47	2	25
Rate:	13%	3%	41%	1%	27%	1%	14%

What these data shows is that there is no clear advantage to either the trombone in A or the trombone in B-flat, when it comes to position frequency rate in Viadana's *Canzon Francese*.

In summary, the numerous occurrences of the low *B-flat* might push the modern trombonist to perform this piece on a trombone in B-flat. The position frequency rates between the two trombones did not differ significantly enough to sway the choice either way. When performing Viadana's *Canzon Francese* modern trombonists have reasons to use a trombone in B-flat, however they ought to pay careful attention to intonation

tendencies. Notes played in first position (*B-flat*, *f*, and *b-flat*) tend to be low compared to $\frac{1}{4}$ -comma meantone tuning, while notes in second position (*A*, *e*, and *a*) tend to be high. Playing on the trombone in A eliminates these intonation problems.

Case Study #2

The second trombone part I analyze is again from the *Sesta Sonata* from Dario Castello's 1621 collection *Sonate Concertate*.¹⁰⁶ This piece is for two solo instruments, Castello specifies "Sopran e Trombon overo violeta," and basso continuo. As is typical of the *stile moderno*, the *Sesta Sonata* consists of many different sections designated by *affect* markings, such as *alegra*, *presto*, and *adasio*, and meter changes, from duple to triple and back. Castello even includes dynamic markings of *forte* and *pian*.

While little is known of the composer beyond what is written in his two volumes of *Sonate Concertate in stil moderno*, his music was sufficiently well diffused to warrant several editions (the last two from Venice and Antwerp in 1658¹⁰⁷) and continues to delight listeners nearly 400 years after publication. The *stile moderno*, coined by Castello to describe his own music, was possibly his greatest contribution as it gave fellow composers "permission" to explore the possibilities of writing instrumental music with a new aesthetic (i.e., not in the *cappella* tradition).¹⁰⁸ Renaissance polyphony was based on well-established rules regarding voice leading, the treatment of dissonance, and equality

106 □ See Appendix B for a modern edition score of Castello's *Sesta Sonata*.

107 □ Eleanor Selfridge-Field, "Dario Castello: A Non-Existent Biography," *Music & Letters* 53, no. 2 (April 1972): 179-190.

108 □ Andrew Dell'Antonio, *Syntax, Form and Genre in Sonatas and Canzonas 1621-1635* (Lucca: Libreria Musicale Italiana, 1997), 247-275.

between the voices. The new aesthetic regards the top and bottom voices as the most important, allows for unprepared dissonances, and also allows for larger works to consist of sections representing different affects. Within the new framework, Castello discovers and invents the process of musical discourse not based on text, though likely in imitation of *stile rappresentativo* of Claudio Monteverdi.

The trombone part for Castello's *Sesta Sonata* is only identifiable by the tenor clef at the beginning of each staff (as opposed to the treble clef found in the *sopran* part), and the fact that it is found in the "Canto Secondo" part book. There is no key signature, and the piece begins in common time. While Castello uses a tenor clef, the part could be considered *alla bastarda*, ranging more than two octaves from *G'* to *a'*. There are several instances of long sixteenth-note runs, and in general the rhythms are much more complex than what we saw in Viadana's *Canzon Francese*.

The *Sesta Sonata* trombone part does not immediately strike the eye as suitable for the trombone in B-flat, the way Viadana's *Canzon Francese* did. In fact, Castello's *Sesta Sonata* looks like it would be quite difficult to play on any instrument. Of the twenty-two accidentals in the part, six are *B-flats* and one is an *E-flat*, while fifteen are sharps (on *F*, *C*, and *G*). Considering that there are 575 pitches in the piece, roughly 99.5% are "white" notes (see chapter 2).

We can see the distribution of positions for the *Sesta Sonata* on the trombone in A (Figure 22). What is immediately apparent is that most notes are either in first, lowered first, or second position. In fact, while nearly half of the notes are in second position, almost 90% of the notes in the entire piece are in first, lowered first, or second position

(see Table 6).

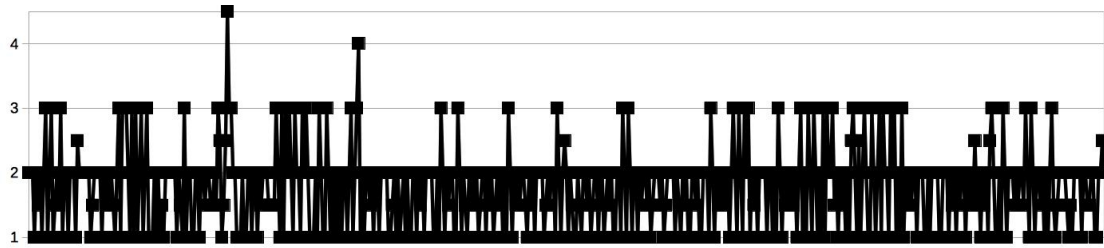


Figure 22: Positions of the *Sesta Sonata* for trombone in A

Table 6: Frequency rates of positions in *Sesta Sonata* for trombone in A

Position:	1	1.5	2	2.5	3	4	54.5
Number:	160	78	269	9	57	1	1
Rate:	28%	14%	47%	<2%	10%	<1%	<1%

In comparison, the distribution of positions for the trombone in B-flat is a little more spread out. As Figure 23 shows, most notes are in the first four positions, while there are several long trips out to sixth and seventh position throughout the piece.

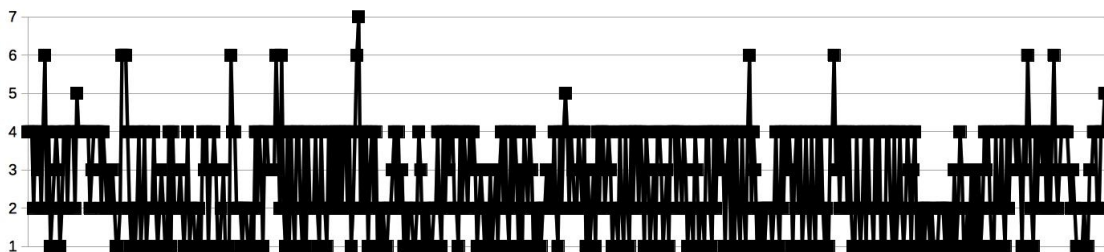


Figure 23: Positions of *Sesta Sonata* for trombone in B-flat

Also noteworthy in Figure 23 is the dearth of notes in first position at the beginning of the piece. This can be quite unsettling for a trombonist. The first position on

the trombone is like home. It is a comfortable place of rest, and to have to avoid first position for any length of time adds tension to the music where the composer desired none. Table 7 shows that on the trombone in B-flat, 97% percent of the notes are between first and fourth positions, but almost a third of the notes are in fourth position, more than in first or third.

Table 7: Frequency rates for positions of the *Sesta Sonata* on trombone in B-flat

Position:	1	2	3	4	5	6	7
Number:	135	176	78	170	3	12	1
Rate:	23%	31%	14%	30%	<1%	<2%	<1%

In summary, there are clear advantages to playing this piece on the trombone in A. The first three positions receive almost 90% of the notes, whereas the first three positions on the trombone in B-flat receive only 68% of the notes, with almost a third of the notes lying beyond. Furthermore, the fact that on the trombone in B-flat only four of the first fifty notes are in first position means that the first priority for the trombonist is to find her way out of the woods. The trombonist playing Castello's *Sesta Sonata* on a trombone in A makes fewer and shorter excursions from home.

Case Study #3

In 1648, at the age of thirty-two, Maurizio Cazzati was preparing for a new life in Ferrara and a new position as *maestro di cappella* of the Accademia della Morte when his second book of sonatas was published in Venice. The collection consists of three sonatas for two solo parts, six sonatas for three, four for four, and one, the *Sonata detta la*

Vecchia, for six parts. The six solo parts for the *Sonata detta la Vecchia* include three violins, one viola, one trombone, and one violone. A basso continuo part is also included. In this third case study I examine the trombone part from Cazzati's *Sonata detta la Vecchia*.

The trombone part is found in the Violone part book, and it is printed next to the violone part. The first page of the trombone part faces the first page of the violone part. With a single page turn we see the second page of each part. In this way two performers can use the same book. While the violone part is notated in bass clef, the trombone part is in tenor clef. There is no key signature, and the piece begins in common time. There are occasional bar lines, sometimes coming after one whole note, sometimes after two or four.

Reflecting the development of notation and musical aesthetic, it is significant to see repeat signs at the end of the first and second sections. Cazzati uses *affect* or tempo indications for the different sections of this sonata, including *Allegro*, *Largo*, *Grave*, and *Allegro, e presto*. He also includes a triple section in the middle of the piece.

The trombone part features much simpler rhythms than in Castello's *Sesta Sonata*. There are a few dotted-eighth-and-sixteenth-note rhythms in the *Largo* section, but the rest of the time Cazzati makes do with whole notes, half notes, quarter, and eighth notes. Cazzati uses only two accidentals in the trombone part, twice an *F-sharp*. The range of the part spans an octave and a fourth from *B* to *f*'. This is a narrower range than that of Castello's *Sesta Sonata*, but wider than Viadana's *Canzon Francese*. As can be seen in Figure 24, this part lies really well for the trombone in A.

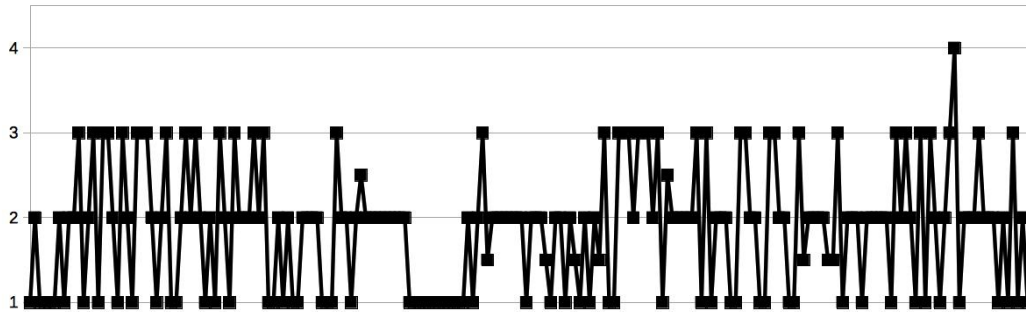


Figure 24: Positions of *Sonata detta la Vecchia* for trombone in A

The trombonist begins in first position, returns to first throughout the piece, and ends in first position. This is very comfortable for the trombonist. Furthermore, the part ventures to fourth position only once and never further. We can also see that, in the middle of the piece where the part stays in the same position for many notes in a row, the notes may change, but the position stays the same. This, too, will contribute to the player's sense of ease. In comparison, we see in Figure 25 the positions for the part played on a trombone in B-flat.

