

Trumpet Through The Ages:
An Overview of the Instrument and its Evolution in the Baroque and
Classic Periods from a Contemporary Performance Perspective

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Abstract

This work presents a discussion on the trumpet during the baroque and classical periods. It cites important names and events that happened before and after the two cited periods. Also, it brings a discussion about today's increasing interest for performing period music by using period instruments and tendencies concerning the musicians and audience interest.

It includes a brief historical background of the instrument, the performer and the performance. In addition, it also presents comments from important period instrumentalists about earlier technique, cites significant works and instrument makers and influential names that provided significant contributions to the development of the instrument.

Therefore, the content presented in this work shall be interpreted from a contemporary perspective. It does not intend to be an absolute truth; its approaches are based on existing and available sources about the subject. Moreover, there are aspects of the topic, which have been summarized to the most relevant points that need to be explained in more depth for better understanding. This opens the possibility for new developments for further research.

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Introduction

The term trumpet is generally applied for a lip vibrated aerophone. Thus, considering the existence of two groups – natural and chromatic – and based on that classification, it is possible to say that the term trumpet has been generically applied for different lip vibrated wind instruments. Therefore, part of this work will present a discussion about the natural and chromatic trumpets, as well as briefly present its most common subdivisions, such as tubular, finger holes, slides or valves and conical or cylindrical.

In addition, the usage of the trumpet has been applied for a variety of different purposes, some important or even informal ones. For example, trumpets have been used to announce intention to marry (by the youth Latvian that used to play in the summer mornings to announce they were ready to marry), to ensure a successful hunt (by Bugandan hunters), and for military purposes to pass on messages or instructions; unique messages could be given by playing loud or soft, long or short as well as by alternated rhythmic patterns.

Trumpets are also associated with power and nobility status. The Imperial Guild of Court and Field Trumpeter and Army Kettledrummers was formed in the seventeenth century by the Holy Roman Empire, and the trumpeters were supposed to travel with the lords and play fanfares when they got into a castle or a town. Therefore, this research will be more focused on the artistic aspect that surrounds the performance of the trumpet than the military or nobility usage.

Nonetheless, as important as the instrument is, the performer and the instrument maker are equally important. Through their work, they provided important contributions for the history and evolution of the trumpet. However, before the eighteenth century, the performer in general was not considered as important as nowadays; the music was actually considered more important, and for

that reason, there is not very much detailed information about earlier performers. For the purpose of this work, which involves mainly the baroque and classical periods, the available sources are good to cover the pertinent spots on the development of the trumpet and the performer.

In the field of music today, there is an increasing interest on performing period music by using period instruments. That interest, among others, rely on the attempt to find out about things that have supposedly been lost by the evolution of the trumpet and its current concepts of technique, as well as timber, pitch, etc. Thus, performing period music using period instruments could be intended to bring back the essence of the earlier music; In this fashion, Christopher Hogwood, willing to bring back what was cut off by centuries of conventions, turned the clock backwards and founded in 1973 the Academy of Ancient Music in England.

The musical eras discussed here might represent the period where the most significant changes occurred in the trumpet, and it represents one of the richest in content concerning the evolution of the trumpet; many works have been registered and published about this period in earlier researches. For that reason, there are points that may need better coverage, which may be appropriate for further steps on the subject of this research.

Overview of the Instrument

In primitive cultures, the trumpet was a sort of megaphone, which the player used to distort his voice. Thus, it did not necessarily have a mouthpiece or even a bell, as well as the player did not blow it; this instrument was played by men, and it was used in religious ceremonies or rites such as sunset or burial.

According to Altenburg (1795, 7), there are three kinds of old trumpets, they are so called: *tuba antiqua abrea, jobel or keren* (Hebrew's tradition) or *Shofrar*, and finally the *bucca* (from the Latin *buccina*) or *cano*. Those instruments pertain to the first class of trumpets, which are the eldest ones.

The first kind is considered the Moses' instrument and its format usually appears in sculptures and paints as shown by the Archangel Gabriel's trumpet; just a straight tube with a mouthpiece integrated to the horn and a bell in the end. The second one is described as a horn of a ram or other animal and was used by the Hebrews for official and non official ceremonies. The third kind is an instrument made out of metal and was used mainly for purposes of war, to give signals of attack, depart or retreat.

