FROM POET'S AID TO COURTIER'S PASTIME:

AN EXAMINATION OF THE SHIFT IN VISUAL STYLE AND SOUNDING FUNCTION OF ITALIAN VIOLS DURING THE RENAISSANCE

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THESIS ABSTRACT

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This thesis examines evidence of the earliest viols in Italy. In light of recent changes in perspective on the origins of the Italian viola da gamba, a new approach to building historical models of the instrument is necessary. By using Castiglione's description of violas as a significant signpost, I have developed a clearer picture of the early viola da gamba's socio-musical context. Using this context, along with my experience as a luthier, I redefine the parameters by which we may interpret the corresponding iconography of the instrument. By relating the building techniques that appear in iconography to our modern knowledge of instrument-making, I expose the differences between building conceptions in the late fifteenth and early sixteenth centuries and those that stem from later "surviving" instruments. Finally, by placing historical models within the musical framework of plausible repertoire, I reveal the ingredients for an updated sense of sound and performance practice.

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CHAPTER I

CASTIGLIONE'S FOUR *VIOLE DA ARCO*

'Then signor Gaspar Pallavicino said: "There are many kinds of music, vocal as well as instrumental: therefore I should be pleased to hear which is the best kind of all and on what occasion the Courtier ought to perform it."

Messer Federico answered: "In my opinion, the most beautiful music is singing well and in reading at sight and in fine style, but much better is *il cantare alla viola*, because nearly all the sweetness is in the solo and we note and follow the fine style and the melody with greater attention in that our ears are not occupied with more than a single voice, and it's better that you can discern every small error—this does not happen when singing in a group, because one helps the other. But above all for me is singing with the viola for *recitare*, as this gives to the words a wonderful charm and effectiveness. "All keyboard instruments are harmonious because their consonances are most perfect, and they lend themselves to the performance of many things that fill the soul with musical sweetness. And no less delightful is the music of four *viole da arco* which is most suave and artificial. The human voice gives much ornament and grace to all these instruments, wherewith I deem it enough if our courtier be acquainted (but the more he excels in them the better)…" [1]

"...and he will take his own age into account; because truly it is uncomfortable and unseemly to see a man of any social standing, white-haired, toothless, wrinkled, playing with a *viola in his arms* and singing in the midst of a company of women, even though he did a passable job, and this, because most of the time when singing one speaks of love,

[1] Baldassarre Castiglione, *The Book of the Courtier*, trans. Charles S. Singleton (New York: Anchor Books, 1959).

> and in old men love is a ridiculous thing; albeit that it sometimes seems that he enjoys—amidst some others of his miracles—to excite and delight frozen hearts despite his age."[2]
>
> *Il Libro del Cortegiano,* 1528

In this passage from *Il Libro del Cortegiano,* Baldassarre Castiglione uses several terms referring to a bowed string instrument used for both vocal accompaniment and instrumental ensemble performance. In 1508 Castiglione began writing his guide to courtly life in Urbino, a lively center of both musical and literary arts, and after its publication in 1528, *Il Libro del Cortegiano* was widely read and translated. With this passage he captured a shift in musical performance at contemporary Italian courts, drawing attention to the development of the harmonious instrumental consort in contrast to the "older" style of accompanying a singer or poet with a single instrument. The development of the viola da gamba in Italy straddled this shift in musical taste, and corresponded with the rising preference for families of similar instruments and published music intended for instrumental groups. By the middle of the sixteenth century, the fashionable viola da gamba had swept all major cities and courts. Evidence of its vogue is found in paintings showing its use and in written documents that attest to its novelty. There was also an increase in published tutors for the viola da gamba, and to provide instruments for the hopeful musicians using the tutors, centers of *luthier* activity turned their attention to manufacturing them. However, we know little for certain about the actual design and construction of instruments such as those Castiglione spoke of, and until recently the origins of the early viola da gamba were fiercely debated. How were

[2] Translation mine.

Castiglione's 'viole da arco' related to the violas da gamba of the later sixteenth century? How were they related to the instruments that came before them?

In line with the most recent investigations based on iconography, organology and musical sources, one can discern some answers to these questions as they relate to the viol of late-fifteenth and sixteenth-century Italy. By situating my research in that intersection of organological sources and the tools by which we create actual performance, I will propose a set of criteria for constructing instruments that share the aesthetic goals of the early sixteenth century as described by Castiglione. This process demands a critique of studies whose interpretations of the viol are historically implausible and a return to the sources of the period.

In the last three decades the creation of period musical instruments has continued to evolve alongside discoveries in organology, a field that uses both iconographic and literary sources to build the functional foundations of current performance practices. Yet, while much has been written generally about the history of the viol and its origins, few scholars have dealt in depth with the sixteenth-century Italian viola da gamba. Compared to the resources for the study of seventeenth- and eighteenth-century instruments, the lack of instruments from earlier centuries has hindered efforts to create more historically accurate reproductions. Another barrier to conceptualizing sixteenth-century viols is the overwhelming presence of instruments built by ill-informed luthiers. It has always been the goal of makers to satisfy the interests of their patrons, whether or not those interests correspond to information gathered through rigorous historical criticism. Unfortunately, there are no extant and reliable examples of true sixteenth-century violas da gamba. In the absence of facts, luthiers have built too many models of these instruments based on

false information. Furthermore, unless questions that rise from scholarship are physically tested, our notions of possible performance options and types of sounds will remain doubtful or entirely detached from our current historical narrative. Therefore, I propose an approach to developing a more historically substantiated conception of these sixteenth-century bowed string instruments, and a clearer picture of what the early viol's physical nature might mean to today's performers of Renaissance repertoires.

The sixteenth-century viola da gamba was not standardized; many different shapes and styles appear in iconography of the period. It has been primarily understood as a consort instrument, that is, a familial instrument-type, much like its relative the violin family, both of which vary in shape and size according to the principle of overlapping tessiture. It is commonly held that the viola da gamba appeared at the end of the fifteenth century, and since then it continually developed according to changing Renaissance and Baroque aesthetic standards. The term "viol" refers to any bowed-string instrument that is played vertically, either on the knees or held between the legs, and that has a fingerboard divided by frets. The tuning schemes of viols are usually identical to those of lutes except in situations of scordatura, that is, six strings tuned to intervals of 4^{th}-4^{th}-3^{rd}-4^{th}-4^{th}.[3] These pitch ranges are thought to correspond to the vocal ranges present in Renaissance polyphony, and it could be assumed that the instruments were developed according to that convention. Four common sizes, treble or soprano, alto, tenor, and bass, would have been used to satisfy the consort model. However, artistic and

[3]Some viols had less than six strings, and therefore the tuning scheme would have been different from this standard. Certain early treatises that contain information on lutes, such as Johannes Tinctoris's *De inventione et usu musicae* (c.1480), could provide clues to how viols with less than six strings could be tuned.

functional variation in the shapes of the early violas da gamba was great, and so there may have been a wide variety of sounding characteristics between individual models.