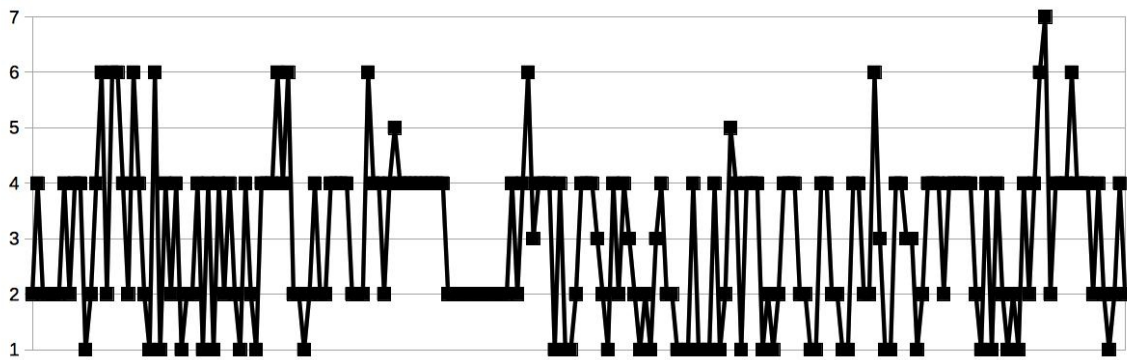


Figure 25: Positions in the *Sonata detta la Vecchia* for trombone in B-flat

It is clear that the part primarily uses second and fourth positions, even beginning and ending in second position. There are also numerous trips out to fifth, sixth, and seventh positions. Even for the trombone in B-flat there are two sections in the middle of

the piece where the trombonist can stay in the same position for several notes in a row, however, the positions for these notes are second and fourth, not nearly as restful or stable as first position.

Comparing the frequency rates for positions in Cazzati's *Sonata detta la Vecchia*, we can see numerically what we saw graphically in the Examples above. In Table 8 below, we see that about 95% of the notes occur in either first, second, or third position.

Table 8: Frequency rates for positions in *Sonata detta la Vecchia* for trombone in A

Position:	1	1.5	2	2.5	3	4	4.5
Number:	65	7	91	2	40	1	0
Rate:	32%	3%	44%	1%	19%	<1%	0%

These are the strongest positions on the trombone in A, and it makes sense that most of the notes would be in those positions. Table 9 shows that roughly 90% of the notes on the trombone in B-flat are in either first, second, or fourth positions, but we also see that fourth position has by far the most notes, and even second position has more notes than first position.

Table 9: Frequency rates for positions in *Sonata detta la Vecchia* for trombone in A

Position:	1	2	3	4	5	6	7
Number:	37	65	7	82	2	12	1
Rate:	18%	32%	3%	40%	1%	6%	<1%

Whereas, on the trombone in A, there was only one note in the furthest two positions, here we see thirteen notes in the furthest two positions. Perhaps most

significantly, on the trombone in A, there are nearly twice as many notes in first position as on the trombone in B-flat.

In sum, I believe this to be an excellent example of a well-crafted part for the trombone in A. Cazzati allowed the trombone to begin and end in first position and to return to it many times throughout the piece. Most of the notes are in the strongest positions on the trombone in A (first, second, and third), while most of the notes occur in first, second, and fourth position on the trombone in B-flat (more in fourth than second and more in second than first). On the trombone in A, first position to second position is a whole step, and second to third is also a whole step. However, on the trombone in B-flat, first to second position is a half step, while second to fourth is a whole step. This difference in distance between the most used positions can and does have a noticeable effect on the performance, as the performer on the trombone in B-flat has to keep in mind two lengths of distance to move the slide instead of just one.

Wider Application

In his 1610 collection *Concerti Ecclesiastici*, Giovanni Paolo Cima includes only two pieces that specify trombone. The first is his *Sonata per Cornetto & Trombone, overo Violino ò Violone*. The trombone part has a wide but low range, from *C* to *d'*. The low *C* and *D* do not exist on the trombone in A, which leads me to believe Cima intended this piece to be played on a *Terz-*, *Quart-*, or *Quint-Posaune*. Cima's low trombone part reflects the tendency at the beginning of the seventeenth century, like Viadana, to write low trombone parts. Breaking with Viadana, however, Cima writes more exciting lines,

including a two-octave run in eighth notes. Near the end of the piece is an ascending chromatic line that, when played with actual major and minor semitones, will take your breath away.

Cima's *Capriccio A 4* also includes a trombone part. This part is neither as low nor as high as the previous, but still descends to a *D*, while the upper limit is only a *g*. This is not playable on the trombone in *A*, however, it would be on a *Sekund-Posaune* in *G*. The part is also less florid than the previous, though it still includes some eighth-note runs.

Giovanni Battista Riccio saw his *Il Terzo Libro delle Divine Lodi Musicali* published in 1620. In it, he includes four pieces for trombone: the *Canzon La Fineta* for violin and trombone with basso continuo. The trombone part is playable on a trombone in *A* as the lowest note is only *E*. The part is still very solidly in the bass range, reflecting the early seventeenth-century fashion. Riccio's music is conversational between the solo instruments, perhaps leading Castello towards the new style.

The trombone parts in *Canzon la Savoldi* and *Canzon La Rubina A 3* do not differ much from that of *Canzon La Fineta*. However, *Canzon la Pichi in Ecco con il Tremolo* is noteworthy for its inclusion of two fascinating compositional techniques. The first is an echo section, in which Riccio plays with dynamic effects by indicating *forte* under tutti phrases then responding with just one part in *Ecco* (he does not indicate *piano*). Later in the piece he indicates *Tremolo* in a section comprised of 112 eighth notes, in groups of four and eight, which move somewhat chromatically. The effect should be executed by varying the volume and speed of air between each note, not articulating with the tongue.

With these experimental techniques Riccio raises the bar for composers to follow.

At the end of his treatise *L'Organo Suonarino*, Adriano Banchieri includes four sonatas for violin and trombone. These pieces are not well known and represent a valuable addition to the repertoire. They are published in score format with no additional part for the continuo. Banchieri indicates *Fuga* where the organist should play and *Violino* and *Trombone* where they each enter. He also indicates *Tace*, where the instruments should stay out. The parts for trombone are all in bass clef while the violin parts are in treble clef. Other clefs are used to indicate organ parts, except in the *Terza Sonata In Scherzo*, where he indicates *Trombone all'alta*¹⁰⁹ below a part in tenor clef, in which it remains to the end of the piece. Perhaps following Castello, Banchieri allows his writing for the trombone to ascend into the tenor range. In his *Quarta Sonata In Scherzo*, Banchieri includes descriptors with his instrument indications, *Violino volendo* (if you want) and *Trombone piacendo* (if it pleases you). I have not seen these descriptors used elsewhere, but they would seem to indicate the affect or feeling to be expressed by the performers.

In his 1629 collection of *Sonate Symphonie*, Biagio Marini included several pieces with multiple trombones. Of the seven *canzoni* with trombones, three feature four trombones, one has three trombone parts, and three include two trombones. Marini includes no pieces in this collection featuring only one trombone part; he indicates the range of the trombone part by his choice of clef, including alto clef (C3), tenor clef (C4), bass clef (F4), and even sub-bass clef (F5). This collection represents a new direction for

¹⁰⁹□ This expression appears to signal that the trombonist should enter despite the part now being in tenor clef and, thus, in a higher range.

trombone music in its use of as many as four trombones together, while not unprecedented—Tiburcio Massaino's *Canzon Trigesimaterza* for eight trombones appears in the 1608 collection *Canzoni per Sonar con Ogni Sorte di Stromenti*—it is the first collection to include several pieces for several trombones.

Marco Uccellini's 1642 collection *Sonate, Arie, et Correnti* includes one piece with a trombone part. *Sonata Seconda detta la Bucefaldasca* is for violin, trombone, and basso continuo. The trombone part is written in bass clef and is in the bass range (*F* to *d'*). Uccellini writes a few eighth-note runs, the part is active throughout, and it never plays an accompaniment role only. There is one flat in the key signature, and the final cadence is in *F*, which provokes a few tricky spots where the trombonist must move quickly between *A* in first position to *B-flat* in lowered fourth position. A trombonist experienced in playing the trombone in *A* should have no trouble, but for the less experienced player, this piece would be much easier on a trombone in *B-flat*. Thus, we see that not every piece composed in the seventeenth century is ideally suited to the trombone in *A*, but the experience gained in struggling with a piece like this will pay dividends later on.

Conclusion

In this chapter I have examined the repertoire for the trombone published in Venice in the first half of the seventeenth century. I have shown that, while some of the pieces used one flat in the key signature, the overwhelming majority of the pieces use no key signature. By recording the “key” of the final cadences in this repertoire, I showed

that, while there is some diversity, the “keys” of G, A, and C comprise almost 80% of the total. The question for the modern trombonist is, does it make more sense to perform repertoire that is constructed primarily from natural notes on an instrument conceptualized and played to strengthen natural notes or on an instrument that is conceptualized and played to strengthen flat notes?

In the three case studies above, I analyzed each trombone part and presented data in graphical and numerical form to get a sense of what it would be like to play these parts on a trombone in A as opposed to on an instrument in B-flat. I discussed the advantages and disadvantages of each, hoping to allow modern trombonists to understand the differences. By examining in some detail a piece from the beginning, the middle, and the end of the first half of the seventeenth century, I was also able to note developments and trends in compositional techniques. The trend towards writing higher trombone parts translates to the performer using closer slide positions. Likewise, the inclination of Cazzati to write more consecutive pitches that are played in the same position, and to allow the trombone to begin and end in first position, leads me to believe that composers improved their writing for the trombone throughout the period in question. The examples from Viadana and Uccellini show that while not every piece is easier on the trombone in A, they are far from impossible, and with a little work will provide rewarding experiences to all involved. The data provided above supports my assertion that not only was the trombone in A expected and intended at this time, but modern performances of this repertoire would benefit from using the trombone in A.

CHAPTER IV
EXPLORATIONS IN CARNAL MUSICOLOGY

I was particularly taken with Elisabeth Le Guin's brazen style and methodologies upon reading her *Boccherini's Body: An Essay in Carnal Musicology*.¹¹⁰ Carnal musicology sounds so... sexy, doesn't it? She explores and describes her physical actions in relation to playing her instrument and to the music of eighteenth-century composer and cellist, Luigi Boccherini. I had never seen anything like this before, and I immediately knew that I had to do something similar for the trombone. In researching phenomenology as applied to music, I came across Jim Sudnow's *Ways of the Hand: The Organization of Improvised Conduct*.¹¹¹ In it, he writes:

My concern is description and not explanation, a phenomenologically motivated inquiry into the nature of handwork from the standpoint of the performer. Can the body's improvisational ways be closely described from the viewpoint of the actor, not through an introspective consciousness, but by a fine examination of concrete problems posed by the task of sustaining orderly activity, which 'improvisation' certainly is? This question sets the tone of my discussion.¹¹²

In this chapter I provide two analyses, one personal, the other communal, both seeking to describe the physical and musical processes at work in the performance of Dario Castello's music on appropriate instruments. In answering Sudnow's question above, I must say that it *is* possible to describe the work of the body in service of the

110 □ Elisabeth Le Guin, *Boccherini's Body: An Essay in Carnal Musicology*, Berkeley: University of California Press, 2006.

111 □ Jim Sudnow, *Ways of the Hand: The Organization of Improvised Conduct*, New York: Harvard University Press, 1978.

112 □ Sudnow, *xiii*.

musical output. Whereas Chapter 3 showed the quantitative efficiency of playing Castello's *Sesta Sonata* on the trombone in A as opposed to in B-flat, in this chapter my colleagues and I pursue a phenomenological inquiry through discussion and exploration of the aesthetics and *Zeitgeist* of the time and place from which the music comes.

