The Natural Trumpet: A Stepping Stone

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Dr. William Stowman
Mus 497

May 6, 2002
An Overview of the Baroque Era

The Baroque era in music was a turning point for musicians around the world. For the first time, all instruments, (specifically the natural trumpet) had their own repertoire, and were being featured through solos in many settings. In the Baroque era, many new forms and styles were developed by French, German, Italian, and English composers. Among the most successful composers were; Monteverdi and Frescobaldi in the early Baroque, Couperin and Purcell in the middle Baroque, and Handel, Bach, and Vivaldi, in the late Baroque (Ammer 31).

The start of Early Baroque was characterized by the discarding of polyphonic music. It was replaced with monody, a new concept of singing a solo line to a chordally conceived accompaniment. Polyphony was not completely abandoned, however, due to its significance in keyboard music. The concept of polyphony led to the development of forms such as fugues, organ chorales, and toccatas (Ammer 31). Another new concept that was important in the Baroque era was the use of extremes in music. The use of slow and fast tempos, solo voice and full chorus, as well as loud and soft dynamics were especially noticeable in Baroque forms such as the trio sonata, concerto grosso, sinfonia, and cantata.

Development of the basso continuo is the primary trademark of the Baroque. The basso continuo, or thorough bass, is important because it is continually present and requires two players; one to sustain the bass line (a
string bass or low wind instrument) and one to provide the chordal 
accompaniment (keyboard or a lute) under a solo line of music. The notation 
used for the chordal accompaniment is called figured bass. The most successful 
type of musical shorthand invented, figured bass, is still in use today and 
consists of numbers above the bass line that indicate what chords the musician is 
to play (Bukfozer 26). It was not uncommon for figured bass specialists to be in 
great demand as musicians; the concept required great skill and musical 
knowledge.

_A New Concept: The Natural Trumpet in the Early Baroque_

In addition to the style changes at the beginning of the Baroque era, a new 
form of trumpet playing was developing. Trumpeters now had to use softer 
dynamics to play the impure partials of the harmonic series with good intonation 
(Tarr 85). It was necessary for the trumpet to make this adaptation in order to be 
successful in ensemble music. The adaptation was contrary to the trumpet of the 
middle ages which primarily used a loud method of playing for signaling as well 
as performance in the military and the courts. In order to play in the high 
register quietly, trumpeters had to give up the embouchure used during the 
Medieval Era which involved puffing up the cheeks. This procedure was 
officially forbidden by Cesare Bendinelli in his trumpet manuel, _Tutta l'arte della 
trombetta_, written in 1614 (Tarr 86).
The new style of trumpet playing required enormous talent and control of the trumpet’s range. For the first time, music was divided into different parts to accommodate all levels of trumpeters. The lowest register, referred to as “principale”, covered the third to ninth harmonics in the harmonic series. The clarino register was the eighth to twentieth harmonics in the harmonic series, but was often split into clarino I and clarino II. The clarino I register called for a “suitable lip, good teeth, physical strength, and assiduous practice (Bate 106)”. Very few trumpeters ever reached this level. A fourth level was also created called the tromba register, which was between the principale and clarino II. It seems probable that this four part arrangement of trumpet parts was influenced by four part vocal writing (Bate 106).

Along with the style changes taking place during the early Baroque period, guilds were being formed for professional and military trumpeters. While, military trumpeters were still highly respected due to the Thirty Years’ War that began in 1618, guilds were soon recognized as the only legitimate organization for trumpeters (Tarr 95). One of the most popular guilds in the
early Baroque period was the Imperial Trumpeter's and Kettledrummers guild, formed in 1623.

The Imperial Trumpeters' and Kettledrummers' Guild had two main functions. Primarily, it existed to keep the number of trumpet players small and the level of their art high by means of strict regulation of instruction. Secondly, the guild ensured the exclusivity of the trumpet by restricting its use (Tarr 95).

