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It's Instrumental, My Dear Watson: A Collective Investigation of Early Instrumental Practices

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"IT’S INSTRUMENTAL, MY DEAR WATSON"
A Collective Investigation of Early Instrumental Practices
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From early ritual dances to modern Hip Hop and Jazz, dance music has been part of the foundation for musical art in world history and the key to unlocking information concerning societal atmospheres throughout history. With each age and progression of music came new genres, instruments and social beliefs that were woven through religious and secular culture, each of which impacted the production of dance throughout the centuries. Therefore, the art of music has seen much diversity and change throughout history, causing each individual dance genre to be created and shaped into a product fitting for the time. Because dance music gained historical importance since the medieval period, its rapid progression through oral tradition, religious tradition, and social environments reached new heights in the social and musical life from medieval times though the Renaissance period.

The evolution of dance can be traced back to the Stone Age, but the progression of dance music in the medieval period can be picked up around the thirteenth century. When dealing with the development of dance music, it is crucial for understanding worldwide culture to exam the history of dance music in western civilization because the center of dance music history resides in the historical development of western music. Dance music can be put into two categories: sacred and secular. While, most dances in this period are secular, the church traditions had significant impact on the regulation of dance music. Music is commonly understood as the universal language and movement of the body is also a form of communication. Body movement accompanied with music can be very meaningful to fulfill a purpose, but the medieval church did not agree with this and disregarded dance as a sacred action. Melissa Hudler states in her article,
In other words, gestures silently voice the changing values of a social system, and the acceptable bodily movements in a society reveal that society’s moral structure. This value of gestures reveals the fact that the human body was of greatest importance in medieval society and culture.”\(^1\) The medieval times were shaped by the church authority in relation to the pagan culture, which heavily supported dance music among the nobility and commoners. Medieval society was progressing culturally and socially, and their focus on pushing dance in an era that negated it showed their will and vision to move forward. From years of resistance to dance music to the heavy influence pagan culture had on society, the medieval church began embracing dance disciplines.

According to *World History of the Dance* by Curtis Sachs, the early medieval church believed that practicing certain dances in a sacred setting would lure people to Christianity. Although most secular and flamboyant dances from the pagan culture became tolerated by the church, classical drama was still declared obscene and blasphemous.\(^2\) Classical drama was the act of including dance, stage and props with musical elements. Having accepted the belief that dance in itself wasn’t sinful, but the associations of pagan culture it brought was, the church began services that included dances with the chorus. One of the dances that Hudler discusses is an early rondeau, a group circular dance, which contains clear Christian ideas in its lyrics:

\[
\begin{align*}
\text{Sol est in meridie-} \\
\text{Laudes demus marie-} \\
\text{Fulget dies gratie} \\
\text{Et gaudii} \\
\text{A laude Marie} \\
\text{Non debent conscie} \\
\text{Lingue demi}\end{align*}
\]

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\(^3\) Hudler, “The Body Speaks of Sin: The Voice of Dance in the Middle Ages.”
Hudler translates the above rondeau as follows: “The sun is in the south/let us give praises to Mary/the day of grace shines out, the day of joy/the perceptive tongues of sinners should not be torn from Mary’s praise.”¹ These lyrics emphasize how the Christian church sought to embrace secular dance forms and themes, but integrate their own ideas to combat the pagan culture. Clergy men, priests and bishops, even advocated for dancing at gatherings such as feast days, sacred devotionals and ceremonial events. In Gayle Kassings book, History of Dance: An Interactive Arts Approach she claims that it became ritual to dance around the altars to hymns on feast days with worshippers singing and dancing in the churchyards. She also denotes that, “Religious dance was ceremonial in nature, using beautiful figures, solemn movements, and symbolic poses that were accompanied by hymns.”² This is in stark contrast to pagan dances, as described by Hudler, “as a demonic invention, dance was believed to serve well as an exhaustive punishment for those who found joy in dancing.”³

Once the Christian church accepted dancing, nearing the tenth century, history began to change. Timothy McGee’s book on instrumental dances affirms this, “Dancing continued to be a part of the Christian ceremony of worship through the era; church documents from the late Middle Ages make it clear that dances were permitted in the celebration of certain feasts and that they were performed by clerics.”⁴ Dance music was no longer directly related to the pagan culture, but rather encouraged because of its deep roots from the medieval church promoted by clergy men. Some of the sacred dance music related to the church still contained dark themes and demonic roots, such as the dances of

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¹Hudler, “The Body Speaks of Sin: The Voice of Dance in the Middle Ages.”
³Hudler, “The Body Speaks of Sin: The Voice of Dance in the Middle Ages.”
death, also referred to as danse macabre. Kassing states that, “The dances were performed to ward off death while symbolizing oblivion and death.”\(^1\) The dances of death were typically performed in medieval churchyards as a round dance and illustrated how death would lead all people, kings, monks, and peasants to the grave. The circle formation for this dance was very important because, as alluded to by Hudler, “A circle allows no one to be in a superior position, thus representing equality in death. Only in death could medieval people be equal because equality amongst the classes was not evident in life.”\(^2\) The dance of death also carried certain connotations among the common people that were represented through the skeleton. Death, in the form of a skeleton, would lead the village people in their round dance that eventually led to the grave. Kassing states that, “Some people thought they could hear the dead singing and dancing in an effort to revisit the joys of living. They believed the dead danced in churchyards, drawing the living into the dance, who then died within the year.”\(^3\)

Although this dance had demonic associations, it was accepted as sacred dancing, and as more dances infiltrated the church atmosphere, eventually dance-dramas in the late thirteenth and early fourteenth centuries were accepted as well.

While historically there is not a lot of information on dance-dramas in the sacred setting, its progression is very important in the development of dance music from the medieval times through the Renaissance period. Kassing discusses sacred dance music further by dividing dance-dramas into the categories of mystery, miracle and morality plays. Mystery teachings were used in the church to educate the congregation on church teachings from the Bible and

\(^9\) Hudler, “The Body Speaks of Sin: The Voice of Dance in the Middle Ages.”
theological books, such as the falling of Egyptian idols or the passion of the Christ. Mystery teachings could be staged in the sanctuary with clergy men as actors who chanted in Latin to accompany the biblical texts. Miracle plays were depictions of the lives of saints and martyrs using actors and prisoners in tortuous scenes to properly present church history. Morality plays were developed later in the fourteenth century, according to Kassing, and illustrated moral truths such as virtue and integrity. Kassing concludes that, “Through mystery, miracle, and morality plays, theater made the transition from teaching Bible stories and lives of saints and martyrs to presenting allegorical dramatizations of man’s struggle between good and evil.”¹ After her conclusion, it is important to realize that the development of dance-dramas within the church are important to dance music history because they show the growing popularity and tolerance of dance music from both a sacred and secular atmospheres.

Dance music was traditionally secular, although slowly accepted in sacred settings as previously mentioned, and its progression has been greatly important to medieval and Renaissance culture. As societies prospered through the ages, so did dance styles and genres. Some of the earliest genres of dance music trace back to the trouvère repertory according to Joan Rimmer’s article, “Dance Elements in Trouvère Repertory.” She discusses that the connection between dancing and the trouvère movement has always been assumed and that until detailing of musical artifacts and musical manuscripts, which are sparse, there is only some evidence showing that dance music originated within the trouvère repertory.² Some specific evidence of dance music from the medieval period can be established through the rondeau, carole, ballade and virelai genres that are included in trouvère repertory. Typically, these genres are associated

¹ Kassing, History of Dance: An Interactive Arts Approach, 76.
with the French, because the trouvère movement has French origins, but historically, dances have survived into the Renaissance period and beyond from specifically the Faroe Islands and from South Brittany. Although there is some speculation about dance music in the medieval period being also sung, Curt Sachs put this to rest, “Let us now turn to the music of the medieval dance. In the older literature we sometimes find the dance leader as soloist with the chorus of dancers singing the responses, and sometimes the minstrel with his fiddle carrying the dance melody.”

First, the rondeau is often interchangeable with the carole, but was a round dance in which the group leader would alternate melodies with the group, usually for a festival occasion that celebrated the coming spring. The rondeau, as well as the ballade and virelai are associated with the medieval French formes fixes (fixed form) where poetry was sung in specific strophic form with melodic phrases, indicating new poetry or musical content with upper and lower case letters: upper case indicating repetitions of words and music, lower case indicating poetry and melodic repetitions with different words. This specific pattern was often, ABaAabAB for the rondeau. Second, the ballade was associated with the troubadour’s and trouvère’s dansas or baladas, another name for their dance music. Ballade choreography was similar to the rondeau, but with denser musical content and slower steps, often with a triple beat pattern. Although the ballade is connected with the French, Richard Hoppin connects different cultures with these trouvère dances in Medieval Music. Hoppin states:

The name balada passed into the musical terminology of both France and Italy, but it came to designate different forms in two countries. The Italian ballata kept a refrain at the beginning of the poem and after each stanza and corresponds in form to the French virelai. The French ballade apparently began with much the same form but developed in a different way.

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The French and Italian versions of the ballade both used capital and lower case letters to indicate lyrical and melodic material. Thirdly, the virelai is both poetically and musically structured, like the previous, and usually follows a pattern of, AbbaAbbaAbbaA. This dance was usually played on trouvère instruments: hornpipes with three finger holes or wooden recorders that had two finger holes with a thumb hole. The virelai contained simple tunes with three or four note melodies. The content of the formes fixes as described by Hoppin, were love songs, debates, court songs, pastourelles and laments.¹ In, The Carole: A Study of a Medieval Dance by Robert Mullally, music of the Carole and other formes fixes illustrates how the music stands parallel with the lyrics and that the compositions weren’t originally for dance, but that round dances adapted to the musical genres to show completeness to literary and musical content.² The development of poetry in relationship to music and dance also shows rapid progression from the medieval period to the Renaissance. Historically, the poetry used in trouvère music was written beginning in the thirteenth century, but music and dance did not accompany trouvère poetry until the fourteenth century.³ Dance music in the thirteenth and fourteenth centuries proved to progress quickly and greatly impact musical history; through rondeau, carole, ballade and virelai dances, dance genres were able to move into the Renaissance with a firm foundation in liturgical and courtly dance music. Because of this, dance music proceeded to develop into new genres and styles, taking on different characteristics in Renaissance society.

While the formes fixes died out entering into the Renaissance, new dances related to the style of round dances were developed early on. The bass danse, a circle dance borrowed from the form fixes, moved into the Renaissance gaining popularity, and the new pavan and galliard

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¹ Hoppin, Medieval Music. 293.
³ Rimmer, “Dance Elements in Trouvère Repertory.”
resembled both the basse danse and *form fixes* from the medieval period. According to Peter Walls, *Common 16th-Century Dance Forms: Some Further Notes*, popular dances in the Renaissance included the pavan and galliard, la volta, courante and alman, branle, gavotte.¹ The pavan and galliard are separate dances, but linked together because the galliard immediately follows the pavan and shares melodic material but with a different meter: pavan in a two pattern and galliard commonly in a three pattern. The pavan-galliard grouping is described as a dignified dance and can be used for processional events. The galliard was specifically characterized by five steps, according to Walls, and was a couple’s dance that followed a procession, usually a wedding or festival.² Both the pavan and galliard had instrumental accompaniment, usually for lute and keyboard in the early Renaissance according to Leeman Perkins book, *Music in the Age of the Renaissance*.³ The important progression between the medieval period and Renaissance in dance music can specifically been seen in round dances moving to couple dances. This is yet another example of rapid progression made in the cultural developments and acceptance of dance music between these two periods.

While dance music from the medieval and Renaissance periods persisted through drastic movements and changes religiously and made innovative developments in the social field, dance music was only capable of these progressions through key tools- such as new instruments, publications, and dance music literature, which were utilized to further the success of dance music. Dance music is relatively instrumental, as traced back to the trouvère’s repertory in the thirteenth century, therefore, only through utilizing different instruments could dance music be constructed.

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² Walls, “Common 16th-Century Dance Forms: Some Further Notes.”
Bone flutes and reed flutes can be traced further back in history than the medieval period, but through trouvère history specific instruments developed and were carried through the century into the Renaissance period. Horne pipes and wooden recorders used in performing virelais, as mentioned before, are some of the early medieval instruments, but the fiddle was also used in the estampie and early keyboard instruments for dance music are mentioned in historic musical score manuscripts such as the Robertsbridge Codex.¹ Other medieval instruments used for dance music are mentioned in one of Guillaume de Machaut’s manuscripts and quoted in Timothy McGee’s book, *Medieval Instrumental Dances*:

But you should have seen after the meal the minstrels who entered in generous number, with shining hair and simple dress! They played many varied harmonies. For I saw there all in a group Vielle, rebec, gittern, [13 additional lines of instruments] and certainly, it seems to me that never was such melody seen nor heard, for each of them, according to the tone of his instrument, without discord, plays on Vielle, gittern, citole, harp, trumpet, horn, flageolet, pipe, bellows, bagpipe, nakers, or tabor, and every sound that one can make with fingers, quill and bow I heard and saw in that park. When they have finished an estampie, the ladies and their friends went off in twos and threes, holding one another by hand, to a very beautiful chamber.²

This illustrates the variation of instruments in the medieval period, from stringed instruments to plucked, fingered and blown instruments all used in dance music. Now, not all of these instruments were commonly used, or used all together, but above all, the vielle was used the most. The vielle was the precursor to the violin, also referred to as the fiddle, and was used specifically in the estampie, but was also used in historic trouvère repertoire- the melody in unison with the vocal line. The vielle was commonly used in France, England, Italy and Germany, and was mostly known as a solo instrument, except in cases of dance music when played with a harp or shawm.³ The vielle made great improvements moving into the

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Renaissance, becoming the most important instrument family of musical life, and with its changing mechanics, became known as the violin. The violin was constructed smaller than the vielle and its strings were tuned in fifths, like the modern violin. The usage of the violin was mostly for dance music, specifically in the courts and could be heard in the early Renaissance bass danse and branle dances. *A Performers Guide to Renaissance Music* talks about how the Renaissance violin was used, “Because dance music was the primary repertory of the Renaissance violinist and dancing was an entertainment shared by most segments of society, fiddling was a source of employment as well as an enjoyable pastime.”

The second commonly used instrument is the flute, carrying various names, shapes, and sounds. Some of the first flutes were made with bones and wood, carved with finger holes and blowing holes. Medieval flutes had between three and seven finger holes and the smaller flutes would commonly have a thumb hole, dating as far back as AD1000- These flutes would typically play five notes. The flutes were used in specifically the rondeau and virelai, but it is implied from medieval dance literature that flutes, as well as many other instruments, were often used in other dances as well. Several other instruments mentioned in McGee’s book are impossible to illustrate with specific music examples, because although much of dance music required instrumental accompaniment, most existing manuscripts only contain the poetic form and simple melodies used throughout the period. A close relative to the medieval flute is the recorder which gained popularity moving into the Renaissance period. The construction with finger and thumb holes remained similar to the flute, but a key difference is the over tone abilities of the Renaissance recorder. Based on the speed of air used combined with specific fingerings, a

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musician could reach multiple notes, even ranges of an octave or more. The recorder was a popular instrument in all classes and was included in almost all dance music of the Renaissance, specifically in processional dances like the pavane and galliard.¹

Other important instruments of the Renaissance period include the shawm and sackbut. While the shawm was invented before the Renaissance, dating back to the thirteenth century, its popularity wasn’t gained until the sixteenth century when its size was increased and performances were increased in Spain, Germany and England. The shawm was a technically demanding instrument and comparable to the modern day bassoon with its construction and reed. Shawms were used in most proper Renaissance dances, but specifically in the Italian bassadanza and ballo, and the French basse danse. The sackbut was also used in the basse danse, but also the pavane and galliard. The sackbut was the Renaissance trombone and quite similar to the modern trombone, it contained a pitch slide and gained popularity in the beginning of the fifteenth century. The sackbut was used in almost all dance music that utilized shawms and could also be heard in French branle dances.²

The progression of instrumentation is important to the development of dance music from the medieval to Renaissance period because it illustrates the rapid cultural and social progressions that were made in the exploration of new dance music, genres and styles. Although new innovations of instrumentation were important, in the fifteenth century the biggest innovation in the music world took place- the invention of the printing press. Up to and through medieval times, most music was passed by oral transmission, or in few cases of dance music, by manuscript. But, when Ottaviano dei Petrucci of Fossombrone invented music printing in the late fifteenth century, he drastically improved the transmission and reconstruction of dance music

and literature. The reproduction of dance music now allowed for wider variety of people to be involved in dances, from royals to commoners, court musicians to slaves: many had public access to varying kinds of dance music.1 Dance literature obviously withstood the medieval period and the age of manuscripts, and some early significant dance works can be seen in the publications of Italian dance master, Domenico d Piacenza and his students, Antonio Cornazano and, Guglielmo Ebreo from the fifteenth century.2 Not every kind of dance music was reproduced as result of the printing press, but dance literature still remained important and developed deeper roots culturally in the Renaissance, causing dance music to reach a peak of acceptance, popularity and performance.

Dance music in the twenty-first century is often related to modern Hip-Hop or Jazz Swing, but historical recourses trace it back to the medieval period and beyond. Because dance music is prevalent in our culture today, it is important to evaluate situations throughout history related to its development through the ages, specifically from the medieval period through the Renaissance. Because dance music gained historical importance since the medieval period, its rapid progression through oral tradition, religious tradition, and social environments reached new heights in the social and musical life from medieval times though the Renaissance period. Dance music progressed from its association with sinful nature in the medieval church to cultural sensation in the Renaissance. Dance music also progressed rapidly because of innovations of new instruments, dance forms, and the publication and dissemination of dance music. Twenty-first century music has all of these innovations represented through the rapid progression of instruments, illustrated through the rise of the electronic stage and use of electronic instruments and enhancements. Dance forms and publications in the twenty-first century also progress on a

daily basis with modern recordings and dissemination through social media. Because of the rapid advancements between the medieval and Renaissance periods in dance music, culture can imitate these forward movements and dance music can continue to make a name for itself throughout history.
Annotated Bibliography


This book is dedicated to the scholar, Ingrid G. Brainard who was also a dancer and mentor for choreography and musicology. This source is compiled of essays on the subjects of performance dance, dance history and musicological issues in the Renaissance period. The book is sectioned into three areas: musical repertory through contexts of musical creation, learning to interpret it- through performance meaning and social identity of dances- and finally, discussing changes in music and dance based on the locations of music performances, aspects of transcription difficulties, and comparison of a shared genre in music and dance.


This chapter comes from the larger work, *Studies in Medieval & Renaissance Music*, and the chapter specifically covers the polyphonic Basse Dance. The chapter informs the reader of the history behind the Basse Dance melodies and the controversy over preservation through oral tradition or manuscripts. The chapter also explains the polyphonic Spagna dance and how Basse Dances were compiled in chanson literature.


This chapter on dance in the seventeenth century is first compiled of a list of references to dance methods, steps and choreographies in the regions of France, Italy, England and Germany. The chapter moves on to talk about seventeenth century dance styles and interpretation of dance music through phrasing, choreography, society and musical technique. Finally, the chapter covers reconstruction of seventeenth century dance from early sources and the productions seventeenth century music used dance and costumes for.


This chapter defines the Medieval dance song as a Balada or Dansa. These Balada’s were attributed to a section of the Troubadours movement to often celebrate the return of spring. The Troubadour songs mentioned are considered love songs and the chapter explained that the musical forms associated with this genre of dance music was related to strophic form and subjected to rhyming themes. The rhymes created easy repetition and dance opportunity for the Troubadours.


This source seeks to study the positive and negative issues that arose from society because of dance in the Middle Ages. The author discuss how secular dance as wild,
leaping dance was sinful, yet serene, liturgical dance was acceptable, but how there was a combination of Christian practice and pagan ritual. This source moves through the views and regulations the church had on dance, but then also covers society’s fascination with death in correlation with dance, specifically the danse macabre. Finally, the author covers the aristocratic pleasures in secular dance and how in the Middle Ages there was a relationship of dance between Christian doctrine, pagan ritual and aristocratic society.


This book provides multiple historical references to the history of dance, before and after the Medieval and Renaissance eras. Kassing covers important points of dance in several time periods and locations which include, Greece, Egypt, Crete, Rome, The middle ages, Renaissance, dance at the court and theater, and the romantic to modern periods. In each of these regions, the author covers their individual history, specific dancers, the prominent styles of the time, and significant works of dance literature from that era.


This source presents problematic considerations of reconstructing 16th century dance music through reading the texts, deciphering the meaning, and conquering the difficulties of historical dance. The author moves on to defining key musical characteristics- meter, time signature, and melodic alignment- then begins reconstructing early dance by walking the reader through the relationship of dance music with choreography. Finally the author covers notated examples and choreographed examples of the Balletto, a Renaissance song and dance.


This chapter covers early Renaissance dance from 1450-1520. The book discusses Italy’s dance music and the steps and dance types. France is also discussed, but the steps and choreographies discussed are from later in the Renaissance period. The late Renaissance dances are mentioned and the Pavane and Gagliarda are defined and explained with musical examples and historical information from the countries of England and France.


This book covers Dance in the Middle Ages through various evidence discovered behind vocal dance and instrumental dance. The contents of the book also contain information concerning dance music repertory of the Estampie, Ductia, Nota and other dance from the Middle Ages. After a section on performing practices of Middle Age dance, the author works through notated examples of dance music and the historical information behind each one.
This chapter covers the activities in the early court of France, including dance of the middle ages. The chapter reinforces the importance of courtly dance, or Caroles, as the book defines them, but it also discusses that dance in the middle ages often came from travelers and employed musicians.

This book covers the specific information of the Carole dance from the 1400’s. Beginning with the history and etymology behind the term Carole, the author moves into the earliest records of the Carole and theories about the dances choreography. The author moves into reconstruction of this early dances choreography, working through specific steps, foot motion hand motion, and even terms for the dance. Finally, the author discusses the lyrics to the music used in the Carole and the origins of the Italian and Middle English versions of the Carole.

This book is somewhat an illustrated resource with the pictures and figures used to present dance in Renaissance society. The chapter first discusses street music in Renaissance society and how street performances were an important part of dance in Europe. Music at the court is covered and also considered as an important event in Renaissance history for dance music. Finally, music in the theater is discussed and although it didn’t contain much dancing, it did provide documentation of Renaissance music for scholarly study.

This book provides detailed information on dance music and traditions from various times during the Renaissance. Dance music is discussed in topics about instrumental music and genres, performance practices and secular music in Renaissance society. The book also gives musical examples within the text for proper illustration of musical genres and forms.