The three sonatas for soprano instrument, trombone, and continuo in Dario Castello's first book of *Sonate Concertate in Stil Moderno* (1621) comprise some of the most beautiful and challenging music written for the trombone in the first half of the seventeenth century. According to Andrew Dell'Antonio, Castello's *Sonate Concertate in Stil Moderno* forged a new genre, and a new style, in which composers experimented outside the strict rules of the *prima pratica*.¹¹³ While Giulio Cesare Monteverdi was providing cover with his "boxer's rhetoric,"¹¹⁴ Castello ignited a revolution with his instrumental music *in stile moderno*, in which the relationship between the long-dominant rules of counterpoint and musical discourse would become inverted.

The third of these sonatas for two solo instruments, the *Sesta Sonata*, is not significantly different from the other two—or the rest of the collection, for that matter—in terms of syntax, form, or genre. It does, however, include an absolutely gorgeous "love song" in the second half (after the solo sections), which is why I have chosen to analyze it here.

Possibly the most immediately recognizable feature of Castello's writing for the trombone is the massive amount of notes. The trombone part for *Sesta Sonata* consists of a total of 575 pitches (see Chapter 3), which is three to four times the number of notes in

113 □ Andrew Dell'Antonio, *Syntax, Form and Genre in Sonatas and Canzonas 1621-1635*, Lucca: Libreria Musicale Italiana, 1997, 247-303.

114 □ *Ibid.*, 297.

trombone parts by Castello's contemporaries. The second feature we immediately notice is the "blackness" of the page; Castello does not hold back on eighth, sixteenth, and even thirty-second notes. This can be daunting to the trombonist used to a diet of quarter, half, and whole notes, but as Castello states:

TO MY BENIGN READERS.

I have thought it appropriate to warn those who will enjoy playing these sonatas of mine, that if at first [they] seem difficult, they should not lose their enthusiasm in playing them more than once, because they will become accustomed to [them], and then they will become quite easy; because nothing is difficult to he who delights in it. I was not able to make them any easier, being obliged to follow the modern style, which is nowadays followed by everyone.¹¹⁵

I will provide two analyses of Castello's *Sesta Sonata* below. The first is a comparison of playing the trombone part on a trombone in B-flat versus playing it on a trombone in A. My discussion is based in part on "Cello-and-Bow Thinking" from Elisabeth Le Guin's *Boccherini's Body*.¹¹⁶ Some of the issues addressed by Le Guin include the following:

- fixity vs. mobility
- competing muscle groups
- muscular extension and contraction
- joint extension, contraction, and rotation
- motion of limbs or digits toward or away from the center of the body

115 □ "ALLI BENIGNI LETTORI. M'è parso, per dar satisfatione à quelli, che si deletterano di sonar queste mie sonate, avisarli; che se bene nella prima vista li pareranno difficili; tuttavia non si perdano d'animo nel sonarle più d'una volta; per che faranno prattica in esse, & all'hora esse si renderano facilissime: perche niuna cosa è difficile à quello che si diletta: dechiarandomi non haver potuto componerle più facile per osservar il stil moderno, hora osservato da tutti." Castello, C2. Translated by Dell'Antonio, 63-64.

116 □ Le Guin, 14-37.

- friction and release
- use of or resistance to weight, and gravity.

In applying these ideas to a comparison of trombones at different pitches I necessarily have to adapt some of these issues to fit my needs.

My second analysis of Castello's *Sesta Sonata* is based on Le Guin's "Analysis 2" from her Chapter Six, "It Is All Cloth of the Same Piece."¹¹⁷ This analysis is based on rehearsals and conversations among the members of the early music ensemble "à2." While Le Guin derived her parameters from Boccherini's contemporary Condillac, and reflect the aesthetics of the *Galant* style, I had to develop parameters relevant to the *seconda pratica* and Castello's *stil moderno*. My parameters are derived from Dell'Antonio's discussion of the stylistic, generic, and syntactical elements that define the music of Castello's time.¹¹⁸ We described our experiences of playing Castello's *Sesta Sonata* in terms of "dramatic changes in musical affect,"¹¹⁹ stability or instability, the use of patterns for manipulation, and the satisfaction or frustration of expectations.

By pursuing these questions as an ensemble, based on our individual experiences within the group, we were able to tease out significant points of commonality and differentiation. As did Le Guin and Diderot before her, I present the results of this analysis in "semi-fictional dialogue form."¹²⁰ While Le Guin describes her work as

117□ Le Guin, 234-253.

118□ Dell'Antonio, Conclusion and Appendix: '*La maniera di sonare con affetti cantabili: The Seconda Pratica* and Instrumental Music,' 247-303.

119□ Ibid., 259.

120□ Le Guin, 12.

“scientific,”¹²¹ I do not, as I consider myself less of an interviewer and more of a participant.

Analysis 1

In this first analysis I explore the differences and similarities between playing Castello’s *Sesta Sonata* on the trombone in B-flat as opposed to playing it on a trombone in A. I seek to understand and describe the difference in “feeling” between the two. In order to achieve this I use my modern historical trombone, a tenor in B-flat at $a' = 440$ Hz or in A at $a' = 465$ Hz, built in 2012 by Markus Leuchter in Herzogenrath, Germany. The mouthpiece I use is a historical replica made in 2012 by Geert Jan van der Heide in Putten, The Netherlands. My historical trombone came with two pieces of tubing, known as bits, which fit onto the tuning slide to lower the pitch of the instrument by a half step. Using these bits, I am able to play the instrument pitched in A at $a' = 440$ Hz, and by removing them I can play the instrument pitched in B-flat at $a' = 440$ Hz. This allows all other aspects to remain identical.

I was introduced to the historical trombone in 1999 by Professor Gilbert Cline at Humboldt State University, where I studied music as an undergraduate student. I began with the tenor in B-flat and the alto in F. It was not until January of 2015 that I made the decision to play my tenor in A. Now in September, as I write this, I have had enough time that I feel just as comfortable playing in A as in B-flat.

To demonstrate and explore the differences between the two, I use the trombone part for Castello’s *Sesta Sonata*, a composition I have had the pleasure of playing on

121 □ Ibid.

several occasions with my colleagues, Margret Gries (harpsichord) and fellow graduate students Holly Roberts and Charlie Hankin, violins. Published first in 1621 and again in 1629 and 1658, Castello's first book of *Sonate Concertate in stil moderno* was well diffused in his own time across Europe. It has returned to popularity amongst early music enthusiasts and performers not only in Europe, but all over the world.

I was enamored with Castello's music from the very first listening (in the early 2000s): it was unlike any of the Renaissance wind band music with which I had become familiar. I heard passion, emotion, and technical brilliance executed on the historical trombone. I was hooked, but I did not dare try to play it. Castello's music stood beyond my fair abilities until I moved to Eugene in 2011 and met like-minded musicians who were willing to take on this incredibly difficult music. Through the act of playing I somehow grew even more connected to the composer and his music. It is with this experience that I journey further in learning more about my instrument and how it works with Castello's music.

Opening Section: *alegra*

The trombone part begins with a rest before imitating the violin's opening theme at the lower fifth. On the trombone in A the opening theme is easier to execute than on the trombone in B-flat. This is likely because nine of the first twenty-two notes are in first position on the trombone in A (comparable to an open string on a cello), whereas only two are in first position on the trombone in B-flat. Playing in B-flat there is a distinct feeling of wandering; there is nothing firm to grasp onto. On the trombone, at any pitch,

the further on the slide from first position a note lies, the “fuzzier” the tone. Notes in first position sound clear and strong. This is probably because of the physics of the instrument, which increases tubing via the telescoping slide, but it also allows for more air to leak when the slide is further out.

Before the trombone was “improved” in the nineteenth century by increasing the bell size and the bore size, one of its features was that all the notes did NOT sound the same (as they do now). If we imagine a spectrum of timbre, the notes further out on the slide are fuzzier, while the notes closer to first position are clearer and sharper. Let us look at the distribution of notes on the slide (see Figures 26 and 27).

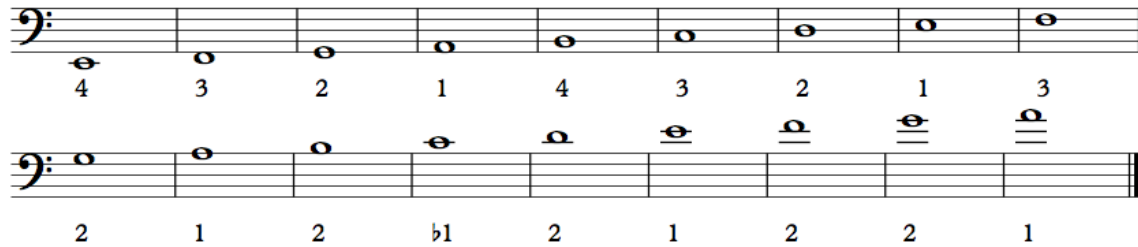


Figure 26: Slide positions for notes on trombone in A

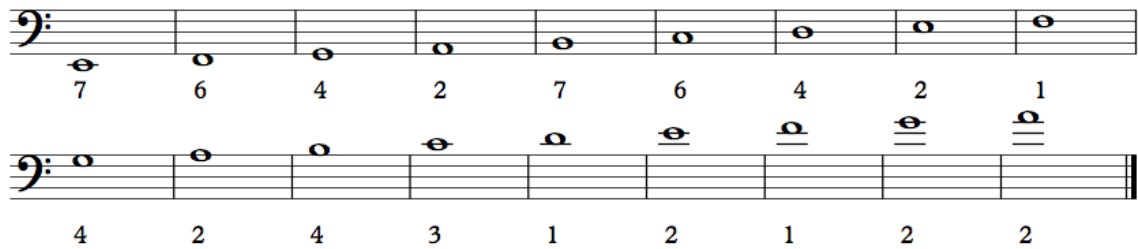


Figure 27: Slide positions for notes on trombone in B-flat

I should explain that the positions systems are different from each other. Where the modern trombone in B-flat is conceptualized chromatically with seven positions, each

a semi-tone apart, the trombone in A is conceptualized diatonically with four positions, the first three of which are a whole tone apart, and the fourth a semitone lower (see Table 10).¹²²

Table 10: Comparison of slide positions between trombone in A and B-flat

Trombone in A	1	b1/#2	2	b2/#3	3	4	b4
Trombone in B-flat	1	2	3	4	5	6	7

Conceptualizing the instrument diatonically allows the trombonist to use slightly different slide placements for the notes in between the positions. The *G-sharp* is in a raised second position, which is slightly further out than *A-flat*, which is in a lowered first position. The modern trombonist conceptualizes these notes as “enharmonically equivalent,” but the historical trombonist, who conceptualizes in a diatonic manner plays these at different frequencies and is able to create more just intervals with fellow musicians.

