

Thomas Buchanan

Petre

English IV Honors

31 March 2017

“Sibling v.s. Sibling”

“Perhaps the most majestic and stirring sounds to be heard in music are those of brass instruments in full cry. The brilliance and richness of their sound never fails to thrill. Yet, played quietly or with mutes inserted to thin their tone, brass instruments can bring a haunting and mysterious air to music”(Ardley). The most commonly played brass instruments are trombones and trumpets which fit into the category of cylindrical brass instruments. The trombone and trumpet possess the ability to create a very bright, strident sound; which is a quality that makes these instruments widely played (Ardley). The trombone and trumpet are in the same family of instruments but have vast differences in each’s mechanics, pitch, tonal moods, styles, and types.

Noticeable throughout time, the two things that the trombone and trumpet have similar characteristics in is how their sound is produced and how they are designed. According to Neil Ardley, “Brass instruments are long, coiled tubes made of brass or other metals. At one end, the bell, the tube flares outwards in order to project the sound forward. A mouthpiece shaped like a small cup or funnel is inserted in the other end.” This characteristic is a prime example of how these two instruments fit into the category of cylindrical brass instruments. The second characteristic that these two instruments share is that the people who play this instrument use fluctuating pressure in their lips to reach different harmonics. Reaching higher notes is harder

and requires stronger pressure in the lips(Ardley). As for lower notes it is easier to reach them due to the low amount of lip pressure needed to hit them.

The mechanics of the trumpet vary from the trombone in multiple ways; however, the biggest difference is most notable at a first glance. The basic overview is that the trumpet uses valves and possess three tuning slides (see Illustration 1 page 9). “The trumpet uses three valves which lower the pitch of the note being blown by one, two, or three semitones. Pressing the valves in different combinations lowers the note by up to six semitones, which is the greatest change needed to fill the gaps between the harmonics”(Ardley). The sequence of valves pressed to to change the pitch goes zero (or open, which means no valves are pressed), two, one and two, two and three, one and three, one and two and three. The corresponding valve sequences to the trombone slide position are open valve equals first position, second valve equals second position, first valve equals third position, first and second valve equals fourth position, second and third valve equals fifth position, first and third valve equals sixth position, and first second and third valve equals seventh position (Ammons).

The mechanics of the trombone may look easier than the trumpet at a first glance but in all reality it possess a harder mechanic than the trumpet to master. The basic overview is that it contains one tuning slide and one playing slide (see Illustration 2 page 9). “The player controls pitch by a combination of lip position, which determines the general range, and slide position, which determines the note. With this capability, the trombonist, has infinitely fine control of pitch”(Moore). By pushing out the slide a musician is lengthening the tubing of the trombone which indefinitely lowers the pitch of the note. “Skilled trombonists use less energy than less skilled, which can be assumed to depend on that they have learned to optimize their own force

input and take more advantage of the force supplied by gravity”(Ekdahl). The main reason why the trombone is harder to master than the trumpet is due to the fact that a trombonist is constantly moving the slide position. Due to this, a skilled trombonist is constantly going to have to adjust the slide while playing since the slide is not in a set position while moving it. In order to develop perfect control of the pitch a trombonist needs to be able to identify a mistake in the pitch quickly. A trumpet player only has to alter their lip pressure ever so slightly while playing a note to obtain perfect pitch whereas a trombonist has to alter their lip pressure and at the same time make adjustments to the slide (Ammons).

There are some differences between the instrument that are not noticeable just by looking at the instrument by itself. These differences fit into the category of pitch. The trombone is in concert pitch and its music is written bass clef and is sometimes written in tenor clef. The trombone has a range of two and a half octaves up to three (Ammons). With the use of the slide, the trombone has a continuous possession of a complete chromatic scale (“Trombone”). The trumpet is pitched one whole step above concert pitch, it is technically a “C” instrument but is called “B” flat (Ammons). While the trumpet is keyed in treble clef and trumpet music is written in treble clef, the overall range of the trumpet has the ability to reach below the bass treble staff and way above the treble staff, depending on the skill of the player and the type of trumpet that is being used (“Trumpet” Making Music with Brass & Wind Instruments). In a more condensed view, the range of the trumpet is two and a half octaves up to three (Ammons).

One thing that is very interesting about the differences between these two are the tonal moods created by each one. Even though they are in the same family of instruments they both bring two completely different interpretations of music to the playing field:

“Part of it has to do with the registers that the two instruments play in. The trumpet is a high register instrument and the trombone is a low register instrument. A band is going to get more strength and power from a trombone section than from a trumpet section. The trumpet section would be more brighter, more dynamic, and brilliant whereas the trombone would have more ‘meat’ to the sound. The trombone plays from a depth point of view whereas trumpets play from over the top”(Ammons).

The trombone is used in music when an impression of grandeur is wanted, and the trumpet is used in music when an overpowering beautiful and sweet tone is wanted (Alexander). The reason the trumpet has a sweet and overpowering tone comes from the fact that it plays in the upper range of the treble clef. The reason the trombone has a grand and powerful tone comes from the fact that the trombone plays in the low to middle of the bass clef which provides a rich and firm foundation to musical chords (Ammons).