There are more two classes of old trumpets described in the same source and one of them is refers to the ancient Romans. Those are the instruments that existed before the development of the modern trumpet which started still before the decline of the Holy Roman Empire, according to Altenburg (1795, 8) they are:

(1) *Tuba* (otherwise, *tuba directa*) from *tubus*, i.e., a tube, because with its straight form it resembled a tube.

(2) *Lituus*, which was a bit smaller, curved toward the end, and intended specially for the cavalry— just as, on the contrary, the former was more intended to the infantry.

(3) *Buccina*, which was curved all the way around and [was] common to everybody (Altenburg, 1795, 8).

Over the sixteenth century, the usage of the trumpet had become basically devoted to warfare and festive occasions. Therefore, the instrument could also be used for artistic purposes; the playing on the high register made it possible for the natural trumpet to play melodies. That playing, on the higher register, which embraces a range from the eighth to the twentieth pitch on the harmonic series was called *clarin* – from the Latin *clarus*, which means clear or bright. Meanwhile, the playing on the lower register was called *prinzipal*.

That classification of playing originated to kind of players and was used until the end of the eighteenth century. Composers such as G. F. Handel and J. S. Bach wrote for the *Clarin* playing. About that, Menke (1960, 66) says "the two most important composers who have contributed to the literature of our instrument." This same author also mentions that due to the scarcity of performance works containing the applied expressions other than Bach's and Handel's ones.

At that point, even after the instrument has evolved, trumpeters are still needing to use different horns in different moments in order to achieve better results. There are horns with three or four valves, rotaries and built in different keys; being the most common ones the B flat, C, Piccolo in the key of A and B flat with valves and rotaries.

A five keyed trumpet was developed in 2013 by David Hickman in a partnership with Cliff Blackburn. This instrument was presented at the ITG- International Trumpet Guild- Conference in 2014. According to Hickman, that instrument tunes in four different keys - C, D, B and D flat. According to Blackburn, the main purposes are to facilitate complicated orchestral passages when playing on the conventional trumpets.

Natural and Chromatic Trumpets

Nuremberg was an important center for Baroque trumpets; the most important trumpet maker, Anton Schnitzer was established there. It is said by Tarr (1991, 7) that Bendinelli had probably used a Schnitzer trumpet in 1585; this instrument is kept in the Academia Filarmonica in Verona. Two kinds of trumpets were produced. although, one of them is called serpentine, rather than trumpet; it is a horn with a bizarre anatomy form. So, even the bizarre one presents common parts. The following description of the natural trumpet is not actually related to this unusual horn, but to the trumpet that became more popular for the concept of the baroque trumpet.

The so called Nuremberg Trumpet by Tarr (1996, 7) is a length of tubes of about 10 to 12 mm. in diameter and about 2 m. long with the bell expanding in a proportion of 10 times the diameter of the tubes. This is the description of the natural trumpet, with no holes, valves, keys, slides or additional tubes; the instrument could play only the natural harmonic series notes. That is why it is called natural trumpet.

The way of naming the parts of the trumpet presented variations and there was no standard terminology. This is how this instrument is described by Tarr (1991, 9):

- Mouthpiece socket (Shank);
- Ferrule (cap placed around the shank to strength it);
- Cordage with Tassels in both terminations (ropes to support a block of wood that is placed between the lead-pipe and the bell-pipe in order to keep the tubes firm or not shaking- once the trumpet is long);
- First branch or first yard (Lead-pipe);
- First bow or front bow (where is placed the tuning slide at the modern trumpet);

- Second branch (this is the place where the additional tubes and the valves were added in the modern trumpet);
- Third branch or middle yard (tube in parallel with the lead-pipe);
- Loop (curve from middle yard to the bell-pipe);
- Bell-pipe;
- Pommel or bauble (this is the point where the bell-pipe starts to enlarge the conical shape until it gets to the bell);
- Bell or *pavillion* (it should be have proportionally a ten times larger diameter than the pipes).

According to Tarr (1996, 7) "...the classic trumpet is one of the simplest and most uncomplicated in European music." Although, during the baroque period, several experimentations on the desire of making the trumpet a chromatic instrument were done, such as applying holes on the tubes, adding slides of different sizes, or even building different instruments of different sizes, they were not really successful, and some composers opted for using the *cornetto* rather than the trumpet.