In his 1730-31 treatise, *The Modern Musick-Master*, Peter Prellieur provides a violin fingerboard diagram, which similarly shows different positions for sharps and flats (see Figure 28). According to Ross Duffin, this is how non-

keyboardists thought about music; “They recognized keyboard

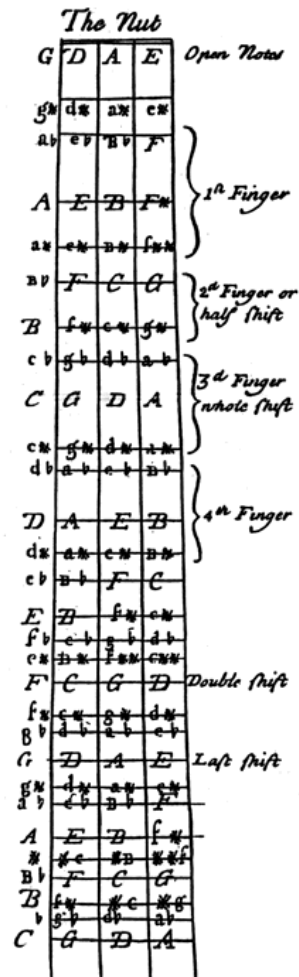


Figure 28: Prellieur's fingerboard diagram

¹²²□The unspecified space between the diatonic positions allows for two slightly different positions for the sharpened and flattened notes that exist there, whereas the chromatic system places both of these notes in the same position.

temperament as a compromise that allowed the keyboard to play in a variety of keys... Not being limited to twelve unchangeable notes to the octave, string players, wind players, and singers did not have to make that compromise.”¹²³

It is clear then, that a diatonic conception of the slide positions is essential and goes hand-in-hand with playing the trombone in A: the two are inseparable. However, the question remains: which notes are further out on the slide and which are closer? On the trombone in A, *E* and *B* are both in fourth position, and *F*, *c*, and *f* are in third position. These notes are fuzzy and weak. In second position are the notes *G*, *d*, *g*, and *b*, and in first position *A*, *e*, *a*, *c'* (in lowered first position), and *e'*. These notes are clear/focused, centered, and strong (see Table 11).

Table 11: Spectrum of positions based on strength or weakness for trombone in A

	Weaker ←-----→ Stronger			
Position:	4th	3rd	2nd	1st
Note:	<i>E, B (flat)</i>	<i>F, c</i>	<i>G, d, b</i>	<i>A, e, c'</i>

In her chapter on Solmization, Anne Smith discusses the “differences in color between the syllables.”¹²⁴ First she refers to Martin Agricola, who wrote in his *Musica Choralis Deudsch* (1533) that the syllables *ut* and *fa* are sung “extremely mildly, gently, sweetly and softly,” while *re* and *sol* “emit an average sound, not too mild or too clear,” and *mi* and *la* are “clear and hard syllables. For they should and must be sung in a more

¹²³ □ Ross Duffin, *How Equal Temperament Ruined Harmony (and Why You Should Care)*, New York: W.W. Norton and Company, 2007, 48.

¹²⁴ □ Anne Smith, *The Performance of 16th-Century Music: Learning from the Theorists*, Oxford: Oxford University Press, 2011, 26.

manly and stronger way...”¹²⁵

As we can see by comparing Tables 11 and 12, there is significant correlation between Agricola’s syllable quality distinctions and my own quality distinctions of notes played on the trombone in A based on slide positions. Five of the six notes that are either *ut* or *fa* lie in third or fourth position. Similarly, five of the six notes that are either *re* or *sol* lie in second or third position. While all six notes that are *mi* or *la* lie in second or first position, and this is, for me, the most significant discovery because these are the notes that sound clearly and strongly on the trombone in A, and that Agricola prescribes as being “more manly and stronger.”

Table 12: Syllables and their affects according to Agricola

Affect:	Sweet and soft		Neutral		Clear and hard	
Syllables	<i>ut</i>	<i>fa</i>	<i>re</i>	<i>sol</i>	<i>mi</i>	<i>la</i>
Hard hexachord:	G	C	A	D	B	E
Natural hexachord:	C	F	D	G	E	A
Soft hexachord:	F	B-flat	G	C	A	D

In Table 13 we see that there are differences for the trombone in B-flat compared to the trombone in A. Most significant are the transformations of B-flat, from the weakest end of the spectrum to the strongest, and *f*, from weak-neutral to strong. *B-flat* and *f* are the strongest, most reliable notes on the trombone in B-flat, naturally, but in the solmization system described by Agricola, these notes ought to be sweet and soft. From the perspective of solmization, this is the most significant difference between the trombones in A and B-flat.

¹²⁵ Ibid.

Table 13: Spectrum of positions based on strength or weakness on the trombone in B-flat

	Weaker ←-----→ Stronger						
Position:	7th	6th	5th	4th	3rd	2nd	1st
Notes:	<i>E, B</i>	<i>F, c</i>	<i>F#, c#</i>	<i>G, d, b</i>	<i>Ab, eb, c'</i>	<i>A, e, c#'</i>	<i>Bb, f, d'</i>

The most important syllables to be differentiated in quality are *mi* and *fa*, the half step. Looking again at the trombone part for Castello's *Sesta Sonata*, we see a few half steps in the opening theme. The first comes between the fifth and sixth notes, *b* and *c'*. On the trombone in A these notes are played in second and lowered first position respectively. The *b* in second position is stronger than it is in fourth position on the trombone in B-flat, which is more than halfway out on the slide. The next half step crosses the next bar line between the *f* and *e*. On the trombone in A, *f* is played in the fairly weak third position and resolves to *e* in the strong first position, whereas on the trombone in B-flat, the *f* is in a strong first position and resolves to a strong second position. The last two half steps in the opening theme are from *c'* to *b* and back to *c'*, the positions and strengths I discussed above.

After some rests the trombone enters again with three *d* pitches and ascends stepwise to *g* with a half step between *f#* and *g*. On the trombone in A, the *f#* is played in a neutral raised third position and resolves to *g* in second, while on the trombone in B-flat, the *f#* is played in a weak-neutral fifth position and resolves to *g* in fourth. This is followed by half steps from *c'* to *b* and from *b* to *c'* before leaping up above the staff to half steps between *g'* and *f#'* and back. On the trombone in A, the *g'* is played in second and the *f#'* in raised second position, one partial lower. On the trombone in B-flat, the *g'*

is played in a slightly raised second position and the *f#'* in a slightly-raised third position, both on the same partial. In this instance, playing a *mi f#'* on a different partial from the *fa g'* allows me to place more emphasis on it than playing it on the same partial, which smoothes the transition between the notes. Here, the advantage goes to the trombone in A. The same can be said for the following half step from *f'* to *e'*. On the trombone in A, these notes are played on different partials, whereas on the trombone in B-flat, they are played on the same partial.

I can recall a private lesson early on in my undergraduate education, when my trombone professor told me that I should play half steps on the same partial to make them smoother. This aesthetic may apply to music from a later time, but for music composed in an era in which solmization was still at the basis of musical education¹²⁶ it does not seem to apply. When playing half steps on the same partial, the lower note necessarily has to be further out on the slide, but the physics of the instrument, especially the historical trombone, governs the strength of the notes. As I have discussed above, the further out on the slide a note lies, the weaker the timbre of that note will be. With Agricola's guidelines that *mi* ought to be clear and hard and *fa* soft and weak, it would seem that the modern trombone practice of playing half steps on the same partial is backwards, and that for music composed from the time of its invention in the fifteenth century all the way to the eighteenth century, trombonists ought to play half steps on different partials.

Continuing with the *Sesta Sonata*, the trombone part leaps down to three *c* pitches

126□ Solmization did not end with the Renaissance. Margo Schulter points to Giovanni Paolo Cima's use of solmization names in 1606 and Fabio Colonna's use of them in 1609 on her website, "Hexachords, Solmization, and Musica Ficta," accessed September 30, 2015, <http://www.medieval.org/emfaq/harmony/hex3.html>. Likewise, Anne Smith writes that solmization "continued to be maintained and taught well into the eighteenth century." Smith, 22.

before ascending through *d* and *e* to *f*. This half step between *e* and *f* is possibly the best example of the difference in effect between the trombones in A and B-flat in this piece. Here we have a perfect outline of the natural hexachord: *ut c* (3 times), *re d*, *mi e*, and *fa f*. On the trombone in A, *e* is in strong first position and *f* is in weak third position, whereas on the trombone in B-flat, *e* is in strong second position and *f* is in an even stronger first position. The opposition of *mi e* and *fa f* in qualitative terms is functionally destroyed when played on the trombone in B-flat.

The next significant half step comes when the trombone plays three *a* pitches and ascends through *b* and *c#'* to *d'*. On the trombone in A, the *c#'* is played in strong first position and the *d'* in a strong-neutral second, one partial higher. On the trombone in B-flat, the *c#'* is played in strong second position and the *d'* in a stronger first position on the same partial. Again, the qualitative opposition of *mi c#'* and *fa d'* is disrupted on the trombone in B-flat.

The trombone part continues with a sequence of triadic leaps that outline major chords on D, followed by G, and followed by C. Here we realize Castello's innovative use of the circle-of-fifths to propel the listener forward, in the same way that the Juno spacecraft used a gravity-assist (commonly referred to as a "slingshot") from Earth to escape the sun's gravity and make its way to Jupiter.¹²⁷ Castello asks for a *presto*, which only serves to further the excitement of the listener as the trombone and violin ratchet up the breathless rhetorical climax all the way to the cadence in G that ends the first section.

¹²⁷□ "Juno Earth Flyby - Oct. 9, 2013," National Aeronautics and Space Administration, accessed September 30, 2015, https://www.nasa.gov/mission_pages/juno/earthflyby.html.

Analysis 2

Holly: Ready?

Me: Mmm.

(Thus we begin our first run-through of Dario Castello's Sesta Sonata from his first book of Sonate Concertate in stil moderno.)¹²⁸

Me: *(whispered)* Whew. Good.

Holly: Pretty good. I always mess up that solo in the middle, Peggy. I'm sorry. I don't know what my problem is...

Peggy: I don't think it's messed up. I think you can do whatever you want to do in there.

Holly: Ughhh!

Peggy: It's as if... The thing about it, I think that, reading Dell'Antonio again, it's that Castello has tried to put down what he would improvise.

Holly: Yeah.

Peggy: So it needs that feeling of improvisation, and if you improvise something differently I'll follow you. I don't think it has to be his improvisation of that moment in 16-whenever. It has to be that feeling of, "Oh! What a good idea!"

Holly: Ok.

Me: *(from the kitchen while making a cup of coffee)* Yeah! That's a good point! I was reading a lot of Dell'Antonio last night trying to figure out what these different criteria or aesthetics are from this period. It's like there are expectations, but it's okay for them to be... messed with a bit.

Peggy: Yes. Well, I think it's just sort of a roadmap, or a guide, or a list of ideas. It's sort

¹²⁸□ Measure numbers throughout this section refer to the modern edition of Castello's *Sesta Sonata* found in Appendix B.

of equivalent to those charts and charts of cadential formulas that we have from a little bit earlier, 1580s.

Me: The *passaggi* from Dalla Casa or Rognoni.

Peggy: Yeah, just sort of ‘Here’s how to ornament this kind of a cadence...’ There’s a lot of that in the organ repertoire, which is where I get all of my little licks from. Stealing like crazy. So, I think it’s that idea that music is not on the page, but it’s really in the air, and you can feel what you feel. I think that’s sort of the deal, it’s in the air.

Me: So, some of the questions that I came up with for this...

Questionnaire: à2 Observations

1. Where in the music do you feel the most “dramatic changes in musical affect”? (Dell’Antonio)
2. Where do you feel the most extreme or the least extreme?
3. Where do you feel the most or least stable?
(Those two are related, I think.)
4. Where do you feel patterns are being used for persuasion or coercion, manipulation?
5. Where do you feel expectations, and are they satisfied or frustrated?
6. And where is the best or worst sounding moment, and why?

Peggy: Mm-hm.

Me: Some things to think about.

Peggy: Some of those are driven harmonically, that is, stability or instability. I think they are harmonically driven. But then, what are the most satisfying moments in this piece? I have lots of them. What’s in my head is: *That was a good idea! What a good idea!* I mean, instead of trying to put labels on it like this is a *noema*, or this

is a that, I feel like we gather energy and then it lands and we move on from that point.

Holly: Yeah.