Under the first rule of instruction a teacher was not allowed to instruct more than one student at a time unless his own son was included; only then could he have two students. A student was only allowed to have two years of instruction, paying the teacher half of the wages at the beginning of the lessons and the other half at the conclusion of the two years (Tarr 95). This apprenticeship method of teaching resulted in a great loss of trumpet music during the early Baroque period because many trumpeters memorized their repertoire and passed on the skill without the use of printed music.

At the end of the two year period of lessons, a student had to pass tests which consisted of playing the most important military signals, and showing some knowledge of clarino playing. After the tests, the student had to wait seven more years until he could teach and could only do so if he had participated in at least one military campaign (Tarr 95). This guild, along with others, was an important building block for the trumpet in the Baroque era.
After the Thirty Years’ War, ensembles featuring two or four trumpets became very popular. Since trumpeters were accustomed to memorizing music, improvisation played an important role in performance once the melody was known (Lampl 3). This was important during the early Baroque period because “all things in variety were considered pleasing and agreeable” (Lampl 5). The primary composers of this early Baroque music were Sebastian Knupfer (1633-76), Johann Schelle (1648-1701) and Johann Pezel (1639-1694).

Pezel was the most prolific composer of the group and also an important trumpeter in the early Baroque period. The trumpet ensemble music that Pezel composed contained two clarino parts and avoided the use of non-harmonic tones. His music lacked thematic development and harmonic interest, and the basso continuo was not fully developed (Smithers 153). Pezel did, however, take great strides by making the most of the limited possibilities of the natural trumpet by employing the full range of the trumpet in the clarino parts of nearly every piece (Smithers 153).

As a trumpeter Pezel was well known throughout Leipseg, Germany. Originally a tower musician, Pezel was taken into a circle of Leipzig trumpeters known as the Kunstgeiger in 1664 (Tarr 105). The tower musicians would ascend into the tower daily, ring the watch bells, and immediately after the bells stopped ringing, would sound the trumpet. The tower musicians were also expected to
play four or five entire compositions both in the evening and the morning, from all sides of the tower (Tarr 61). Along with being a tower musician, Pezel was promoted to “Stadtpfeifer”, the equivalent to being named 'Master' of his particular craft, in 1670 (Simpson 1). It was noted twice in the archival document of the Kunstgeiger that Pezel was an approved clarino player (Tarr 105).

The Middle Baroque: The Natural Trumpet in the Bologna School

While the century continued to move forward, so did the development of the natural trumpet. As the natural trumpet entered the middle of the Baroque period, the main center for Baroque trumpet composition and performance shifted from Germany to the Bologna School in San Petronio, Italy.

The Bologna School is the oldest and most famous university in Europe, and was a center of “intellectual and artistically creative activities” (Smithers 93). In 1660, the construction of the Grand Basilica of San Petronio (a Christian church), was completed, and attracted many composers and musicians to the city. More sonatas, sinfonias, and concertos for trumpet were performed here than at any other location (Tarr 125). The composers introduced the trumpet for acoustical reasons besides the obvious symbolic ones: in the vast church it is the only instrument whose sound would carry clearly (Tarr 126). The chief musical event was a concert mass in which trumpets frequently played, and a prelude in the form of a trumpet sonata usually followed (Tarr 126). The first three trumpet
sonatas were published for the church at San Petronio by Maurizio Cazzati in 1665 (Tarr 125).

The main composers for natural trumpet pieces that emerged from the Bologna School in San Petronio were: Pirro Capacelli d' Albergati, Matteo Albergati, Giuseppe Alberti, Giovanni Colonna, Francesco Foggia, Petronio Franceschini, Domenico Gabrielli, Giuseppe Iacchihi, Ferdinando Lazzari, Francesco Manfredini, Giacomo Perti, Giuseppe Aldrovandini, and Giuseppe Torelli (Bate 98). The total number of natural trumpet pieces among these thirteen composers is eighty-three. Of the surviving manuscripts, thirty three are for one trumpet, forty five are for two trumpets, and five are for four trumpets. There were no compositions for three trumpets in Italian trumpet music.

Of the thirteen composers above, Torelli is represented by the largest number of natural trumpet pieces composed during the middle Baroque period, with a majority of them being sonatas. He composed a total of forty two trumpet pieces; seventeen for one trumpet, twenty three for two trumpets, and two for four trumpets. All of these pieces, but one, were scored for trumpets in D. The reason for the exception could have had something to do with the pitch of the organ when the pieces were first composed (Bate 100).