By applying holes, the timber and the intonation suffered and sometimes was not balanced between the registers. Some notes also sounded brighter than others. In some works by J. S. Bach, there is the designation for *tromba da tirarsi* - what corresponds to a slide trumpet, which was different than the trombone because it moved the part where the bell is- such as the cantata BWV 67, where he wrote for *corno o tromba da tirarsi*. Although it granted some extra possibilities, it was still not very reliable for fast passages, and still it was built in different keys.

This natural trumpet, a limited instrument, which offered few music possibilities due to its unavailability to play chromatically on the lower register, was still the best option. Thus, it relied on

harmonic support, what can be evidenced by later composers such as Mozart and Beethoven that used to write combining the trumpet with the timpani.

By the end of the eighteenth century, the trumpet player of the Royal Imperial Theater, Anton Weidinger had created what he called the keyed trumpet. Thus, the trumpet became able to play chromatically in all registers as other instruments; this instrument was actually nothing but a trumpet with holes- likewise the baroque trumpet had holes. The differences between those two instruments are that this one received keys that the player used rather than his fingers to control the aperture of the holes and it was a shorter horn.

Then F. J. Haydn composed a concerto for the E flat trumpet and its initial melodic lines containing an ascending E flat major scale, played by the strings is played in the following by the soloist in order to reinforce the idea that the instrument was then chromatic. According to Tarr¹, after the premiere, there was no performance of the work for about a hundred years; the manuscript remained in Brussels.

In the beginning of the nineteenth century by 1814, the valves system was created and added to the trumpet; this is the system that is used in the contemporary trumpets. The so called tubular or piston system was created by Henrich David Stölzel, who was a German accomplished musician that played the French Horn, the Trumpet, the Harp and the Cello. That creation was contested by Friedrich Blühmel, he had created a similar system but with a different name, box valve. Then, "eventually the two men joined forces, obtaining a ten year Prussian patent for both the tubular and the box valve on 12 April 1818 (Tarr, Oxford Online)." And then, sometime later Stölzel bought the Blühmel's rights.

¹ Haydn, F. Joseph. 1796. *Concerto: Preface*. Edited by Edward H. Tarr 1982: Haydn Mozar Presse in Universal der Edition.

The Performer

The trumpet playing is followed by steps that can be classified since the learning process until the equipment, passing through the aesthetic concepts, skills and mechanical development, etc. That is part of the preparation, and it influences the performance directly, because what will be in evidence is a result of the preparation. About that, Johnson (1942, 94) says that "the quality of a performance is always a reflection of what has been done (or not done) in practice."

The concerns about preparation come from along ago. Therefore, one of the most important characters in the history of the trumpet, Cesare Bendinelli (who was a trumpet player of the Viennese court during the second half of the sixteenth century) wrote the *Tuta L'arte Della Trombeta*; that is a book containing details about the technique, such as applying syllables to achieve articulation in the different registers, as well as details for five trumpet ensemble techniques. Moreover, in 1795, the trumpeter Altenburg published *The Essay on the Trumpeter's and Kettledrummer's Art*; that is considered one of the oldest printed German trumpet studies. The work was translated to English by Edward Tarr. Those are two of the most important pedagogical works on the natural trumpet.

The baroque period was when the instrumental music became equally important as the vocal music. Thus, one of the situations that instrumentalists went through was to imitate the human voice while playing, "...whenever notes of one, of two or of four beats length are found, they should be held in a singing fashion (*in modo cantabile*). (Fantini, quoted by Weast 1998, 33)."

The trumpet became a very important instrument as it was considered a nobility instrument. Thus, according to Tarr (1991, 1), in 1623, "The Holy Roman Empire of the German-Speaking People of the Hapsburg dynasty" founded a trumpet guild, the Imperial Guild of Trumpeters and Kettledrummers, which was a sort of limited professional association that regulated the profession and ensured exclusiveness.

The elector of Saxony, was named the patron of the guild at the same year. The Holy Roman Emperor Ferdinand II, decreed in one of the articles of a mandate that:

No [honourable] trumpeter or timpanist shall allow himself to be employed with his instrument in any way other than for religious services, Emperors, Kings, elector and Princes, Counts, Lords and Knights and nobility or other persons of high quality; it shall also be forbidden altogether to use a trumpet or a timpani in despicable occasions; likewise, the excessive nocturnal improper carousing in the streets and alleys, in wine and beer houses. He who transgresses this way shall be punished (Rhodes, 2007).