Me: And there's a lot here, too. You know, when I was doing my statistical analysis for the third chapter I found that this trombone part has 575 notes, which is three to four times the number in contemporary trombone parts.

Holly: Wow!

Me: Yeah. There's a lot of notes here!

Peggy: I think there's something else, Bodie, that we haven't really... what Dell'Antonio doesn't talk about them so much, but I think it's part of how this music works, is that sense of, not necessarily improvisation, but *exploration* of different tonal centers. Because if you think about how his tunes go, *bum-ba-dum-ba-bum*, he really defines with a leading tone or he defines with the top end of the triad.

Me: Almost every theme that he comes up with outlines a triad.

Peggy: Yeah. And so, what that does is just, to me, it says *Ok. We're going to explore where we can go in the key of... or in the triad of... G, G major*. And I do think that some cadential points offer a place to end. To shorten the piece, we're going to end at this point.

Holly: Yeah.

Peggy: And that sense of, that tension between, "is this the end or is there more that we could say about this key?" Even hearing what he does from the ending of the first section in G, then continuing in the next section starting on C, which is very

satisfying.

Me: Dell'Antonio talks specifically about Castello's use of secondary key areas in order to play with the expectations of the listener.¹²⁹

Peggy: Yeah. One of the things I learned from harpsichord training in improvisations is that if you accidentally hit a wrong note, then you need to look at that as a new spice in the soup. You need to work it in. So you play it again and again, until it sounds like it was intentional. And you can hear this same accommodation of a new pitch in the figure from the solos where he changes the accidental in the middle of the bar but repeats it, so that it sounds planned.

Me: Mm-hm.

Peggy: Does that fit into any of your questions?

Me: I think so. There was a great quote in the book, "Justice and knowledge depend on experience of their opposites."

Peggy: That is, you don't know good unless you know bad.

Me: It goes along with this idea of contrast in everything; polarization of emotions; synthesis of extremes. It's not just unity across everything, but we've got this over here and this way over here, and they balance each other out. There's another quote that Dell'Antonio uses from a contemporaneous writer Emanuele Tesauro, "[the intellect finds] a secret and innate pleasure in realizing that it has been pleasantly deceived; to cause movement from deceit to truth is a method of learning that is unexpected and, therefore, pleasing."¹³⁰ The idea of novelty was so

129 □ Dell'Antonio, 23-64.

130 □ Ibid., 271.

important in seventeenth-century Venice, and it related to politics, capitalism, and worship. So, these are some of the aesthetics of the time of Castello, derived from Dell'Antonio, that we can think about as we play through the piece once more.

(à2 play through the piece again, this time sounding more engaged, more expressive.)

Me: *(whispered)* Nice. That's always fun.

Peggy: Would you mind doing the final *Adasio* (m. 118) again? I feel like we run out of energy before we get to the last figure. Or maybe it just has to be more anguished in the very last one.

Me: We need to build up so that the first of those is bigger, then they relax, each more than the last.

Holly: Yeah, okay.

(à2 play the final Adasio section once more, shaping the line to express more anguish.)

Holly: Is that better?

Peggy: Yes, it is. Though I wonder if you could do even more with it. It's almost like it's just *painful* to play those last two notes before resolving.

Me: Yeah, because you don't want it to be over.

Peggy: Yes, it's like you just don't want to let go.

Me: I think with all of this, we can be more exaggerated with our gestures and expression.

Peggy: And I can't really do that because my part has too much energy in it.

Holly: Shall we play it one more time?

Peggy: Maybe the last *Adasio*... (m. 118)

Me: So, do you guys have any more thoughts on “dramatic changes in musical affect?”

Where do you feel the biggest dramatic changes in affect? Because that’s the staple of the *stile moderno*, every section is dramatically different.

Holly: You’re asking from which section to which section do I feel it the most? I feel like that’s so hard because each of his sections is so different.

Me: That’s true.

Holly: To me, the most shocking one is the triple section after the solos (m. 103). To me, that seems like it’s coming out of nowhere. It’s sandwiched between the solos and the next *Adasio* (m. 118).

Peggy: I’ll argue then, harmonically it’s logical. The solo just before ends with a cadence in G, and the triple takes off in G, so it’s not unexpected harmonically.

Me: I’d like to keep us focused on the feelings that we are experiencing rather than the harmonic construction of the piece.

Peggy: Right, well, here’s the one that I think is the most dramatic, going into the last *Presto* (m. 103). The previous section finishes so beautifully, then the *Presto* builds up a lot of energy and tension with long descending lines in all of the parts. The *Presto* section is the biggest surprise to me.

Holly: That’s true.

Me: So, that’s more like a pattern, right?

Holly: That is definitely a place where the pattern is what’s saying something rhetorically.

Me: And you’re expecting it to go somewhere, and it gets cutoff and ok, we’re just

going to cadence in D.

Peggy: Actually, could we try it from two whole notes before that *Presto*, but don't play the *Presto*, and instead go straight into the final *Adasio*.

Holly: Skip the *Presto*?

Peggy: Skip the *Presto* because then, I think, we'll see what the effect of the *Presto* is by not doing it. You know what I mean?

*(à2 attempts to play the end of the piece skipping the Presto, but I started **three** whole notes before, rather than two. Thankfully, my colleagues waited for me to catch up, and the point is made that the final Presto could be skipped altogether to form a cohesive seam between sections.)*

Holly: Yeah, that's true. It's so funny, it's like he just stuck it in there.

Peggy: Now, let's add the *Presto* to it.

Me: So, what do you think about taking out that *Presto* section? What does that feel like? What does that mean?

Peggy: It feels to me like a discharging of energy. There's so much emotion built up in the previous *Adasio* section, it's almost like one is embarrassed to be so... heartfelt. And he wants to get some spice back in it.

Me: And the spice is the *Presto*?

Peggy: Well, and that's that idea that you mentioned earlier about opposites giving more energy.

Me: So, this *Presto* section is accumulating more energy.

Peggy: Since we have such a lush feeling before, when you both are guys are going back and forth...

Me: In the previous *Adasio* (m. 81), which is followed by an *Allegro* (m. 95).

Peggy: To me, it's almost as if it's too close to sentimentality, and you want to splash some cold water in your face to bring you back to reality. Don't go quite so far.

Me: I wonder what they thought about that at the time.

Peggy: Well, what you want to look at is some poetry. Find some poetry that would have a parallel gesture in it.

Me: Yeah... I've seen it compared to architecture in the showing of motion and movement.

Peggy: Well, look at some staircases then.

Holly: No, you're right. It's the poetry, too.

Me: I don't know if I've ever heard of an early-seventeenth-century Italian poet.

Peggy: In Bianconi's book *Music in the Seventeenth Century*, there is a whole chapter on Marino and the big change in poetry.¹³¹ He contrasts the new kind of poetry to the old kind, and he describes the new kind as more symmetrical, more concise, more vivacious. Can I run and get the book for you?

Me: It's ok. I have it at home, but thank you.

Peggy: Ten years ago when I read that, there was something about the older, established poets who didn't approve of this new style. So, I wonder if there isn't some parallel that you could find there.

Me: Yeah, and it's definitely political. Dell'Antonio discusses the patrons to whom composers like Castello dedicated their collections were members of the *Casa Nuove*, a progressive, anti-papal, merchant class, who were very interested in

¹³¹ □ Lorenzo Bianconi, *Music in the Seventeenth Century*, (Cambridge: Cambridge University Press, 1987), 7-14.

anything new.¹³²

Peggy: Aha! So, let's try it again. From the ooey-goey-booey part? No, how about from the *Allegro* (m. 95) just before the *Presto*.

(à2 play through both sections, but stop suddenly after resolving the Presto.)

Holly: Can we try that just going straight through and not even slow down at all?

Because I feel like it's written to be a much more abrupt seam between sections, like suddenly changing gears without using any brake. I love how we're accelerating at the beginning of the *Presto*, but I don't feel like it should ever decelerate. It just goes until it stops.

Me: Okay. That sounds good. Let's try it.

Peggy: Same place?

Holly: Yeah, back at the *Allegro*.

(à2 plays from the Allegro to the end, this time with a more abrupt transition from the Presto to the final Adasio.)

Me: I think that's much more effective. So, should we put a fermata over that arrival at the end of the *Presto*?

Peggy: It depends on where I set the next bass note.

Holly: Yeah, I think it kinda depends on what Peg does.

Peggy: And what I'm listening to, wherever we're playing, is the resonance of the room, because you don't want the sound to completely die away, you want to catch it right before it leaves.

Me: But it is a matter of whether we hold it out or not.

132 □ Dell'Antonio, 273-274.

Holly: I don't think we need to hold it extra long. It's just kind of written in.

Me: Ok.

Peggy: Are there other parts that you feel are large contrasting moments?

Me: Well, the solos are so sappy and sweet. I was thinking along your lines, the transition from the solos to the earlier triple section seems like a big contrast to me. That would be contrasting mostly in meter and tempo, less in affect.

Me: Ok. Are there are any moments where you feel like what you're doing is really extreme or where the music sounds extreme? This sonata doesn't have that really tense, Castellian ending that he does so well in others. This one feels like it just wants to ease out, like falling asleep almost. I don't know if there's much in this piece that could be described as extreme. I guess the "love song" section we mentioned earlier is pretty extreme.

Peggy: I think the *forte* and *piano* echoes (mm. 72-80) that you play just before the "love song" (m. 81) is pretty unusual, and it's a way to stop the motion that has built up over that triple section.

Me: Yeah. I thought about trying to have a question about dialogue or argument, because this section, and the whole sonata, are full of it.

Peggy: Well there is a big dialogue throughout, but it has to be dramatic. I have cartoon characters in my mind, going back and forth, teasing each other. I can imagine the people acting this out in an *Intermedio* at the Florentine Camerata or somewhere similar. This music is so full of gesture, how can you not imagine it?

Peggy: You can hear where one character is reaching out, but the other walks away when

they get too close. But then in the triple they're dancing around each other. It's almost like hide-and-seek. The violin is playing very coy. Then they carry through to "love song" section, where the violin is more apologetic and moves towards the trombone. But again, they get too close.

Me: Well, now... to me it sounds like there is resolution at the end of that section.

Holly: Which section?

Me: The "love song" section (m. 81). It feels to me like the characters get to a point of coming together. In the last couple bars of that section the violin and trombone are playing unison rhythms and cadence together.

Peggy: Interestingly, that's the only section that ends with a cadence in C. You guys begin in C in the first *Adagio* section following a cadence in G (mm. 24-33).

Me: My opening theme is in C (m. 3), but I'm responding to the violin's opening in G (m. 1). Yes, C is what Dell'Antonio would call Castello's second key area. The use of which is essential to Castello's formalistic conventions.

Peggy: So, the "love song" ends in C, and that could be the ending of the whole thing. But Castello follows this with an *allegro* section (m. 95), which is more lively, and ends by ratcheting up to D.

Me: So, the fact that he resolves this section in the second key area might imply that the "love story" is all a fantasy or a dream. It's something that is not exactly real.

Holly: That's interesting!

Me: What about patterns? It seems like the last *Presto* section is a long descending pattern (m. 103).

Holly: The whole opening section is patterns, too.

Me: Good point! I guess what I mean by patterns is sequences. Rather than presenting the theme in different keys going around the circle of fifths, which is significant because he's one of the first composers to use the circle of fifths, I guess I'm more curious about shorter sequences that ascend or descend by step. Are there more sequences in the continuo part?