Torelli's interest in natural trumpet music was due to the presence of an excellent trumpet player in Bologna by the name of Giovanni Brandi. Brandi
was used by Torelli to play during the special festivals and masses at San Petronio. It was common for the trumpeter to play during the offering, after the Epistle, after the Agnus Dei, and to play a sonata for prelude and postlude (Bate 105).

Because of Brandi's talent, a number of Torelli's solos were quite challenging. These solos ascended to the sixteenth partial and required the soloist to be flexible and agile (Tarr 127). The other trumpet works from Torelli and the remaining composers from the Bologna School employed for sound and personality while only reaching the thirteenth partial. Therefore, during the middle Baroque period, the natural trumpet was not employed as a 'soloistic' instrument, but one to add to the church service as a whole. Nevertheless, the trumpet sonatas composed by Torelli and his counterparts still remain a musical symbol of Bologna.

**The Natural Trumpet in Art Music: The Late Baroque**

After the middle Baroque period of the Bologna School at San Petronio, the natural trumpet entered its peak in the late Baroque period, due to Henry Purcell. Purcell was the first to integrate trumpets into art music with his birthday ode for King James II, in 1687 (Smithers 205). The trumpet was no longer being treated as just an instrument of ceremony but one with melodic purpose. Purcell's music showed a great understanding for the instrument's
capabilities and limitations. His music was not written for virtuoso trumpet players, but for the ordinary town musician (Smithers 205).

Because of Purcell's developments, the concept of the natural trumpet in art music was adopted by two leading composers of the late Baroque period, Johann Sebastian Bach and George Fredric Handel. Both composers produced a vast amount of challenging music for the natural trumpet.

Johann Sebastian Bach, a German composer, active in Leipzig, added the natural trumpet to his music to give brilliance to the rest of the ensemble. The use of the instrument was solely built on the biblical text being preached and was used occasionally for the high festivals, in the church (Menke 72). In Bach's hands, the trumpet was given great care as a solo instrument and the number of trumpets he would use at a time greatly varied. It was possible for Bach to write for as many as four trumpets at a time, generally having only three in his orchestra.

Bach's most famous trumpet work is the Brandenburg Concerto No. 2. This work consisted of a trumpet, recorder, oboe, and violin, with one player on each part. Arguably the most famous of his compositions, this work is also Bach's most difficult for the trumpet, posing many physical challenges. Due to the orchestral nature of the composition, the trumpeter could not enjoy the freedom attended by solo works of the period. In addition, the trumpeter is required to
balance with the other, softer instruments in the orchestra (Tarr 108). Perhaps the most demanding aspect of the work is its tessitura. The piece requires the execution of the eighteenth partial numerous times, on the F trumpet. The lack of rests throughout the piece also increases the difficulty a great deal (Tarr 108). It is believed that Bach's inspiration to write such demanding trumpet literature was Gottfried Reiche, his trumpeter at Leipzig. *The Brandenburg Concerto No. 2*, was specifically written for Reiche. This composition required Reiche to play a third or fourth higher than then natural trumpet, while having to lip unplayable notes into pitch (Tarr 108). A famous woodcut of Reiche was created in 1727 while he held his coiled F trumpet. Several proposed theories exist to explain why Reiche is holding this trumpet and not the standard natural trumpet. The image is well planned and suggests some very detailed information. Reiche holds in his left hand a piece of music known as the *Alblasen*, a truly difficult passage, now a famous excerpt known to all trumpeters. In his right hand Reiche holds the coiled F trumpet implying that he uses it to perform the *Alblasen*; an impressive feat for any performer over the more manageable natural trumpet. Some suggest that Reiche had no hidden motive and that it was simply his favorite instrument or that it fit in the picture.
Gottfried Reiche was such an important figure in the town of Leipzig that he was paid a substantial amount of money to stay there during a year long period of mourning for the death of the Elector of Saxony (Tarr 105). No musicians could be paid for their service during this year, and the City Council feared that Reiche would seek employment elsewhere. Tragically, Reiche died after the premier performance of Bach’s, *Preise dein Gluke, gesegnetes Sachse*. It was a work of virtuosic character that ascended to an e”’ (Tarr 110). On his walk home after the performance Reiche collapsed and died, perhaps due to the strain of the piece. He was 67 years of age.