If a person attends a jazz concert, an orchestral performance, or a marching band performance they would more than likely see both of these instruments being used. A major part of why these instruments are seen in so many places was discussed in the previous paragraph, that reason is that these instruments cover a wide range of notes and can produce unique sounds that bring their own flavor to the mix that is music. Both instruments play a lot of jazz and classical styles of music (Ammons). As a side note, these instruments are starting to be seen in more public ways such as on late night television in the style of a live band playing to a live audience during commercial breaks. They are also seen in the form of busking, or in other terms, street performance, which uses a style of improvisation that is found widely among jazz soloist when they are told to perform an improvised solo when all they have been given is the key of the

measures. It's a rare and unique sight to see a live street performance due to the fact that improvisation is a difficult task to master and become fluent in, such as learning how to speak a language. In the case of jazz, or more specifically, Dixieland Jazz, both instruments play an effective role. "Each frontline instrument (cornet (trumpet), clarinet, and trombone) had specific playing obligations to fulfill. Frontline players played their parts polyphonically (simultaneous melodic lines). The cornet (trumpet) played melody because it was the loudest instrument in the jazz orchestra. The trombone plays the most important notes of a chord, the bass notes, to mark the changes in harmonies"("Early New Orleans and Chicago Style Jazz").

In the case of the overall different styles of music that the two are used for, they are similar yet slightly different in some aspects. The trombone is more commonly used as an ensemble instrument than as a solo instrument in the orchestral setting, and has little solo literature. Three trombones is a standard size section in the orchestral setting ("Trombone"). Whereas, "The trumpet is a versatile instrument found in jazz trios, symphony orchestras, religious music, dance bands, as well as military & school marching bands"("Trumpet" Making Music With Brass & Wind Instruments).

The different characteristic between the two instruments possessing the widest range of history, would be the different types of trombones and trumpets that there are. "There are two main types of brass instruments: cylindrical or conical, depending on the bore or shape of the tubing. The main cylindrical brass instruments are trumpets and trombones (Ardley). The trombone is broken down into the tenor trombone, bass trombone, soprano trombone, piccolo trombone, and the valved trombone. The trombone is the descendant of the Sackbut, which was developed in the 15th century by adding a slide to the trumpet. The tenor trombone is the most

often used today, it is often provided with extra tubing that can be accessed by pressing a valve to give it the lower notes of the bass trombone (“Trombone”). Bass trombones are used to get notes that are not reachable on the tenor trombone. This is done with the use of an extra coil of tubing(Ardley). “A valved trombone, first produced in Vienna in the 1820’s, is frequently used in Latin countries and jazz (“Trombone”).

On the other hand the trumpet is broken down into two main categories: trumpets without valves and trumpets with valves. Trumpets without valves includes the natural trumpet, war/hunting horns, bugle, cornet, curved cornet, and the slide trumpet. “Ancient trumpets were used as hunting horns, war calls, and signals for the arrival of royalty. Some scholars believe that these trumpets were even used by the Egyptians in 1500 BC. In all likelihood, the trumpet wasn’t used musically until the Renaissance”(Gingery). The natural trumpet had no valves, used lip slurs to change the pitch, and was used in the Baroque Era. The lack of valves meant that composers wrote trumpet parts higher due to more overtones. “According to scholar Arnold Fromme, baroque trumpets were often made in the key of D, the most versatile key for trumpet. Baroque D trumpets were also rather large; at 8 feet in length, they double the length of the modern B flat trumpet”(Gingery). The slide trumpet came to be in the Renaissance Period. It was not originally fitted with the sliding apparatus that is found on trombones; however, the player would have to hold the mouthpiece in place while they simultaneously moved the body of the instrument back and forth. “Surprisingly enough, the slide trumpet remained popular in England until at least the mid-19th-century, thanks to its use by the well-known trumpeter Thomas Harper and his son”(Gingerly). The cornet, which is a smaller version of the trumpet, contains no valves, is easier to play, has a mellow and “fatter” tone, and is less piercing. The curved cornet is a long

wooden instrument, has a separate mouthpiece, uses finger holes to change the pitch, has a clear and bright sound, and was popular in the sixteenth and seventeenth centuries (“Brass Instruments”).

Trumpets with valves include the keyed trumpet, the B flat trumpet, the C trumpet, the D trumpet, the E flat trumpet, and the piccolo trumpet. The keyed trumpet came to be at the end of the 18th century by the invention of a trumpeter in Vienna by the name of Anton Weidinger. This was one of the first trumpets to allow players to play a full chromatic scale by using keys that open and close holes along the tubing (“History of the Trumpet”). In the 19th century-Heinrich Stölzel and Friedrich Blühmel produced the first valved trumpet which enabled tunes with a greater note range to be played (“Musical Instruments of the World”). There are two main types of valves that are in use today: rotary valves (which are flat valves that resemble the shape of a teardrop) and piston valves.