The music with which the early viol is most commonly associated includes consort music and solo repertoire. Peter Holman has exposed the potential relationship to the late fifteenth-century Italian 'songs without words' repertory with the arrival of the viol in Isabella d'Este's court. It follows that the *frottola*, Isabella's indigenous Mantuan polyphonic genre, may have been specifically developed for viols.[4] Practically any vocal polyphony could be played by a consort of viols, including the five- and six-part chansons of Josquin and his contemporaries, which sometimes had a range of more than three octaves. By the mid-sixteenth century, the viola da gamba had developed to the point that virtuoso performers were using it for division playing, elaborate *passaggi*, and the single-line adaptations of polyphonic works, or playing *alla bastarda*. This is reflected in the tutors of Silvestro Ganassi (1542) and Diego Ortiz (1553), which are devoted to advanced techniques for playing *recercate, glossas*, and *clausulae*.

The viol was not the only stringed instrument to receive attention in the late fifteenth and sixteenth centuries. The poet's tool for accompaniment, the fiddle or viella, developed into the *lira da braccio*, and the lute also underwent many changes. The arrival of the *vihuela de mano*, or *vihuela*, in Italy from Spain may well have affected the development of the viola da gamba; of course the assertion that the viol was actually descended from the Spanish instrument has been thoroughly exhausted.[5] Without exploring the relationships between these instrument families, we would be left to

[4] Peter Holman, *Four and Twenty Fiddlers: The Violin at the English Court, 1540-1690* (Oxford: Clarendon Press, 1993), 16.

[5]Ian Woodfield, *The Early History of the Viol* (Cambridge: Cambridge University Press, 1984). This is Woodfield's central thesis.

wonder about many specific innovations that have broad implications. For instance, the addition of lower courses to the Renaissance lute was necessitated by the increasing range of its repertoire. Similarly, the transformation of the Trecento fiddle into the lira da braccio occurred according to the instrument's harmonic role for formulaic songs and declamation. The Italian viol was born into this environment of rapid innovations and experiments, inhabiting a musical space close beside its stringed cousins, yet being uniquely suited to the latest repertoire.

Little has been published concerning the way instrument makers innovated upon physical forms of fiddles or liras, or about the reasons why they carried some characteristics from the older instrument into the building process of the new ones. Several relevant issues remain to be addressed before a clear understanding of the construction and sound qualities of the sixteenth-century viola da gamba can be reached. How did the Trecento fiddle or viella change as it developed into the lira? Why were these instruments displaced by consorts or families of instruments with varying tessiture? Which features of the earlier instruments were retained as new ones arrived? What features were eliminated, and why? Are the physical transformations of instruments analogous to the development of improvised genres into published consort music? Contrasting this model of professional performance with the amateur practice of playing in consort should provide valuable insight into the early viola da gamba's distinctive characteristics. Addressing the questions listed above and applying the information gained from them to the practice of lutherie is the central task of my project.

Working from a luthier's conceptual models and iconographical sources, my research will present an idea of the sixteenth-century viola da gamba that will aid our

understanding of its use in Italian music. I shall examine the early history of the instrument in relationship to the iconography in which it appears, and combine these findings with the way images might be interpreted in terms of modern experimental lutherie. By identifying and scrutinizing the most relevant examples of instruments depicted in paintings, I will be able to extrapolate stylistic conventions, plausible building methods, and ultimately the function of the instruments' physical structures. From there, I will provide information on internal structural configurations such as bracings, blocks, and the sound-post, as well as external set-up schemes, such as bowing geometry, bridge style, and the degree of bridge/fingerboard curvature. Considering the stylistic features of these elements, I will outline the process of constructing an instrument, taking into account personal insights from my own experience in historically-oriented lutherie. If successfully interpreted, the information gathered from these sources should yield a better conceptual model of the early viol that will contribute to our current understanding of sixteenth-century string playing, and to the history of stringed instruments in general.

Early twentieth-century scholarship on viols and their development tended to focus on the supposed contribution of the viol to the violin family, treating it as a primitive ancestor. In the 1970s, this approach was overturned, and a search for the viol's origin and its relationship to Renaissance music began. Once it was realized that the viol was not the parent of the violin, scholars began to treat it as a "bowed guitar" that had its roots in the Middle Ages. Not until 1984 was the quest for an *Early History of the Viol* attempted, when Ian Woodfield published his influential book. Until recently, Woodfield has been the most widely read and quoted scholar on the subject of Renaissance violas da gamba. Woodfield distanced himself from earlier scholarship by arguing against the

historical connection between medieval and Renaissance viols, and by providing instead a point of introduction in the form of the fifteenth-century Valencian *vihuela de arco*. Subsequent authors have treated Woodfield's theory as authoritative, including Annette Otterstedt in *The Viol: History of an Instrument* (2002), and so have the many contributors to the *Proceedings of the International Symposium on the Italian Viola da Gamba* (2002), an important collection of articles edited by Christophe Coin and Susan Orlando.

Recently, Stefano Pio has challenged the long-held notion of the Italian viola da gamba's Spanish ancestry in his book *Liuteria Veneziana 1490-1630* (2011), reconnecting the Venetian schools with the medieval fiddle and the lira da braccio. Exploring a great deal of iconography, artifacts, and the historical records of the various mercers' guilds called *Corporazioni dei Marzeri* in Venice—to which instrument makers belonged—Pio has established a very convincing connection between fifteenth-century Venetian lutherie and the general rise of violas da gamba in the sixteenth century.[6] In his description of a probable origin for the instrument in Italy, Pio relies upon the economic realities of Venice and other centers of craftsmanship and commerce, inspecting relevant artwork on the basis of available records of merchants, craftsmen, and their patrons. Pio proposes that the rapid innovations in the physical structures of bowed instruments in the late fifteenth century were precipitated by the efficient organization of Venetian luthier guilds. Working to meet the increasing desire of musical patrons for larger instruments with lower ranges, Venetian luthiers broadened the gamut of available bowed string types, and set the standard for tastes in these instruments in adjacent cities and courts.

[6] Stefano Pio, *Viol and lute makers of Venice 1490-1630* (Venice: Venice Research, 2011), 23.

Pio's research has significantly altered the current landscape of organological inquiry into bowed string instruments. His methodology and ideas have been fundamentally important and inspiring for my research, particularly with regards to the effect of Venetian innovations on the broader culture of lutherie and music in the Italian peninsula. In terms of historical approaches to building violas da gamba, it seems that the Venetians pioneered the first modes of mass-production, which involved stockpiling materials in large quantities, and assembling the instruments according to guild standards.[7] It follows that once these new, more efficient techniques reached the market of patrons and performers, the culture of bowed string instrument building throughout Italy had to adjust to the shifting trend. If true, a distinct visual difference should be present in the paintings produced during this period of rapid innovation.