Pfandl-Buchegger, Ingrid. "The Performing Body in Renaissance Literature and Dance." *Anglia-Zeitschrift Für Englische* 132, no. 1 (2014): 23-39. *Humanities International Complete*. This source gives an example of the masque to show how dance and images of dance in literature were used in Renaissance dance society. The author’s first point covers the importance of dance in Renaissance society through dance morals and the performing body in Renaissance literature and dance. Secondly, the author discusses dance as an emblem for cosmic harmony through the performers and audience. Finally, dance as a social and political discourse is discussed, giving examples of the court masque at events such as weddings, parties and holidays.

This source covers the study of dance music from the Trouvère movement and its relation to artifacts of musical instruments as well as specific repertory. First, the author discusses artifacts of flutes, horn pipes and reed pipes that were used by the Trouvères, potentially in dance music. The source showed that the study conducted also was consistent in showing a number of small-compass, dance-like tunes used by Trouvère practitioners for monophonic rondeau and virelai, and some stanzaic songs with pastoral content. The source moves on to give notated examples of these songs and their possible dance accompaniments.


This source deals with the many unhelpful sources about early dance written by other authors and how they are unhelpful to the choreographically uniformed. The author proceeds to cover the Carol, a medieval dance, and Italian frescoes depicting early dance choreography. The author also discusses how dances are put into three categories- round, carol and estampie- giving detailed definitions of each. Finally, the author presents different patterns of early dance music and their individual forms, either through-composed or having a repetitive structure.


This book, split up into two parts, covers dance throughout the world and Dance throughout the ages. Within these parts, the book informs the reader about social movements of dance, themes and types, forms and choreography of early dance, and the actual music that accompanies dance. Dance throughout the ages covers evolution to the spectacular dance, Europe since antiquity, and music characteristics in these ages.


This book covers dance in the early ages of Jewish music, Ancient Israel, Greek music and Roman music. Throughout these ages, the book talks about dance in position at the court and in drama and theater. The book also discusses how dance is used for instrumental music of the Romans and dance at funerals in Ancient Israel. Overall, this books gives adequate information on early dance music in various forms, genres and societies.


This source is not only documentation of Greek and Italian dance in the Renaissance, but the author also gives a list of extra resources containing notated dance music and locations of other dance sources. After the listed resources, the author discusses the many treatises on dance of humanist culture in the Renaissance. The source then discusses the contents of the treatises, most containing choreographic descriptions and music of dances that were performed on public and private occasions.

This source points out that there is a lot to be learned from Renaissance dancing and the social aspects of dancing. The author then moves on to discuss the prominent dance forms, styles and genres in the 16th century. First is the Pavane, a basse dance commonly used for courtly enjoyment. Second is the Galliard, a five step rhythmic dance. Finally, the author briefly discusses the La Volta dance, Courante and Alman, the Branle, and very similar to the Branle- the Gavotte.
The Downfall of the Hurdy-Gurdy

Nate Chester
Cedarville University

The hurdy-gurdy is a unique instrument that has declined in use and popularity since its glory days in the Renaissance period, surviving only through the genre of folk music. Its decline is mainly due to the instrument’s popularity being primarily in the lower class culture.

The hurdy-gurdy is an instrument that is far more complex in its design than that of other stringed and non-stringed instruments during the time of its more popular use. I want to start out by giving a thorough historical background and explanation of the instrument so as to understand the uniqueness of the hurdy-gurdy. By understanding its unique design, we will be able to contemplate why this instrument has disappeared from music today, except for its use in folk music and with its enthusiasts. In its basic definition, a hurdy-gurdy is a stringed instrument, which is played by pressing its strings onto a circular bow that is manually cranked. The earliest evidence of the hurdy-gurdy can be traced back to around 1175 in the country of Spain. There is a carving at the church of Santiago de Compostela that shows two men playing the hurdy-gurdy.¹ The hurdy-gurdy in the carving would have been called an organistrum, which is the name for the earliest form of the instrument, the other being the symphonia. The organistrum required two musicians to play because of its size of up to five feet long and complex mechanical functions. One of the musicians would turn the crank wheel while the other would actually play the

instrument by pressing its keys. The symphonia, on the other hand, was a smaller hurdy-gurdy that was played by a single person. ¹

Many lutes were transformed into hurdy-gurdies by removing their necks and adding the additional components the body of the instrument.² There are many variations on the instrument and also many other names by which it can be called. The Hungarian version of the hurdy-gurdy is called a tekerölant, or tekerő. This specific instrument has four points on the wheel that produce a buzz against the strings. These points are syncopated into groupings of two, which produces a distinct and rhythmic sound. The French hurdy-gurdies, however, had wheels with both four and eight evenly spaced buzzing points. The size of the wheel and the division of the buzzing points determined the rhythmic sound of the instrument. The tekerő, for example, had a small wheel to aid in the playing of fast rhythms while providing longer endurance for cranking the wheel.³ It became common for hurdy-gurdies to contain at least drone string, called the buzzing bridge as well as at least one melody string, which was played by using the keys on the instrument. All hurdy-gurdies would have had three strings or more, the earliest forms only having three.

When playing the instrument, the drone strings would sound and a melody could by played on the melody string over the drone. One of the most interesting features is the buzzing bridge. The buzzing bridge is made of a drone string which is called a trompette, and a piece of wood which is pressed against the body of the instrument from the pressure of this string. While the musician is playing, this string will sound as a drone pitch. However, through a sharp pulse

of the crank, the wheel will grip the *trompette* and momentarily lift the string enough to release the pressure on the piece of wood. This process results in a loud buzz sound as the wood vibrates against body of the instrument. In French, this action is called *coup de poignet*, which translates to “stroke of wrist.”¹ These rhythmic buzzes are a characteristic sound of the hurdy-gurdy. The player’s ability to manipulate the cranking of the wheel can produce the desired rhythmic effect. The wheel also provides the musicians a way to show expression in music, whereas expression on a violin would be conveyed through the pressure put on its strings.² A quick press and release of the instrument’s keys is necessary to achieve the proper sound and tone. Gravity causes the keys to fall back into place because of the angle in which instrument is held.³ Like all stringed instruments, the hurdy-gurdy also must have rosin on its wheel to maintain the instrument and ensure a quality sound production.⁴

The hurdy-gurdy was a valuable instrument because of its ability to play with an uninterrupted sound through the use of drone pitches. Other instruments would have had breaks in the sound, such as bowing on a string instrument. From my research on the instrument’s history, it is apparent that as the instrument was improved and changed, its use came to function for more melodic purposes. While the drone strings are still necessary to produce the unique sound of the hurdy-gurdy with the melody strings, I would think that the drone strings were depended on more heavily than melody strings in the earlier days of the instrument. Richard Haynes shares his personal belief that the development of the instrument came about as a way of

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¹ Robert A. Green, *The Hurdy-Gurdy In Eighteenth-Century France*. (Indiana University Press, 1995), 64.
² Green, *The Hurdy-Gurdy In Eighteenth-Century France*, 56.
providing an instrumental bass line for choirs. Although this is certainly very interesting, I have not found any substantial evidence to support this belief.

Because of the near disappearance of this instrument in music today, I want to take a look at any other instruments that may have been influenced by the technology of the hurdy-gurdy or that are in any way related to each other. I believe that in doing this, it will give a bigger picture of the hurdy-gurdy and will later aid in discussing the decline of the instrument. There are some sketches of a similar instrument called a viola organista, which appears in the Madrid notebooks of Leonardo da Vinci. This instrument has some obvious differences from the hurdy-gurdy. The instrument is sounded by the pumping of bellows rather than the cranking of a handle; however, the bowing function with the strings remains the same. The bellows would have been pumped with the operation of a handle and elbow called a *con gomito*.\(^1\) This is significant because the operating of the bellows would allow the musician to have both hands available for playing the instrument’s keys. The viola organista has a much closer resemblance to a modern piano than that of a stringed instrument such as a violin. With both hands free, the musician would have been able to play more notes simultaneously and possibly more complex music. From the information we know about the viola organista, I would argue that this instrument is more advanced than the hurdy–gurdy and that the hurdy-gurdy may have influenced its design. Because the hurdy-gurdy began as a two-person instrument and later was developed for one musician, it makes logical sense that an instrument that frees both hands for playing would be an advancement in design. It is fascinating how the mechanical function of the hurdy-gurdy, which

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was able to produce a continuous sound, is directly related to an instrument that distinctly uses a keyboard, while the hurdy-gurdy looks more like a string instrument.

While this instrument has distinct ties to the hurdy-gurdy because of the technology involved in the playing of it, there is a completely different instrument, which is oddly related to the hurdy-gurdy because of its similar social and musical aspects. This instrument is known as the bagpipe. In fact, Emanuel Winternitz says, “After an adventurous history, their fates intertwined and they became so assimilated that they could replace each other in the same score.”¹ In its basic definition, a bagpipe contains a flexible bag, which acts as a storage tank for air, a blow pipe, and at least one reed pipe. A musician plays the bagpipes by blowing air through the blow pipe into the bag while compressing the bag with their arm to allow the air to escape through the reed pipes. Typically, the bag would have been made from the skin of an animal and the pipes were fitted where the animal’s limbs were located. There are different types of reed pipes, including the chanter and the drone pipes. The chanter can be visualized as an early clarinet and its function was to provide a melody through the use of its finger holes. The drone pipe does not have any finger holes and therefore only produces a single tone. Through its history, many modifications were made, such as adding drones, an additional chanter and swapping the blowpipe out for bellows.²

Already it has become possible to point out some similarities between the bagpipe and the hurdy-gurdy. First, there is the more obvious similarity of the melodic device combined with a device by which a drone will sound. Both instruments are described as usually having multiple drone pitches to be played simultaneously. The possibly less obvious, yet most significant

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¹ Emanuel Winternitz, *Bagpipes and Hurdy-Gurdies In Their Social Setting*, (The Metropolitan Museum of Art, 1943), 56.
² Winternitz, 56-57.
similarity between these two instruments is their ability to provide a continuous and uninterrupted sound. This has now been successfully achieved by two differing methods. This strange similarity is actually what closely relates these two instruments. It seems that there may have been a desire for instruments that could produce a constant sound. The hurdy-gurdy may have significantly improved by the time any record of it was ever taken. I personally think these instruments in their earliest and possibly undocumented form could have been used simply as a drone accompaniment for singing. The rise of instrumental music and instrumental virtuosity led to the further development of both instruments into the forms that we now envision today.

I want to begin to suggest that the popularity of instruments and their music is not completely dictated by their level of enjoyment, but also largely due the cultural circumstances surrounding them. While this may not be true in all situations, it is sometimes the case. In the following example, the hurdy-gurdy is seen to be preferred in church use, although, this was largely not the case with the instrument throughout history. Emanuel Winternitz writes,

It was perhaps because of its harmonic, chordal capacity, as well as for its use in sacred music and in the instruction in the cloisters, that the hurdy-gurdy was frequently given the place of honor in the assemblage of the twenty-four elders in so many French and Spanish tympanums of the eleventh and twelfth centuries...The elders, it seems, preferred the apparently nobler instruments, the stringed ones, perhaps because of the stringed instruments mentioned in Revelation 14:2-3; as far as the writer can see they did not touch a bagpipe.¹

In this case, a passage from Revelation that mentions the sound of a harp has influenced the giving of honor to the hurdy-gurdy rather than the bagpipes. Religion has dictated the use of these instruments. Winternitz goes on to explain that in secular music, both instruments are seen

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¹ Emanuel Winternitz, Bagpipes and Hurdy-Gurdies In Their Social Settings, (The Metropolitan Museum of Art, 1943), 65.
as equals. “Unlike the elders, angels seem to have no social prejudices whatever; like playful children they do not hesitate to take a juggler’s or beggars instrument for the greater glory of the Lord or his saints”¹ These cultural circumstances and others have influenced the use of the hurdy-gurdy.

Through history, the hurdy-gurdy has not been recognized as an instrument of the wealthy and upper class. Unfortunately, this unique instrument has largely been known as an instrument of the peasant and the vagabond. The instrument was often the primary means by which the poor and the blind could earn a living. Although a solo performance on the hurdy-gurdy may have been much more exciting than that of one on other instruments, the hurdy-gurdy’s place in society restricted its popularity amongst listeners.² Each of us has probably, at one time or another, walked by a poor or homeless street musician and enjoyed their music in passing. Possibly, the musician was using various items that were available as a drum set or using any instrument available to make enjoyable music. While this enjoyment can be fulfilling and we may even toss a few dollars their way, I can hardly imagine this type of music being performed in a more professional setting for an attending audience. We don’t usually associate this type of street music with our normal repertoire of music for listening. The hurdy–gurdy was never widely popular, yet remains a part of music history for its unique design and its place in lower class society. Francis Baines calls the instrument “the obvious choice of the vagabond” because of its ability to provide harmony and melody.³ The instrument was an all in one package that a person seeking to provide music by themselves, without other musicians, could play. One could pick up the instrument and play music that was pleasing to the ear because of

¹ Emanuel Winternitz, Bagpipes and Hurdy-Gurdies in Their Social Settings, (The Metropolitan Museum of Art, 1943), 66.
² Winternitz, 67-68.
the fascinating sound of the melody strings against the drone tones. It was a great means for the poor to earn a living because it was an instrument with a high entertainment value. There are drawings in an article that are taken from da Vinci’s notebooks and they depict a man playing an instrument similar to the hurdy-gurdy. Because of the way the man is dressed, it can be inferred that he is playing for a masquerade or as some form of entertainment.¹ The article also notes that these instruments are not made for use in serious music, but made for entertainment. The hurdy-gurdy found its place in lower class society because of these circumstances and it was able to thrive in this place. I believe the hurdy-gurdy was primarily used for entertainment in the medieval and renaissance times, while lacking a strong presence in serious music. Evidence of this can even be found by looking at the organistrum, which, by the medieval period, was no longer in popular use in the church but rather “it became popular with wandering minstrels and country folk. Thus debased, it was in function as well as form, the ancestor of the hurdy-gurdy.”² By the time the hurdy-gurdy was fully developed, it had already been established in the lower class society as an instrument for entertainment and for earning a living as a poor musician. This instrument never had a chance to thrive outside lower class culture because of these social circumstances. The hurdy-gurdy was usually not the primary choice of instrument for the aspiring musician or wealthy student, yet it deserves more attention because of its distinct sound and unique design. Its popularity, however, was dictated by the popularity of those who played the instrument.

Many of the instruments we have today are the product of their development through centuries of use. For example, the modern violin can be traced back to its different forms and

stages of development as well as many other stringed and wind instruments. The various forms of these instruments were suited well to handle the demands of the music which was played by them. The instruments we see in use for serious music today are instruments that were commonly used throughout history, and composers have become dependent on these instruments so as to produce their desired sound. The question I propose is why the hurdy-gurdy, a more complex and interesting instrument than the violin, is not commonly known and played in serious music? I believe the answer to this question is that the hurdy-gurdy was not an instrument of serious music throughout history. It was, in fact, an instrument of entertainment, and the reasons for this are due to the instrument’s social misfortune. Had the hurdy-gurdy not been stuck in lower class society and gained the poor reputation it had gained, it may have been able to break into the realm of serious music. There, it would have had a better chance of being improved upon to meet the demands of the music played by it. It also seems to me that the hurdy-gurdy may not have been able to keep up with the demands of serious instrumental music according to an article in *The Science News-Letter*. “Thus the instrument played a melody with an accompaniment of drone tones, but could not be used for playing part music. As this music was greatly enjoyed by the people, the hurdy-gurdy gradually gave way to instruments on which it could be played.”¹

The very thing that gave the hurdy-gurdy a high entertainment value was at the same time holding it back from remaining in style. As the musical interests of the people shifted with time, so did the demands put on the instruments. The hurdy-gurdy was still played and performed, but its listeners no doubt gave way to new musical interests which did not include this instrument. Ultimately, the hurdy-gurdy would have had a better chance of remaining in popular use in the

current day had it not been as socially confined as those who played it, although I’m sure it would have seen some alterations and improvements had this been the case.

In the previous two paragraphs, I have described only the social challenges associated with the hurdy-gurdy and at large I believe this to be an accurate assessment. However, there was a brief time when the instrument saw increased use by the upper class and began to rise in fame. This brief time of social prosperity was soon interrupted by the French Revolution, an event which landed the hurdy-gurdy in its current role with folk music. Now I want to explore how this came about.

From before the twelfth century through the thirteenth century, the hurdy-gurdy was played in a larger form, requiring two musicians to play. It is likely that the musical playing of these instruments was heavily based on the pedal point system of this time, therefore explaining a decline in the hurdy-gurdy’s use as the fourteenth century saw a decline in the pedal point system. It has been recorded that this century would have commonly seen the blind beggars playing this instrument. By the fifteenth century, secular music was quickly on the rise, and with it, many hurdy-gurdies could be found in the shops of instrument makers. The sixteenth century saw a continued enthusiasm for secular music along with dancing. It was during this century that folklore about music and dancing became popular. In 1511, the hurdy-gurdy was listed in Virdung’s *Musica Getutscht*, an encyclopedia of music, but there was no description of it included. One of the most significant events affecting the hurdy-gurdy in the seventeenth century occurred in Germany.

During this century there were other legal Acts which directly affected the hurdy-gurdy. In 1653 elaborate statutes were passed in Germany which reflected the general official attitude to music amongst the working classes of Europe…The statutes forbade members of the Union to ‘sing improper songs, to play the less dignified instruments, as bag-pipes,
sheep-horns, hurdy-gurdies and triangles or to consort with low company such as jugglers, bailiffs or hangmen or to take as apprentices sons of such’.  

Another one of the most significant events for the hurdy-gurdy in the seventeenth century occurred in 1685, when the Edict of Nantes was repealed in France. Up until this century, France had mostly been the central home of the hurdy-gurdy, and where the most important historical events surrounding it had occurred. This event resulted in many French citizens leaving the country and in turn spreading the knowledge of the hurdy-gurdy to England, America, Canada, Africa and others. The eighteenth century was the only time when the hurdy-gurdy became popular with the royal courts and the aristocracy. Because of this, there were many hurdy-gurdies made in a smaller size for women and children. Its brief popularity, however, was over before the nineteenth century, and this time was short in comparison to the encompassing reputation of the instrument with the lower class. I believe the French Revolution was enough to shake the French culture and musical life to the degree that the hurdy-gurdy quietly slipped from its place in the upper class. During its eighteenth century popularity, the poor and the beggars were still playing the hurdy-gurdy just as much as they had before. By the end of the revolution, the instrument had fully returned to its well established home with the lower class. It was during this time that the instrument transitioned into what we now know as folk music.

Folk music is a broad term, however; I would like to provide some characteristics that are typical. Folk music may include having specific cultural roots, unknown authorship, traditionally nonprofessional performances, and a simple composition for ease of passing along

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2 Palmer, 44-189.
through oral tradition.¹ Most of the hurdy-gurdy playing by the lower classes would have fallen
into all of these categories. Therefore, when folk music began to gain significance as a genre in
the nineteenth century, hurdy-gurdy playing fit the description perfectly. Norm Cohen has an
interesting opinion on folk music. He suggests that folk music is a method of social
communication. The text of the music may not be fully understood or appreciated by a person
outside a certain community because he/she may not be familiar with the culture of that
community. Folk music is the music of common people. He suggests that when a folk musician
is placed into the limelight of a stage, his/her music changes. The musician naturally feels a
pressure to perform well for the audience and may even alter the music to sound more interesting
than a true folk-styled performance would sound. We may never get the chance to hear true folk
music. If we have heard folk music, it has most likely been commercially produced or
performed in a commercial situation. True folk music is subject to accidental change and
variation. There are no expectations for the music because it is simply played and enjoyed.²

The hurdy-gurdy has really had a rough journey through history. Despite the social
aspects which held it back from becoming more well known today, the instrument is fascinating
and these social aspects are part of what makes it so great. Having an appreciation for the
environment and culture in which the hurdy-gurdy was played will grant a greater appreciation
for the instrument itself. Social influences have had a great impact on music and on instruments,
as has been the case with this instrument. So, although it gained a reputation as an instrument of
lower class culture, it is very interesting when studied from this perspective. This culture found
uses for the hurdy-gurdy and gave it an intriguing history. It is important to be aware that social

² Norm Cohen, Folk Music: A Regional Exploration, (Greenwood Press, 2005), xxii-xxxi.
influences greatly impact the music not only of the past, but of the present as well. This will only add to our appreciation of all music.

Annotated Bibliography

This article provides evidence for the origins of the hurdy-gurdy and more specifically the origin for the name for the instrument. By looking at the ancient name of the instrument and its meaning, the instrument’s origin is better understood.

This article provides a very clear focus on the hurdy-gurdy. There is a substantial amount of information on the instrument including the historical aspects as well as the technical aspects of the hurdy-gurdy. It discusses many variations of the instrument which also provides information on the development of the instrument.

This article provides a historical background for the hurdy-gurdy as well as a substantial amount of information regarding the instrument’s place in society. This information is crucial to understanding the way the instrument was viewed by people during the time when it was more commonly played.

This book also provides a nice amount of information on folk music. It is useful because of its information on the social and cultural backgrounds of folk music. It provides a general overview of folk music, even in its modern application.

This book has a background on the symphonia and the organistrum, which are both names for the hurdy-gurdy. Each of these names can be used for the instrument in a particular time, having differing characteristics and uses, which are described in the book.

This book discusses the history, musical style, interpretation, performance and repertory of the hurdy-gurdy. The chapter on interpretation and performance is helpful to
understanding the instrument’s style and technique, as it would have been played in the eighteenth century.

This book covers western music beginning with church chant and ending with 20th century music. This book is an excellent source because of the depth of detail it involves. I have found the information on medieval and early renaissance music useful in gaining a valuable historical background of my topic.

Haynes, Richard. “Welcome to The Hurdy-Gurdy,”
http://www.richardhaynesmusicservices.com/page3.htm
This website contains detailed information about the hurdy-gurdy. Some of this information includes the method by which the instrument was played and how it operated. There is also information about the instrument’s origin and history, including uses for the hurdy-gurdy and similar instruments.

This article contains useful information about how old lutes were converted into hurdy-gurdies. There is also a note on the how the cranking of the wheel on a hurdy-gurdy contributes to its sound and the rhythm that can be created.

This review places the hurdy-gurdy in a list of instruments that are used in Hungarian folk music. This Hungarian folk music is mentioned to have its influence in European music because of its musical elements.

This article contains a section devoted to the origin of the hurdy-gurdies. This information is useful for understanding where such a unique instrument has its roots. Different opinions and arguments regarding its origin are discussed and questioned. The article demonstrates the difficulty in tracing the origin of this instrument when not much evidence is available.