Peggy: Hmm... In the opening section he presents the theme in different "keys," but it's not always logical.

Me: Right! The circle of fifths did not have the same logic in the seventeenth century as it does now.

Peggy: Why don't we play through that opening section again?

(à2 play the opening section, ending with the cadence in G.)

Peggy: What do we hear here? Castello has a couple different themes, which he presents in the "keys" of the circle of fifths.

Holly: I think what's interesting is that it starts off seeming like a regular canzona with the dactylic rhythm and a simple theme, but it becomes a conversation with the solo instruments engaging in dialogue—posing questions to each other—bouncing these simple themes back and forth. Castello gives us the drama of the *seconda pratica* after he fools us into believing that it's just another *prima pratica* canzona. That's what I find interesting.

Me: Yes!

Peggy: After your little dialogue you come together rhythmically in the rush to the

cadence.

Me: So, that is different than the last triple, the *Presto* section, where it's descending by step, right?

Peggy: Oh right! This opening section is harmonically driven, where the other is descending the scale.

Me: Right! So, that's more of the kind of pattern I was thinking of with this question. A sequence, either descending or ascending by step, where it's repeating, increasing tension, and maybe creating an expectation that will either be satisfied or frustrated.

Peggy: What you want to look for is the V-I cadence. He ends almost every section with a V-I cadence.

Me: Unless they're plagal, and usually those are only at the very final cadence.

Peggy: Those V-I cadences have finality, but you're right, the last one is plagal.

Me: Perhaps there is meaning behind his choice of a plagal cadence for the final. The association of the plagal cadence with the sacred could imply a marital (or funereal) ending to the courtship and pursuance of the previous sections.

Peggy: Now that's a nice metaphor!

Me: Although, I think it's too happy of an ending to be a funeral.

Me: Ok. What about stability? Are there any places of great stability or instability? Where things could just careen off the tracks, so to speak.

Peggy: I think the *Presto* triple at the end with the descending bass line is unstable, but I don't feel that instability anywhere else.

Me: I wonder if there's a connection between the *Presto* being a descending sequence and the palpable instability. Perhaps we feel more stable in the earlier patterns that go through the circle of fifths because of our experiences living in the time that we do. I wonder if Castello's contemporary listeners felt the same kind of stability in the circle-of-fifths patterns.

Peggy: Or melodic integrity.

Me: Yes, that's true. This *Presto* section doesn't feature a melody or theme per se.

Peggy: It's Jack and Jill falling down the hill.

Me: Right. Well, that's interesting.

Me: Ok. Are there any favorite sounding moments? Do you have any favorite spots or least favorite spots?

Peggy: No, I like them all.

Holly: Yeah, I really just like all of this piece.

Peggy: It's a narrative, in a way, or a drama, and it has to do with where you are in the story.

Me: You're right. I was tempted to leave out that question because it seems to reflect a more modern aesthetic than that of the period.

(The ensemble turns its attention to Tank, the sweet old dog lying under Peggy's harpsichord, and to the sonatas for violin and trombone by Adriano Banchieri).

Conclusion

My second analysis, presented in the form of a "semi-fictionalized dialogue" between the members of our early music ensemble "à2," has provided fascinating and

valuable insight into and exploration of the musical style of Dario Castello through his *Sesta Sonata*. Through our discussion, we reinforced Andrew Dell'Antonio's ideas about formal conventions in Castello's music. Rather than being a chaotic patchwork of unrelated sections, Dell'Antonio showed that Castello actually uses his own conventions in the formal construction of his *sonate concertate*. While they are, almost by definition, sectional, it is this sectionality that creates the dramatic changes in affect, which Dell'Antonio writes define the *stile moderno*. We also explored how Castello's use of secondary key areas need to be understood by performers in order to create different levels of tension that affect the expectations of listeners.

As performers, we also discussed how the florid lines emerged from the *passaggi* of Rognoni and Dalla Casa, among others, and ought to be performed in an as improvisational style as possible. We discussed other important principles of performing style in Castello's music, including pursuing contrast in everything, the importance of novelty to seventeenth-century Venice, and the need for performers to exaggerate expressiveness (through dynamics, tempo changes, and articulations) in order to present affective performances. We questioned whether the logic and stability of the circle-of-fifths was felt as deeply in the seventeenth century as it is now. We learned that the *Sesta Sonata* begins in the style of the *prima pratica*, but the *seconda pratica* dialogue quickly emerges and the piece follows a dramatic arc involving the two instrumental characters. The arc follows their courtship through a "love song," ratchets up the tension in an exciting *presto* section, before ending with a long, easy plagal cadence that could imply the happy "ending" of marital bliss. Affective performances of this piece should display

the dramatic arc between the two characters.

In comparison with the personal analysis performed earlier in the chapter, this communal analysis allowed us to take a larger view. My personal analysis was up close with the material (instrument and notes), while our communal analysis dealt with ideas of form, feeling, and aesthetics. These two analyses are almost perfectly complementary, the first looking at the details, and the second taking a more distant perspective.

In Analysis 1, I looked for reasons to explain the comfort of playing Castello's *Sesta Sonata* on the trombone in A. I found answers in the practice of solmization with its varying degrees of weight and stress for each syllable in the hexachord. I found that these syllables correspond nearly perfectly to the varying degrees of clarity and strength of the notes as played on the trombone in A, but not as played on the trombone in B-flat. The key difference in the natural hexachord (starting on *c*) is with the note *f* (syllable *Fa*), which is a strong note on the trombone in B-flat but weak on the trombone in A. *Fa* should be mild, sweet, and gentle according to Agricola, and this only corresponds when played on the trombone in A. A similar discordance is found with the soft hexachord (starting on *f*). The *b-flat Fa* is strong in first position on the trombone in B-flat but weaker in lowered second position on the trombone in A.

The hexachord and its solmization was the primary tool for music education into the eighteenth century and was strongly influential on composition throughout the seventeenth century. As such, it is important for the modern performer to understand how the notes of the hexachord were understood and performed at the time. Use of the trombone in A brings trombone performance in line with historical performance practice

of this vital element in music of the seventeenth century.

When the lower-level details are aligned, the performer can then turn his or her attention to elements in the bigger picture. These elements were discussed in my second analysis and include: formal structure, including dramatic changes in affect between sections and consideration of the dramatic arc; exaggeration of expressive elements, such as dynamics, tempo changes, and articulations; and the aesthetics of seventeenth-century Venetian culture, including novelty, contrast, and polarization and the use of extremes. In order to create affective performances, modern trombonists (and their colleagues) must be responsible for the details *and* the big-picture concepts. We can and ought to expect more than simply playing the right notes at the right time.

CHAPTER V

CONCLUSIONS

What is the purpose of all this? Why is it important? The problem remains that modern trombonists are handicapped, or at least extremely limited, in accessing the expressive beauty and meaning of the early seventeenth-century Italian repertoire. Why? Because they are using the wrong instrument or rather, because they conceptualize pitch in a far too convoluted way. Thus, the sonic cohesion between composer (via the work) and performer (via the instrument) is inaccessible, producing lackluster performances.

To rectify this, modern trombonists ought to study the history of the instrument as I have outlined it in my second chapter. In doing this, they will learn that during the long early history of the trombone, it was understood to be an instrument in A. The trombone was conceptualized in A for as long as it has been in B-flat, that is roughly three centuries. It is clear from the repertoire that composers did not consider the trombone to be in B-flat in the past.

Along with studying the early history and repertoire, modern trombonists should be encouraged to learn the modification possibilities of the instrument through the use of bits and crooks. These capabilities were essential to the trombonist in the seventeenth century, and, as such, should also be essential to the modern trombonist who is interested in performing this repertoire. The use of bits and crooks allowed the trombonist to play in A at any pitch level ($a' = 415$ Hz, 440 Hz, 465 Hz, or any other) and in some instances, even to play in G (*Sekund-Posaune*), in F (*Terz-Posaune*), in E (*Quart-Posaune*), or in D

(*Quint-Posaune*). In learning to use this essential hardware, modern trombonists will be able to determine the instrument the music was designed for and play it with reduced technical effort, and increased expressive effect. Indeed, in matching the right instrument with the appropriate repertoire, performers will find it technically easier, achieve intonation more accurately, and be able to access the specific and unique tonal resources of the instrument. The full sensuality of the confluence of repertoire and instrument, of composer and performer, will be experienced, not only by the performer, but also by the audience.

Obstacles

Naturally, obstacles will arise in this endeavor, but they are easily overcome with perseverance, determination, and fearlessness. The first impediment is the lack of pedagogical traditions that addresses such flexibility. Even today, there is only one method book that even mentions the trombone in A. Adam Woolf's *Sackbut Solutions*¹³³ is the most important method book for the modern trombonist playing historical repertoire. Woolf explains the reality that "choice of pitch largely depended on the city one was in, or perhaps even where in that city one was playing."¹³⁴ He goes on to explain the equivalency of the trombone in B-flat at $a' = 440$ Hz and the trombone in A at $a' = 465$ Hz and mentions the availability of bits and crooks only to lower the instrument to $a' = 415$ Hz. However, Woolf cites intonation and timbre problems and recommends the

133 □ Adam Woolf, *Sackbut Solutions* (Mechelen: Adam Woolf, 2009).

134 □ *Ibid.*, 12.

same transposition scheme as Linda Pearse.¹³⁵ He mentions surviving trombone and organ parts that are a tone lower than the string and woodwind parts, but reading transposed music is a different skill from transposing at sight.

Woolf presents the historical evidence and explains the benefits of playing the trombone in A, but he does not explain how to play in A when $a' = 440$ Hz. Furthermore, the exercises he created and included further along in the book are all oriented towards the trombone in B-flat using seven chromatic positions. These are the most significant shortcomings and may be what led to Woolf releasing *Duo Seraphim!: 20 heavenly duets for trombones from the 15th - 17th centuries* in 2013.¹³⁶ This book of duets includes a play-along CD, which is available at $a' = 440$ Hz or at $a' = 465$ Hz. He explains in a brief paragraph that the latter “corresponds with the performance pitch across Europe during the sixteenth and seventeenth centuries and with seventeenth-century slide-position charts.”¹³⁷ With this statement he contradicts his earlier statement regarding difference of pitch between cities and even between different venues in the same city, which could confuse the modern student navigating the murky waters of performance pitch and the historical trombone. Despite this small incongruence, Adam Woolf is to be commended for these two invaluable resources for the modern trombonist as well as for the numerous recordings on which he has been featured. As far as I know, Woolf is the only modern trombonist recording the most difficult repertoire on the trombone in A at $a' = 465$ Hz. As such, he stands as a beacon illuminating the past and the path forward.

135□D. Linda Pearse,*Seventeenth-Century Italian Motets with Trombones* (Middleton, WI: A-R Editions, 2014).

136□Adam Woolf,*Duo Seraphim!* (Mechelen: Adam Woolf, 2013).

137□*Ibid.*, 5.

Sadly, these are the only pedagogical works available to the modern trombonist that discuss the trombone in A. Woolf is a professor of Baroque Trombone and Historical Performance at the Royal Academy of Music in London and at the Utrecht Conservatoire in the Netherlands, and he offers instruction in playing the trombone in A. Certainly there are teachers at other institutions who provide similar instruction, but without publishing materials it is difficult to identify who they are or where they operate. The lack of pedagogical traditions remains the most significant obstacle to learning the trombone in A.