In *Four and Twenty Fiddlers*, Peter Holman explores in depth the social context of sixteenth-century string playing, commenting on the origins of the stringed consort, Isabella d'Este's role in the construction of instruments, and the significance of the *frottola* in the development of the consort genres. William Prizer's (1982) article on the correspondences between Isabella d'Este and Venetian luthier Lorenzo da Pavia sheds light on patron-craftsman relationships in the late fifteenth century, and offers a social context for the creation of new instruments.[8] Jon Banks has explored the *Instrumental Consort Repertory of the Late Fifteenth Century*, examining the evidence for the use of instruments in available musical sources.[9] Banks also comments upon hypothetical

[7] This does not mean that there was standardization amongst models. The variety of instrument shapes appearing in Northern Italian paintings is wide.

[8] William F. Prizer, "Isabella d'Este and Lorenzo da Pavia, 'Master Instrument-Maker'." *Early Music History* 2 (1982): 87-118.

[9] Jon Banks, *The Instrumental Consort Repertory of the Late Fifteenth Century* (Aldershot: Ashgate, 2006).

contexts in which instruments could have been used, even if that meant adding to an established vocal genre. His research has provided performers and other researchers with a framework within which they can incorporate or conceive of instruments in a pre-sixteenth-century polyphonic setting. A wealth of information is available on genre, style, and the functionality of viols after 1500, such as the use of the viola da gamba as a solo instrument, or the *viola bastarda*. Silvestro Ganassi's *Regola Rubertina* (1542) and Diego Ortiz's *Trattado de Glosas* (1553) serve as foundational sources for the bass viola as it coalesced into its "classic" shape and accumulated its reputation as a viable solo instrument.

I agree with Stefano Pio's thesis of Italian origin for the viola da gamba, as well as with Peter Holman's interpretation of the frottola as the first genre likely developed for viol consorts. The expansion of improvised practice into the consort music of the frottola was facilitated through instruments conceived with the most economical adaptations compared to their predecessors. In terms of craft, the early viola da gamba *was* a stylistic extension of earlier fiddles and liras da braccio. The viola da gamba differed from these instruments only as far as published consort music demanded, which involved above all a broad expansion of tessitura. Altering the fiddle or lira model to accommodate more sizes presented subtle challenges to the architecture of the new instruments, and the limitations of materials,[10] resulted in many different experiments by separate schools of lutherie. My exploration will clarify this concept with continued documentation of this period of experimentation as it appears in artwork, and as it relates to sixteenth-century musical practice.

[10]Strength, weight, type of wood, etc.

I will not be examining "extant" instruments, since it has been shown that surviving examples have not escaped alterations. Too often, observations about the physical nature of the early Italian viola da gamba have been based upon surviving examples that cannot be proven to be from the sixteenth century. Numerous reconstructions have been made from schematic drawings of notoriously false extant instruments, as well as after pseudo-scientific examinations of those examples with the extrapolation of significant geometries and proportions as a goal. Such dubious materials are regularly used in academic and performance environments, specifically the articles on the historical construction and re-construction of "extant" Venetian viols by Ian Harwood and Martin Edmunds,[11, 12] as well as Kevin Coates' attempt at a *Study of the Use and Aesthetic Significance of Geometry and Numerical Proportion in the Design of European Bowed and Plucked String Instruments* (1985).[13] While some information about real sixteenth-century bowed instruments is available—for example in the volume *When Angels Make Music* (2005) on the perfectly preserved instruments in the Cathedral of Freiberg (Saxony)—the most realistic basis for interpreting extant instruments is the one presented by Karel Moens. He affirms that no bowed instrument, even if consisting of parts fashioned in the sixteenth century, can be a trustworthy primary source in its entirety.[14] However, some isolated attempts at experimental lutherie based on detailed

[11]Ian Harwood and Martin Edmunds, "Reconstructing Sixteenth-Century Venetian Viols." *Early Music* 6 (1978): 519-525.

[12]Ian Harwood, "An Introduction to Renaissance Viols." *Early Music* 2 (1974): 234-246.

[13]Kevin Coates, *Geometry, Proportion, and the Art of Lutherie: A Study of the Use and Aesthetic Significance of Geometry and Numerical Proportion in the Design of European Bowed and Plucked String Instruments in the Sixteenth, Seventeenth, and Eighteenth Centuries* (Oxford: Clarendon Press, 1985).

[14]Karel Moens, "Problems of authenticity in sixteenth-century Italian viols and the Brussels collection" in *The Italian Viola da Gamba* (Solignac: Ensemble baroque de Limoges, 2002): 97-114.

scrutiny of iconographic sources have produced convincing results; for instance, a successful interpretation of the viols in the famous altarpiece by Lorenzo Costa (1497) was carried out by students at West Dean College.[15] Engaging with sixteenth-century viols by creating "style copies" from iconographic sources eliminates the problem of information added to our knowledge by luthiers of later centuries, and creates a more direct dialogue with our visual and sonic history.

The following chapter presents my model of challenging these perspectives, which begins with the twelfth-century *viella*. Since the origin of Italian violas da gamba can be connected with medieval bowed strings, I explore the potential avenues by which the Trecento fiddle came into being, and how the features of that instrument might have informed the earliest viols and lira-type instruments of the Italian peninsula. This historical model is different from the currently accepted theory, but is a further development in the research and a departure from Woodfield's thesis as well as from the many ahistorical attempts to portray the earliest violas da gamba as heralding the 'classic' Baroque type of later centuries. Since Stefano Pio has opened the door to examining the Italian origins of sixteenth-century violas da gamba, the conversation can and should be initiated.

In Chapter III, I examine iconographical sources related to the viola da gamba's origin. It is my assertion that images can provide another link to instruments of earlier eras, as they contain visual information on the procedures for their construction and design. Based on my experience as a luthier, I describe the techniques that would have been most likely employed to fabricate certain elements of Trecento fiddles, liras da

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[15]Roger Rose, "Artistic License." *The Strad*, (May 2002).

braccio, and viols. I have explored the large corpus of iconography related to these instruments, and have selected images that, in my opinion, are depicted in a way that shows at least basic organological understanding of the painter, so that they become useful and relevant to the most salient concepts or building techniques as they relate to my central points of discussion. These iconographic sources are important models to guide our experiments in creating relevant and historically representative instruments.