This article gives a description of the instrument's features and construction details, which also provide division by which the instrument can be classified.
The article provides information on the revival of the hurdy-gurdy in the 1960's for its use in folk music. Many diagrams are included which aid in the understanding of the instruments operation while being played.
http://www.jstor.org/stable/3903060  
This article provides a small but useful amount of information about the hurdy-gurdy comparing it to some instruments and noting its place in society during the middle ages. It also includes some technical information on the instrument as well as the method by which it would have been played. There is also a piece of information which gives reason for the decline of the instruments use.

This article suggests that the hurdy-gurdy was known by two different names, each with their differences. It takes a close look at these names and their related instrument families. The two names are explored in a search for any related characteristics or differences setting them apart from each other.

This article provides evidence for the origin of the instrument which is valuable because of how unique this instrument is. The discussion of its origin also provides its relationship to other instruments such as the monochord as well as examining its use in the musical setting.

This book contains two sections, the first being a historical background and the second covering the technique of playing a hurdy-gurdy. The historical section of this book is organized by century, separating any historical differences in order through the development and use of the instrument.

This book begins with the Ancient music of Southwest Asia and Egypt and covers a medieval history of music through the 14th century. This book is useful because of its emphasis on this time period. I have found the included history of instruments and their uses to be of value.

This book provides an in-depth definition for folk music. It also includes information on folk music's role and place in society which has added to my knowledge of the historical value of this music.

http://www.jstor.org/stable/3257042
This article specifically addresses bagpipes and hurdy-gurdies and their individual historical musical applications. It provides a historical relationship between the two instruments and their uses while noting what they have in common or where they differ.


This article describes several instruments which appear in notebooks of Leonardo da Vinci. One of these instruments is a type of keyboard, which uses a similar operational method to the hurdy-gurdy. The information is useful for discovering any development or improvements of the hurdy-gurdy.
The organ is one of the most magnificent and impressive musical instruments known to man. It is often referred to as the “king of instruments.”¹ By the Baroque era, some organs were massive enough to fill up several stories of a cathedral. Such organs were the largest instruments on the planet. However, as great and wondrous as the Baroque organ was, it did not begin that way. It began as a rather small instrument that could be moved without much trouble. Over the centuries, musicians, engineers, and architects saw shortcomings in their contemporary organs and sought new ways to improve them.

To be clear, the strengths and weaknesses of a particular organ were directly related to the intended purpose of that instrument. As distinct musical cultures developed throughout Europe, new uses for organs were also developed. As a result, the rate of organ production increased. This increase in turn produced a growing number of organists. As these organists became more skilled and grew in their knowledge of the instrument, their tastes for a “high-quality” organ became more refined. Also, as the basic design of organs became more solidified, organ-builders were able to hone in on specific modifications they desired to make.

The design of the Baroque organ is the result of over two thousand years of development. This design developed primarily, for three reasons: a desire for different types of sound production in terms of pitch, range of volume, and timbre, a desire for different types and sizes

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of organs that would fit well in specific ensembles or musical venues, and a desire to make it easier for organists to utilize the performance capabilities of the instrument.

The long story of the organ's development rightly begins with an ancient Alexandrian man by the name of Ctesibius. Employed as a barber's apprentice, Ctesibius became very familiar with large mirrors that pivoted on stands. These stands incorporated counterweights that moved up and down in tubes. The man observed that when a weight fell through a tube, air was pushed out the end of the tube. Ctesibius then held a flute to the end of a tube, let the weight fall, and discovered that this action sounded the flute. Intrigued, the barber then sought to create an instrument out of this mechanism. The first issue to solve was finding a way to sustain the air pressure and thus, the sound.

A solution was found with the use of water. With the knowledge that water always seeks to maintain a certain level, Ctesibius made a bronze cone and turned it upside down in a container of water. A tube was then attached to the inside of the cone to supply air, while a flute was placed at the cone's opening. As soon as air was blown into the cone, the water would work to push back up and force the air out of the cone. This air then moved into the flute and produced sound. Therefore, the sound could be sustained as long as someone blew into the cone. This invention became known as the hydraulus or “water organ.” The instrument fascinated everyone who saw and heard it.

As captivating as this invention was, people soon looked for ways to improve it. The main drawback of the first hydraulus was that it could only produce one pitch. Heron of Alexandria enlarged the blowing system, replaced the single flute with a row of flutes, and fashioned a keyboard to control the supply of air. Now air could be sent through the flutes by pressing the keys. The sound could be immediately stopped by releasing the keys. The row of
flutes was tuned to the musical scale in use and, for the first time, the hydraulids could create melodic music.¹

It may be surprising that one of the first patrons of the organ was the cruel Emperor Nero. He was one of the most skilled musicians of his day and became intrigued with the hydraulids. Nero proposed that slides be added to the bottoms of the flutes so that the sound could be “started” and “stopped.” These slides were then connected to iron keys by strings or levers. Up to this point, it was very difficult to control the sound of the organ. With this brilliant design modification, the organ became easier to control as one played.

The emperor also observed that the instrument was very suitable for accompanying the voice. However, it was far too soft to be included in a large band. The hydraulids would easily be drowned out by the other instruments. Nero desired that the hydraulids would be added to the pantomime orchestra. Therefore, he set out to find a way to increase the air pressure and volume the hydraulids could produce. The emperor funded the construction of many different organs in his attempt to develop a louder sound. However, Nero did not live to see (and hear) the success of his patronage. Although he was obsessed with the organ and its improvement, apparently, it was not important enough to give him the desire to keep living. J.F. Rowbotham explains:

> It is not a little curious that the last recorded act of this tyrant on earth, before his death and overthrow, should neither be a political measure, nor a monstrous crime, nor an unheard-of vice, but a simple and single-minded effort for the advancement of music. We learn that he spent the day before his death “walking about among scores of organs, all made agreeably to his directions, testing, trying, and amending them, and by all means endeavouring to secure their perfection.”

The next morning, Rome was invaded and Nero committed suicide.

Sometime after Nero died in 68 B.C., his organ builders were able to execute his plans and develop a system of pumps which produced a stronger, steadier current of air. This, in turn, created a louder, more powerful organ. The instrument could now be heard clearly in bands.\(^1\)

In continuation of the pursuit of greater volume, organ builders began to connect multiple pipes to each key on the manual. This started with a few pipes per key, but by the tenth century, there were ten pipes for every key. As time went on, this number increased to twenty, thirty, forty, and even fifty pipes. The sound produced by such an assembly was nothing short of thunderous. This loud volume could not be diminished at all.

There is some debate regarding the exact dates, but the use of bellows was introduced to the organ as early as 120 A.D. The idea for this innovation came from a blacksmith's bellows. Blowers would send air into the bellows and then stand on them to force the air into the organ. This became the distinction between the hydraulus and the organ. Specifically, this instrument became known as the pneumatic organ.\(^2\) The hydraulus employed water pressure while the organ used weighted bellows. The need for air in an organ with hundreds of pipes was so great that between twenty and forty bellows and more than twice that many strapping men to blow was necessary. Often there would be enough men to take turns blowing when one group became fatigued. There were also four huge manuals with keys that had to be played with the fists, knees, and feet. This instrument became known as the “organa magna.” The downfall of this organ was that it could not be played softly; it was only capable of producing a tremendous, booming sound. Although impressive in terms of sonic power, this amount of volume did not


facilitate the creation of melodic music. So it can be understood why this organ design did not last long.

In fact, the organa magna was not the only organ in production at the time. Other smaller organs were also being made, especially in England. The first was called the “organa parva” or “little organ.” It was usually carried in processions and used to play interludes. Also, its range was too high to accompany vocal music. This is a prime example of an organ designed for a specific ensemble.

The second was called the Ninfale, or portative organ. This instrument was typically hung from the player's neck. The right hand activated the blowing mechanism while the left hand played the keys.¹ There is also some evidence that Khalif Harun al-Rashid sent a pneumatic organ to Charlemagne in 822 or 826 A.D. This organ was built by an Arabian named Ja'far and is described as having “extraordinarily soft tone.”²

By the end of the tenth century, organs were commonly found in both cathedrals and monasteries. In 951 A.D., the Bishop of Winchester acquired the largest organ in the world for his cathedral. In a poem by Mason, the instrument was described as having four hundred pipes, twenty-six bellows, and was operated by seventy men. It had two manuals with a total of forty keys and each key controlled ten pipes. Each manual was played by a separate monk. The organ was also becoming very popular in Germany, with organs built in Haberstadt and Erfurt.³ So we

²Henry George Famer, The Organ of the Ancients: From Eastern Sources (Hebrew, Syriac and Arabic) (London: W. Reeves, 1931), 140.
see that the tenth century was a time when at least a few organs were designed specifically to fit certain musical venues: cathedrals and monasteries.

When designing an organ specifically to fit inside of a cathedral, several complex factors had to be taken into consideration. The main factors were: acoustics, visual aesthetics, and liturgical requirements. Based on the construction materials used and the architectural design of a cathedral, the acoustics of its interior would have unique characteristics. These characteristics directly influenced where the organ was placed. A location which enabled the organ to benefit most from the natural acoustics of the cathedral was usually chosen. Depending on the cathedral, this might have meant placing the pipes in one of the front corners, on a side wall, in the rear, or even on the second floor. It is also important to realize that the pipes and their corresponding chests can be a considerable distance away from the console. Sadly, some building committees decided to place the pipes of the organ in a separate “organ chamber” outside of the main sanctuary. This usually had a very negative effect on the clarity and fullness of the organ's sound.1

Although the organ is primarily a musical instrument, depending on its size, it can be a prominent visual feature of a cathedral or other venue's interior architecture. The visual aesthetics that an organ contributes to a venue are determined primarily by the design of the case, its respective chests, the arrangement of the pipes, and their respective colors and artistic ornamentation. For instance, pipes could be made of gold, silver, clay, tin, wood, ivory, ebony, or even alabaster. The latter materials were rare, but the point is that the materials used directly

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influenced the overall appearance of an organ and, therefore, whether or not it would fit the design of a venue.¹

As far as liturgical requirements go, the organ was typically used to perform music in the Catholic mass or protestant liturgy. It was often used to accompany the church's choir. For this reason, organs were usually placed next to the choir or over the choir stalls. As organs became progressively larger, organ-builders began constructing them on the choir-screen. Arthur Hill highly recommends this, saying:

For a large church we strongly advise the placing of the organ on the quire-screen. There are many advantages in this position. The instrument is free from any obstacle which would be detrimental to its acoustical effect, while it has the opportunity of displaying its case, which, in this position, should certainly be a good one. The choir is, moreover, able to have the full advantage of its accompaniment, which is not the case when the west-end site is chosen.²

Considering Hill's statement, each individual organ would have to be specially designed to fit the unique interior dimensions of a given cathedral. If the cathedral was large and had a large quire-screen, there should be plenty of room to build a grand, highly-decorated organ. On the other hand, if the cathedral was only large enough to hold two hundred people, a smaller organ would have to be designed to fit the available space.

Up until the conclusion of the eleventh century, each note of the organ was controlled by a separate lever. The hydraulus had a keyboard that could be played with the fingers, but the organ did not.³ Then, in the late 1000s, an organ was constructed at Magdeburg, in Saxony. This instrument included a keyboard that spanned two octaves. However, the keys were not like

¹Hill, Arthur George. The Organ-cases and Organs of the Middle Ages and Renaissance. (London: D. Bogue, 1883).
those of more modern organs. The keys of this medieval organ were several inches wide and rounded at the end. Despite its deficiency in terms of fitting the average human hand, and thus, being easier to play, the organ at Magdeburg was still an improvement in pitch range.

It was also during this time that the stops of the organ were reinvented. Again, the hydraulus possessed stops, but the earliest organs did not. Before this development, the volume of the organ was almost completely uncontrollable. Because of this, in the thirteenth century, Catholic priests in Greece and Rome actually banned organ playing in the church. With the addition of stops, however, the player could choose between several different groups of pipes of various lengths, thus creating different harmonies, timbres, and volumes. Also, by the eleventh century, the hydraulus had become almost completely extinct and was replaced by the organ.

By the sixteenth century, the organ had been greatly refined. The size of the keys had been decreased in two stages: first, so that one hand could reach up to five notes, then again so it could reach an octave. A new type of pipe was also added to the instrument's design. These updated pipes emitted sound through the use of a thin sliver of metal or wood, not with a whistle. They became known as reeds and produced sounds similar to wind instruments such as the oboe and trumpet.

New stops were also added that caused a wide variety of events to occur. Not only were there stops that rang small bells, but some stops even caused birds to sing and roosters to crow. Others made figures of men pop up in the windows of the organ case. Some of the stops were
used to set a great variety of case decorations in motion, such as: giants’ heads, gargoyle-like figures, and priests with monkey faces.¹

A great tragedy in the development of the organ occurred in England in the second half of the seventeenth century. Leading up to this time, there had been arguments in the church concerning the use of the organ to accompany and “guide” congregational singing. Many held that the congregation should be able to sing without any aid from instruments. Others observed that many in the congregation were considerably lacking in musical skill, thus contributing very unpleasant sounds to the singing. Then, following the death of Charles I of England, the British government decided that the cathedral service should be ended altogether. Along with it, Parliament declared that, “all organs and the frames wherein they stood should be taken away and defaced and none hereafter set up in their place.” The cathedrals of England were now at the mercy of Oliver Cromwell and his army. Only a few organs from this period survived the destruction that ensued.

When Charles II was restored to the throne in 1660, work quickly began to restore the cathedral service. By this point, there were only four organ builders left. Forced to work in the carpentry business, they had unfortunately become very rusty at constructing organs. Therefore, foreign organ builders were summoned from across the continent. Responding to this call, Renatus Harris, an Englishman from Paris, and “Father” Smith, of Germany, traveled to Britain. “Father” Smith then built the organ in St. Paul’s Cathedral. These men were closely followed by

many other organ builders. This influx of builders led to a substantial number of advancements
in organ design, most of which were made by the British.¹

One such Englishman invented concussion bellows, which keep the air flow consistent
when the player changes volume suddenly. Without these new bellows, the organ would briefly
go out of tune whenever a sudden change took place. A sudden change in hand position on a
manual is hard to execute with a light touch. Because of this, organ music either had to be
relatively slow, or composers would just have to accept part of their piece sounding pitchy. This
meant that lack of concussion bellows in an organ was seen as a big problem. Without them,
composers basically had two choices: write easier, more simple music, or be content with their
piece only being performed when a highly-skilled organist was in town. Even then, somewhat
questionable pitch quality was almost unavoidable.

Another design modification came in the form of pedals. Organ-builders recognized the
importance of designing organs with pedals as early as the fourteenth century. The original
purpose of a pedal was to allow the organist to sustain a drone or pedal point of a fugue with his
foot. This freed both of his hands to play the subject, episodes, and other ornamented sections of
fugues with excellence. Before the addition of the pedal, performing such polyphonic works on
an organ would not sound nearly as impressive.

For example, the low bass notes included in much polyphonic organ music are incredibly
important to create a full, powerful sound. Some organ-designers considered making the
manuals extend farther to left to cover the lower register. However, this modification would be
almost pointless by itself. If an organist could not afford to hold a bass note with his left hand,

the notes to be played above would sound unsupported. Or, depending on the rate of a piece's harmonic progression, reaching far to the left on a wider manual could be incredibly difficult. But with some kind of sustain pedal available, the organist could simply hold a bass note with his foot. This allowed him to devote the rest of his physical, mental, and emotional energy to performing the rest of the notes. Pedal claviers and pedal organs were constructed in Beeksow in 1418. Actually, Pretorius claimed that organs were constructed with pedals in Halberstadt as early as 1359. T. Casson describes the value of the pedal this way:

"The old builders were much cleverer fellows than their modern successors seem to think them. Mr. Abdy Williams considers that in 1470 a German organ without pedals would have been considered more remarkable than one furnished with them. Be this as it may, there can be no doubt but that the pedals provided means for extrication from what I must call the dilemma of organ-playing, besides, perhaps, providing convenient distribution over the physical powers of the performer, of the excessive labour is even yet distributed in carillon playing."

So it is clear that the pedal was a crucial addition to the organ in terms of making performances less work and more musically excellent. An Englishman designed composition pedals, enabling the organist to change stops with his feet. More and more pedals continued to be added to the organ throughout the next several centuries.

One of these additions was the development of the swell pedal, which eventually led to the swell organ. It was created by Jordan in 1712. He simply placed some of the organ's pipes in a box that could be opened and shut by a foot pedal. This produced a “swelling” or diminishing in the volume of the pipes. The invention of the organ's swell pedal was both an

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3No last name is given for Jordan in *Organs and Organ-building*.
advance in the organ's capability to produce a variety of volumes and, simultaneously, an
advance in the ease with which organists could achieve outstanding performances.

The organ continued to reach new heights in performance capabilities throughout the
eighteenth century. Any paper on the history of the Baroque organ would be terribly incomplete
if it did not mention the great organist, composer, and church musician, Johann Sebastian Bach.
Bach played a variety of different organs during his lifetime. That being said, he never explicitly
stated what his preferred characteristics were for an organ. However, some general conclusions
can be made based on the organs Bach played, how he composed for them, and a few organ-
reports he wrote. One such report, from a rebuilding project at Muhlhausen in 1708, lists a few
elements Bach considered necessary: good bass tone (specifically deep pedal stops), some
particular stops in addition to the principal chorus (Fagotto 16', Viola da gamba 8', Nasat, a row
of bells 4'), a coupler between the main manual and Brustwerk, and a well-regulated Tremulant,
which most likely affected all three manuals.¹

These preferences are all related primarily to the particular sounds the organ could
produce and the ease with which it could be played. This shows what was most important to J.
S. Bach. Indeed, the variety and quality of sounds and the capability to effectively utilize them
was very important to any professional organist. However, leading up to the Baroque era, the
design of the organ was modified for more than one reason. The organ’s design was modified
for three reasons: a desire for different types of sound production, a desire for different types and

sizes of organs, and a desire to make it easier for organists to utilize the instrument's full potential. These were the reasons that led to the creation of the magnificent Baroque organ.

Bibliography


From Bows to Sound Chests: Tracing the Ancestry of the Violin

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Have you ever wondered why we refer to the stringed instruments as a family? The violin (Figure 1) is part of the string family that consists of the violin, viola, cello, and bass. In addition to having a family, the violin has an extensive ancestry. Many people have researched the ancestry of the violin; however, only a few primary sources and pieces of solid evidence exist to help trace the ancestry of the violin. As a result, the ancestry of the violin is not certain and several theories have attempted to suggest the true ancestry of the violin. This paper will present three theories with arguments for and against each one.

The first school of thought traces the ancestry of the violin through the stringed instruments that are strictly accompanied by a bow. This theory claims that the bow produces the violin’s unique tone. Without the bow, producing this tone would be impossible. Therefore, this
theory asserts that the bow is of high importance and is the most crucial criterion in tracing the ancestors of the violin.¹ Herron-Allen is an advocate for this theory and feels very strongly about it. He writes, “It has been justly remarked that the history of the violin is in point of fact the history of the bow, and this is indeed the case for without the bow the fiddle cannot exist.”² This theory proposes that the first ancestor of the violin is the Ravanastron (Figure 2), followed by the rebab, the rebec, and finally the viol, which led to the violin. All of these instruments are considered to be stringed instruments accompanied by a bow.

![Figure 2. Ravanastron.](https://upload.wikimedia.org/wikipedia/commons/a/aa/Ravanastron_illustration.jpg)

The Ravanastron (Figure 2) is chosen to be the first ancestor in this theory because it has the simplest structural form of all the bow-instruments traced throughout history. According to Sonnerat, Ravana who was the King of Ceylon at the time invented the Ravanastron. Hence the word “Ravanastron” is capitalized since it was named after Ravana. The Ravanastron was primarily found to be in use among the lower orders of people in isolated and mountainous districts. Its structure consists of a cylindrical piece of sycamore wood that is hollowed out from one end to the other, having the appearance of a tin can. Punctured through this cylindrical piece is a wooden neck. At one end of the neck is the cylindrical wooden piece and at the other end are

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two pegs, to which two strings are wound to and attached at the opposite end on the other side of the cylindrical piece.¹ The structural features that the Ravanastron body has in common with the violin are the wooden pegs and the concept of the strings. The bow that accompanies the Ravanastron has a very rough form as well. It consists of a cane, possibly even without any hair attached to it.² Other than these two body features and the bow, the Ravanastron is quite different from the violin. However, since this was the simplest form of the bow-instruments, it is considered to be the first ancestor of the violin.

The rebab (or rabab) is the second bow-instrument in the ancestral line. There are two main types of rebabs. The first (Figure 4) has the structural body of a pear-shaped lute with a short neck. The second type (Figure 3) has a long neck with a circular body, quadrangular body, or a bowl body made out of carved wood, gourd, or coconut shell.

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² Ibid., 38.
Once again the body of this instrument does not have much in common with the violin. However, according to this theory, the rebab contributed the structural feature of the short neck and open string tuning to the violin.¹

According to this same theory, the next instrument in the ancestral line is the rebec (Figure 5). The rebec is also referred to as the ribible, rebelle, or rubebe.² According to Hoffman, the rebec was a result of combining the structural elements of both the rebab and lira. Its body was that of the lira, except for the fact that the wood of the body was thinner than the lira, especially the soundboard on top. It was also carved into a more slender outline, which resembled the rebab. It had the raised neck of the lira, three or more strings that were tuned in perfect fifths, a pegbox with lateral pegs, accompanied with a short arched bow.

Figure 5. Rebec.
http://www.mideast.com/rebr.jpg

In illustrations, it is sometimes drawn with frets, but sometimes without frets. The structural features that contributed to the modern violin were the arched bridge, the sickle shaped pegbox, the first primitive scroll, lateral pegs, the lack of frets, the overhand bow hold, and its three strings tuned to the exact pitches of the modern violin. Before the rebec, all bridges were flat, but the rebec was the first instrument to introduce the arched bridge.\(^1\) According to Hoffman, “the scroll was used almost exclusively on instruments of the violin family. Since the weight of the scroll or head affects both the power and timbre of an instrument, it is not purely an ornamental feature.”\(^2\) Therefore, the scroll truly contributed to the tone of the violin.

According to the bow theory, the viol is the last instrument in the ancestral line before the violin. According to Sandys and Forster, the viol was an instrument that went through a considerable amount of structural development. The oldest form of the viol had a pear-shape structure (Figure 6) that morphed into a more oval shape (Figure 8). Later, inward curvatures (Figure 7) were added in the middle of the body to make bowing easier. Throughout several centuries, the viol became very similar to the violin in form, except that the viol was of heavier make and had frets to guide the fingers.