The other significant composer of music including the natural trumpet during the late Baroque period was George Fredric Handel (1685-1759). Active
in England, Handel, like Bach, based his compositions on specific text. His works for trumpet were very similar in that regard. He also developed the trumpet aria and the use of the trumpet in the oratorio (Tarr 136).

Handel’s arias were usually written for solo soprano and trumpet, while his oratorios, (the Messiah being the most notable), contain up to four trumpets. One of the more popular pieces in the Messiah is, The Trumpet Shall Sound. In this work Handel utilizes one trumpet with a bass soloist and, like Bach, Handel also wrote notes that were unplayable on the natural trumpet. The notes F, A in alt, and B in alt (the word alt instructing to play the notes an octave lower than written), were not natural notes on the horn and had to be lipped down to the correct pitch (Menke 90).

In general, Handel’s writing for trumpet was not as demanding as Bach’s in the use of range. However, in Handel’s parts the trumpeter needed endurance to play extremely long passages. Trumpeter, Valentine Snow (1700-1770), was a prominent member of Handel’s opera and oratorio orchestra and continually performed for the public in featured programs around London (Sorensen 6).

Because of his great stamina, Handel composed the following pieces for Snow including: Music for the Royal Fireworks (1749), Dettingen Te Deum (1743), and Overture to Atlanta (1736). These parts were among the most strenuous ever written by Handel (Tarr 187). Snow’s performances of these works were never
perceived as too powerful or piercing (Sorenson 7). Snow was truly a zenith in
the art of English Baroque trumpeting and helped to make the transition into the
Romantic era (Sorenson 6)

The Construction Process and Structural Development of the Baroque

Trumpet

The natural trumpets that were used by the great trumpeters of the
Baroque era were carefully constructed in various cities throughout Europe. The
most famous of these cities was Nuremberg, where thousands of natural
trumpets were made by the finest trumpet makers in Europe.

The construction of the natural trumpet was done by artists who were
specially trained in designing trumpets of the Baroque era. Like the guilds, there
were many skill levels of trumpet makers, and several different positions in one
shop, allowing for the trumpets to be built and developed in stages, with experts
overseeing their own specialty.

The first area of trumpet construction was the “floor shop”. This is where
the body of the trumpet was developed by workers known as journeymen. They
began by making their own tools for the construction process. From stock metal,
the journeymen shaped hammerheads, ground teeth into pliers, and shaped
punches, dies, and mandrels (Barclay 54). The journeymen had to be blacksmiths
and toolmakers. For this reason, every trumpet shop had its own unique array of
tools. Journeymen only worked for a couple of years, however, before they had
to retire. Poisonous fumes from soldering and the constant ringing of hammers
on anvils, led to many health problems for the journeymen in the floor shops
("Art" 100).

After the tools were constructed, the body of the trumpet could be made.
The tubing used was two meters long with a diameter of ten to twelve
centimeters (Barclay 54). The two meters of tubing was folded on itself one time
and ran three-quarters of the length before flaring into a bell (Barclay 54). There
were no slides, vent holes, valves, or keys. The natural trumpet only sounded
the notes of the harmonic series and required no tuning during manufacture.
Below is a picture of a standard natural trumpet of the Baroque era (Tarr).
Once the body was shaped, the trumpet progressed to the trumpet master for finishing work. The trumpet master had his office away from the floor shop in order to protect himself from the health hazards present during the construction process. The trumpet master was considered too valuable to be exposed to such harmful conditions.

The responsibility of the trumpet master was to put the finishing touches on trumpets made for people of wealth or high importance. This included polishing, decorating, and engraving. In Nuremberg, the true center of trumpet building, only half of the trumpets made were actually touched by the trumpet master; the rest were finished by his apprentices (Barclay 59). He was commissioned on special occasions to finish a trumpet once it had been started. This included work such as engraving, designs, and decorations.