Chapter IV explores the repertoire that would likely have been supported by the instruments discussed in the previous chapter. It stands to reason that any change in the current organological landscape should have an effect on our perception of performance practice and choices of repertoire. Conceptualizing early viols by means of consulting relevant iconography should ultimately yield a new set of tools for interpreting available sixteenth-century repertoire, and should dramatically broaden our palette of historically relevant sounds. Since the accepted origin of the viola da gamba has shifted in light of recent organological research, the history of bowed strings has therefore changed, and is in need of new explorations to reconcile historical sources with modern understanding. By focusing on the varied construction techniques that are the result of the functional shift from medieval fiddles to lira da braccio instruments to violas da gamba, we may arrive at new models of construction that serve twenty-first century performance practices.

CHAPTER II

EARLY HISTORY OF THE VIOL

Did the viol originate in Spain or elsewhere? According to Ian Woodfield, the Aragonese *vihuela de arco* was a likely candidate for the historical instrument that spawned a new school of lutherie in Italy.[16] After the Spanish had applied the Moorish rebab's bow to flat-bridged guitar-like *vihuelas de mano,* the Italians theoretically were the ones who transformed the instrument into a whole family of different sizes, each capable of bowing individual notes across a gamut of at least three octaves. This presumed connection to the *vihuela de arco* and early Spanish origin has been recently challenged by Stefano Pio. Citing pictorial evidence from Italian paintings of the period, Pio shows that the vihuela's introduction into Italy is contemporaneous with the appearance of viols in Italian art. While the introduction of the *vihuela de arco* in Italy and its supposed arrival in Northern Italian courts was related to the papacy of Alexander VI (Rodrigo Borgia, 1492-1503), there was not necessarily a connection between the musical culture of the Spanish instrument and the earliest development of the viol. It would seem, therefore, that Italian luthiers had been producing viols prior to the arrival of the Spanish vihuela. Pio points instead to an Italian origin for the viola da gamba, and one that is linked to the medieval fiddle, referred to by Pio as *violetta*.[17]

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[16]Ian Woodfield, *The Early History of the Viol* (Cambridge Univ. Press, Cambridge, 1984).

[17]Pio,*Viol and lute makers*, 55.The terms used to describe fiddles were never fixed, and sometimes used to describe other instruments as well, such as lutes. Stefano Pio states that by the sixteenth century, the terms *viola*, *violone,* and *violetta* were the ones used in Venice. The term "viola" indicated an instrument of medium size, fitted with four to seven strings, included instruments that could be played *a braccio* or *a gamba*, with a range of alto/tenor. The term "violone" indicated a viola of large size with four to six strings, played vertically, with a bass range. The term "violetta" indicated a small viola with three to five strings in the soprano range. For this discussion, I will refer to medieval fiddles as viellas, based on Jerome de Moravia's term. For Italian viols, I will use the term "violas da gamba," and for describing these instruments in a general sense, I will use "viols," especially for those outside of Italy.

Thus, it is necessary to explore the origins of the viol in relation to its ancestry in medieval bowed strings. If viols are related to fiddles, then understanding how fiddles were constructed may inform us about the earliest traditions of lutherie during the Renaissance, and serve as a structural framework by which we can evaluate features of later instruments. In this chapter, I will be exploring the few sources that relate to the medieval fiddle, and will connect the history of that instrument with the earliest viols in Italy. Once this history has been narrated, I will explore the features and uses of violas da gamba in terms of their novelty and musical-cultural significance. Part of this discussion will be focused upon the adjacent developments of lutes and liras da braccio, since these instruments are indispensably linked to viols. By establishing a new history for the introduction of the viola da gamba into Italian Renaissance culture, we may begin to understand the instrument in terms of its physical reality, instead of considering it a vague and cursory antecedent to the "classic" instrument of Baroque fame.

The use of the fiddle, or *viella*, was ubiquitous in medieval Europe. It was the accompanying force par excellence of the twelfth-century troubadours, and found a permanent home in Trecento and Quattrocento Italian courts. We know that fiddlers could be of any social stratum, and aside from performing all types of secular music, they even made appearances in churches. A specific task of the professional minstrel was to enrich liturgical dramas, and accompany royal meals during which epic poetry was often sung. Fiddles were particularly useful for embellishing monophonic song with drones or organum, or for providing instrumental interludes between sung verses.[18] They were also the best instruments for leading dances.

[18]Mary Remnant, "Fiddle." *Grove Music Online*. *Oxford Music Online*. Oxford University Press, accessed June 1, 2013, http://www.oxfordmusiconline.com/subscriber/article/grove/music/09596.

The ambiguity of phenomenological traits of medieval instruments is the result of our lack of artifacts from the period. Although some important organological findings can be added to our collection of knowledge on medieval and Renaissance bowed strings, we are in the dark when it comes to true sources of physical detail. In the Middle Ages, much of the visual art in which fiddles appear was not meant to be interpreted realistically, and must be analyzed with care. Furthermore, the craft of lutherie was not being pursued at the same professional level as it was during the Renaissance, and it is likely that many instruments were made by general woodworkers or even the players themselves. Economy, rather than sophisticated artistry, may well have been the norm for the tools of this trade. We can draw some conclusions about the physical realities of medieval fiddles or viellas, first by studying sculptural depictions, then by collecting details from paintings and illuminations, and finally by comparing these to our few written descriptions. Semblances of fiddles are preserved in sculpture in many prominent European medieval centers, among them the Cathedral of Santiago de Compostela, Lincoln Cathedral, Chartres, and the Strasbourg and Angers cathedrals. Some of them survive in remarkable detail (Fig.1).

Figure 1: Sculpture of a fiddle on the exterior of the Chartres Cathedral (twelfth century).[19]

Generally speaking, fiddles were shoulder-held, though some depictions show or suggest an instrument played vertically, held on or between the knees. They had necks and fingerboards separated from the body above which the strings passed, but they were not always raised above the plane of the instrument's top. Most fiddles were shown with a bridge, and in cases where one is not discernible, we should assume that the artist neglected that detail, or that the bridge and tailpiece were actually connected.[20] The tuning pegs were inserted at the front or back of a flat pegbox; however, the presence of a

[19]Photograph in a private collection.

[20] Mary Remnant, "Fiddle." *Oxford Music Online*.

nut is uncertain before the fourteenth century.[21] Sound-holes were carved into the instrument's top, usually in symmetrical pairs. Fiddles were often waisted, or indented to allow greater freedom of the bow, but this was not universal or even normative. The greatest variable of these instruments was their shape; we can only confirm generalities as to their formal outlines. However, each feature was stylized according to regional preference and the typical decorations of that location.