The different types of valves led into the design and making of different trumpets in different musical keys. “Around the year 1830, the B flat cornet was introduced. Because they were smaller than F and G trumpets, the B flat and C horns played with much more agility, a trait players were beginning to need due to more difficult compositions. The B flat trumpet tubing is the largest of the commonly used trumpets; stretched out it reaches more than 4 ft in length. Due to the length and size of the tubing, B flat trumpets have a darker sound. In the U.S. most concert bands and jazz music is performed with B flat trumpets”(Gingery). The C trumpet became popular several years after the B flat trumpet became widely used. The C trumpet has a slightly brighter sound and due to having shorter tubing it is pitched a step higher than the B flat trumpet.

As a result, the D trumpet projects more and is the instrument of choice by American orchestral players. D trumpets have a bright sound that is almost piercing to the ears, it is in between the pitch of the C and Piccolo trumpet. The D trumpet is used for their brightness of the tone and the consistency in the brighter range. The Piccolo trumpet has come close to replacing the D trumpet in modern day musical performance due to the possession of a 4th valve. Also the Piccolo trumpet comes with an extension in the lead pipe which is used to place the instruments pitch into the key of A (Gingery).

As previously mentioned, the trombone and trumpet are unique in their own aspects and styles. The trombone and trumpet may be in the same family, but they have vast differences between them. Both of these instruments take years to master, but when they are mastered it is definitely worth the result. “The most skilled brass instrumentalist can produce about 16 notes on modern, lip-vibrated instruments” (“Brass Instruments”).



Illustration 1: "Philip Bishop"

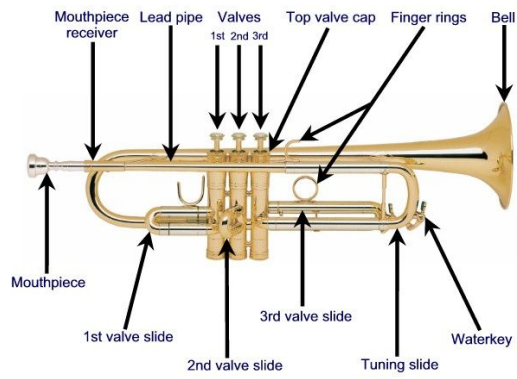
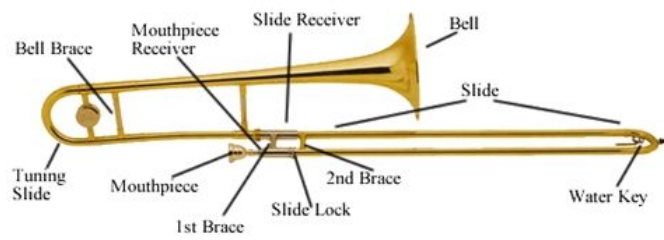


Illustration 2: "Amro Music"



## Works Cited

- Alexander, Fuller Maitland John. *The Age of Bach & Handel*. New York: Cooper Square Publ., 1973. Print.
- Ammons, Anthony. "'Mentor Interview'." Personal interview. 28 Feb. 2017.
- Amro Music*. Amro, 2017. Web. 5 Mar. 2017.
- <<https://www.amromusic.com/trombone-repair>>.
- Ardley, Neil. *Music: An Illustrated Encyclopedia*. London: Hamlyn, 1986. Print.
- "Brass Instruments." *Making Music With Brass & Wind Instruments* (2000): 13. *MAS Complete*. Web. 14 Feb. 2017.
- "Early New Orleans and Chicago Style Jazz." *Early New Orleans and Chicago Style Jazz*. N.p., 2017. Web. 17 Feb. 2017.
- Ekdahl, Gitte. "A Simple Model of the Mechanics of Trombone Playing." *A Simple Model of the Mechanics of Trombone Playing - OpenThesis*. N.p., 2009. Web. 17 Feb. 2017.
- Gingery, Adam. "Types of Trumpets: Keys, Size, History, and Performance Practice." *Musika Lessons Blog*. N.p., 01 June 2016. Web. 17 Feb. 2017.
- "History of the Trumpet." *History of the Trumpet | The Instrument Place*. N.p., 2016. Web. 17 Feb. 2017.
- Moore, Frank L., and Mary Varchaver. *Dictionary of the Performing Arts*. Lincolnwood, IL: Contemporary, 2000. Print.

*Musical Instruments of the World*. New York: Facts on File, 1976. Print.

Philip Bishop, 2007. Web. 5 Mar. 2017.

<<http://www.molevalleymusic.co.uk/anatomytpt.htm>>.

"Trombone." *Columbia Electronic Encyclopedia, 6Th Edition* (2016): 1. *MAS Complete*. Web.

14

Feb. 2017.

"Trumpet." *Making Music With Brass & Wind Instruments* (2000): 70. *MAS Complete*. Web. 17

Feb. 2017.