This was one of several occasions in which mandates were published in order to reinforce the importance of the trumpet and ensure its exclusive usage. Mandates were also published in 1650, 1661, 1711 and 1736 in an understanding that the unauthorized usage of the trumpet playing did not stop completely.

Despite this, before the 1711 mandate was published, Caspar Hentzschel, who was a trumpet player of the Brandenburg court, mentioned in the prior century about the risk of a decline in the art of trumpet playing, he says that,

not only because the great defects and lacks with which untrained people bring our profession...into disrepute, ... but also because...many bumbler and [stumbers] can be found in all cities and villages-...mixing among our colleagues like mouse-droppings among papper (Hentzschel quoted by Tarr, 1991, 1).

Indeed other guilds existed, such as the guild in Nuremberg; that was the principal center for brass instrument production during the seventeenth and eighteenth century, as well as in other parts of the German-speaking territories. But, at the beginning of the nineteenth century, with the break of the Holy Roman Empire, "in the Saxony all the guilds were abolished in 1831; and in Vienna the Union of Court Trumpeters was dissolved in 1878 Tarr (1991, 1).

The trumpet took part on the scenario of solo instrument during the classical period when Haydn composed the concerto for Trumpet and Orchestra in 1796. The concert was premiered in

1800 by the creator of the keyed trumpet, Anton Weidinger "...he believes may be described as a perfection (Tarr)."²"

This is one of the most important works of the genre for the trumpet repertoire, next to the Johann Nepommuk Hummel's trumpet concerto that was composed three years after the premiere of Haydn's one; that concerto was also written for Weidinger. In Tarr's words (concerto), "Joseph Haydn Trumpet's Concerto... has become not only one of the most important concerto for trumpet, being required material in nearly every orchestral audition, but with over 20 recording versions on long-playing records it is also the composer's best known concerto."

Furthermore, by the year 1820, the first trumpet professor of the Paris Conservatoire, François Dauverné (1799-1874), was the first trumpeter who played the three valve trumpet in the key of F; before that, the trumpet had two valves. One of his most famous pupils, if not the most, is Jean Baptiste Arban, who wrote the most famous book for three valve trumpet. Dauverné wrote *Méthode Pour La Trompette*, in which only about twenty percent is dedicated to the valve trumpet, and the other part is devoted to the natural trumpet.

² Haydn, F. Joseph. 1796. *Concerto: Preface*. Edited by Edward H. Tarr 1982: Haydn Mozar Presse in Universal der Edition.

Contemporary and Period Instruments Nowadays

The variety of existing trumpets nowadays descend from the baroque natural ones. Despite this, they have the same origin and keep similarities such as, both are made out of brass, both have a cylindrical body, and basically the same bore size about 11 to 12mm with a mouthpiece and a bell. The mouthpiece is different than the modern ones, "baroque trumpet mouthpieces invariable possesses wider, flatter rims with bow-shaped cups, as opposed to the concave cup shape of the modern mouthpiece (Roseborrough 2010, 28)."

The baroque and modern trumpets also differ in shape, size, pitch, and sound projection. Nowadays trumpets are practically half the size of the baroque, project more sound, have valves and it is said that the pitch is higher. Bendinelli had written for a C trumpet in one of his manuscripts. According to Tarr (1991, 7-8) "he writes for an instrument in C, but this particular instrument is short enough to stand in F. Its pitch has been specified as E at A= 445Hz." That means this earlier instrument is about half a step lower than the modern one.

On the other hand, the technical principle of playing both modern and baroque trumpets is the same, blow air. Therefore, they are different instruments, and such difference may require some special attention, such as the difference that exists between the *clarin* and *principal* playing and the difference between the equipment, mouthpieces, pitch, etc. Thus, there is another difference which is on the pedagogical approach, the modern books of technique exploit the idea of playing consistently in all registers, which may not work well if applied to the baroque trumpet.

Using period instruments nowadays is an interest among musicologists and some performers that is in an increasing practice. This way - playing earlier music using period instruments- may or may not enable the performers to recreate pertinent characters, such as the differences on the acoustic

principles of the instrument, which involves sound projection, instrument anatomy, technique - as mentioned earlier- and stylistic aspects to the interpretation of period music.