Two thirteenth-century treatises confirm certain conventions for amateur players of the viella in Paris.[22] At that time Paris was a great cultural hub and featured prominently in the diffusion of musical theory and taste, and would have been responsible for many developments in instrumental practices occurring in other centers of learning. Jerome de Moravia's *Tractatus de Musica* (c. 1280-1300) and Johannes de Grocheio's *De Musica* (c.1300) contain detailed information on what types of music the viella could be used for, as well as instructions for playing that instrument. Although Grocheio's treatise is not a tutor for the viella or any other instrument, it does contain a section devoted to explaining which types of music are suited to the instrument. He states that one can discern all musical forms more precisely on the viella, including the *cantus* and *cantilena*, the *cantus coronatus*, which was a composed song that was fit to be performed for royalty, and those forms "without words," the *ductia* and *stantipes*.[23] Therefore, the viella could be used for any monophonic genre associated with the "lay public" and was prized for its ability to emulate the human voice.

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[21]Christopher Page, "An Aspect of Medieval Fiddle Construction." *Early Music* 2 (1974): 166-167.

[22]I do not use the term *amateur* to mean poorly trained, but distinguish the musical activities of nobility from those of *professional* minstrels.

[23]Christopher Page, "Johannes De Grocheio on Secular Music: a Corrected Text and a New Translation." *Plainsong and Medieval Music* 2 (1993): 31.

Jerome de Moravia's *Tractatus* contains the earliest example of a text intended for students of the *viella* and *rubeba*.[24] Jerome writes about the practicalities of studying the viella, provides a tuning scheme, and offers some advice on advanced playing techniques. For Jerome, the instrument must have five strings, one of them being a *bourdon* (drone string), situated outside the fingerboard. In the event that the music to be performed required the use of all five strings, all strings should pass over the fingerboard.[25] To complement the tuning scheme, Jerome tells his readers how to place their fingers; this positioning reveals a diatonic sequence, and never involves any notes outside of the Guidonian hand.[26] But most importantly, the *Tractatus* reveals broad cultural implications for the use of bowed strings as commonly utilized in the thirteenth century. Jerome placed the performing tradition of bowed string instruments within the conceptual range of *musica artificialis*, thereby aligning it securely within the culture of the literate, educated elite—an elaboration upon the general usages mentioned by Grocheio. The viella, therefore, was associated with all walks of life, used by courtiers and academics whom Jerome would have considered his peers, and by entertainers who practiced more diverse forms, whom Johannes de Grocheio admired.

The process by which the viella and its performance conventions took hold of Italian courts is connected to the great cultural exchange occurring over the Alps. The French Ars Nova era and the Italian Trecento were periods of great transformations in secular musical forms, several having arrived in northern Italy as the troubadours fled

[24]Christopher Page, "Jerome of Moravia on the Rubeba and Viella." *The Galpin Society Journal* 32 (1979): 77-98.

[25]Page, "Moravia," 91.

[26]Ibidem, 95.

from the Albigensian crusade of the thirteenth century. It is known that the exchange of Provençal culture in Northern Italian courts had a long and traceable history leading to the flowering of Trecento secular song, a process by which many long-standing troubadour practices were absorbed into the native Italian musical identity. The court of Monferrato was the earliest point of contact for migrant Provençal poets and musicians such as Raimbaut de Vaqueiras—composer of the famous *Kalenda Maia*—who emigrated there in 1197.[27] Verona became the Italian center for collecting and copying Provençal poetry soon after, thereby ushering in a long period of Occitan literacy for the Trecento courts. This contact was further bolstered by the refugees of the Albingensian Crusade (1209-1255), as well as the unavoidable cultural exchange resulting from the relocation of the Holy See to Avignon from 1309 to 1377.[28] Since the earliest treatises on the viella were contemporary with this new period of artistic sharing, the performance indications preserved in them could apply to the fourteenth-century Italian fiddle as well. From the beginning of the Trecento onward, the appearance of the viella in Italian artwork is abundant, characterized by depictions of performances in both secular and sacred spaces.

During the Trecento, it seems that stringed instruments from both sides of the Alps shared structures and visual features. The function of stringed instruments in Northern Italian Trecento courts had also become similar to the practice described in Jerome's *Tractatus*. According to Richard Taruskin, this process of cultural exchange

[27]F. Alberto Gallo, *Music in the Castle: Troubadours, Books, and Orators in Italian Courts of the Thirteenth, Fourteenth, and Fifteenth Centuries* (Chicago: University of Chicago Press, 1995) The Provençaux in Italy.

[28]Marco Gozzi, "The Trecento," in *The Cambridge Companion to Medieval Music* (2011), 136.

was reflected in the emergence of Italian Trecento song genres, a repertory related by common ancestry to contemporary French chanson traditions.[29] He cites a miniature of the three eminent madrigalists[30] of the Trecento in a Bolognese legal treatise as further evidence of this connection of native song to *oltremontano* style: Giovanni de Cascia, Maestro Piero, and Jacopo da Bologna, who are all flanked by a depiction of Arnaut Daniel, a twelfth-century troubadour (Fig. 2). In this pictorial rendering, Giovanni is playing a viella, suggesting that these famous Italian masters performed their own songs in the same manner as the troubadours who had graced northern Italian courts in the generations before them. Giovanni de Cascia, Maestro Piero, and Jacopo da Bologna served the same two courts in the mid 1300s—the Visconti court in Milan and the Scala court in Verona.[31] Through the absorption of ultramontane performing fashions, the viella came to be used by composers and performers of art song south of the Alps.

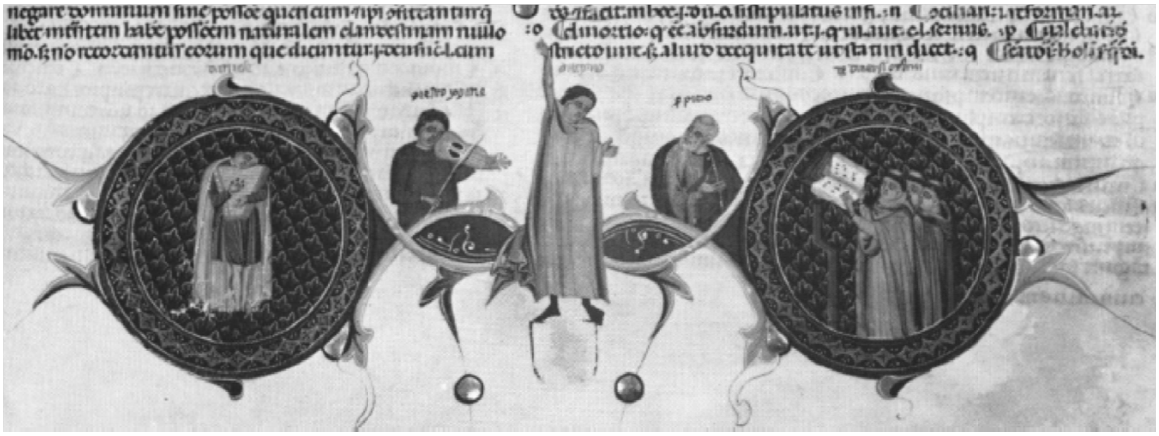

Figure 2: The three madrigalists and Arnaut Daniel. (Taruskin, Oxford, Vol. 1: 352)

[29] Richard Taruskin, Taruskin, *The Oxford History of Western Music* 1 (Oxford: Oxford University Press, 2005): 352.