Because the trumpet master only worked on certain instruments, there were great variations of quality among 18th century trumpets. Some of the trumpets were poorly designed and others were made beautifully. Despite having his name engraved on the bell, the trumpet master did not design every instrument (Barclay 59). Below is an example of an engraved natural trumpet done by Anton Schnitzer in 1581 ("Art" 124).
Once the trumpet was finished, either by the trumpet master or his apprentice, a mouthpiece must be fitted to the horn. The mouthpieces were never made in the shop, but instead ordered from shops that mass produced them. To a natural trumpet player the mouthpiece was the most important part of the instrument. In the Baroque era the mouthpiece had a large diameter rim, with a deep cup, and sharp shoulder (Collins 11). Mouthpieces with a shallow cup were deemed unsuitable for clarino playing (Menke 104). The deep cup was needed in order for the trumpeter to easily bend the pitches of notes that were deemed 'unplayable'.
Despite the fact that a lot of detail and evidence exists regarding the construction of the natural trumpet in the 17th and 18th centuries, the modern day replicas are very different. The original natural trumpet had an "impure" harmonic series which required trumpeters to bend the 7th, 11th, 13th, and 14th partials into tune along with occasional non-harmonic tones. This was a very difficult and delicate procedure done with the lip muscles. Because this is an unfamiliar process to modern day players, it takes a great deal of intense practice and patience to be able to acquire this skill. Due to equal temperament modern players need to be able to play in tune quickly because audiences expect flawless intonation and pinpoint accuracy (Koehler 17).

Around 1960, Otto Steinkopf devised a system of three vent holes on the natural trumpet that brought the 11th and 13th partials into tune and made the natural trumpet easier to learn (Koehler 17). Later, the British trumpeter Michael Laird devised a four-hole system that increased the stability of many pitches and additional solutions to intonation problems (Koehler 17). Tapered lead pipes were also being added to ease the centering of pitches. Although these vent holes and lead pipes helped make the instrument easier to play they altered the sound slightly and would never have been a characteristic sound to the trumpeters in the Baroque era. It is becoming common practice to refer to trumpets without holes as natural trumpets, and trumpets with holes as Baroque
trumpets (Koehler 17). While this may seem like a reasonable adaptation to promote more refined performance, several historians were outraged at the alteration of an authentic instrument.

The Baroque trumpet, according to Robert Barclay, was an instrument that only slightly resembles the natural trumpet (Barclay 62). Its playing technique was different and the timbre was not an accurate representation of the trumpet used in the Baroque era; "it was not necessary to invent a new instrument to play Baroque music" (Barclay 62). Barclay believes that the reason the modern day players could not adapt to the original natural trumpet was due to the fact that the pitch was a semitone below what musicians use today; A415 instead of A440 (Barclay 64).

The musicians in the Baroque era lived daily with the imperfections of the natural trumpet and knew how to cope with them. The natural imperfections of the trumpets, because they were handmade, allowed the Baroque players to bend the pitches more easily. Despite the adaptations made by trumpet makers to the Baroque trumpets constructed today, it will take some extended time for even the most accomplished player to adjust to this type of instrument. The embouchure will need time to adjust to the physical reflexes that accompany the specific intervals and patterns. The lower fundamental of the Baroque trumpet's harmonic series and the response of a longer leadpipe is perhaps the biggest
challenge associated with the instrument (Koehler 20). The Baroque trumpet remains a great way to represent the music of the Baroque era, despite the fact that it is not a true replica.

**Conclusion**

After examining the role of the trumpet in the Baroque era and the importance of its construction, it is evident how significant the natural trumpet was in the development of Western music. The Baroque era brought solo instrumental music to a new height through the many compositions that were written. Music for the natural trumpet can be held as some of the greatest music ever composed. Through the work of Pezel, Torelli, Bach, and Handel, the natural trumpet gained a position of prominence in the world of art music, and became a true stepping stone in the continuing development of the trumpet for decades to come.
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