\(^2\) Ibid., 224.
It is interesting to note that the second theory, the “sound-chest theory,” completely disregards the viol to be in the ancestry of the violin. Straeten writes, “It must be clearly understood that the viols were not the parents of the violin family, but they were cousins who came into existence about the same time, both being descendants of the guitar-fiddle”1 The second theory views the ancestry of the violin quite differently. It not only rejects the viol to be a part of the ancestry of the violin, but other instruments as well.

The second theory takes a drastically different approach to the ancestry of the violin in comparison with the first theory. Whereas the first theory laid its foundation for tracing the ancestry of the violin solely on the history of the bow, the second theory asserts that the bow should not be taken into consideration at all. This theory argues that the structure of the violin itself is more important than the bow. The characteristic that sets the violin apart from any other bowed instruments is its tone. This special tone was not produced through the creation of the bow, but rather through the structural features of the violin’s body (sound-chest). The structural features of the sound-chest are a back, and a soundboard either flat or delicately arched (these are the two larger pieces that are parallel to each other), joined by the sides or ribs of equal width, and sound holes placed on each side of the strings.2 Therefore, this theory, which will be referred

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to as the “sound-chest theory,” includes instruments in the ancestry of the violin that possess structural characteristics of the violin’s sound-chest.

There are several instruments that do possess this particular sound-chest and are included in the ancestry of the violin. The ancestral line starts with the Greek cithera, followed by the Roman cithara, then the rotta (which was the Roman cithara in its transition stage), followed by the guitar fiddle, and finally to the Italian violin itself. Most genealogical tables of the violin actually start the genealogy with the Egyptian kithera as the first ancestor, followed by the Assyrian chetarah or ketharah, and then followed by the Greek cithera. Even though the Egyptian kithera is technically the first ancestor in the genealogical table, the Greek cithera takes importance and precedence over the Egyptian kithera. It is considered to be the first ancestor because Greece is where the cithera reached its greatest development.¹

Looking at the Greek cithera (Figure 9), it appears to have nothing in common with the violin. However, its sound-chest is one that consists of a back and soundboard connected by sides (or ribs) of equal width, which are structural features of the violin.²

2 Ibid., 76.
The general shape consists of a square base, with two arms that go up on each side, and a crossbar (yoke) that rests on top of the two arms, to which the strings are attached. As mentioned before, the Greek cithera went through many stages of development.

According to Hoffman, the earliest known form of the Greek cithera dates back to the eighth century B.C. The corners of its base were rounded off (Figure 10), rather than square and only had three to four strings. The strings were attached to the crossbar with thongs of greased hide rather than tuning rods. The back of the cithera actually had the same structural feature as the violin, arching a little in the middle of the backboard rather than being flat.

During the seventh century B.C., the number of strings increased to a set of seven. The base also took on square corners rather than rounded corners. The cithera of the seventh century not only developed some structural features, but also added several new features as well that are reflected in the violin today. These structural features included the tailpiece and bridge. The tailpiece was a box tailpiece rather than a flat, curved tailpiece that the violin bears. The bridge
was a low bridge rather than being a high bridge as well. Even though these features slightly differ from those of the violin, they still incorporate the same ideas and concepts that the violin does.

During the fifth century B.C., the demand for more technical skill and musical virtuosity had increased. As a result, more strings were added to the cithera, totaling up to twelve strings, to increase the range and possibilities of notation. Guitars and lutes at this time had necks that made the task of producing many notes and chromaticism very possible. A neck could have easily been added to the cithera, but the Greeks did not accept necked instruments because necked instruments were of low status in the eyes of the Greeks. Hoffman asserts that the body of the violin could have been easily developed at this point in history, but because of the Greeks’ view of necked instruments, they continued to alter the neckless cithera to meet their needs. In the fifth century B.C. sound holes were added to the cithera. Although the sound holes were circular, differentiating from the sound holes of the modern violin, the idea of the sound hole remained fundamental in instruments leading up to the violin. Even though the cithera did not develop into the violin, it still contributed the structural features of the back, the tailpiece, the bridge, and the presence of the sound holes. Just as the violin was considered to be an instrument of the professional and elite world, so was the Greek cithera. The cithera was greatly respected in Greek society. Because of all of its developments, it was an elaborate instrument that was favored by professionals rather than the just the common people.¹

The next string instrument in the lineage of the violin according to the sound-chest theory is the Roman cithera. The Roman cithera is very similar to the Greek cithera, considering that the

Roman cithera is the Greek cithera, with a few structural changes. It was simply called a “Roman” cithera because of its location in Rome. The Romans were more attracted to the loud and powerful tones of the wind instruments rather than the soft and gentle tones of the string instruments. As a result, their focus was on the wind instruments and they were content with the Greek style and development of the cithera. However, the Roman cithera did have the structural feature advancement of the tuning rods, which is a structural feature found in the violin. As Hoffman states, “While the violin does not use tuning rods per se, a rod inserted into the wood instead of next to it was the first mobile tuning peg.”¹

Following after the Greek and Roman cithera is the rota (Figure 11). “Rotta” was the name that was designated to the Roman cithera in its transition stage during the Middle Ages.

Its name is written and mentioned in many different ways, such as rotte, hrotta, hrota, rotteh, rote, and riote.\(^1\) There is minimal solid evidence for the existence of the rotta, or even for the fact that it was a transition instrument. Schlesinger mentions that there is little evidence to guide one through this particular transition period of the rotta besides some allusions in the writings of the fathers, some coins, and miniatures in MMS.\(^2\) However, based off of these sources, this theory has concluded that the rotta developed several key structural features of the violin. The first feature was that the arms were removed from the sound-chest and the sound-chest took on a rectangular body shape rather than a square one.\(^3\) It was constructed in such a way that the whole length of the strings would lie over the resonant body, rather than just part of the sound-chest.\(^4\) The second feature was a neck and a fingerboard attached to the sound-chest that in some cases was fretted with three to four strings. The rotta was very close to the structure of the violin, however it was still plucked, and didn’t have the use of a bow.

The guitar-fiddle (Figure 12), according to this theory is the instrument that came after the rotta, and paved the path for the creation of the viol and violin.

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\(^3\) Ibid., 223.
\(^4\) Ibid., 114.
The guitar-fiddle possesses a grand history itself in light of the fact that it was in development from the time of Ancient Egypt, to the time of the Middle Ages. As a result, the guitar-fiddle took on different forms and structural features in various countries throughout the centuries. There was the Egyptian fiddle-guitar (Figure 13) that had an extremely long neck, the German fiddle-guitar with a shorter neck and arched bridge, the Spanish guitar-fiddle, and the guitar-fiddle from England and Italy.

![Figure 13. Egyptian guitar-fiddle.](https://upload.wikimedia.org/wikipedia/commons/3/39/Britannica_Guitar_Egypt.jpg)

However, throughout all of the centuries and different structural transitions of the guitar-fiddle, there were a few structural characteristics that remained foundational. Schlesinger describes the foundational structural features of the guitar-fiddle in the following: “The shape of the sound-chest (shallow, with ribs); incurvations like those of the modern guitar, without corner blocks; a fingerboard, and a separate neck added to the body.”¹ Many of these features already existed in previous instruments except for the incurvations, which was the new structural feature

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that contributed to the modern violin. This concludes the stringed instruments in the line of the violin according to the sound-chest theory.

So far, two theories concerning the ancestry of the violin have been presented, each being quite different from the other. Advocates for each of these theories have very strong arguments for the theory they support, but they also have very strong arguments against the opposing theory as well. The arguments for the bow theory and against the sound-chest theory will be presented first.

Most importantly, the bow theory argues that without the bow, the violin could not exist and it would not be able to produce its unique tone. Menuhin states, “the distinguishing feature and crowning beauty of its [the bow’s] tonal capabilities has always resided – and will doubtless so continue to reside – in its unmatched cantilena, made possible only by the skillful wielding of the bow.”¹ Heron-Allen states that without the bow, the violin would “cease to express every human emotion,” would “cease to produce the continuous flow of melody,” and would “become as the sounding guitar and tinkling banjo.”² He also mentions that it is only because of the bow that instruments of the violin family are capable of producing a continuous flow of melody and human-like imitations.³

A second argument for the bow theory would be the craftsmanship of Andreas Amati. Amati is widely known to be one of the first violinmakers. However, Amati was originally a maker of viols and rebecs and did not start making violins until later on in his career.⁴ The fact

³ Ibid., 86.
⁴ Ibid., 73.
that he was first a maker of rebecs and viols and later a maker of violins, fits the bow theory perfectly. As mentioned before, the two instruments that preceded the violin in the bow theory were the rebec and viol.

A third argument or defense could be made for the validity of the bow theory including the rebab and rebecc and other pear or club-shaped (long necks, with small circular or square bodies at one end) instruments in the ancestry of the violin. An argument could be made that instruments that had the characteristics of the rebab and rebecc were popular in Europe. According to Hoffman, “Western Europeans preferred the slender, club-shaped instruments.”

Concerning the beliefs and arguments of the sound-chest theory, they are almost the complete opposite of the bow theory. First and foremost the sound-chest theory believes that the bow should not be taken into consideration at all. The sound-chest theory believes that the unique tone of the violin comes from the structural features of the sound-chest rather than the bow. This theory argues that there have been other stringed instruments accompanied by a bow throughout history, but none of them have ever been able to attain or exceed the tone quality of the violin simply because they do not possess the unique sound-chest of the violin. The sound-chest theory asserts that the structure of the body, or the sound-chest is more important than the bow, and therefore should be the means to tracing the ancestry of the violin.

The bow theory responds to this particular train of thought with strong disagreement. The bow theory believes that certain sound-chest instruments, such as the cithera, should not be included in the ancestry of the violin at all. Menuhin says, “The shape, construction, and

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technique of the kithara differ so much from the various attributes of the violin that any attempt
to relate the two instruments must be classed with the kind of pseudo-philology which derives
the word virgin from *vir* (Latin) and *gin* (Old English) with the resulting connotation of man-
trap.”¹ The sound-chest theory would respond by saying that it is the sound-chest components (a
back, and a soundboard either flat or delicately arched, joined by sides or ribs of equal width, and
sound holes placed on each side of the strings) that are truly important, not the technique as to
how it was played, or if it was accompanied by a bow or not.

Another strong argument for the sound-chest theory is the fact that the violin and its
ancestors that are included in the sound-chest theory’s particular lineage have all been
considered to be instruments of prestige. As mentioned before, the Greek cithera was used by
professional players and was considered to be an instrument of prestige like the violin. The
stringed instruments in the bow theory’s lineage, however, are not considered to be instruments
of prestige. Hoffman specifically mentions that the Rebab was used among the lower classes.²

The last argument the sound-chest theory presents against the bow-theory is the
absurdness of including the viol in the ancestry of the violin. The sound-chest theory asserts that
the viol should not be included in the ancestry of the violin at all. Hoffman states, “contrary to
modern misconception, most organologists (including Straeten and Sachs) agree that the viols
and violins were two totally separate branches of the evolutionary tree; one never led to the
development of the other.”³ Straeten also argues that the early viol form evolved from the guitar-

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³ Ibid., 225.
fiddle.¹ The violin evolved from the guitar-fiddle as well. Therefore, Straeten argues that the viol was not the father of the violin, but was rather a cousin who came into existence around the same time.²

These two theories make their own valid points and solid arguments for the “correct” ancestral line of the violin. However, I am not convinced that either of these two theories proposed the correct lineage of the violin or the correct criteria to trace the ancestry of the violin. Through much reading and research, I have come to the conclusion that there is yet another theory, one that is a convergence of the bow and sound-chest theory. I propose that different components of various bowed and stringed instruments preceding the sixteenth century were combined to produce the violin. Throughout my research I became convinced that one cannot trace the ancestry of the violin solely through bowed instruments or solely through sound-chest instruments, but rather, one should trace the ancestry through instruments that possess both of these characteristics. Both the bow and the sound-chest were instrumental in the creation of the violin.

Moving forward, three theories have been presented. As you side with a particular theory, you also side with a particular lineage of the violin as well. All three theories present lineages that are drastically different. Just as you would want to trace your own family’s ancestry correctly, it is important to trace the ancestry of the violin correctly as well. It is important to know what makes the violin the violin. Knowing the true ancestors of the violin will give credit

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² Ibid., 27.
to whom credit is due and increase one’s appreciation for the instruments that had an impact on its birth.

Bibliography


Signals to Solos

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Society always draws towards the new and original. Stores put up signs with the word “new” in bold letters in order to sell a product. Popular culture producers constantly search for “the next big thing.” Human curiosity and the desire to better ourselves launched every major innovation and discovery since the beginning of time. Integrating computers and technology into music led to the creation of entirely new musical genres such as electronic dance music. This is especially true in the realm of music. For example, the ancestors of brass instruments and their modern counterparts would hardly be recognized as related if they were displayed side by side. However, if several of the intermediate developments were placed between the extremes, the relationship would be more apparent. The mechanical improvements and social function of brass instruments ultimately brought a new regality to the orchestra.

Today, when asked what a brass instrument is, an educated person will probably answer by naming one or more of the most common modern instruments: trumpet, tuba, trombone, or French horn. However, this answer would only be correct in the context of the last one hundred years. As a matter of fact, even the term “brass instrument” isn’t relevant until the Bronze Age. For the purpose of this report, the definition that will be applied is: a musical instrument that is sounded by the air passing through a person’s vibrating lips through a length of tubing. The reason this definition is rather broad is because the majority of history consists of many variations and types of similar instruments that can be categorized under the same blanket definition. For accuracy and clarity, I will use the term “lip-energized instruments” to refer to
some of the older forms of brass. Looking back at primitive forms of brass, it is important to keep this understanding in mind.

The earliest forms of brass instruments were found in nature. There are accounts and discoveries of conch shells, animal tusks or horns, or wood being used as these lip-energized instruments. One of the oldest accounts that researchers have found in relation to lip-energized instruments is in the narrative of the Sumerian hero Gilgamesh. In the story it describes Gilgamesh as making the instrument from a hollow tree branch with another piece, with a larger bore, attached at the end. 1 Ancient writings describing early brass are also found in the bible. In the familiar biblical story of Joshua and the battle of Jericho, priests are commanded to blow trumpets after marching around Jericho’s walls. Both of these examples involved lip-energized instruments constructed of non-metal materials. Gilgamesh used wood, and the trumpets that God mentions in Joshua were most likely shofars, which were usually hollowed rams’ horns. While there have been many advancements in the technology of lip-energized instruments, many primitive designs continue to be used. An early example that has survived is the Australian Aborigine didgeridoo. The didgeridoo has a very long tube with an opening that is rather wide. As a result, there are only a couple of pitches that can be played on each instrument, usually a high pitch and a low pitch. This is a result of the harmonic series.

The harmonic series is one of the most fundamental concepts that accompanies the study of brass instruments. There are many mathematical concepts that must be understood to fully grasp the entirety of how the harmonic series works, but a basic knowledge is all that is required to be useful for this report. Start with a cylindrical tube that is hollow and open on both ends. When a person puts this tube up to his or her lips, he or she effectively seals one end. Now, when

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the player vibrates his or her lips, a column of air is created. When passing through the cylinder, air vibrates in waves. The oscillation of the vibrations is known as the frequency. The lower the frequency, the lower the pitch that is heard from the tube. The lowest pitch that can be produced from a certain length of tubing is known as the fundamental pitch. This fundamental pitch is primarily based on the length of tubing and on the shape of the tube, either cylindrical or conical. Each tube can theoretically produce more than just the fundamental note (theoretically because there are several factors that go into producing sound other than simply being a tube). The other notes are achieved by altering the air stream so that the waves oscillate in a different manner. The physics, ratios, and equations necessary to completely explain this are much too complicated to be worth explaining here. Essentially, with each length of tubing, there are several notes that can be sounded above the fundamental pitch by set intervals. The set of notes sounded by a certain length of tubing is known as the harmonic series. The intervals immediately above the fundamental pitch are much wider than the intervals that are higher in the series. As a result, many chromatic notes are left out of the series. This was one of the reasons that spurred the improvements made to brass instruments.

Many primitive instruments have been found in archeology, or are still in use today. As stated before, most of the first lip-energized instruments were made of non-metal materials. The beginning of metal instruments began in the Bronze Age. The Bronze Age began in the Fertile Crescent. It was here that people started to mix copper and tin to create a hard alloy, which was primarily used for armor and weapons. This alloy was the material from which the first trumpets were made. As is true today, many technological advances are spread through trade and

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communication. When those living in the Fertile Crescent traded with the Egyptians, the Egyptians received some of the bronze trumpets. As a result, the use of metal for creating instruments spread farther. Archeologists found evidence for this in 1922 with the discovery of Egyptian King Tutankhamen’s tomb. In his tomb, there were two primitive bronze and silver trumpets.

The Egyptians also developed one of the first mouthpieces. While most instruments at this time were simply tubes with an opening, the Egyptians soldered a metal ring onto the opening of the tube. This added much more comfort to the playing of these instruments. The mouthpiece is a crucial part to the development of brass. The shape of the mouthpiece greatly affects the tone of the instrument as well as the intonation and quality of the notes in and the harmonic series of the instrument. As stated above, a lot of the early instruments were just tubes into which the players would buzz.

The mouthpieces were developed to change the harmonic series that were accessible to the instrument. We still see this in modern times. The shape, width and depth, of a mouthpiece contribute to where in the harmonic series the instrument produces the best sound. For example, because of the French horn’s small mouthpiece, paired with the long length of its tubing, the upper tessitura of the harmonic series is more natural.

One of the earliest mechanical developments in brass was the boring of the instruments.\(^1\) The Romans experimented with both a cylindrical bore and a conical bore. The difference in bore shape is one of the distinguishing factors of brass today. The trumpet and trombone have cylindrical bores, whereas the horn has a conical bore. The shape of the bore highlights the tonal color differences of the harmonics. Innovation in the manufacturing of bore shapes focused the

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\(^1\) G. B. Lane *The Trombone in the Middle Ages and the Renaissance* (Bloomington: Indiana University Press, 1982), 10.
brilliance of the brass instruments on a certain range. While the brass brilliance already existed, this development aided the progression further. Proof is found in the fact that the shape differentiation began a few hundred years before Christ, yet it continues to be a method employed today.

The Romans were also some of the first people to make use of tube bending. In brass today, several curves or bends are noticeable. The practice of metal bending was crucial to the development of the modern brass. With the knowledge that a longer tube creates a lower fundamental pitch, instruments of various lengths were constantly being used. Bronze was typically the metal of choice of the Romans. The heavy metals led to a few problems with the straight design. The characteristic bell flare at the end of the instruments caused much of the weight to be farther from the players’ faces. The larger instruments were much harder to hold and to move around. As a solution, the Romans decided to bend the instruments. Different regions used different techniques at different times, but the result remained the same. After the fall of the Roman Empire, this technique was lost on Europe until the fourteenth century.¹

Trumpeters used instruments of varying lengths, some up to six feet long. The need for a more portable, convenient instrument was greatly desired. The result was the invention of the folded trumpet. The folded trumpet had a U-shape, which made the instrument much more portable and less cumbersome. In order to create this instrument, metalworkers would fill metal tubes with materials that had lower melting points than the material used to make the instrument. The metalworker would then hammer out the tube into the shape, or bend that he desired. The whole thing would then be heated until the filling was melted enough to be taken out. The making of a U-shaped instrument would leave the bell facing backwards. However, the same

¹ David Guion A History of the Trombone (Plymouth: Scarecrow Press, 2010), 15.
process could be duplicated to make a second curved tube. The second tube would be connected to the first, creating an S-shaped instrument, and the bell would face forward again.

Today, we are familiar with the use of valves, keys, and slides. These technologies allow modern players to sound any one of the twelve diatonic notes in several octaves. However, these are only the modern answers to a long-standing problem. This problem is the filling of the gaps in the overtone series. The role of the natural trumpet at this point is primarily as a signaling instrument. For this purpose, the absence of the other tones is not a hindrance. The problem is exploited when multiple instruments try to play with one another, or when one plays in a private setting for entertainment. Without the ability to fill the gaps in the series, ensembles are not able to play in tune and are extremely limited harmonically. The inability to play the missing notes also prevents an individual from playing any sort of melody, which is more obvious.

Because this problem was so apparent, there were many attempts to solve it. There are three overarching ways that this problem was addressed. The first involves the lengthening of the tubing so that the fundamental pitch is altered. Early developers realized rather quickly that lengthening the tubing lowered the fundamental pitch of the instrument. This principle is evident in the use of the modern trombone. However the early trombone was one of the first brass instruments to reach its ultimate form. The trombone’s origins come from the slide trumpet. When first made, slide trumpets had one length of tubing that slid telescopically on another, which typically consisted of the mouthpiece.¹ Players would hold the mouthpiece in place while the rest of the instrument was slid farther from and closer to his or her face. This, coupled with the fact that the design of the slide trumpet required the slide to be extended a much greater distance than that of the modern trombone, severely hindered the agility of the instrument. As a

result, slide trumpets were probably only to play no more than four positions, which still limited the playing. Most basically, the longer the tube, the lower the instrument can play. They decided that one of the best ways to make brass instruments able to play melodic lines would be to vary the length of the tubing. One of the easiest ways of doing this was by adding a slide to the mouthpiece. While the trombone is essentially a descendent of a certain type of trumpet, it is one of the earliest to achieve the modern design.

The second solution makes use of holes that are put in the tubing that make one or more other overtone series usable. The same technique can be applied to transform the instrument into a fingerhole trumpet or horn, which means that there is a particular hole to make each tone. The third approach uses a stop technique where a mute or the player’s hand is inserted into the bell to change the sound that comes from the instrument. These techniques are still used in many cases today. Modern French horn players employ the third method. Before the invention of valves, horn players would exclusively use the hand stopping method. Even today, when the music instructs a French horn player to use a stopping technique, the performer must take into account the change of pitch that occurs by changing the flow of air. The second method is widely used among woodwind instruments as well as the modern trumpet, tuba, and French horn.

The overall mechanical development of brass instruments led to the ability to play brilliant melody lines and fanfares. There were only were a few capabilities of such instruments before the developments began. By the end of the Baroque period, many of the features that define modern instruments had been developed. As a result, these instruments became a useful and colorful member of the orchestra.

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The second factor that contributed to the regality of the orchestra was the change in social function. The social function of brass instruments demanded the need for the mechanical improvements. When brass, or “lip-energized” instruments were first discovered, they were used primarily as signaling instruments. The limited number of notes that could be produced on these early forms severely restricted the use of lip-energized instruments. The signals were typically used for military purposes as well as announcing special events such as university promotions, jury verdicts, or the summons of the upper class to a meal. ¹ The sound was typically a single note that was played only for a short amount of time so that the hearers would know what was happening.