[30] *Madrigal*, according to Taruskin's translation literally means "a song in the mother tongue."

[31] Taruskin, *Oxford History*, 1, 352.

The cross-influence of French and Italian music was still increasing as the fourteenth century came to a close. By the beginning of the fifteenth century, composers, instruments, manuscripts, and musical style had become fully mobile, creating a pan-cultural awareness and literacy for all cities and courts that supported art music. The addition of bowed string instruments to vocal polyphony was commonplace throughout the fifteenth century, yet we have no complete record of an instrumental consort genre that mirrored vocal practices until the turn of the sixteenth century.[32] Nevertheless there is significant evidence of "songs-without-words" from the last quarter of the fifteenth century, a genre that attracted the compositional talents of Josquin des Prez and Heinrich Isaac, and utilized a variety of instruments.[33] It has also been proposed that several apparent vocal compositions might actually have been intended for instrumental performance even though text was present. According to Jon Banks, the appearance of ensemble pieces that demanded highly-extended ranges, ranges that challenged what would normally be expected of the human voice, opens the possibility of performance upon instruments such as the lute, which could accommodate them "without any undue technical difficulty or special pleading."[34] The fiddle or viol was also capable of these extended ranges, and had the added feature of infinite sustain, especially in tessituras that are characteristically weak for voices or wind instruments. But stringed instruments that could accommodate such wide ranges were not invented overnight—their development

[32]Banks, *The Instrumental Consort Repertory*, 37.

[33] Holman, *Four and Twenty Fiddlers*, 13.

[34]Jon Banks, *Instrumental Consort Repertory*, 26.

happened slowly according to the increasingly complex polyphonic lines of the fifteenth century, and through several adjacent musical idioms.

While stringed instruments were added to and used for performing existing polyphony, the reduction of polyphony onto single instruments was a conventional practice. The evolution of the lute and bowed instruments in the second half of the fifteenth century can be largely attributed to the facilitation of this practice. Before 1500, the instrumental duet was an especially common configuration, with one player performing a tenor line, and the other improvising an upper voice.[35] The improvised upper voice may have been pieced together from the most important motions of superius or countertenor voices from sung motets or polyphonic chansons, but was largely an improvisatory task. An impression of this type of extemporaneous performance practice survives in the music of the *Codex Faenza*, which, although thought to be intended for keyboard, could easily have been arranged for other instrumental configurations.[36] Tinctoris describes hearing a bicinium performed by two violetta players in Bruges—one player improvising an upper line while another played a known cantus firmus.[37]

By the last quarter of the fifteenth century, single instruments were providing chordal accompaniment for poets in both public and noble circles. By then Italians had developed their own class of virtuoso poet-musicians, the *improvvisatori*, who often utilized the violetta, lira da braccio, or the lute as a proto-continuo instrument to

[35]Andreas Schlegel, *Die Laute in Europa* (Manziken: The Lute Corner, 2007), 28. Tinctoris also describes this type of improvisatory reduction.

[36]Crawford Young, Martin Kirnbauer, and Thomas Drescher, *Frühe Lautentabulaturen im Faksimile: Early Lute Tablatures in Facsimile* (Winterthur: Amadeus, 2003).Young posits that although the *Codex Faenza* was specifically written for organ, the music contained therein could be performed on a number of instruments, including the lute, and the practice itself was not limited to the organ.

[37]Pio, *Viol and lute makers of Venice*, 49.

accompany their formulaic lyrics.[38] Although reduction of complex polyphony on the lira da braccio was possible, it would not have been easy to accomplish with its fixed drone strings that could not be fingered. The use of chordal accompaniment in formulaic songs was more likely. An impression of this style of playing is documented in one written source, the Pesaro Manuscript (c.1490-1511) which has been examined in depth by Crawford Young. It is the earliest surviving manuscript with a substantial body of lute music, and it also contains a tablature for seven-string lira da braccio—a *Romanesca*—and a fragment of a *Passamezzo,* which are the only surviving pieces specifically intended for that instrument.[39] The majority of the compositions in the Pesaro Manuscript are chordal settings of tenors of popular *bassadanze,* a genre of dance music that was strongly associated with the Burgundian court. The lira pieces from the Pesaro fragment reveal that the instrument was capable of playing triple- and quadruple-stopped chords with melodic flourishes in the upper voice (Fig. 3).

[38]James Haar, *Essays on Italian Poetry and Music During the Renaissance, 1350–1600* (Berkeley, University of California Press, 1986), 83. Haar actually traces the *improvvisatori* back to the mid-fourteenth century, but we know little of their musical accompaniment traditions from before the lira da braccio.

[39]Crawford Young, *Early Lute Tablatures in Facsimile*, 143.

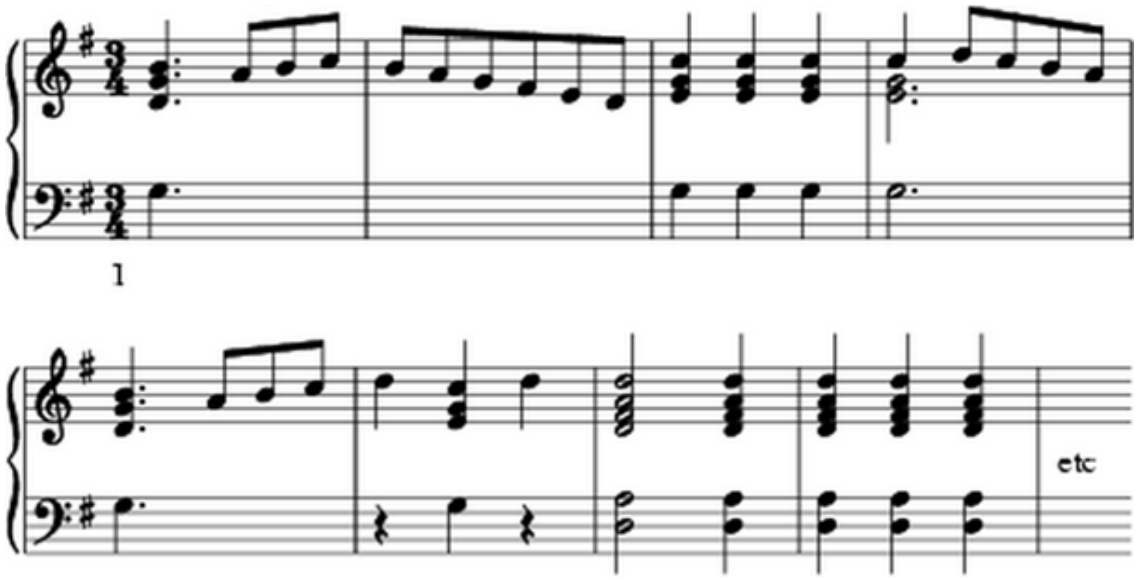

Figure 3: Romanesca for Lira from the Pesaro Manuscript (I-PESo 1144, p.174)[40]