Another obstacle to playing the trombone in A at all pitch levels is the availability of the necessary hardware, the bits and crooks, which facilitate this pitch flexibility. Ewald Meinl, one of the most appreciated historical brass manufacturers, makes two extra tuning slides available for his historical trombones. One lowers the pitch to $a' = 430$ Hz, the other to $a' = 415$ Hz, however this is only relative to the trombone in B-flat at $a' = 440$ Hz. When played in A at $a' = 465$ Hz, these extra tuning slides only lower the pitch to $a' = 455$ Hz and 440 Hz, respectively. Meinl really ought to offer at least one longer tuning slide, which would probably require a loop (thus called a crook), to lower the pitch from $a' = 465$ Hz to $a' = 415$ Hz.

Another historical brass manufacturer, the Egger workshop in Basel, Switzerland, makes similar tuning bits available for lowering the trombone in B-flat at $a' = 440$ Hz to 430 Hz or 415 Hz. However, Egger also offers a “G crook,” which is designed to lower the trombone in A at $a' = 466$ Hz to G. Playing the trombone in G (the *Sekund-Posaune* or *trombone alla bastarda*) at $a' = 466$ Hz would be the same as playing the trombone in

A at $a' = 415$ Hz.

Geert Jan van der Heide, the Dutch manufacturer, goes even further: the Renaissance trombone he offers (based on the 1595 instrument made by Antoni Drewelwezc in the German National Museum in Nürnberg) includes four bits and three crooks because it does not include the modern convenience of a tuning slide (see Figure 29).¹³⁸



Figure 29: Van der Heide's Renaissance trombone with bits and crooks

On his website he writes:

Other pitches are possible if desired. To tune the instruments without tuning slides, bits in all measurements are available.

It is also possible to order a so-called “tortil”. That is a crook between bell-part and slide to lower the pitch. For a half-tone (from $a' = 440$ to 415 Hz), or a fourth or a fifth.¹³⁹

138□The trombone tuning slide was a later invention, not described until André Braun's method book at the end of the eighteenth century. The earliest surviving instrument with a tuning slide was made c.1810 by François Riedloker.

139□Geert Jan van der Heide, “Sackbuts,” Geert Jan van der Heide Historische Blaasinstrumenten en

Van der Heide seems to offer a trombone that Praetorius would call the *Gemeine rechte Posaun*. However, he still describes all his historical trombone models as being “pitched in B-flat.”¹⁴⁰ Even the most progressive manufacturer still has some modern bias, but, given the dominating culture, he might have purely commercial reasons for doing so.

The fact that these manufacturers refer to their historical trombones in terms of being in B-flat at $a' = 440$ Hz shows the paradigm that we still live in. The movement towards the performance of historical music on appropriate instruments would greatly benefit from these historical brass instrument manufacturers adopting the “correct” terminology, i.e., historical trombones pitched in A. Perhaps the reason so many modern trombonists continue to play their historical trombones in B-flat is because the instruments sold to them are labeled as trombones in B-flat.

A third obstacle to modern trombonists playing the trombone in A is the inherent fear of the unknown. In my own experience, it took me at least a year after learning about trombones in A to actually try to play my trombone in A. And it took me at least another year before I switched to playing my trombone in A all the time. The reason for this lengthy delay is that I was afraid of the inevitable drop in my abilities and the resulting judgment from my colleagues. In reality, my colleagues were supportive of my switch after learning my reasons for doing so, and while there was an obvious dip in my skill level, it returned to and quickly surpassed my preceding level because of the additional

Pauken, accessed November 14, 2015, <http://www.geertjanvanderheide.nl/paginaseng/sackbuts.html>.

¹⁴⁰ Ibid.

benefits related to intonation and hexachord expression.

That switch to playing the trombone in A was actually strongly supported by my colleagues. However, not every trombonist has opportunities to play with open-minded and supportive musicians, and this is another obstacle for modern trombonists wishing to play the trombone in A. It is absolutely essential that musicians approaching historical repertoire today be curious, open-minded, and non-judgmental because in historical performance practice there is only so much we can learn from texts. We must also experiment to figure out what works and what does not. In this way we can be more scholarly-based, and we ought not let our expectations and biases cloud the results of our experiments.

The last obstacle I have observed is the shortage of reliable performing editions and recordings of the early seventeenth-century Italian repertoire with trombones. I believe the Petrucci Music Library (IMSLP)¹⁴¹ is one of the more valuable resources available to modern musicians approaching historical repertoire. Not only can we often find historical musical treatises in several editions, but we can also find various historical editions, as well as modern editions and even recordings, of many musical works. The downfall of the Petrucci library is its decision, for copyright reasons mostly, to discard editors' introductions and critical apparatuses. While it seems that more good recordings of this repertoire are made every year, their number and availability is still quite low compared to, say, recordings of "canon" pieces such as Vivaldi's *Four Seasons* or Bach's *B-minor Mass*. Unfortunately, this is due to the priority that major record labels put on

141 □ "Petrucci Music Library," International Music Score Library Project, accessed November 14, 2015, <http://imslp.org>.

selling copies rather than informing listeners or enriching their practice with new aesthetic experiences.

Relevance of This Study

In this thesis I have attempted to ask the questions and address the problems relevant to the trombone in A in 2015. I approached the issues from different perspectives and with different methodologies, including historical, quantitative, and phenomenological approaches. Throughout these chapters the core subject has remained constant with the focus on the need for the modern trombonist to explore the expressive possibilities of the repertoire.

In the second chapter I have provided a history of the trombone in A. While others have written histories of the trombone, my effort is the only one to date to focus entirely on the trombone in A. I followed the course of the instrument in published works through six centuries, from the first treatises, which provided barely an image and an idea, through the “Golden Age of the Trombone” and the subsequent fallow period, to the modern Renaissance of the trombone in A spurred by groundbreaking work of such scholars as Stewart Carter, David M. Guion, and Howard Weiner. In my third chapter I have given evidence that addresses the unseen obstacles experienced by playing this repertoire on the wrong instrument and I have provided ways to surmount those by simply altering the conceptualization and approach to the instrument. In doing so, I provided quantitative evidence for the efficiency and connection of playing the repertoire on the appropriate instrument.

The intensions of those who play this repertoire with trombones in B-flat are not misguided. However, those instruments are still not appropriate for the repertoire. If modern trombonists would modify them to play in A using bits and crooks, and alter their conception of the pitch of the instrument, then the elements of technique I outlined—using the diatonic system that is essential to the trombone in A; achieving a higher level of accuracy with just intonation and mean-tone tuning that is the expressive basis of the music; navigating the hexachords as the primary compositional material of this repertoire; and delivering phrases in an effective rhetorical framework—would facilitate the aesthetic experience of confluence and cohesion between the composer and performer (witnessed by an audience), which I believe is the purpose of this music.

In the fourth chapter I explored the phenomenology of playing the trombone, demonstrating the obstacles of playing in B-flat and the benefits of playing in A, as well as identifying when performance technique is less affected by instrument pitch conceptualization. I hope to have provided a narrative that modern trombonists approaching this repertoire can relate to and learn from. Through exploration of the repertoire in a small ensemble rehearsal, I allowed space for the voice of colleagues (often marginalized in ego-dominated experiences) to be seen and heard. By sharing our experiences with each other, we can expand our knowledge and understanding of the music and of each other.

Conclusion

At this point it may be useful to address modern trombonists performing early

seventeenth-century Italian repertoire. If one takes the risk, if one makes the changes I suggest in re-conceptualizing the instrument and probably even modifying it with extra tubing, then new experiences and opportunities will open up for players and audiences alike. However, if one does not, if one remains stuck in the old paradigm based on modern biases and expectations, then we will continue to miss out on realizing the amalgam of instrument and music, of performer and composer, for it is in matching our performing forces and approach to those intended and expected by the composer, that we (and our audience) will experience the cohesion of performer and composer, of intention and expectation, of desire and pleasure.

Only by playing the trombone in A, performers will be able to access the true nature of this repertoire. It is through the unification of the composer's intentions and expectations, not our own, that we best perform this music which remains so far from and, at the same time, so close to, our present experience. And if this is not the goal of performing 400-year-old music, then what is?

APPENDIX A

REPERTOIRE FOR TROMBONE PUBLISHED IN VENICE IN THE FIRST
HALF OF THE SEVENTEENTH CENTURY

Pub'd	Composer	Collection	Piece	Instrumentation
1597	Gabrieli, Giovanni	<i>Sacrae symphoniae</i>	<i>Sonata pian' & forte, alla quarta bassa a 8</i>	Cornetto + 3 Trombones; Viola + 3 Trombones
			<i>Canzon Quarti Toni a 15</i>	12 Trombones
			<i>Canzon Duodecimi Toni a 10</i>	2 Trombones
			<i>Canzon in Echo Duodecimi Toni a 10</i>	2 Trombones
1598	Soderini, Augustino	<i>Sacrarum cantonum</i>	<i>Interrogavi angelum</i>	<i>Concentus duplex vocum, & instrumentorum.</i>
			<i>Ipsi sum desponsata</i>	<i>Concentus duplex vocum, & instrumentorum.</i>
			<i>Repleti sunt</i>	<i>Concentus duplex vocum, & instrumentorum.</i>
1602	Viadana, Lodovico	<i>Cento concerti ecclesiastici</i>	<i>O bone Jesu</i>	Tenore solo, e due Tromboni
			<i>Canzona Francese</i>	Violino, cornetto, e dui Tromboni
1606	Leoni, Leone	<i>Sacri Fiori</i>	<i>In te Domine speravi</i>	2 Altos, 2 Trombones
			<i>Deus exaudi</i>	2 Sopranos or Tenors, Trombone, and Violetta
1607	Radino, Giulio	<i>Concerti per sonare et cantare</i>	<i>Magnificat</i>	"Giulio Radino publishes a Magnificat, which, though texted in all 16 parts, specifies Choro de Tromboni in 4 of the parts." (Kurtzman, <i>Monteverdi Vespers</i> , 124).
1607	Freddi, Amadio	<i>Concerti per sonare et cantare</i>	<i>O domine Jesu</i>	"A posthumous print of Giulio Radino Padavano's <i>Concerti per sonare et cantare</i> includes works by several composers. Amadio Freddi's <i>O Domine Iesu</i> , which is included in the collection, is texted in all voices, but has a rubric calling for trombone in every part except the cantus. The Padavano collection also contains <i>Media nocte</i> , a 12-part motet by Orindio Bartolini that calls for trombone in the texted part-book." (Kurtzman, <i>Monteverdi Vespers</i> , 121).
1608	Croce, Giovanni	<i>Raccolta terza</i>	<i>Laudate pueri</i>	<i>Laudate pueri</i> not included in <i>Musica Sacra</i> (London, 1608)
1608	Crotti, Archangelo	<i>Il primo libro de concerti ecclesiastici</i>	<i>Ave regina caelorum</i>	A 4 Doi Soprani con doi Instrumenti si Placet
			<i>Congratulamini</i>	A 3 Soprano voce con doi Instrumenti