The other highly common use was for hunting, specifically, the hunting horn. The hunting horn has been in use for many centuries. Mainly used in France and England, these horns were a way of communicating with other hunters. The horn was extremely important to the hunting community that Hardouin de Fontaines-Guérin published instructions on its use in the book *Le livre du trésor de vanerie* in 1394.² Fontaines-Guérin explains in his book that there are fourteen distinct signals that can be blown by the hunting horn. These signals convey to the other hunters various situations of the hunt and the events associated with those situations. The signals were similar to that of Morse code in that they typically were determined by sets of long and short notes.

Signals themselves played a large role in the social aspects of brass playing. In the fifteenth century, large walls protected most towns and cities. Two towers were constructed on either side of the main gate, along with several other towers along the wall and sometimes a

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central watchtower. The guards placed in these towers served two main purposes: watch for attackers, and survey the town for any odd smoke. The watchtower guards used trumpets to signal the city of attackers or fire.\(^1\) With the rise of instrumental playing, music would be heard throughout the city during the majority of the day. Warning signals, as a result, could easily be lost in the cacophony of sounds that occurred. Restrictions were placed on the playing of brass instruments in an effort to protect the city. The restrictions, naturally, limited further the variety of players in the city. Due to the occupation, the tower guards became the most advanced players in the area. As time progressed, the role of the tower guards became more ceremonial than functional.\(^2\)

Tower musicians sought ways to play in capacities other than signal callers. The instrumentalists often found extra work playing in weddings and funerals. Many of these men also played in the Lutheran churches. Many musicians were known to play hymns and chorales from the towers. Churches benefited greatly from the addition of the core of skilled brass players.\(^3\) Tower musicians benefited greatly from the invention of the slide trumpet. The addition of the slide allowed for these musicians to play hymns as well as higher parts in the church orchestra.\(^4\)

Through the involvement with nobility, brass instruments have established an air of regality and power. The signals that were transmitted via brass were almost entirely associated with military. The use of trumpets on the battlefield would communicate commands to the troops. Trumpeters have served military functions since biblical times. As a result, this was the

\(^1\) Don Smithers, *The Music and History of the Baroque Trumpet Before 1721* (Syracuse: Syracuse University Press, 1973), 116
\(^2\) Don Smithers, *The Music and History of the Baroque Trumpet Before 1721* (Syracuse: Syracuse University Press, 1973), 119
\(^3\) James Ode *Brass Instruments in Church Services* (Minneapolis: Augsburg Publishing House, 1970), 5.
main association that people had with brass. However, in the mid fourteenth century, the brass began to appear in court performances.¹ This began a long tradition of trumpeters gaining noble status. Brass has been used to announce the arrival of kings and nobility for a while around this point. Bringing these instrumentalists into service of the courts only seems natural. Trumpets and other brass became a symbol of power among the upper class. This pattern continued all the up through the end of the seventeenth century.

The pinnacle of the trumpeters’ status lasted from 1530 to the end of the seventeenth century in France.² During this period, the Grande Écurie was established. This was the name given to a select group of instrumentalists that were employed specifically for the French monarchs. This group was tasked with playing for the king in his private chambers, performing for his chapel, as well as accompanying special events. These musicians also enjoyed the benefit of being exempt from taxes. Because of the length of time that brass musicians served nobility, brass became a symbol for nobility and regality.

All of these developments accumulated in the involvement in the orchestra. When brass was first placed in an orchestral setting, the purpose was merely for effect. In the mid-seventeenth century, Jean Baptiste Lully placed several hunting horns in his pieces.³ At this time, many of the developments that addressed the problem of filling the harmonic series had not been addressed. Naturally, Lully only used trumpets and horns to exemplify splendor and majesty. However, as time progressed, there were many trumpeters who began specializing in the upper range. This was an extremely important factor in the use of the brass in the orchestra. Players who used the upper harmonics were able to play more notes in the scale. With players now

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¹ Timothy McGee Instruments and Their Music in the Middle Ages (Bington: Ashgate, 2009), 383.
playing in the upper harmonics, composers started composing more for the brass. In the Baroque era, J. S. Bach and Friedrich Handel exploited the trumpeters in their virtuosic writings.

The developments of historical brass are vital to the regality of the orchestra. The solutions to the problem that the harmonic series presented enabled brass to play melodic lines beautifully and completely. The association with the kings and nobility of Europe enforced a majestic characteristic of brass playing. Today, many composers take advantage of the brass instruments to present a sound that evokes a sense of pride, strength, and nobility.

Annotated Bibliography


This source discusses a lot of the history of the trumpet and French horn, specifically the valve system. One different thing about this source is that it includes a lot of the social aspects of development, not only the technical.


This source is very helpful for observing the development of the trumpet and the trombone. This book looks at both the natural trumpet and the slide trombone from “medieval to modern.” It also looks at each of said instruments in the orchestral setting.


While much of this source deals with the modern trumpet and its use, there is still included much of the trumpet’s history. The first 150 pages are devoted to the history and development of the trumpet.


This source dissect the development of the trombone from its earliest stages to the modern slide trombone. One of the most interesting and unique sections of the book talks about the decline and revival of the trombone, which is helpful for understanding the overall development of the instrument.

This source discusses just about everything that needs to be known about brass instrument. There are detailed descriptions of the history of the instruments as well as the technical and musical development. Another great feature is the inclusion of how different composers wrote for brass instruments.

This is an excellent source for learning about the development of the trombone. There is a lot that speaks about the trombone origins, as well as the cultural impact of the trombone.

Janetzky and Bruchle have written an excellent book that traces the development of the horn. The book starts with the earliest forms of “horns” in ancient times and follow its development until the modern “French” horn. This source is excellent for finding information on each step of the development process.

This book includes a lot of research that was done on a very little known time in the history of brass instruments, the trumpet and trombone specifically. Lane covers everything about brass from ancient myths to the end of the Renaissance. The book has a couple sections on the use of brass in the courts, as well as the church during this time period, which is very helpful.

This source has a lot of information on the development of instruments specifically in the middle ages. There are several essays that talk about the development of wind, or early brass instruments. This source will be helpful for understanding instrumental developments during this early period.

This source is decent for understanding the very beginning uses of brass in the church. Most of the content discusses post 1800s, however, there is still some information on the earliest incorporation of brass.

This source is a one-volume collection of twenty-three essays. These essays take the reader through the history of the development of the modern orchestra and its parts. This is helpful because several of the essays deal with the role of instruments in the orchestra as it developed.
This book is mainly about the composers who developed the orchestra today. Much of the focus is on the stringed instruments, however, there are some good bits and pieces of information on the first incorporations of brass in the orchestra.

This book has an extensive amount of information on the trumpet before 1721. The author talks about everything from the construction of the baroque trumpet, to the renaissance predecessors, to the working conditions of trumpet players. This source will be very helpful in learning about the trumpets development during the baroque period.

One of the best features of this source is the fact that it goes into detail about the use of the ancient predecessors of the trumpet as well as the trumpet in the non-western world. There is also a lot about the how composers, such as Bach and Handel, used the trumpet in their writings.
The music of the Christian Church has undergone much change since its biblically recorded beginnings. Perhaps one of the more controversial musical changes in the church, both before and shortly after the Reformation, centered on the propriety of intermixing the sacred liturgy and musical instruments. The church’s stance on the use of instruments in sacred music shifted through influences of church leaders, secular culture, and innovative composers. To speak of a shift necessitates a clear understanding of the starting point—unaccompanied vocal only liturgy—and of the end point—instruments serving both a liturgical function and as accompaniment. While the church’s view on worship continues to shift even in the present day, this paper will focus primarily from the beginning of the Christian church through the death of Johann Sebastian Bach in 1750.

As recorded in the Old Testament, Jewish worship included instruments assigned according to one’s ancestral tribe and purpose. For example, shofars (horns) and trumpets remained reserved as instruments for the priestly tribe while harps and lyres seemed to be designated to the Levites as accompaniment for liturgical singing.¹ Other sources also verify the highly inclusive musical nature of the temple services with regard to instruments. Author John Price connects the early musical practices of the church to the Jewish synagogues. According to Price, there seems to be no record of instrumental worship in Jewish worship once the temple in

Jerusalem was destroyed in AD 70. After that, Jews worshiped exclusively in local synagogues that practiced unaccompanied vocal singing. Stylistically, local synagogues moved away from the sacrificial and ceremonial traditions toward a simplistic and spiritual congregational feel. It is out of that experience that the early church modeled its worship. While there is evidence that the temple worship included instruments, early church leaders overall rejected that inclusion. The second-century theologian, Clement of Alexandria, stated, “We employ but one instrument, the peaceful Word alone, neither the old psaltery, nor the tuba, not drum or flute, love of those who arm for the fray.”

The early church fathers developed a rather robust argument against the inclusion of instruments in liturgical worship. James McKinnon, a respected researcher on this topic, said, “The antagonism which the Fathers of the early Church displayed toward instruments has two outstanding characteristics: vehemence and uniformity.” This harsh attitude is rooted in considerations of practicality and doctrine. When the early church faced persecution, the underground nature of its meetings mandated a secrecy and hushed tone not suited for instrumental practices in worship. However, that the most crucial opposition grew out of doctrinal concerns and the topic was frequently discussed. Edmund Bowles, in his *Musical Quarterly* article on “Instrumental Liturgy in the Middle Ages,” notes that the ban on instruments began as a matter of conscience and evolved into concrete church policy by the end of the Middle Ages. Despite Biblical evidence of instruments in the Old Testament, these

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3 Price, *Old Light on New Worship*, 68.
4 Edmund A. Bowles, “Were Musical Instruments Used in the Liturgical Service during the Middle Ages?” *The Galpin Society* 10 (1957): 47
5 Ibid, 70.
church fathers banned instruments on the grounds of three arguments. First, that Old Testament practices were no longer need in the post-Christ’s return maturity of the church. Second, many felt that references to instruments were best interpreted figuratively.\(^1\) Ignatius of Antioch first put forth this view by allegorizing the harmony between Christ and the bishops with the well-tuned strings of a harp.\(^2\) Third, and most convincingly, musical instruments were considered to be closely aligned with pagan and immoral cult practices. Regardless of reasoning, the early church fathers were unanimous in their dismissal of instruments in worship. In AD 367, The Council on Laodicea formally forbade the use of musical instruments in church.\(^3\)

The totalitarian stance on musical instruments in sacred worship began to loosen as the organ increased in use and popularity. The organ has an impressive history, with documentations showing that some early forms of organs were available in Egypt, Rome and Greece well before the birth of Christ. These organs were rather primitive, using a system of hydraulics that involved a water device producing air pressure.\(^4\) Around 670, Pope Vitalianus introduced a Roman Catholic Church in Rome to an organ, resulting in what many consider to be one of the first recorded example of instruments in Christian worship. King Pepin of France received an organ as a gift from Byzantine Emperor Constantine V in the eight century.\(^5\) (As an interesting aside, musicologist Willi Apel argues that western polyphony, which of course dominated much of the early church vocal music, was in fact modeled from early Byzantine organ works. This

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\(^1\) Price, *Old Light on New Worship*, 68.
\(^2\) Ibid, 68.
\(^3\) Ibid, 76.
\(^5\) Price, *Old Light on New Worship*, 79.
also explains the origin of the term *organum.*) While Pepin installed that organ in his court, his son, Charlemagne, had a replica built for the Cathedral of Aix-la-Chapelle.\textsuperscript{2}

Organs began to find a more regular place in churches by the twelfth century. Numerous sources verify an organ in the cathedral of Winchester which required seventy men to operate it and that produced a sound so great that a listener would “cover his ears with his hands.”\textsuperscript{3} From this point onward, there is regular documentation that proves the use of organ for sacred purposes. Presbyterian pastor and Columbia Theological Seminary (SC) Professor John L Girardeau writes, “In spite of opposition, the organ, during the fourteenth and fifteenth centuries, steadily made its way toward universal triumph in the Romish church.”\textsuperscript{4} While organ music set a precedent which will later allow for the entry of other instruments into the sanctuary, it took quite a while to do so. Girardeau states of the Roman Catholic Church, “When the organ was introduced into its worship it encountered strong opposition, and made its way but slowly to general acceptance.”\textsuperscript{5} Organ music became a standard element of Catholic liturgy by the end of the fifteenth century, with one installed in nearly all prominent European church. With the organ securely accepted, the church’s mind was open for the sacred use of other instruments such as harp and violin, though these would not come until much later.\textsuperscript{6}

Through this introduction of organ, church leaders certainly did not remain silent. Even up until the late thirteenth century, theologians such as Thomas Aquinas spoke rather frankly on the dangers of any instrumental use in the church. Aquinas feared that instruments would

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\textsuperscript{1} Willi Apel, “Early History of the Organ,” *Speculum* 23 (1948): 212.
\textsuperscript{2} Weinmann, *History of Church Music*, 195.
\textsuperscript{3} Gotsch, “The Music of Instruments,” 175.
\textsuperscript{4} Price, *Old Light on New Worship*, 82.
\textsuperscript{6} Price, *Old Light on New Worship*, 81.
hearken the church back to Judaism and that Old Testament usage reflected the coarseness and carnality of the Israelites.\(^1\) The Council of Trent (1545-1563) addressed an array of issues on church music, particularly singing, but mentions only organ on the instrumental side—nisting that it should be permitted only when played free from \textit{lascivum aut impurum} (lascivious or impure) elements.\(^2\) This lack of recorded discussion most likely indicates that no other instruments had been introduced.

The Council of Trent came from a new era in religion, the protestant reformation and subsequent Catholic response. This reformation launched with Martin Luther and his theses posted in Wittenberg. Luther is crucial, not just as a theological leader, but also as the center of a new musical movement in the church. It has been said that he lived “with music ringing in his ears.”\(^3\) His commitment to art grounded in biblical truth shaped the churches in the new, reformed movement and in the Catholic response—the Counter-Reformation. However, Luther was not the first, nor was he the only to speak up for reform in the church. The first whisper of reformations came from Oxford scholar and theologian John Wycliffe who vocalized his condemnation of the Catholic church’s practices of indulgences among other theological concerns. In regard to Wycliffe’s musical ideas, he felt that the increasing high-art culture in the church was hindering the words from being heard, diminishing the presentation of the Gospel. After Wycliffe’s death in 1384, the church managed to squash any potential uprising by quickly silencing dissenters.\(^4\) On October 31, 1517, Martin Luther posted ninety-five theses outlining his theological grievances with the Catholic church and its doctrine. This led to his

\(^1\) Ibid, 81-82.
excommunication and the founding of the Protestant church tradition which would separate into followers of Luther, Calvin, and others.

Of the new protestant denominations, the Lutheran church had the richest musical culture. As a musician, Martin Luther held music to be of upmost importance, even writing, “next to the Word of God, the noble art of music is the greatest treasure in this world. It controls our thoughts, minds, hearts, and spirits.”¹ Perhaps Luther’s most direct musical influence can be seen in the German hymn. While there was a strong hymn tradition in German prior to Luther, it had always been kept separate from the liturgy. From the reformation onward, congregational hymns sung in vernacular become the staple of Lutheran churches, replacing the choir sung, Latin-based liturgical mass.² It is in accompanying this endeavor that organs (and eventually other instruments) find a secure place in Lutheran Protestantism.

Unlike many of the other reformation movements, Luther’s primary concerns were matters of doctrine and not of worship practices. Many reformers, but not Luther, developed the “regulative principle of worship.”³ This principle states that only what Scripture commands is acceptable in worship and anything outside of those commands is forbidden.⁴ Luther instead felt that anything not explicitly forbidden in Scripture should be a matter of Christian liberty and therefore allowable.⁵ He also held a very high view of Catholic music and was not afraid to adjust preexisting Roman Catholic music for acceptable use within the protestant church. Stated in the *Formula missae* of 1513, his policy was, “In the meantime we shall try all things, what is

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³ Price, *Old Light on New Worship*, 87.
⁴ Ibid, 16.
⁵ Ibid, 87.
good we shall retain.”¹ As such, Luther had no hesitation to include instruments in the church service.

Many of Martin Luther’s fellow reformers held strong convictions against such relaxed and inclusive views. Andreas Bodenstein of Carlstadt, Ulrich Zwingli, and John Calvin all developed worship practices strictly void of any instruments. Bodenstein (commonly known as Carlstadt) blamed the fall of the Medieval church on increasing prevalence of music, particularly music that demonstrated any level of significant technical skill or a theatrical flair. He unsuccessfully attempted to apply his views to Luther’s church while Luther was away for a length of time.² Carlstadt’s writings greatly influenced Ulrich Zwingli, a leader in the Swiss Reformation. Developing on Carlstadt’s historical and psychological objections, Zwingli was the first of the reformers to draw objections from the Word of God, resulting in the above-mentioned regulative principle of worship. This line of thought restricts instruments from the sacred service because there is no command to use instruments found in the New Testament. Zwingli succinctly states his views in this, “Everything which is added to the true institutions of Christ is an abuse.”³ His sect of the reformation era church, the Great Minister Church, stopped using the organ in 1524.⁴ In fact, Zwingli oversaw the literal destruction of the cathedral organs throughout Zurich, Switzerland. Interestingly, there is some record that Zwingli was a talented instrumentalist; but unlike Luther he did not allow his personal passion for music to inform his views on proper worship.⁵

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¹ Buszin, *Luther on Music*, 12.
² Price, *Old Light on New Worship*, 89.
³ Ibid, 90.
⁴ Ibid, 91.
Perhaps the most “imposing figure of reform,” John Calvin also kept a tight grip on musical worship practices. He completely countered Luther by stating Christian priority to be, “first, of the mode in which God is duly worshiped; and, secondly, of the source from which salvation is to be attained.” His fervent rejection of instruments in Christian worship was based on his interpretation that the Old Testament use of instrument in temple services held no sway once Christ abolished the old covenant. Verging on offensive, he argued that musical instruments were “childish elements” that buried the “light of the Gospel.” As with Zwingli, Calvin did not reject music in private for personal pleasure, barring frivolity and sensuality. But church music had special regulations to avoid comparison with the Roman Catholic music, which allegedly could put one’s soul at risk, and association with dance music, which put one’s morals at risk.

Any discussion of post-reformation church music would be incomplete without an examination of the resulting Catholic counter-reformation. Perhaps the most concrete collection of counter-reformation views comes out of the afore-mentioned Council of Trent, which met intermittently from 1545 to 1563, over twenty-five years after the beginning of the Protestant Reformation. The council’s original purpose was to seek reconciliation with the reformers, but any chance of that had long passed by 1545. Instead, the council prepared to recommend a number of adjustments to Catholic doctrine and practice. As the Renaissance had defined an independence between vocal and instrumental music, the church felt increasing pressure to offer

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1 Ibid, 65
2 Price, *Old Light on New Worship*, 93.
3 Ibid, 93.
5 Ibid, 99.
7 Ibid, 73.
8 Ibid, 74.
clarity into its views on instruments in worship, as the reformers had. The Council made a provision for organ, as described above. As the “symphonic wave of the baroque era” influenced the church, Pope Benedict XIV revisited the church’s liturgical policies. In his Annus qui (1749), the pope takes a balanced approach, acknowledging both the traditional exclusion of instruments and presenting the increasingly prevalent arguments for inclusion. He concludes that “only the abuses should be reproved”—which consisted of any “theatrical or profane musical genres.” More specifically, he only permits organ, stringed instruments and the flute due to their ability to support the natural, human voice. This way, more theatrical (and thus banned) instruments cannot hinder the worshiper’s ability to “be penetrated by the meaning of the words.”

In studying the history of instruments in the church, French Jesuit priest (and composer) Joseph Gelineau draws three basic principles for the post-reformation Catholic churches’ use of instruments in worship. First, “vocal praise alone is essential to Christian worship. Instruments are only accessory.” When used as accompaniment, instruments should serve to support the text. (Of course, the notion that music in its proper place is subservient to the text parallels an increasing trend in secular music and in operas of the baroque era.) When liturgy calls for neither singing nor silence, purely instrumental music needs to contribute to the service by carrying a message, not of sensual pleasure, but pointing to truth as drawn from the Word. Second, “That it may in no way damage the holiness of Christian worship, the playing of instruments has to be free from all connection with idolatrous, profane, or worldly practices.” The third principle, as

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2 Ibid, 154.
3 Ibid, 154.
5 Ibid, 156.
championed by Pope Pius XII particularly, “concerns the technical standard required in the
playing of instruments if they are worthily to serve the sacred chant or action.” It was Pius XII’s
opinion that the traditional church chant’s “power and splendor were increased when the sounds
of the organ and other musical instruments were joined with the voices of the singers.”\footnote{Pius XII. \textit{Musicae Sacrae}. Papal Encyclicals Online. December 25, 1955. Accessed September 28,
2015. http://www.papalencyclicals.net/Pius12/P12MUSIC.HTM}

While Pius XII’s papacy (1939-1958) lies outside the set time range of this paper, his statements serve
well to emphasize that the church’s acceptance of instruments has continued to progress:

Among the musical instruments that have a place in church the organ rightly holds the
principal position, since it is especially fitted for the sacred chants and sacred rites. It
adds a wonderful splendor and a special magnificence to the ceremonies of the Church. It
moves the souls of the faithful by the grandeur and sweetness of its tones. It gives minds
an almost heavenly joy and it lifts them up powerfully to God and to higher things.
Besides the organ, other instruments can be called upon to give great help in attaining the
lofty purpose of sacred music, so long as they play nothing profane nothing clamorous or
strident and nothing at variance with the sacred services or the dignity of the place.
Among these the violin and other musical instruments that use the bow are outstanding
because, when they are played by themselves or with other stringed instruments or with
the organ, they express the joyous and sad sentiments of the soul with an indescribable
power.\footnote{Ibid.}

Without composers, the church lacks any music, instrumental or otherwise. As
composing for instruments became more and more popular, instruments seemed to always find
their way into the church. In turn, this opportunity leads to an increase of composers. One of the
church’s earliest recorded organists, rising to fame worth acknowledging in the late fourteenth
century, was a blind man named Francesco Landini, though he was called “Cieco” on account of
his blindness.\footnote{Weinmann, \textit{History of Church Music}, 197.} Some would consider the true start of notable organ compositions to begin with
the uncle/nephew pair of Andrea (1556-1586) and Giovanni Gabrielli (1585-1612). The
development of secular song and dance tunes in the late fifteenth century greatly influenced the
organ style. A combination of these melodies and polyphony led to a new understanding of
chords and harmonic movement.\textsuperscript{1} Of course, this influence only added fuel to the arsenal of any church leader who felt that instruments of themselves were too worldly for use in church services. As the most prolific seventeenth century organist, Girolamo Frescobaldi (1583-1644) greatly assisted in the development of the fugue. His technical abilities and educational work influenced the next generations of organists.\textsuperscript{2} The next great master of organ, Dietrich Buxtehude (1637-1707) came from Germany. His expansive body of works demonstrated a maturing of organ composition—pedal independence, varied registers, and engaging effects.\textsuperscript{3} Perhaps Buxtehude’s greatest gift to the organ was his profound influence on Johann Sebastian Bach. Bach stands as the “Titan among the Masters of the organ, who incorporates in himself the musical power and feeling of a whole generation.”\textsuperscript{4} His compositions from his postings at Weimar, Cöthen, and Leipzig solidified organ’s place in the church and his settings of church liturgy demonstrates and adeptness of other instruments for such purposes.\textsuperscript{5} Bach’s compositions established the liturgical test for all organ music by remaining appropriate in length and by maintaining the spirit of the liturgical texts. These organ works became staples of liturgy, particularly as processions and recessions.\textsuperscript{6}

It seems that any measurable progress always results in disagreement. Change has never been popular, despite its inevitable nature. Among the desperate cries from decades of stalwart church fathers, a new generation of church leaders began to have open minds about new expressions of worship, namely worship through the playing of instruments. Perhaps not even intentionally, figures such as Pope Vitalianus, Constantine V, Luther, and Pope Benedict XIV

\textsuperscript{1} Nemmers. \textit{Twenty Centuries of Catholic Church Music}, 151.  
\textsuperscript{2} Weinmann, \textit{History of Church Music}, 199.  
\textsuperscript{3} Nemmers. \textit{Twenty Centuries of Catholic Church Music}, 154.  
\textsuperscript{5} Weinmann, \textit{History of Church Music}, 201.  
\textsuperscript{6} Nemmers. \textit{Twenty Centuries of Catholic Church Music}, 155.
each uniquely led the church toward musical inclusion. Many other leaders disagreed and some traditions returned to a culture of instrument exclusion, but change refuses to be isolated. No institution can remain immune to the influence of secular culture. As styles and tastes shifted, the church felt pressure to adjust accordingly while still maintaining some semblance of orthodoxy, with the organ serving as a symbolic instrument of musical beauty and piety. The great composers such as Gabrieli, Frescobaldi, Buxtehude, and finally Bach pushed the boundaries by inspiring all with beautiful compositions and technical finesse. Change always begins and ends with people and people are always molded by the culture around them. Through the influence of church leaders and composers, themselves moved by cultural and religious beauty, the church’s stance shifted to allow instruments in the sacred worship of God.