Along with providing chordal accompaniment, lutenists were able to accommodate many lines on a single instrument. Furthermore, the continued popularity of the duet and the interplay between bowed and plucked instruments within this genre may be responsible for the creation of the lower-voiced viols. Johannes Tinctoris wrote in his *de Inventione* (c1470) that lutenists were playing up to four lines at once.[41] It must be remembered that the lute at this time only had five or six courses, with a tuning of [4th]-4th-3rd-4th-4th between them, according to Tinctoris. Compared to the range of the viella described by Jerome de Moravia two centuries earlier, this is a considerable extension of the lower register, yet additional courses would have been necessary for the accommodation of the lower voices in the known polyphonic instrumental sources from

[40]"Lira da Braccio" from Oxford Music Online, accessed 8/2/2013.

[41]Anthony Baines, "Fifteenth-Century Instruments in Tinctoris's De Inventione et Usu Musicae," *The Galpin Society Journal* 3(1950): 19-26.

the fifteenth century.[42] Tinctoris gives a description of the bowed "viola" as either having just three strings tuned in fifths or five strings tuned unevenly in fifths and unisons, just as Jerome had mentioned.[43] If a bowed instrument were to participate in a duet with a lute, its range would have needed to match the lowest possible notes on the lute. As instrumental polyphony expanded even further in the lower register toward 1500, a sixth and even seventh course were permanently added to the lute, thus expanding its tessitura by a fourth in each instance. A longer string length would have been the solution for the bowed instrument, thus elongating its entire body. If bowed instruments were to retain a balance with the lute's new low range, they would not have been able to be held on the shoulder comfortably. The solution in the case of playing an elongated viella would have been to hold it vertically, or *a gamba*.

There is no iconographic evidence for a vertically held viol in Italy before the last few years of the fifteenth century. The earliest possible example from outside Italy in the fifteenth century comes from HubrechtVan Eyck's c. 1418 *Adoration of the Mystic Lamb*, or *Ghent Altarpiece* (Fig. 4), which provides extraordinary detail of several instruments, including one large bowed instrument. All the features of this fiddle are consistent with iconographic representations of shoulder-held instruments of that time, except for its large size, its lack of a drone string situated off the side of the fingerboard, and its possible vertical orientation. Although it is uncertain whether the instrument would be played vertically (it is not being played in this image), its large size would seem to exclude the possibility of a shoulder-held playing position.

[42]Christopher Page, "Jerome of Moravia on the Rubeba and Viella." *The Galpin Society Journal* 32 (1979): 83.

[43]Page,"Jerome of Moravia." 82.

Figure 4: Vertical Viol in Hubrecht Van Eyck's Ghent Altarpiece, c.1418.[44]

The first painting of viols in Italy comes to us from Lorenzo Costa (in the *Ghedini Altarpiece* from 1497) in Bologna. Between 1418 and 1497 several large, vertically-held instruments also appear in Spanish iconography. The lack of visual sources from this critical period of the viol's development has allowed Ian Woodfield's thesis of Spanish origin for the Italian viola da gamba to go unchallenged for some time. However, since vertically-held fiddles were possibly known in early fifteenth-century Ghent, and since they appear in Italy contemporaneously with the Borgia papacy (1492-1503), Woodfield's notion they were developed in the last quarter of the fifteenth century in Valencia is even more doubtful.[45] More likely is that the "viol" is merely an elongated

[44]"Closer to Van Eyck, Rediscovering the Ghent Altarpiece," accessed 8/1/13, http://closertovaneyck.kikirpa.be/#home/sub=altarpiece.

[45]Woodfield, *The Early History of theViol*, 53. According to Woodfield, the Valencian viol was exclusively the cross-fertilization of the vihuela de mano and the Moorish rebab—getting its shape and structure from the guitar-like instrument, yet having the bow from the rebab applied to its strings. While it should be considered that this cross-fertilization may have influenced the later viola da gamba in some way, neither

viella or violetta, which was less invented than it was altered to accommodate longer and thicker strings, and a new playing position.

Lower-voiced, vertically-held viols were likely conceived of with ranges and tuning schemes that matched those of the lute. As will become clearer in chapter IV, the instruments also shared a common repertoire. It stands to reason that the viol was intended to be the lute's bowed companion—an instrument for playing tenor voices in duets and trios. Although the viol became widely established in the sixteenth century through the popularity of its use in consorts, it was not initially made in sets or families of different sizes. In Costa's aforementioned *Ghedini Altarpiece* (1497), two viols of similar size are depicted. They are being played in duet, a practice which had long been established among lutenists and *viellatores*. These instruments do not have *bordone* strings situated off the side of the fingerboard, and their approximate string lengths have made them too large to be held on the shoulder. A close look also reveals frets. Lorenzo Costa (1460-1535) was trained in Ferrara but spent many years in Bologna, and in 1509 he moved to Mantua where he became the court painter of Isabella d'Este and of the Gonzagas. Since Isabella is credited with instigating the beginning of viol consorts, Costa's first exposure to a consort of viols may have been after he entered into the service of the Mantuan *marchesa*. His *Ghedini Altarpiece* is likely meant to depict viols as the Bolognese understood them in the 1490s. The uses of these instruments would have included practices already established by lutenists.

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the vihuela de mano/arco, nor the Moorish rebab should be thought of as the direct antecedent to the earliest Italian viol.

Figure 5: Lorenzo Costa, *The Ghedini Altarpiece, Madonna and Child enthroned with SS. Augustine, Posidonius, John and Francis*, San Giovanni in Monte, Bologna 1497.[46]

The viola da gamba as the lute's companion appears in another painting at the turn of the century: Francesco Francia's *Madonna and Child with Saints Lawrence and Jerome* (Fig. 6). The construction of these two instruments is similar, and the viol seems to have been fashioned according to lute-making conventions. The peg-boxes of both instruments are of the same style, they both have flat soundboards and fingerboards, and they are being played in duet.

[46]Accessed 12/13/13, http://prolyra.free.fr/Christian_Rault_luthier/pages/30publpag/art17technofeatures.htm.