				si placet
			<i>O gloriosa Domina</i>	A 3 Soprano voce con doi Instrumenti si placet
			<i>O sacrum convivium</i>	A 3 Soprano voce con doi Instrumenti si placet
			<i>Sancta Maria</i>	A 4 Soprano voce, & tre Instrumenti
			<i>Pater peccavi</i>	A 5 Soprano voce con quattro Instrumenti
1610	Cima, Giovanni Paolo	<i>Concerti ecclesiastici</i>	<i>Sonata à 2</i>	Cornetto & Trombone, overo Violino ò Violone.
			<i>Capriccio à 4</i>	Violino e violone, cornetto e trombone
1613	Franzoni, Amante	<i>Concerti ecclesiastici</i>	<i>Sancta Maria</i>	Soprano + 4 Trombones
1615	Borsaro, Arcangelo da Reggio	<i>Novo Giardino de Concerti a quattro voci...</i>	<i>20 pieces specify trombone</i>	Canto ò due tenori e due tromboni ò voci
1613	Franzoni, Amante	<i>Apparato musicale</i>	<i>Sancta Maria</i>	
			<i>Sit nomen</i>	
			<i>Aperi oculos</i>	
			<i>Laudemus Dominum</i>	
1613	Belli, Giulio	<i>Concerti ecclesiastici</i>	<i>Canzone à 2, Canzone à 3</i>	
1614	Uspèr, Francesco	<i>Messa e salmi da concertarsi</i>	<i>Intonuit de cèlo</i>	doi voci, e quattro Tromboni. Nel tempo di Pasqua, & di S. Salvatore & di S. Gio. Battista
			<i>Vulnerasti cor meum</i>	A 6. Voci; "Trombone" marked on Altus, Tenor, Bassus, and Quintus parts; "Voce sola con cinque stromenti alla quarta bassa, & per un Contralto all'ottava bassa.
1617	Marini, Biagio	<i>Affetti musicali</i>	<i>La Giustiniana Symfonia A 3</i>	Doi Violini ò Corneti è Trombone
			<i>La Foscarina Sonata A 3</i>	Con il Tremolo, Doi Violini ò Corneti è Trombone ò Fagotto
			<i>La Hiacintina Canzone A 2</i>	Violino ò Corneto è Trombone. Del M.R.P.F. Hiacinto Bondioli Zio del Autore
			<i>La Marina Canzone A 3</i>	Doi Tromboni è Corneto ò Violino
1619	Uspèr, Francesco	<i>Compositioni armoniche</i>	<i>Sonata à 8</i>	2 violins, 2 cornetts, 4 trombones
			<i>Beatus qui intelligit</i>	3 trombones (including "Trombone Grosso")
	(Uspèr, Gabriel)		<i>Ego dormio à 8</i>	4 trombones
1620	Porta, Ercole	<i>Sacro convito musicale</i>	<i>Corda Deo dabimus</i>	Canto, Alto, con tre Tromboni
			<i>Consolamini</i>	2 violins and 3 trombones
			<i>Salve Mater pia</i>	2 violins and 3 trombones
			<i>Mass</i>	2 violins and 3 trombones
			<i>L'Animosa</i>	Violino e Trombone

			<i>La Spensierata</i>	Violino e Trombone
1620	Riccio, Giovanni Battista	<i>Terzo libro delle divine lodi musicali</i>	<i>Canzon La Fineta</i>	à 2. Violin è Trombon
			<i>Canzon La Savoldi</i>	à 2. Violin è Trombon
			<i>Canzon La Pichi</i>	à 2. Violin è Trombon
			<i>Canzon La Rubina</i>	à 3. Doi Violini ouero Corneti è Trombon
1620	Banchieri, Adriano	<i>Primo libro delle messe e motetti</i>	<i>Sonata</i>	Due Violini e Trombone Sopra l'aria del Gran Duca.
1621	Castello, Dario	<i>Sonate concertante in Stil Moderno, Libro Primo</i>	<i>Quarta Sonata</i>	Sopran è trombon ouero violeta
			<i>Quinta Sonata</i>	Sopran è trombon ouero violeta
			<i>Sesta Sonata</i>	Sopran è trombon ouero violeta
			<i>Duodecima Sonata</i>	Due violini è trombon ouero violeta
1622	Milanuzzi, Carlo	<i>Armonia sacra</i>	<i>La Guaralda</i>	Canzon A 2. alla Bastarda Per il Trombone,e Violino. di P.A. Mariani. Per il Deo Gratias.
1622	Banchieri, Adriano	<i>L'organo suonarino</i>	<i>Prima Sonata</i>	violin and trombone
			<i>Seconda Sonata</i>	violin and trombone
			<i>Terza Sonata in Scherzo</i>	Trombone all'alta
			<i>Quarta Sonata in Scherzo</i>	Violino volendo (wanting) and trombone piacendo (willing)
1623	Donati, Ignazio	<i>Salmi boscarecci</i>	<i>Laudate pueri Dominum</i>	A 6. Con li soliti instrumenti se piace. Ripieno solo delli Instrumenti senza le voci.
			<i>Magnificat</i>	Ripieno ut supra Primo Tuono. Basso & Trombone
			<i>Missa primi toni</i>	“Trombone” indicated in lyrics.
			<i>Missa secundi toni</i>	Ripieno doppio di Voci & Istromenti Concertati
1624	Merula, Tarquinio	<i>Primo libro de motetti e sonate</i>	<i>Favus distillans</i>	A 4. Canto, con tre Viole, overo Tromboni
1625	Picchi, Giovanni	<i>Canzoni da sonar</i>	<i>Canzon Terza</i>	Trombone,& Violino
			<i>Sonata Sesta</i>	Trombone,e Violino
			<i>Canzon Settima</i>	Doi Violini, & Trombone
			<i>Canzon Ottava</i>	Doi Violini, & Trombone
			<i>Canzon Decima</i>	Doi Tromboni,& doi Flauti
			<i>Canzon Vndecima</i>	Doi Tromboni,& doi Cornetti
			<i>Canzon Duodecima</i>	Doi Tromboni,& doi Violini
			<i>Canzon Decima Terza</i>	Doi Tromboni,& doi Cornetti
			<i>Canzon Decima Quarta</i>	Quattro Tromboni,& doi Violini,ò Corn.
			<i>Canzon Decima Quinta</i>	Quattro Tromboni,& doi Violini
			<i>Canzon Decima Sesta</i>	Doi Violini, doi Flauti, Trombon,e

				Fagotto
1626	Marini, Biagio	<i>Sonate, symphonie . . .</i>	<i>Canzone Terza</i>	Quattro Tromboni, ò Viole
			<i>Canzone quarta</i>	Doi Violini. Ò Cornetti, e doi Tromboni ad libitum
			<i>Canzone sesta</i>	Due Cornetti, e due Tromboni ad libitum
			<i>Canzone septima a doi chori</i>	Nel primo Coro due Canti, e Basso, nel Secondo doi Tromb.
			<i>Canzon Ottava</i>	Due Violini, e Quattro Tromboni
			<i>Canzone nona a doi chori</i>	Nel primo Coro due Violini, & una Viola nel secondo tre Tromb.
			<i>Canzone decima</i>	Due Violini, o Cornetti, e Quattro Viole ò Tromboni
1628	Grandi, Ottavio Maria	<i>Sonate</i>	<i>Sonata Decima nona A 5</i>	Quattro Tromboni, & un Violino
			<i>Sonata Vigesima A 6</i>	Tre Violini, & Tre Tromboni
1629	Grandi, Alessandro	<i>Motetti a una, et due voci con sinfonie di due violini</i>	<i>Lib use only: M3 .G73 2011 v.1</i>	
1629	Castello, Dario	<i>Sonate concertante in Stil Moderno, Libro Secondo</i>	<i>Sonata Quinta</i>	Sopran e Trombon ouero Violeta
			<i>Sonata Sesta</i>	Sopran e Trombon ouero Violeta
			<i>Sonata Undecima</i>	Doi Soprani e Trombon ouero Violeta
			<i>Sonata Duodecima</i>	Doi Soprani e Trombon ouero Violeta
			<i>Sonata Decima Terza</i>	Doi Soprani e due Tromboni ouero Violete
			<i>Sonata Decima Quarta</i>	Doi Soprani e due Tromboni ouero Violete
1630	Grandi, Alessandro	<i>Raccolta terza</i>	<i>Lauda Hierusalem</i>	
			<i>Laudate Dominum</i>	
			<i>Laudate pueri</i>	
			<i>Nisi Dominum</i>	
			<i>Mass</i>	
1634	Chinelli, Giovanni	<i>Messe à 4, 5, & 8 voci</i>	<i>Messe concertata</i>	Library use only: M2 .S474 v. 5
1636	Buonamente, Giovanni Battista	<i>Sonate e canzoni</i>	<i>Canzone A 5</i>	“Trombone” indicated on parts.
			<i>Sonata A 5</i>	“Trombone” indicated on parts.
			<i>Sonata A 6</i>	“Trombone” indicated on parts.
			<i>Sonata a sei</i>	doi Violini, o Cornetti & quattro Tromboni, o Viole da Brazzo
			<i>Canzon a 6</i>	quattro Tromboni, e doi Violini
1637	Ganasso, Iacobo	<i>Vespertina psalmodia</i>	<i>Canzon prima</i>	Violino & Trombone

			<i>Canzon seconda</i>	Violino & Trombone
			<i>Canzon terza</i>	Violino & Trombone
1640	Urbano, Gregorio	<i>Sacri armonici concentus</i>	<i>La Barbisona. Sinfonia à 3.</i>	Cornetto Primo, Cornetto Secondo, Trombone
1642	Uccellini, Marco	<i>Sonate, arie et correnti</i>	<i>Sonata Seconda</i>	detta la Bucefalasca(sp?) A 2. Violino, e Trombone
1648	Cazzati, Mauritio	<i>Secondo libro delle sonate</i>	<i>Sonata Detta la Vecchia</i>	Tre Violini, Viola, Trombone, e Violone
1649	Ferro, Marco Antonio	<i>Sonate . . . Alla sacra cesarea</i>	<i>Sonata 5 à 3</i>	Violino, Tenore da gamba, e Viola da gamba overo Cornetto, Trombone e tiorba
			<i>Sonata 8 à 4</i>	Due violini, violetta da braccio & viola da gamba overo due cornetti Trombone e fagotto
			<i>Sonata 11 à 4</i>	Due violini, violetta da braccio & viola da gamba overo due cornetti Trombone e fagotto
1651	Neri, Massimilano	<i>Sonate da sonarsi</i>	<i>Sonata Ottava à Sei</i>	Due Cornetti è fagotto, è trè tromboni
			<i>Sonata Undecima à None</i>	Due violini è viola, due Cornetti è fagotto, è trè tromboni
			<i>Sonata Duodecima à dieci</i>	Cinque viole, è Cinque Tromboni
			<i>Sonata Decimaquarta à dodici</i>	Due Cornetti fagotto e trè Tromboni, due violini viola, è Tiorba ò viola
1660	Ucellini, Marco	<i>Ozio regio</i>	<i>Sonata decima terza</i>	a Violino e Trombone

APPENDIX B

DARIO CASTELLO'S *SESTA SONATA* IN MODERN EDITION

32

Sesta Sonata

A Doi. Sopran & Trombon overo Violeta.

Alegra

Soprano

Trombone

Basso Continuo

6

6 5 6

6 6 6 #

presto

6

#6 # # # #

adagio

6 7 8 7 6

6 6 8 7 6 #3 4 #3

34 Solo.

6 5 # # 6 5 6 5 6 5

56 Solo.

#3 4 #3 6 5 6 5

51

6

56

allegro

6 #

#

#

74 [p.] f. p.
 Ecco # # 6 # Ecco 6 #

81 adagio
 6 5

93 allegro
 6 6 5 6 5 6 5

98 99 100 101 102

6 5 6 5 6 5 6 4 #3

103 *presto*

103 104 105 106 107

113 *adagio*

113 114 115 116 117

120

120 121 122 123 124

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