Bibliography


Coursing with Coils: The Only Orchestral Instrument Harder Than the French Horn

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The natural horn, used in a variety of ways in early history, demanded much more skill, precision, and dedication in some ways than our valved horn today because it required a more accurate ear, more embouchure dexterity, and the encumbrance of having to wrangle the crooks. It was in many ways less developed and therefore hard for the musician to achieve finesse. Thus, it required many practiced skills of the player that are no longer as necessary as they once were. Many horn players today do not have the endurance, control, or diligence needed to perform on a natural horn.¹ This paper will discuss these demands, the history of the horn, its uses and popularity, its comparison to the valved horn, and why it is no longer practical.

The natural horn has an iconic sound which relates to music from the early Greek and Roman hunting calls to the orchestral horn passages of Bach’s, Haydn’s, and Mozart’s symphonies. Before the seventeenth century, it was commonly referred to as the hunting horn and was employed to signal other hunters in a hunting group. The term “hunting horn” is used traditionally to describe the horn up until when it was brought to the court and professional orchestra settings in the middle of the seventeenth century. Through its role in European courts, it slowly gained acceptance in the orchestral world and was employed in a variety of ways in the horn parts of the Baroque composers. Its name then changed once again when valves were added to it, making it no longer a “natural horn,” but just “the horn.”

The earliest hunting horns were simple conch shells or curved animal horns (ox, elephant, or ram).¹ Because of their limited length, only one or two different pitches could generally be sounded on them. The player just needed to learn how to produce one of the possible notes, and then adjust his/her embouchure (the shaping of the lips) to find the second pitch if possible. The player would tighten his lips to the sides for the higher pitch and loosen for the lower pitch. We generally don’t think of these horns as having very much musical capability because their tone and pitch range was completely dependent on natural means. But because of their dependency on the player’s embouchure control, playing these natural horns required not only a lot of lip dexterity but a good ear to hear the correct pitch for which to aim.

Closer to the end of the seventeenth century, the straight horn became popular. It measured anywhere from nine inches to two feet and could be made out of copper or German silver or a combination of both. Clearer notes could be produced on straight horns than on a trumpet because their bells were funnel shaped. But the length of the horns also mattered. “From a very short Horn nothing but a discordant noise can be extracted.” These horns were very short, and in comparison to the great length of tubing in today’s modern horn, it was very hard for some people to learn how to produce a note at all. The method of producing a note on this straight horn, however, was just like how you would with the modern valved horn. The player needed hard lips that were flexible and not chapped, and strong teeth to brace the mouthpiece against. Cameron gives a good description of how to buzz in his book, “The Hunting Horn”: “Almost close the lips, pressing them back against the teeth. Place the mouthpiece firmly against the centre of the almost closed lips and half-blow, half-spit into the mouthpiece, when a clear note should be produced.”

Often used for signaling other hunters during a hunt, these horns produced just one note, so different horn calls had to be created through a mixture of note lengths, frequencies, character, and repetitions. Reading the notation for this music was relatively simple since it didn’t have to indicate where different pitches were located. The horn player just had to learn several symbols

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3 Cameron, “Hunting Horn,” 6-7.
4 Cameron, “Hunting Horn,” 7.
5 Cameron, “Hunting Horn,” 11.
6 Cameron, “Hunting Horn,” 12.
7 Cameron, “Hunting Horn,” 11.
8 Cameron, “Hunting Horn,” 8.
9 Cameron, “Hunting Horn,” 8.
for note length and know where to take breaths. The music also didn’t indicate barred measures since the performer didn’t have to keep time while playing. The horn player could however create a pseudo trill or shake to add variety to his playing by “agitating the Horn with the hand while blowing.”

This straight horn, or hunting horn was a useful instrument for signaling hunting parties in the thirteenth century but later became merely a sign of status in the medieval courts rather than of practical use. First employed in hunts in France and Britain (and Germany soon after) during deer hunts, wars, or chases, the hunting horns called the hunters together in the morning, to the slaughtering of their kill, and back home once the hunt was over. Later, however, natural horns were used more for giving instruction during recreational huntins. “The skill of playing the hunting horn became so closely integrated with the identity of the hunting gentry that it became an icon for it.” Noblemen were expected to learn to play the horn just as they would learn to hunt and carry out their other expected duties. In fact, “For a long time its use, apart from military purposes, was reserved for kings and nobles, and trumpeters were the aristocracy of

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1 Cameron, “Hunting Horn,” 9.
2 Cameron, “Hunting Horn,” 9.
3 Cameron, “Hunting Horn,” 11.
6 Heater, “Early Hunting Horn Calls,” 123.
wind-instrument players.”¹ The English courts of King Edward III, King Henry VII, and Queen

Elizabeth filled more than a quarter of their instrumentalists with trumpeters.²

By the early seventeenth century, natural horns started to take a different form. Inventors discovered that they could be created by manipulating conical metal tubing into a shape similar to but more precise than these animal horns.³ ⁴ Making the instrument with metal and smaller tubing than the natural animal horn or shell created a more brilliant tone quality.⁵ And the metal tubing used could be made much longer in length than the animal horns, allowing these horns to play many more notes. But in order to retain the portable and manageable size, the tubing was coiled around itself instead of protruding straight from the mouthpiece. Four feet of tubing, coiled tightly around itself, could create up to six notes in the harmonic series.⁶

Some horns had eleven complete coils around and measured seven inches across the coils with a bell also almost seven inches wide. The French introduced the Compassed Horn which

¹ Blaikley, “How a Trumpet II,” 82.
² Blaikley, “How a Trumpet II,” 82.
³ Heater, “Early Hunting Horn Calls,” 130.
could play twelve different pitches and was wrapped around the player’s body (similar to a modern sousaphone). This horn, though more flexible in pitch, still relied on the dexterity of the player’s lips to create the different pitches. And to make the musician’s job harder, he now had to distinguish between six embouchure changes for each of the six possible notes in the harmonic series instead of just the one or two possible pitches from the animal horns. The horn player had to have an excellent ear to know which of the notes he was playing as he produced them because he had no keys to press as modern instruments do. Only the variation of his embouchure could give him a hint as to which pitch was which. In addition, the horn may not have even been able to produce good intonation depending on the quality of its production.

The cor-de-chasse came to England in the late seventeenth century from France and became known as the French horn there, even though it was originally from Austria and Bohemia. There in England, it was frequently seen in Louis XIV’s court as a hunting instrument or giving life through its hunting fanfares in Lully’s *La Princesse d’Elides* in 1664 and Morin’s *La Chasse du Cerf* in 1708. Artistic horn playing came about through the patronage of Count Franz Anton von Sporck. He was a Bohemian nobleman whose love for music was just as strong as his love for hunting. After hearing the hunting horn at Versailles, Sporck created his own hunting band at home and became known as “the First Huntsman of Europe.” These horn players then joined his house orchestra and led the way for the horn player tradition still evident today in Vienna and Prague. Their place in the early court

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1 Cameron, “Hunting Horn,” 5-6.
4 Fitzpatrick, “The Valveless Horn,” 49.
5 Fitzpatrick, “The Valveless Horn,” 49.
6 Fitzpatrick, “The Valveless Horn,” 49.
7 Fitzpatrick, “The Valveless Horn,” 49.
orchestras was the first time that horns appeared in an orchestra.¹ “By the close of the second
decade of the eighteenth century a flourishing tradition of orchestral horn-playing had spread
from Bohemia to virtually every musical centre of the Holy Roman Empire.”²

The next development to the metallic natural horn was adding removable crooks.³

Viennese trumpet-makers, Michael and Johannes Leignambschneider, are credited with this
advancement in 1718.⁴ These crooks changed the length of the horn and thus the key that the
horn sounded in, depending on the length of the crook added. Changing the crooks of the horn
gave the performer a new harmonic series to play in for each key, thereby expanding the number
of possible chromatic notes. Where the earlier coiled horns could produce up to six notes, the
crooks added almost unending higher harmonics to the natural horn. Orchestral horn players
now also didn’t have to bring with them separate horns for each key that they would play in the
program, but just the crooks needed for one single horn.⁵

¹ Tiffany N Damicone, “The Singing Style of the Bohemians: Part 1 - A 300 Year Tradition of Czech Horn
² Fitzpatrick, “The Valveless Horn,” 49.
³ Michelle Luanne, “Natural Horn and Various Crooks,”
⁵ Fitzpatrick, “The Valveless Horn,” 53.
Natural horns from 1718 to the nineteenth century had six varying crooks.¹ Four of them were cylindrical and the other two were conical. These crooks let the player play in the keys from C alto to the D below by using just one or multiple simultaneously. The lower keys, however, required the player to use three crooks.² By the time all these crooks were added to the natural horn however, it became unwieldy and awkward for the musician to play.³ So in an effort to improve upon this model and make it more accessible, the French created a horn that had separate crooks for each key.⁴ Following suit, the English have been credited with producing horns with tuning-slides and calling them, “cors à l’anglaise.”⁵

Four or five of these new horns, called the Waldhorn or Cor de Chasse, could now play a four and five part harmony horn call together.⁶ This new and reimagined horn was finally fitting for the orchestra world of music and was performed constantly until the hand horn took its place in the middle of the eighteenth century. With the flexibility that crooks and the tuning slide gave, orchestral composers were able to write creative horn parts that could aptly enhance their

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music instead of being worried that the hunting horn sound would detract from the blend of the other instruments.

Around 1750, the horn became known as a solo instrument with the convocation of hand-stopping by Bohemian hornist and teacher, Anton Joseph Hampl.\textsuperscript{1, 2, 3} When the right hand was inserted in the bell of the hand horn, it changed the intonation and pitch of the notes. Since the hand closes off some of the air coming from the end of the bell, the conical form of the bell is altered, producing a different series of harmonics. Closing one’s hand toward one’s body makes the pitch more flat while opening it away from one’s body raises the pitch back to the natural intonation of the horn. The varying degrees at which you curve your right hand bridges “the

\begin{itemize}
\item \textsuperscript{1} Blandford, “Studies on the Horn,” 546.
\item \textsuperscript{2} Fitzpatrick, “The Valveless Horn,” 56.
\end{itemize}
gaps of the natural partial series." If closed far enough, the horn’s pitch will rise an entire half step, and produce a very pinched, buzzy tone.

Stopping the horn however requires an even better ear than playing the same notes open and without one's hand closing the air stream. Intonation is harder to discern and manipulate when the tone of the horn is compromised in this way. The possible notes that the horn player could produce also sky-rocketed, while still mainly depending on the flexibility of the lip without any valves or keys on the horn. So this new technique made horn playing the hardest and most complex it had ever been.

Having been dubbed “stopped horn,” this technique was primarily used as a way to play chromatic notes on the natural horn but still continues to be used in orchestral and solo music today to create special effects. Whereas before one had to play in the very high register of the horn in order to get the chromatic notes in the harmonic series, horn players could now produce chromatic notes in the lower, more comfortable range as well. This new tradition made horn playing even more flexible and adaptable to the orchestral sound. Composers no longer had to worry about writing their horn parts fully in arpeggios in the key of a specific horn or limiting themselves to a certain range of the horn which had the propensity to stick out from the rest of the orchestra in order to get a certain chromatic note.

The hand-stopping technique expanded the possible notes playable on the horn to an almost limitless range. Writing orchestral parts, let alone solo repertoire, became virtually independent of the capabilities of the instrument. Although not easily transported due to the necessary crooks still used, the hand-horn gives the musician the ability to adjust the intonation and tone of the

1 Fitzpatrick, “The Valveless Horn,” 56.
2 Fitzpatrick, “The Valveless Horn,” 56.
horn while playing. This made the horn’s tone no longer subject to the processes of the manufacturer in manufacturing it. It was once regarded as fit only for outdoor use because of its coarseness, but was now an instrument capable of the soft and sweetness of the human voice.¹

The trumpet and horn had often been viewed as substitutes for each other in their era since horn players often had to double on trumpet just to maintain their livelihood.² The tone of the horn, however, remained unique amongst the other orchestral colors in the Baroque period, and with the commencement of the stopped-horn technique, personnel for professional orchestras now changed as well.³

In addition to the music and personnel alterations, the physical aspects of the horn were even changed as a result of the stopped-horn technique. First, the throat of the bell of the horn was enlarged in order to accommodate the hand of the player.⁴ The mouthpiece was also shifted from the thicker rim to a thinner rim because players didn’t need to press as hard to produce sound.⁵ Before the advent of hand-stopping, horn players needed to use a lot of pressure to get the higher chromatic notes in the harmonic series to sound. If the mouthpiece was too sharp against the lips, it would have been very painful to play. But now that horns didn’t need to play so high in their register, horn-makers could design thinner mouthpieces that gave the lips more sensitivity, and the sound of the horn a darker and more gentle tone.⁶ Low horn playing now became possible because the horn player could manipulate his lips without the hindrance of a thick mouthpiece.

² Fitzpatrick, “The Valveless Horn,” 54.
³ Fitzpatrick, “The Valveless Horn,” 54.
⁴ Fitzpatrick, “The Valveless Horn,” 56.
⁵ Fitzpatrick, “The Valveless Horn,” 57.
⁶ Fitzpatrick, “The Valveless Horn,” 57.
Although the natural horn was initially thought of only as “an annoying noisemaker,”\(^1\) it was gradually added to the Baroque orchestra and popularized by composers in this era. The difference between different composers' parts however is distinctive. During the time of Mozart and Haydn, natural horns could only play in one harmonic series, depending on the crook that the player had in the horn and stepwise motion in the parts had to be played by either hand stopping or “lapping” it, both of which were impractical for chromatic passages.\(^2\) Their horn parts therefore are not as varied or interesting as horn parts today. Mozart wrote his horn parts to be relatively monotonous in pitches in order to accommodate the natural state of the horn at this time.

As mentioned before, interchanging crooks in the natural horn was a necessary and critical aspect of playing orchestra music is this era. Horn players kept crooks hanging on their arm until needed though it was not very convenient.\(^3\) Because of their cumbersome nature and perhaps for sake of efficiency, Classical composers would frequently write for two horns in one key, and another two horns in a separate key.\(^4\) This allowed for modulations or scoring of important notes not in the original harmonic series.\(^5\)

Bach often wrote horn parts that were difficult and impractical for the natural horn because of his extreme demands on the horn player’s range.\(^6\) His music either required the musician to use a plethora of crooks or to create a “fake” note through hand-stopping or lipping it down.\(^7\) The latter of the two of these methods interrupts the horn’s characteristic tone and asks the horn

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\(^1\) Heater, “Early Hunting Horn Calls,” 124.
\(^3\) Kennan, “French Horn,” 126.
\(^4\) Kennan, “French Horn,” 126.
\(^5\) Kennan, “French Horn,” 126.
\(^7\) Boer, “Bach’s Use,” 11.
player to do extra work above and beyond creating a sound on the horn in the first place. And using an array of crooks, though inconvenient, was quite common for horn players to have to learn how to manage.

Blandford states in his article about the French horn in England, “The earliest parts were played on ‘hunting horns,’ but proper concert horns with crooks, enabling the key of the instrument to be changed, were soon introduced. Such horns appear to have originated at Vienna before 1718; and Bach had a set at his disposal at Cöthen if the inventory of the Capelle can be trusted.”

Bach wrote his parts for “Corno” or “Corno da caccia,” meaning the natural horn, in D, F, G, A, or C. These parts could then ask for up to eighteen or twenty notes in the harmonic series along with a few notes outside the harmonic series that the player could produce by “forced resonance.” Many players have found Bach’s parts easier to play on a horn in a different key than Bach originally intended. By using a differently tuned horn, and then transposing the part, the horn player is better able to accommodate for the large range that would otherwise be difficult.

Bach wrote his parts in this way because he had incredible musicians whose primary instruments were the clarino trumpet. These trumpeters were used to playing in the upper registers of the horn because the clarino’s pitches were also up there. Bach was pivotal in shifting horn parts from low, hunting horn lines to “high, brilliant, sophisticated lines.” He heard the horn’s potential as a solo instrument and its capability to mimic the human voice.

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1 Blandford, “Studies on the Horn,” 545.
3 Blandford, “Bach’s Horn Parts,” 748.
5 Boer, “Bach’s Use,” 17.
6 Boer, “Bach’s Use,” 17.
7 Boer, “Bach’s Use,” 17.
The first recorded use of the horn in the orchestra was in 1705. Handel (Keiser’s associate) later introduced the horn to English open-air music through his “Water Music” in 1715, but only added it to his orchestral music in 1720. The horn parts for Handel’s pieces were most frequently in G, F, and D, and a few times in B flat alto, A, or E flat. Handel also sometimes wrote four different horn parts, the top two parts being very challenging. Parts were often written as if for trumpet, leaving out the lower register, and covering only two octaves in range. In contrast, Weber’s Concertino for horn, written later in 1806, along with much of the solo repertoire written today covers a full four octaves. Modern advances in instrument technology and a change in customs for writing for horn have expanded the notes that the typical horn player is asked to play.

In 1737, Maurice Greene produced a unique operetta which had an accompanied French horn ritornello for thirty-four bars. Since most parts for horn during this time could have been played on trumpets or similar instruments, the fact that Greene wrote “‘French horns’ in F” on the part was a noteworthy phenomenon.

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1 Blandford, “Studies on the Horn,” 545.
5 Blandford, “Studies on the Horn,” 545.
The concert horn was introduced in 1750 and later the first valved horn was made by Charles Claget in 1788.\(^1\) \(^2\) The modern and most commonly used style of horn today originated in Germany and has a larger bore, rotary valves, and a larger bell.\(^3\)

Some composers have still written for the natural horn since the valved horn became the customary horn. Ravel arranged a specific hand-horn part for his *Pavane pour une infante défante* in 1910, even though the valved horn had already generally replaced the hand-horn’s popularity for thirty years.\(^4\) Although performing the Beethoven Sonata or Mozart’s concerti on the natural horn is done from time to time, it is hard to find a horn player today willing to put forth the effort to learn it. “The early parts, and particularly those of the Baroque period, are so difficult that only an accomplished professional player can meet adequately their technical demands.”\(^5\) Professional horn players today would find the natural horn especially challenging not only because of the difficult horn parts, but also because of the vast difference in technique.

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\(^1\) Blandford, “Studies on the Horn,” 545.
\(^5\) Fitzpatrick, “The Valveless Horn,” 46.
needed for the different instrument and mouthpiece.\textsuperscript{1} Modern horn players don’t have to carry around a dozen crooks to each concert they play. The valves in today’s horns provide just as much, if not more, flexibility in the harmonics. The pressure on the lips is also much less than what it was in the first natural horn and the modern mouthpieces give the player the freedom to play lower than ever before.\textsuperscript{2}

Intonation and tone production is another area in horn playing that became significantly simpler since the valved horn was introduced. Horn players today don’t have to adjust with their hand and lip up or down pitches to the extent that natural horn players did in the Baroque and Classical periods. The natural horn couldn’t be depended on to be in tune or even have a beautiful tone like we expect of today’s modern horns. Modern horn players do, however, still need to use their ear to adjust pitch and create the most beautiful tone possible. But this is made easier through the careful engineering of modern rotary valved horns.

Because of the advances in the musical work, the natural horn has been eclipsed by the modern valved horn in efficiency, tone, intonation, and relative ease of playing. Modern horns, though still one of the most difficult instruments to learn, are far more streamlined and efficient for the musician than the original natural horns. Not very many players therefore are interested in going back in time and learning to play on a natural horn. Why would someone hand wash his clothing in a tub outside when he had a washing machine already inside and ready to do the work for him?

Some of the original challenges and intended character of Mozart and Bach’s pieces, however, are lost with the modern horn’s fixed intonation and on-demand pitches. I think we would appreciate the intent and musicality of Mozart and his compatriots’s compositions more if

\textsuperscript{1} Fitzpatrick, “The Valveless Horn,” 46.
\textsuperscript{2} Fitzpatrick, “The Valveless Horn,” 57.
we saw and experienced first-hand the technical skill it required to play them. Though the notes themselves are not tricky anymore, the level of mastery that was demanded for the natural horn far exceeds what modern horn players even begin to contemplate when they pick up their horn and play a Mozart horn concerto.