There are several examples of researchers who spent or are still spending endeavors to recreate the scenario of earlier music by using period instruments. Among them, Nikolaus Harnnoncourt in Austria who founded the Concentus Music Wein in 1953, Christopher Hogwood in England who founded the Academy of Ancient Music in 1973 and also in the United States, there are some universities that keep baroque ensembles such as The University of North Texas and The University of Kentucky.

About that, Hogwood says that "playing on period instruments is all about being inspired by the past. There's a lot we can learn from the [soundworlds] Haydn, Mozart and Beethoven knew; different instruments, a different way of giving concerts, and a different attitude towards performing music." Still, he says that the significance of this work was not related only to the way music had changed, but how they felt it.

On the other hand, there is also a certain interest of the audience on listening to how period music sounds when played on period instruments. Therefore, the negative point is that the concert houses nowadays are larger than ever before, and period instruments are not supposed to project the sound in the same way the modern ones do.

After a performance of the Academy of Ancient Music at the Disney Hall debut in November 2014 in LA, a review was published in the LA Times about the performance- in such occasion they performed works by J. S. Bach. In the review, Swed (2014) describes the orchestra as it is supposed to be on what concerns the instrumentation and says that:

The tone was a full lower tone than we are accustomed to today, creating a less brilliant, darkening effect on every note it touched... Disney with its modern feel, modern and unforgiving acoustics and big orchestra size was not the kind of intimate space in which Bach have played his instrumental music (Swed, 2014).

That fact reveals that the modern performer still faces obscurities while performing or even intending to do earlier music. The usage of modern instruments under the modern concept of techniques and manufacturing instruments may not enable to approach to the real or at least appropriate and wanted results. Also, the need of considering the acoustic issues by details such as the sizes of the earlier and modern concert halls must be observed.

Despite this, today's performer using period instruments has more sources of information than the earlier performer, due to the facilities provided by the communication systems, which makes it possible to share information much faster, the numerous researches developed along the history, as well as the accessibility to spaces where the sources might be available such as libraries, museums, etc.

The modern trumpet is more flexible on the meaning that they can fit in almost every instrumentation. Despite this, the modern orchestral trumpeter still faces some challenges due to the wide orchestral repertoire unlike any time before; hence, there are technical issues involving range, fingering, intonation and timber.

Conclusion

After the developments mentioned earlier, all of the approaches that the modern performer achieves, are usually based on statements of sources that guides to hypothetical results. For that reason, the results of performing earlier music using period instruments nowadays, may or may not enable to recreate the wanted characters properly.

In addition to that, performance is a result of current practices that people is used to, and playing earlier music into a current practice that is different, might cause an opposite result as a reaction of the audience. On the other hand, this is in somewhat tough to describe the process of

performance through words; thus, the content which is available in the various sources may not be enough to guide to a way on what the performance of earlier music should be like.

In spite, the performer can also apply its own preferences on the way of interpreting earlier music. Thus, as a result, what can be observed is a large variety of possibilities on the performance field, such as a rich, wide and variable kinds of timbers, textures and different interpretations involving technique, personal preferences, equipment tempo, etc. Even when interpreting the same piece of music.

All in all the difficulties and challenges will always surround the field of performance. Therefore, this must be taken as a starting point on looking for solutions, which is possible by continuing to research; questions must be the fuel for the evolution among students and professionals, even when the answers do not come easy. Thus, questions that were not answered in this research, can be taken as a starting point for a next research.

References

Altenburg, Johann Ernst. *Essay on an Introduction on the Heroic and Musical Trumpeters' and*

Kettledrummers Art. Nashville, TN: Brass Press, 1974.

Apel, Willi. *Clarino*, edited by Don Michael Randel, 183. The Harvard Dictionary of Music:

Cambridge, MA. Harvard University Press, 1960.

Barclay, R. L. *The Art of the Trumpet-Maker: the materials, tools, and techniques of the seventeenth and eighteenth centuries in Nuremberg*. Oxford, NY: Oxford University Press, 1996.

Dahlqvist, Reine. *The Keyed Trumpet and Its Greatest Virtuoso, Anton Weidinger*. Brass Research

Series, N° 1. Nashville, TN: The Brass Press , 1975.