Bibliography


Instruments have been musical tools for performers and musicians since ancient times. As time progresses, instruments evolve to fit the needs of music and the interest of musicians and listeners. From Ancient times to today, instruments change in structure and sound. New instruments are also developed during each musical time period. An example of these newly developed and ever evolving instruments are those of the Renaissance period. During this period, instrumental music began to have its own place in the music world. Instruments were no longer just for vocal accompaniment. Instruments with polyphonic abilities played solo pieces and instruments with monophonic capabilities played in ensembles and orchestras, no longer only played by the traveling troubadours. Dance music became more popular and instrumental pieces were composed and improvised for the enjoyment of listeners, not just for background music in the courts like that of the medieval period. The printing press made music more available to the public and performers.\(^1\) As the popularity of music ensued, instruments developed and evolved. The development of Renaissance instruments was brought about due to the new focus of tone quality and newfound interest in instruments during the Renaissance Period and can be seen in their uses, structure, and evolution.

Renaissance instruments were not just used by troubadours anymore. According to Alexander Buchner in *Musical Instruments: An Illustrated History*, the most popular use of

instruments was by the many bands and orchestras performing in the courts of the nobles. They entertained the nobility and could be found in the castles of and under the employment of royalty. They tended to be background music. Instruments were later incorporated into the church as doublings of the voices of the choirs in the late seventeenth century and at the beginning of the eighteenth century. Organs were built into churches to be used as well.¹

Renaissance instruments can be classified in the way instruments are today. There are woodwinds, keyboards, brass, and strings.² Each class, like today, had their own special characteristics. They were made of their own special materials and created distinct sounds and tones. They covered a variety of pitches and could be combined to make music or be played individually for solos. The difference between the instruments of today and yesteryear are the structure and tone quality. They were different than that of their ancestors and were more developed in their tone quality and structure so they sounded better being played individually and with other instruments without a voice to accompany. Looking at individual instruments of each instrument family will help one see this point.

There were many types of woodwind instruments during the Renaissance. Recorders, crumhorns, double reed instruments³ which have “become for many people a symbol of early music in general”⁴ and are reproduced at times today,⁵ flutes, of which many Renaissance styles

survived\(^1\) and evolved into new flutes used in various pieces including those of Wolfgang Amadeus Mozart,\(^2\) and shawms were common woodwind instruments. Recorders of the Renaissance evolved from those of the Middle Ages. The first recorder came about in the mid-fourteenth century. They came in very few sizes depending upon each European country and were simply cylindrical pieces of carved wood, sometimes with an expansion foot at the bottom.\(^3\) During the Renaissance, more recorders were created in a wider variety of sizes to get a wider variety of sound and tone. The smaller recorders of the Renaissance look like the recorders available today. The larger, lower recorders look like modern day bassoons but with open holes instead of metal keys connecting to one another to close more than ten open holes. Karl Geiringer in *Instruments in the History of Western Music* gives an excellent description:

> Among the woodwind instruments the *recorder* enjoyed special popularity. It was made in various sized and had a reverse conical bore, tapering towards the lower end. The instrument was equipped with seven holes in front. The lowest of them, operated by the little finger, was duplicated, appearing both on the right and the left of the instrument, as some performers held the instrument with the left hand below the right, and some with the right hand below the left; the unused hole was stopped with wax. The tone of the recorder had a rather cool and impersonal quality, conforming to the aesthetic ideals of the time.\(^4\)

However, as explained by David Munrow’s *Instruments of the Middle Ages and Renaissance*, there were eight different kinds of recorders, quite a wide variety for various sounds and events.\(^5\)

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The ranges of the three highest recorders were omitted by Munrow. Anthony Baines explains in *Woodwind Instruments and Their History* that recorder music was written in the low clefs of soprano, alto, tenor, and bass clefs and the high clefs of treble, mezzosoprano, alto, and baritone clef. The higher pitched recorders, as one might assume, played incredibly high notes that could be considered screaming notes. However, the lower notes had pleasing and soft sound that could be played by themselves without other instruments. However, they could not be played in the church because the sound would be lost.¹ The recorder fit the new desire for a certain aesthetic. This aesthetic looks like a pleasing sound to the ear with a wide range of possible notes, which is why larger and smaller recorders evolved and became more structurally sound. A soft and melodious sound like that of the recorder fits the pleasing sound aesthetic. This would make sense because instrumental music was no longer just background music. This desire for a certain aesthetic found its way into the other woodwind and general instruments of the Renaissance instruments, such as in the shawm.

The shawm had many names: the Latin *calamus* meaning reed, the English *shawm* or *shalm*, the French *chalemie* or *chalumeau*, the Spanish *chirimia*, the German *Schalmei* or *Schalmey*, the Latin *bombus* meaning drone or buzz, and many others.² The shawm was derived from the eastern *zurma*, an instrument that apparently terrified the Crusaders, and is still in the world today. It appeared in artwork from the twelfth century onwards.³ The shawm of the Middle Ages was developed in Asian cultures and was about a foot long. It had a disc placed at

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the top of the instrument for the musician to place his or her lips upon and the reed fit into this disk for the musician to put his or her mouth around and play. The shawm of the Renaissance was very similar to this earlier shawm in structure with a few differences.¹ The shawm is shaped like today’s oboe with a small top slowly opening into a suddenly wide bell, like that of a trumpet. It is made of one piece of wood from top to bottom. The style of the structure was different from country to country. The developer bore holes into the body of the instrument for the finger holes, much like the recorder. The difference in these two instruments is that a double reed is attached to the top of the instrument. On large sizes of the shawm, the reed was attached to a long crook, much like the reed is attached to the bassoon. On the smaller sized shawms, the reed was to be placed on a staple, the tube which the reed is mounted, inside a pirouette.

According to David Munrow’s *Instruments of the Middle Ages and Renaissance*, the pirouette “was a funnel shaped reed-shield against which the player could press his lips whilst taking the projecting part of the reed into the mouth.”² Two other ways for the reed to be fixed into the shawm was to loosely fit a flat, circular disk, like in the Middle ages, around the staple to put one’s mouth against and to put the reed directly into the shawm without any extra added pieces.³ The lips of the player never touch the reed, but instead pouches it in his or her mouth, the lips holding either the staple or the on the lowest part of the read right above the staple. This allows the tips of the double reed to vibrate at its fastest possible intensity, creating a loud sound that is

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piercing to the ears. The sound is different from the oboe, however similar in pattern, and is controlled by firmly gripping the lips around the staple or area right above the staple.¹

The shawm was exclusively a band instrument. It was one of the most familiar sounds during the Renaissance. The deafening, shrill, wailing sound it produced was heard in shawm bands in palace courtyards and market squares. It had various sizes for high and low sounds to create a full sound. The bass shawm was six feet tall and rested on the ground to the side of the player. It was played without the pirouette and has a warm, fat tone. The tones of the various instruments blended to make a unique tone that was enjoyable to the ear, like the recorder. It was used for various dances and entertainment music.² The shawm is an excellent example of how the structure of Renaissance instruments shows their development. The shawm had a unique tone that became common in public places. The tone was well received and accepted as musical.

Woodwind instruments were not the only instruments being invented, evolved, and added into the independent instrumental family. Brass instruments were also important in the instrumental family during the Renaissance. Various instruments such as the trumpet and various horns were developing into the Renaissance. Others were brand new types of slide horns.

The trumpet of the Medieval Period was made of either wood or brass and had no slides, valves, or finger holes. It had a six note range in bass clef of C below the staff, the C within the staff, G₃, Middle C, E₄, and G₃. It was known as a straight trumpet over six feet long, usually made in jointed metal sections, usually with a flared bell, and was well known as the *buisine*.³

During the Renaissance, in the early 15th century, trumpets became folded and usually had an ‘S’ shape. Pictures usually depicted the mouth piece as being pushed against the mouth between the index and middle finger of the left hand and the right hand holding the mouth pipe branch as far as the hand could reach to imply some form of motion. The trumpet was also folded twice over to create a paperclip like oval. It looks as if the Renaissance instrument creators took the six foot long straight trumpet and folded it in various ways. Tone extensions could be added to the trumpets for a larger range. These ‘S’ and paperclip style trumpets were known as slide trumpets. As pictures show, the performer moved the metal of the trumpet away from himself and pulled it closer to himself to create different pitches.\textsuperscript{1} The normal range of this new trumpet included C3, G3, middle C, E4, G4, C5, D5, E5, G5, B natural 5, C6, and D6 along various chromatic notes that were naturally out of tune. The parts in compositions for trumpet were for first trumpet labeled “clariono,” second trumpet labeled “quinta,” and third trumpet labeled “alto e basso.”\textsuperscript{2} Renaissance developers evolved the six note straight trumpet into a thirteen and more note instrument that was smaller and easier to hold. They caused the tone to grow with the slides and allowed the trumpet to have a greater voice in instrumental music of the Renaissance. The developers focused on giving the instrument the ability to sound more beautiful and be able to do more for music. This new structure and evolution helped with the tone quality of the instrument, making it more pleasing to the ear. Unfortunately, names of instrument developers could not be found. Their names were not recorded in any scholarly article or book.

The trumpet is an example of the new slide horns becoming prominent in the Renaissance. Another, brand new brass instrument that used a slide for sound was the sackbut.

\textsuperscript{1} Anthony Baines, \textit{Brass Instruments} (London: Faber and Faber, 1976), 94-97.
The sackbut, first recorded in the 15th century, is the precursor to the modern trombone. This name comes from the French name *sacqueboute*\(^1\) which means “pull-push.”\(^2\) The sackbut/trombone is different than the slide trumpet, mainly in its construction, structure, and sound. It is narrower and usually longer than slide trumpet. It is made out of metal with a series of tubes.\(^3\) As trombones are still made today, the trombone of the past was made in two parts, the bell and the slide.\(^4\) A bridge made of two separate metal pieces separate two parallel tubes a few inches apart. A third tube, the slide, is U-shaped and connects the lower ends of the two pieces, fitting over the pieces over several feet so the slide can be pulled in and out without being disconnected from the instrument. “The end of the second tube turns forward, spreading to form the bell.” The walls of the trombone were thicker and the bell expanded less than today’s trombone. The slide trumpet was the precursor to this trombone. This can be seen when comparing their structures. The trombone is larger and the slide is disconnected from the mouthpiece. The entire instrument of the slide trumpet had to be pushed to and from the mouthpiece, making pure intonation difficult. The U-shaped connecting tube fitted over the parallel tubes as a moveable sleeve, making intonation much easier.\(^5\) The trombone had several sizes for different pitches, the most common being the Alto trombone, Tenor trombone, and Bass trombone. The Alto’s lowest natural note is *f*, and when the slide drawn out, *B*. The Tenor’s lowest natural note is *B♭*, and when the slide is all the way out, *E*. The Bass’s lowest natural note

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is Eb, and with the slide drawn out, A.¹ The sackbut, like today, is played by moving the slide into various positions for lower and higher pitches. It took very little strength and was desired to be played gently along with cornets or recorders, viols, violins, organ, and voices. The sackbut was to be played as gently as these other forms of instrumentation.² The sackbut was an instrument to be blended with other instruments. This was possible because the instruments thick walls and narrow bell caused the sound to be muffled, allowing it to be played along with soft instruments and vocals. It had chromatic and diatonic capabilities. Its tone was supposedly characterized by the same power, nobility, and solemnity as it is characterized by today.³ This must have been because of the desire for more sound quality and better tone. A new instrument was created to play with other instruments that sounded beautiful and noble and had a regal tone. The sackbut was just this instrument.

Another instrumental group of beauty and tone was the string family. The string instrument family has been around since ancient times. Some were plucked and some were bowed. One particular plucked string instrument of the Renaissance that was held in high esteem during the Renaissance was the harp of the 16th century.⁴ It was used as both a solo instrument and in ensembles. It ranged over three octaves and was in common use.⁵ During the middle ages, it was an instrument that could be held in the musicians lap. This harp had six or seven to

twenty-five strings and was shaped similarly to today’s harp. It, apparently at times, was mistaken for the Medieval lyre. During the Renaissance, the harp gained permanent prominence over the lyre. The harp had more than one size. Along with the normal harp, the double harp was developed which stood on the ground and offered more pitch options. For example the double harp had a row of chromatic strings to be played along with the harp’s normal diatonic strings. The harps in the harp family had a basic triangular outline with strings perpendicular to the soundboard. The harps were strung with gut or metal, depending on the area in which it was created. In Ireland, its metal strung harp was praised by many. Francis Bacon in his *Sylva Sylvarum*: “No harp hath the sound so melting and prolonged as the Irish harp.” As time went on, only gut strings were used on harps and were strung with equal tension. Some Renaissance harps had two pins projecting form the soundboard to change the tuning of some of the strings. The harp, then and now, had what is described as a heavenly sound. It has a gentle, metallic, cascading, and glittering sound. The sound flows from string to string with a clear yet gentle sound. It was used with other instruments and was used alone as a solo instrument. It can be concluded that this stringed instrument was transformed from the Middle Ages into an instrument that had a beautiful tone for the purpose of being listened to and enjoyed. It was a stunning creation that listeners took a strong liking to for the purpose of listening to music.

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Another plucked string instrument, one that became very prominent in later years, was the harpsichord. This instrument “helped revive a repertoire of old songs, rustic interludes, peasant dances, and sarabandes, which became popular diversions at court.”¹ While the harpsichord is indeed part of the keyboard instrument family, it is different than the average keyboard instrument. The strings are plucked instead of hit with hammers.² They appeared in pictures during the early fifteenth century. It used three different plucking mechanisms and one mechanism to strike the strings. The process of the sound was as follows:

When a key was pressed down its inner end would push up a wooden frame known a ‘jack’, which contained a pivoted wooden tongue on which was a quill plectrum; when the jack rose up the quill plucked the string, but avoided doing so on descent through the swinging back of the tongue.³

The shape of the harpsichord could be described as a smaller, thinner, squared and angular grand piano. The long end of the harpsichord is longer than that of a grand piano.⁴ The harpsichord sound was a combination of plucking and hitting of a string, which makes sense since that is the way the mechanisms in the harpsichord work. This instrument had capabilities of accompaniment and solo playing. Its tone was interesting to the ear and had many musical capabilities, especially in the form of ornamentation and musicality in composition. Its sound was also enjoyable considering it lasted from its creation in the Middle ages into the Baroque period. It had more of a voice in the Renaissance because of its more musical and polyphonic capabilities. The sound was a good combination with the highly ornamented music of the

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Renaissance. The clear and unique tone brought out the interesting aspects of the music it played and made listening to instrumental music even more interesting.

Another instrument family in the Renaissance is the percussion family. This family used the naker, tabor, side drum, triangle, tambourine, cymbals, rattles, friction drum, dulcimer, xylophone, chime bells, and many other instruments dating from the 14th century onwards. These percussion instruments were used for melodies and special effects in music to make dance and other forms of music more interesting to the listener. Some drums were used as war drums. Rattles were used in religious and secular life. Cymbals tended to be depicted as being played by female angels. Tambourines were also depicted in angels’ hands. The triangle was one of the first instruments made entirely of metal that was adapted into the modern orchestra in opera. The tabor drum was played in front of the musician vertically like a bass drum and the musician tended to play a pipe as well. Nakers were kettle drums played with sticks that resemble small golf clubs. The xylophone “gave as much pleasure as any other instrument did when played to its full affect” but was simple in structure. The chime bells were small bells that came connected to a ring with four to five or eight to nine in a set that were struck with one or two hammers, one in each hand, like the chimes of today.1 All of these unique percussion instruments could keep the beat, add interesting rhythms, and shock audiences when needed. Though they do not have as prominent a role in Renaissance music, they still evolved from and into instruments that added special tones and sounds to make music more interesting and that performers found helpful when making and performing their music.

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http://www.jstor.org/stable/3125789
These are just a few examples of the many different Renaissance instruments used in various kinds of music. These different instruments all had unique tones and could combine in interesting ways that were pleasing and interesting to the ear. As the music became more and more interesting, so did the sounds of the instruments. More music in score was available through the printing presses. The music became more musical and interesting. If these factors are as true as they are, it only makes sense that instruments would be created and changed into those which would sound better for the music and would be more entertaining and enjoyable. The structures of the instruments became more and more complex so better crafted sounds and more pitches and notes could be played to go along with various music. Many kinds of instruments were placed together in bands to create unique combinations of sounds that worked with or without a vocalist. People liked the instruments because the instruments sounded better than their ancestors. They were interested in new music and the better tone qualities caught their attention. Instruments didn’t stop evolving there. New instruments were created and old instruments evolved with the times and needs of music as time continued. The Renaissance was a part of the ever developing instrument world and inventive minds of musicians who desired new and better sounds for music. Thanks to the interest in instruments and instrumental music during the Renaissance, we have the unique and beautiful instruments we have today.

Annotated Bibliography

This book explains the history and development of brass instruments beginning with the foundations of brass traditions and moving through different musical eras and developmental points in brass history. This book is very useful for in depth details concerning brass instruments.

This source gives examples of instruments throughout history. Each chapter is by a different author about a specific instrument. This source will be useful for information about specific instruments and for having multiple voices and opinions about instrumental development.

This book describes woodwinds and their history in two parts. The first part describes the construction and style of virtually every modern woodwind instrument. The second part gives the history of each of those individual instruments. This source allows me to get details for specific woodwind instruments instead of an overall history of woodwinds in general.

http://www.jstor.org/stable/3125898
This source is a commentary on a question in an article. The author makes comments concerning the reproduction of the Renaissance crumhorn and how reproductions are never quite the same as the original. He also compares and contrasts them to standard instruments such as the recorder. This article is helpful in that it is a firsthand account of the differences between Renaissance instruments and their descendants.

http://www.jstor.org/stable/3125789
This source describes the percussion instruments of the Middle Ages and Renaissance in great detail with references to present day literary and iconographical evidence. This source is useful for acquiring information concerning descriptions, uses, construction, and other information for the percussion instruments of the Renaissance period.

This book describes the creation, construction, and traditional use of instruments from every era. The information exemplifies the spiritual and philosophical side of music as the book talks about subjects such as music in nature and giving matter a soul. The book is very useful as it gives information on instruments of every culture of every time period and their uses in religious and non-religious settings. For the Renaissance, this means inside and outside of the church.

http://www.jstor.org/stable/3125466
This source is a descriptive work review. The source both critiques and praises a particular work of Jeremy Montagu. This source is useful in that it is a scholarly look at an informative book. It looks into the details of this book. I can use the author as a voice of either affirmation or opposition in my points concerning the development of different Renaissance instruments.
This book gives the history of many musical instruments of many cultures from Prehistoric times to modern times. It gives the process in which these instruments were developed and produced. This source will work well in my information of how Renaissance instruments were developed and produced on a large scale.

This source goes through the developmental periods of the Renaissance to the Baroque period. The book focuses on the evolution of Renaissance instruments to Baroque instruments. Each chapter focuses on specific instruments and the Baroque developers of these instruments. This source is useful in that I can use it to explain the end of Renaissance instrument development before the Baroque period began to emerge.

This book expresses the history of the instruments of the Western world beginning with Prehistory and ending with Romantic and Avant-Garde music. It is an overall view of all instruments and their development through history. I can use this source as a base for my information and timeline for Renaissance instruments. It is also useful in that I can show the development and transition of instruments from the Medieval to the Renaissance period and from the Renaissance to the Baroque period.

This source is a review and summary of a work by Barra Boydell. It summarizes the work while agreeing with and critiquing the original author. I can use this source as an outside voice concerning the Crumhorn and other Renaissance windcap instruments.

This source begins with the origins of instruments and moves to explanations of different instruments in their instrumental categories. The author adds interludes of different topics that add to the present information. This source is useful for details concerning the different instruments and the interludes will add more uncommon information that connects the history of the instruments.

This book takes a look at instruments from the Early Middle Ages to the Renaissance. It shows what was going on in the world while instruments were being developed. This source would be useful for information about where instruments started and how they
developed into Renaissance instruments and how what was going on in the world influenced that development process.

This source talks about the Renaissance harp and the music that was written for its use. This source would be very useful for gathering extra information on the Renaissance harp, an instrument that is not discussed often. It is also useful in that it gives examples of how this instrument was used and the musical theory of harp music.

This book is organized in two parts. Part one discusses the instruments of the Middle Ages, each chapter about a different instrumental category. Part two discusses the instruments of the Renaissance organized in the same way the Middle Ages instruments are organized. This source would be helpful to express the development that occurred between the Middle Ages and the Renaissance.

This source gives examples of instruments throughout history. Each chapter is by a different author about a specific instrument. This source will be useful for information about specific instruments and for having multiple voices and opinions about instrumental development.

This book gives a history of each instrument family through the ages and how they developed. It also gives many illustrations of these instruments and their uses. This source would be useful for explaining how individual instruments developed and the illustrations will be useful for explaining how the instruments looked.

This source gives comments and corrections about an article on Renaissance and Early Baroque Flutes. This would be a useful source because it gives an argument concerning a Renaissance instrument. It also gives another voice to add to the discussion of instruments.

This source concerns itself with the dramatic evolution of the flute starting from the 1800s. This source is useful in that it shows what the flute became near the end of the Renaissance. It also can be used for examples to show how the development of the flute during the Renaissance lead to its further development later in history.
Remnant, Mary. *Musical Instruments: An Illustrated History from Antiquity to the Present.* London: B.T. Batsford, 1989. This book gives an illustrated history of musical instruments from the earliest recorded times to the present. This source is very helpful as it expresses how Renaissance instruments came to be from the Middle Ages and what they became after the Renaissance. It is also helpful as it gives illustrations as to what different instruments looked like, giving me the opportunity to describe their structure accurately.

Sachs, Curt. *The History of Musical Instruments.* New York: W. W. Norton & Company, 1940. This book expresses the history of musical instruments all over the world during each historical period. This book is useful for showing the development of Renaissance instruments and why they became the way they did and what they became before the Baroque period. This is also quite useful to use as I can compare the development of Renaissance instruments to other instruments that were developing at that same time in other countries.
The Interwoven Evolution of the Early Keyboard and Baroque Culture

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Translated from the Portuguese *barroco*, or “misshapen pearl,” the Baroque Era is famous for its emphasis on elaborate, overdone decoration. Following a less dramatic Renaissance Period, Europe experienced a shift of focus to theatrics and embellished extravagance. Several examples of this shift can be portrayed through art, architecture, poetry, as well as the music of the Baroque. Shakespeare’s plays reached new heights of drama; architecture and art became a means to exemplify one’s own talent and virtuosity, and music began to employ the growing fascination for the solo performer and the observing audience.¹ Opera, instrumental music, and other forms of professional performance seemed to take over the stage, no longer stressing audience participation, but instead viewing the audience as mere observers meant to passively watch and be moved by the performer(s). Music and art came to be enjoyed not only for its ability to serve other functions, but simply for the sake of enjoying the art itself. New genres and other ideas were born, including an emphasis on improvisation, dissonance, rhythmic drive, and an increasingly evolving role of the instruments; in other words, more “barroco.”

One role for instruments was the *basso continuo*, or “continuous bass,” which was a general written out bass line that set a guideline for the performer when improvising that line. The concept of the independent but equally important bass and treble lines became essential as

well. A crucial instrument to employ this was the keyboard, which played a vital role in the musical culture of the Baroque Era, and would become one of the most prominent and instruments to develop in history. The early keyboard developed with the cultural shifts of the Baroque Era, resulting in an advancing keyboard instrument. Because of the progression of the keyboard, the music written for it evolved, as well as the roles it played in Baroque musical society.

As previously mentioned, the keyboard emerged as one of the most prominent instruments of its time and in history altogether. Several reasons for this new appeal for a keyboard instrument were the developing genres and concepts of the Baroque Era.¹ New genres included the concerto, early sonata, and vocal pieces using keyboard accompaniment. Also part of this demand for a keyboard instrument was a rising interest in instrumental music as well as the popularity of contrapuntal textures in music. The late Renaissance began this new emphasis on the importance of instruments, while also continuing the concept of early polyphony. One instrument that could satisfy both of these cultural demands was the keyboard, which could play multiple lines at once using the right hand and left hand. This created a variety of textures both in a solo setting, as well as in ensemble work.

Some of these keyboard instruments that were used included the eschiquier, organ, clavichord, harpsichord, virginal, spinet, and the early pianoforte. Each of these played a slightly different role, dependent on the mechanics used to construct each instrument. Some proved more successful, staying relevant through the test of time and continuing the greater evolution towards the modern piano than others. Other than the organ, each of these early keyboards produced

¹ Eric Cochrane, 22.
sound using strings. Set apart in the realm of keyboards, therefore is the organ, producing its sound uniquely through pipes.¹

The organ holds a very significant place in the discourse of not only keyboards, but in the realm of instrumental history as well. Known as the “king of instruments” due to its versatility and fullness in sound, the organ’s initial entrance into society can be traced as far back as the sixth century B.C. in the form of a panpipe instrument.² Gradually this instrument was modified until the modern organ was born. Used mostly in sacred settings, the organ, like the other keyboard instruments, could be sounded through the pressing of keys, but contained pipes rather than strings. Pipes can be created with varying methods, thus capable of contrasting timbres of sound. The more pipes an organ contains, the wider variety and fullness of sound that can be created. The length of pipe also determines pitch, so the number of keys it contains determines the number of pipes. When the key is pressed down, the connected action signals the wind from the pipes to rush through its subsequent pipe, thus creating sound. The action then must signal the stop so that the connected pipes above that note do not sound. An early form of the pedal was present, able to hold out a drone sound that was popular during the Renaissance and Baroque.

Due to its rich and full cathedral sound, the organ gradually became one of the most used instruments of its time. Able to create polyphony while holding out a pedal point in the bass, it became extensively used mostly in church settings and was popular for Baroque listeners due its ability for this polyphony. During the Protestant Reformation, church leaders such as Martin

Luther cherished the chorale, a vocal work that could easily be transcribed for the organ because of its capabilities with versatile voices in its variation of pipes. Also used in Mass Settings, the organ could be used either soloistically or in alternation with choir chants. In this Renaissance and early Baroque culture especially evident is the presence of the church in society. Because of its unique sound, the organ seemed most fitting in the church, not being as versatile for secular genres. Though the church exhibited less flashy barroco characteristics than secular settings of the culture, some styles overlapped. Polyphony was the dominant texture of both, with similar dissonance and consonance to evoke emotional expressivity. The organ as a keyboard instrument fit these demands in its full polyphonic and harmonic capabilities, as were the early stringed keyboards.

Perhaps the earliest known stringed keyboard to exist was the eschiquier, a sparsely documented keyboard ancestor. Known to be a “primitive clavichord,” the eschiquier was a keyboard instrument cryptic in nature, whose mystery centers in its low quantity of definitive evidence.¹ Mentioned in early manuscripts but rarely described in clarity, it can date back even to the fourteenth century in London. French for “chess board,” one of the very few references to the eschiquier dates back to a letter between King John I of Aragon and the Duke of Burgundy written in 1388. In it, King John I requests for the Duke’s minstrel to play this instrument which he described as similar to the organ except sounded by strings rather than pipes.² Because of the

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lack of written substantiation for this instrument, it is not given a significant rank in the discourse of keyboard instruments in music history.

It is, however, understood to be the bridge to more progressive keyboards for future development. The role it played in society may not have been as significant as what the keyboards played in Baroque society, but it served a function nonetheless. During the late Medieval Period, music for the sake of simple enjoyment was less common for the middle class audience, but instead served its purpose mostly in the church or courts only. This seems to be one function of the eschiquier. The King of England and Duke of Burgundy were of royalty, requiring the service of those who were able to play this instrument for the entertainment of the courts. Later music would be enjoyed for the common people, being enjoyed for the music itself.

One of the first revolutionary stringed keyboards, the clavichord was a very quiet instrument due to its construction. Smaller in size, the clavichord produced sound in a different manner than its relative, the harpsichord. When a key was pressed down, it lifted a small copper square called a tangent, which would strike the string and lift a damper, causing the strings to vibrate and the sound to be heard for only as long as the key was pressed down. Considered to be the most similar early ancestor to the piano, this instrument was unable to produce much sound. Being much smaller in size than the modern piano, it contained a maximum of two strings per key, unlike the much larger grand piano, which has up to three strings each key.¹

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Regardless of its size and soft volume, the clavichord was popular during this era for multiple reasons. Due to its smaller size, this keyboard instrument was more suitable to exist in homes during the Baroque Era. Several composers, including Johann Sebastian Bach, were known to contain this smaller keyboard instrument in their houses. Perhaps the best use for the early clavichord was either solo performance or accompaniment for a single vocalist.\footnote{Francis Knights, "Clavichords and Other Claviers." \textit{Early Music} 42, no. 2 (2014) doi:10.1093/em/cau014.} The clavichord emerged successfully during this era that stressed emotional expression. Theories such as the Doctrine of Affections concluded that spectators could be moved aurally or visually through the means of the artist. Visually, this included colors, while music was written to stir emotional responses through the use of consonance and dissonance, as well as continuing the theme of drama through counterpoint and thick textures. Instruments such as the clavichord were capable of creating a variety of colors and extravagance through counterpoint. It soared as an important instrument amongst the emphasis on the solo instrument. The clavichord, being a keyboard instrument, was versatile in its ability to play multiple notes at once, thus capable of counterpoint and chordal composition. Playing chordally could move the emotions through thirds and sixths, as well as resolving dissonance. It could trill, thus participating in the dramatic ornamentation that Baroque members craved, while also being an attainable instrument in homes because of its small size.

Another prominent uniqueness of the clavichord is its ability to produce a variety of volume, known as dynamics. Like the modern piano, the clavichord’s sound was created from the striking of a string, rather than plucking as in the harpsichord.\footnote{David Verotta, “Short History of the Pianoforte,” \textit{Musica}. Accessed October 13, 2015.} The performer could therefore adjust his or her rate of pressing down the keys in order to control the speed of the tangent strike,
thus creating crescendos and decrescendos. Of course, these volume adjustments were much slighter than those of its later successors. Yet this ability to create volume was one significant strength of the clavichord.

The harpsichord was another popular keyboard of the Baroque Era during the escalating role of the keyboard. Famed to be the “concert grand” of the time, it was clear that the harpsichord was a superior keyboard instrument.¹ Larger in size and sound than the clavichord, the harpsichord was much better suited to play a role in the larger group settings. Though there is evidence of more primitive harpsichords being built as early as the Middle Ages, significant improvements were made so that the instrument is considered to have truly blossomed during the Baroque Era. The Ruckers family in Germany was instrumental in their development of the harpsichord, standardizing the use of four and eight foot registers, as well as stops for controlling the sound. Hans Ruckers was known as the first master builder of the harpsichord as early as 1579 in Antwerp, Germany. His family continued to develop this business and build a legacy that later harpsichord manufacturers would use as a model for their work.²

Like the clavichord, the harpsichord creates sound when the key is pressed down, which caused a vibration of strings inside the instrument. Harpsichords typically contain one or two rows of keyboards, called manuals that create the sound.³ These manuals controlled the two or three sets of strings that run parallel to the keyboard, which could be tuned to either unison or increased octave. Rather than using a hammer, the harpsichord creates sound with a plectrum.

¹ John Gillespie, 6.
² John Gillespie, 7.
which was a sort of quill that would pluck the strings. The plectrum was attached to a tongue hinged in a wooden piece called a jack that sat upon the back end of the key lever. As a key is pressed down, the lever would lift the jack and cause the quill to pluck the string, while immediately the tongue tilts back and prevents another sounding of the string from the quill by use of a cloth damper. Figure one below provides a helpful visual of this action.

Because plucking rather than striking the strings creates the sound of the harpsichord, it is nearly impossible to create a variety of volume with this instrument. Gradual dynamics could not be created, but occasionally sudden shifts of terraced dynamics could be played. This remains the key shortcoming of the harpsichord, although it continued to be widely used during the Baroque Era. The harpsichord was one of the only instruments at this time that could not create dynamic variation. In contrast to this was the violin, an instrument of weighty importance, rivaling the voice in its capabilities. With the emphasis being on the solo instrument and expressiveness through genres and styles, the harpsichord seemed unfinished in its lack of dynamic expression.

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Rather than creating shades of color through dynamics, other means were used, such as fluctuating textures and dissonance to create more of an illusion of increased or fading sound.\footnote{Laurence Libin, "Keyboard Instruments," The Metropolitan Museum of Art Bulletin 47, no. 1 (1989): 1-56. Accessed September 21, 2015. doi:10.2307/32588503, 3.} Thus thicker textures would be perceived as a fuller rather than “louder” sound, and ornamentation served the purpose of what musicians would consider the accent on the modern piano.

Ornamentation on the harpsichord mirrors the Baroque emphasis on exaggerated extravagance. Because dynamics could were unable to noticeably shape a piece, ornaments such as trills, turns, and others must be used to fit the desire of the musicians and listeners. This was a way to create expression, and remains applicable today as pianists strive to accurately interpret the execution of a Baroque piece originally composed for a harpsichord.\footnote{Mark Kroll, "Techniques." In Playing the Harpsichord Expressively: A Practical and Historical Guide. (Lanham, Maryland: Scarecrow Press, 2004).} Thus the trill was an essential piece of Baroque repertoire, not only for the keyboard but also for other instruments such as the emerging “singing” violin. Though very little dynamics were possible, the harpsichord was an invaluable instrument during the Baroque Period.

The harpsichord mainly functioned as either a basso continuo or for solo repertoire. Being larger and much fuller in volume than other keyboards like the clavichord, the harpsichord was generally used in ensemble settings to be the basso continuo. Like the clavichord, the harpsichord can produce harmonies by pressing down multiple keys at once. This gave it a greater variety, including the ability to realize figured bass, and fill in the sound between the bass and treble notes, as well as the ability to create counterpoint, which was one of the most central
features of Baroque music. Another includes figured bass, the written bass line denoted by numbers that the performer was to use as a standard on which to improvise.

Improvisation stands out as one of the most important skill for a keyboardist to possess during the Baroque Era. The embellishments that were popular often were not written out in the music that a performer would play. Rather, the performer would use the figured bass as a general guide that must be elaborated on by the artist. This correlates with the Baroque emphasis on the soloist instead of the composer, which would be an idea for later development. Solo repertoire for the harpsichord included the toccata, fantasia, suites, preludes, fugues, and a variety of dance music. Dance music was essential for keyboard solo repertoire, using the rhythms and forms of dances to shape the keyboard dance music. This included suites, a multi-movement dance piece unified often by the key, but with distinct characteristics of rhythm matching the dance for which it corresponds. Perfectly suited for the harpsichord, these genres each required a level of improvisation and virtuosity in order to achieve a sparkling sound capable of smooth embellishments and expressiveness in performance. Church musicians were also expected to improvise.

Besides being a successful solo instrument, the harpsichord was also popular for its ensemble capabilities, especially in accompaniment for opera. The prevailing vocal genre of the this era, opera thrived in its Baroque style of emphasis on the performer through dramatic staging of stories often centered in Greek tragedy or other “larger than life” figures. The audience enjoyed listening to soloist cadenzas, dramatic and often romantically tragic storylines, as well as an importance in the role of the accompanists, which included the harpsichord. Sparkling clarity and an ability to use harmony and figured bass with improvisation for the basso continuo line
caused an increased demand for the harpsichord in opera. Yet it blended well with other supporting instruments to create a rich Baroque opera ensemble.

Very similar versions of the harpsichord include the virginal and spinet. The virginal is a smaller, rectangular version of the harpsichord. The preferred instrument in England, it only contained one string per note instead of three or four like its larger relative. In addition to this is the spinet, which was nearly the size of the harpsichord, but had slightly angled rather than parallel strings compared to the keyboard.\(^1\) These instruments would have been used to play comparable genres as the harpsichord but with a slightly less rich sound. Due to the duller sound of these instruments, they played a much less weighty role in music history. Unable to stand out in a solo setting such as the concerto, the harpsichord proved the most versatile of the existing keyboard instruments.

In the latter portion of the Baroque Era, however, a new instrument was conceived. Though overlooked at first, this instrument would soon rise to the top of all keyboard instruments, paving the way for the modern grand piano. The pianoforte, named for its dynamic characteristics, was created in 1709 by the Florentine instrument maker Bartolomeo Cristofori. Referring to this instrument as a *gravicembalo col piano e forte*, or “harpsichord with soft and loud”, Cristofori essentially built a larger harpsichord except with hammers. Rather than the string being attacked with the tip of a plectrum, the plectrum was replaced with a hammer and lever that would allow the string to vibrate when struck from a downward motion with the hammer.\(^2\) The speed of the hammer could be adjusted based on the speed and intensity that a note was pressed down, thus allowing for contrast in volume. The pianoforte also contained a

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\(^1\) John Gillespie, 9.
\(^2\) John Gillespie, 10.
damper pedal pressed with the knee, capable of holding out the sound even beyond pressing the keys. Although still needing some adjustments in the action of the pianoforte, this was a revolutionary instrument not adequately recognized until almost twenty years after it creation.

The pianoforte was not accepted at first due to the noticeable adjustments in playing styles. The keys, being heavier than harpsichord keys, required more force to create sound, but too much force could also damage the strings. Moreover, the articulation was created through the downward motion of the keys rather than the release of keys after pressing them down. In addition to these significant differences includes the fact that Baroque members were very satisfied with the harpsichord as the preeminent keyboard of the time. The lack of dynamics seemed minimal when compared to the difficult adjustment in playing the pianoforte. Nevertheless, a gradual increase of awareness about the instrument would soon uncover the ongoing capabilities it possessed in order to create a beautiful sound appreciated by the latter Classical society. Late Baroque and early Classical composers played a key role in the bridge from the harpsichord to later piano instruments that are used almost exclusively today.

The Baroque Era experienced a variety in keyboard instruments, each with unique advantages and disadvantages. These keyboards progressed with the Baroque culture and taste in music, providing listeners with the genres and styles they wanted to experience. Members of the Baroque loved drama, ornamentation, and the performer. Keyboards satisfied these needs, able to accompany theatrics, such as the opera seria, while also providing thick textures of counterpoint and satisfying harmonies of the time. Though early keyboards such as the

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eschiquier, virginal, spinet, and the organ played a role in society, the beginning of the early stringed keyboards mostly featured the clavichord, a small keyboard capable of dynamics but also too small to participate in larger scale genres. A cousin of the clavichord, the harpsichord took over the musical scene due to its larger size and rich, full sound. The harpsichord excelled in its ability as both a solo instrument in genres like the concerto, but also became instrumental in its ensemble works as a basso continuo. Being the most popular instrument of the time, it would, more importantly, be the link to the pianoforte and more advanced keyboards suitable in the society and musical preference of the future.

Annotated Bibliography

Adlam, Derek. "Early Keyboard Music." *Early Music* 35, no. 1 (2007): 144-46. [http://0-www.jstor.org.library.cedarville.edu/stable/4137289](http://0-www.jstor.org.library.cedarville.edu/stable/4137289). This source gives helpful information about some of the music of early keyboards. It provides specific compositions to demonstrate what might have been written for the clavichord or harpsichord versus the organ. It specifies one work by Bach that some might have believed to be written for the harpsichord, but was actually written for the organ. The usefulness of this article is that it gives a solid foundation for more information to look into regarding differing styles of works based on the keyboard instrument used.

Chung, David. "Keyboard Music From France and the Low Countries." *Early Music* 42, no. 1 (2014): 147-50. Accessed September 21, 2015. doi:10.306-1078. This article provides information on specific interpretations that can be made from reading dated keyboard works. It refers the reader to a collection of music that is played from restored historical keyboard instruments. It mentions a specific 1635 harpsichord that was restored and is able now to create the sound that the original would have been able to make. It provides detail on the different colors and articulations that would have been possible. This is helpful because it will help me when I am trying to interpret the different interpretations in playing a harpsichord versus the modern piano that present day musicians play.

This source gives helpful details about the transition from the Renaissance to Baroque Period. It examined aspects of European history and culture that affected art, architecture, and music as well. I found it especially helpful in the development of my introduction and overall thesis of how each keyboard would have been impacted by the culture of the Baroque.

Cyr, Mary. "Origins and Performance of Accompanied Keyboard Music in France." *Musical Times* 165, no. 1932 (2015): 7-26. Accessed September 21, 2015. MasterFILE Premier. This article examines some evidence that shows an early tradition in improvising during the culture in which the harpsichord was prevalent. This is going to be very helpful while I look at the evolution of keyboard music as the actual keyboard instrument progressed. It might suggest that some of the early Baroque pieces were meant to be improvised while the later music was strictly played as written. A specific score of an early sonata is studied and specific passages serve as examples for the style of improvisation that would have been necessary at that time.


This source also provides helpful information regarding characteristics of the Baroque Era. It specifically related to my introduction in my addition of “barocco” as the adjective used to denote Baroque ideals. It provides information on some of the most popular and beloved genres that infiltrated Baroque music and art, thus providing further analysis on the relevance of the keyboard.


This book is extremely useful in research because of its fluidity in describing a very in depth progression of the keyboard. It gives helpful information about origin of the keyboard and its evolution over time. It includes information and mechanical illustrations about the clavichord, the harpsichord, pianoforte, and a few others. This was helpful in comparison with other sources to check for consistency.


The uniqueness of this article is present in its reference to an even early known keyboard, known as the eschiquier. This provides insight into some deeper information that could be looked into that some of the other articles did not include in their list of keyboard instruments. It gives very basic information on the replacement of this information with its successors, outlining some of the major flaws that these instruments possessed with their manufacturing. These manufacturing issues caused a lack of musicality because of no presence of dynamics, voicing, etc.

This passage from a book by A.J. Hipkins gives illustrations and descriptions concerning the differing mechanics and functions of early keyboards while also comparing them to the piano. Similarly to the topic of my paper, which not only discusses the progression of the keyboard but its music as well, this source gives information regarding the development of the keyboard music alongside the early instruments. Especially helpful about this source is its specific references to the uniqueness of the function and role of each independent instrument.


This article offers descriptions on the lives of the actual musicians that performed in the Baroque Period. It described how normal musicians functioned and I found it especially useful in understanding the reasoning behind performing. It helped me recognize the fact that Baroque music was performed more for the sake of the enjoyment of music, rather than as just means to another function.


This source discusses early clavichords, as well as some of the repertoire that was written ideally for the clavichord. It also examines the role that the clavichord played in early music and the type of music that was written to accommodate this instrument. A number of Baroque and early classical composers are discussed because their music was used for the clavichord. This will prove helpful in understanding one of the early keyboard instruments and its relationship with this time period’s music.


I found this source helpful in understanding the specifics of playing a harpsichord. It describes the ways that expression could be created outside of dynamics, including articulation, tempo fluctuations, and how the people of the Baroque Era could have still found the harpsichord expressive despite its lack of dynamics. It also helped me understand the adjustments it would have taken in switching to the pianoforte.


This source gives a more detailed overview of the evolution of early keyboard instruments. It is unique in its description of the early organ as well as the instruments that have been mentioned in other sources. It gives information on the mechanics of the
instruments, including differing lengths of the keys, which affected the performer’s finger span while adjusting to the advancing instruments.

This article discusses how the harpsichord functioned as an early keyboard instrument. It focuses on how the different parts of the harpsichord allowed for specific sounds and techniques. It also details the evolution of the harpsichord into the piano and what the new action on the piano allowed the performer to accomplish, though the transition into a new style of playing was difficult.

This source contains more specific detail regarding some of the dynamics of early harpsichords. It compares and contrasts a certain French harpsichord with others during its time, explaining the difference in perception from listeners about whether dynamics could be heard or not on this specific type of harpsichord. This is helpful in understanding what about the mechanics could be changed in order to create such a significant difference in the sound of these instruments. Dynamics was a main reason to need a more advanced keyboard instrument.

This source explains some of the advantages that the piano had above its predecessors. It describes the inner workings of early keyboards and why there was a need for a more advanced piano to be created. This new piano allowed for greater musicality with its technical advancements in stops, pedaling, and other elements that gave the performer more control over the instrument. It is helpful in its details about the contrast in these instruments.

This article includes a study of the early keyboard instruments, including the different models and types of harpsichords that were created. The information that this article contains is drawn from the inventory of harpsichord makers, especially private houses from nobility, as well as a brief description on the fortepiano and spinet.

This source describes the early development of the piano, especially in Florence, Italy. It details the production of early pianos and the effect they had on the culture during the early 18th century. Also helpful in this article are the pictures of the early keyboards that are being described, along with descriptions of the way these instruments functioned and the progress that was made.
I used this article in my description of the early organ. It provided helpful information on the ancestors of the organ, and how they fit with the society that used them. It explains the construction of the organ and how it produces sound through the pipes that can be created different ways to give a variety of sound. It describes some of the settings in which the organ is prevalent. This was beneficial in my study of the unique piped keyboard instrument and how it differs from its stringed relatives.

This source gives brief but important descriptions of the main keyboard instruments that have been used in history. It gives background on which keyboards were more influential than others, specifically the pianoforte. It reinforces the information given by a few of my other forces, such as the original creator of the pianoforte, and why there was a slow start to the popularity and acceptance of the pianoforte.