Early Music Shop. Slide trumpet: based on the picture by Hans Memling (c. 1435-94), Accessed April 12, 2015, <http://www.whitecottagewebsites.co.uk/waits/notes%26queries/slide.html>

Haydn, F. Joseph. 1796. *Concerto: Preface*. Edited by Edward H. Tarr 1982: Haydn Mozar Presse in Universal der Edition.

[Hogwood, Christopher?]. *Academy of Ancient Music*, Acessed March 27, 2015.
<http://www.aam.co.uk/#/>

Janson, Jonathan. 2001-2015. *Musical Instruments in Vermeer's Paintings: The Trumpet*. Acessed April 7, 2015. <http://www.essentialvermeer.com/music/trumpet.html#.VSYAHmY9o7A>

[Johnson, Don?]. *Kentucky Baroque Trumpets*, accessed April 2, 2015.
<http://www.kybaroquetrumpets.com/index.html>

Johnson, Keith. *The Art of Trumpet Playing*. The Iowa State University Press: Ames, IA, 1983.

[Matthew, Parker?]. *Period Instruments*. Accessed April 10, 2015.
<http://www.matthewparkertrumpets.com/periodin.htm>

Menke, Werner. *History of the Trumpet of Bach and Handel*. Translated by Gerald Abraham. London, UK: William Reeves Bookseller, 1960.

National Music Museum. *Annotated Checklist of Trumpets, Fluguelhorns, Cornopeans With Stölzel Valves in the Joe R. and Joella F. Utley Collection of Brass Instruments*: North Dakota University. Most recent update November 30, 2010. Acessed April 12, 2015,
<http://www.whitecottagewebsites.co.uk/waits/notes%26queries/slide.html>

Pérez, Francisco. *Trompettes des siècles XVII et XVIII*. Accessed April 12, 2015,
<http://www.baroque-trumpets.com/english.htm>

Reidel, Johann. *Mandate Against the Unauthorized PLaying of the Trumpets and Beating of Military Kettledrums: Dated the 23rd of July in the Year 1711*. English Translation by Edward H. Tarr. International Trumpet Guild, Tallahassee, FL, 1991.

Roseborough, Andrew Jay. *The Modern Pedagogical Potential of the Baroque Natural Trumpet*: Doctoral Essay, Miami University, Miami, FL Electronic, 2010. Thesis and Dissertations. Accessed April 9, 2015.

http://scholarlyrepository.miami.edu/cgi/viewcontent.cgi?article=1410&context=oa_dissertations

Rhodes, Stephen L. 2007. *Wind Band History: Baroque Trumpet*. Accessed February 17, 2015.
http://www.lipscomb.edu/windbandhistory/rhodeswindband_03_baroque.htm

Sarkissian, Margaret. *Trumpet*. The New Grove Dictionary of Music and Musicians. Second Edition vol. 25, edited by Stanley Sadie. Massachusetts, USA. Macmillan Publishers Limited, 2001.

Swed, Mark. 2014. LA Times, Academy of Ancient Music Takes on Bach in Disney Hall Debut. Accessed April 10, 2015. <http://www.latimes.com/entertainment/arts/la-et-cm-academy-ancient-music-review-20141114-column.html>

Tarr, Edward H. *The Trumpet*. Portland, OR: Amadeus Press, 1988.

Tarr, Edward H. 2007-2015. *Henrich David Stölzel*. Grove Music Online: Oxford University Press. Accessed January 27, 2015.

http://library.valdosta.edu:2292/subscriber/article/grove/music/26842?q=St%C3%B6lzel&search=quick&pos=2&_start=1#firsthit

Tarr, Edward H. 2007-2015. Daurvané, François Georges Auguste. Grove Music Online: Oxford University Press. Accessed April 11, 2015.

http://library.valdosta.edu:2292/subscriber/article/grove/music/45523?q=Francois+Dauverne&search=quick&pos=1&_start=1#firsthit

The Middle Horn Leader. 2010. *The Evolution of the Bugle*. Accessed April 8, 2015.

<http://www.middlehornleader.com/Evolution%20of%20the%20Bugle%20--%20Section%201.htm>

University of North Texas College of Music. 2015. *North Texas Baroque Ensemble*. Accessed April 5, 2015. <http://music.unt.edu/about/ensembles/51>

Weast, Robert D. *Famous Trumpet Players: Principles, Quotes and Commentary of Trumpet Players and Pedagogues From 1584 to the Present*. Johnston, IA: The Brass World, 1998.