Figure 6: Francesco Francia, *Madonna col Bambino ed i Santi Lorenzo e Girolamo*, 1500, the State Hermitage Museum, St. Petersburg.[47]

The first confirmed mention of a consort of viols comes from Isabella d'Este's correspondence in 1495, when she requested three "viole" from an unnamed Brescian maker, and again in 1499, when she wanted another "viola grande" to match the larger ones in her consort.[48] This practice came precisely at the time when the "consort principle," as Peter Holman has named it, was taking hold in music-making centers. Holman states that "in sixteenth-century art music virtually every melody instrument was being made in coordinated sets of several sizes," a practice that was precipitated by the

[47]Accessed 12/13/13, http://commons.wikimedia.org/wiki/File:Francesco_Francia_-_Madonna_and_Child_with_Sts_Lawrence_and_Jerome_-_WGA08175.jpg.

[48] Prizer, "Isabella d'Este and Lorenzo da Pavia." 103.

spread of polyphony into secular music.[49] Toward 1500, the instruments used for performing polyphony were gradually developed into sets or families of similar models to retain a cohesive character between the sounding polyphonic lines.

From theoretical writings and documentary evidence of the manufacturing of consorts it seems that groups of similar instruments were meant to function as a single unit. Nevertheless, the practice of mixing consorts, whether by using instruments from different families for a single ensemble, or by using an unbalanced combination of various sizes from the same family of instruments, probably occurred often as well. Jon Banks has observed that "though manufacturing instruments in sets does not necessarily preclude the participation of different families in the same ensemble, it strongly suggests that unmixed consorts of single instrument types were favored," and that differences in tunings excludes the possibility of many instruments ever being used out of the context of their own family, especially winds, which have fixed pitches and temperaments.[50] However, since there was no common pitch standard at the time, and since both lutes and viols could be tuned at variable tensions and had movable frets, they could easily be added to ensembles of other instruments or voices. They were able to balance the lower register of an ensemble of dissimilar instruments without upsetting the tuning standard of the group, which was predetermined by those instruments with fixed pitch. As iconography from the early sixteenth century onward shows, both lutes and violas da gamba were frequently added to mixed ensembles, and to vocal music.

[49]Holman, *Four and Twenty Fiddlers*, 5 and 15.

[50] Banks, *Instrumental Consort Repertory*, 37.

In the Middle Ages, instruments were often played in mixed ensembles, but these ensembles lacked a theoretical scheme of sizes according to corresponding vocal ranges. The difference in the Renaissance—when the consort principle established itself—was that specific voice ranges could be chosen, and a balance of voices could be retained in mixed-instrument ensembles. Peter Holman associates this strategy of balance with exploiting "the natural difference in pitch between adult males and children or women, and between low and high voices in these categories."[51] Hexachord conventions that began with Guido d'Arezzo in the twelfth century and continued well into the Renaissance served as the basis for placing instruments in different categories of range.[52] Since hexachords were placed a fourth or fifth apart in the *Gamut* of the Guidonean *scala*, consort instruments were made and tuned with this proportion as their organizing principle.

Fifty years after Tinctoris's description of a "viola cum arculo," a treatise dealing with bowed strings in families or sets appeared: Giovanni Maria Lanfranco's *Scintille di Musica*, which is also the first work on music theory written in the "universale Italiana favela" or *lingua cortigiana*, the Italian courtly vernacular.[53] Printed in Brescia in 1533, the Scintille di Musica is aimed at beginners, and contains a thorough description

[51]Holman, *Four and Twenty Fiddlers*, 5.

[52]Peter Van Heyghen, *The Recorder Consort in the Sixteenth Century: Dealing with the Embarrassment of Riches*. Musicque De Joye:: Proceedings of the International Symposium on the Renaissance Flute and the Recorder Consort, Utrecht. (Utrecht: STIMU, 2003).

[53]Barbara Lee: *Giovanni Maria Lanfranco's 'Scintille di Musica' and its Relation to 16th-Century Music Theory* (diss., Cornell University, 1961).

of the tunings of different stringed instruments. The *Parte dei Violoni da tasti & da Arco* provides a graphic representation of the tunings for what he calls *Violoni* (Fig.7).[54]

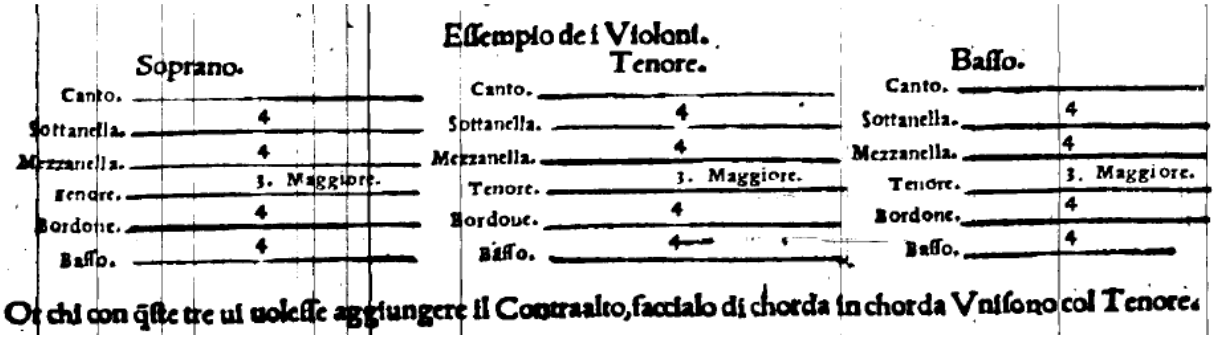

Figure 7: Giovanni Lanfranco, *Scintille di Musica*, Brescia 1533.

We can treat this graph as a conceptual guide to violas da gamba concerning the way their general sizes and tuning schemes related in consort. It reveals the names of the various sizes of "violoni," the interval relationships between strings, and the names of the individual strings. The fifth string of each violone is called *Bordone*, a fact which Stefano Pio has emphasized, since it seems to be a direct link to the instrument's immediate ancestor, the violetta. He states that "the fifth string, already present in some specimens of these *violette* as a drone (*Bordone*), was incorporated into the neck when they were expanded in size. This was then surpassed by a sixth string, named *Basso*, which fixed the lower sound produced by the instrument. The origin of the viola da gamba is tied to the evolution of a smaller instrument that was originally fitted with a fifth string drone (the name remained unchanged even though it ceased to perform this function), which

[54]Lanfranco, Giovanni Maria. *Scintille di musica* (Bologna: Forni, 1970). Lanfranco uses the term *Violoni* for viols, and *Violette* for instruments held *da braccio*, or on the arm.

was precisely the medieval *violetta* or vielle. It is worth noting that the vihuela was never fitted with a drone string."[55]

Somewhere between Tinctoris's *De inventione* in the 1480s and Lanfranco's *Scintille* in the 1530s, the conceptual shift among viols to the consort principle occurred, aligning well with Isabella d'Este's order of "viole" of 1495, as well as developments in other instrument families. By the mid-sixteenth century, consorts of viols are generally grouped according to the consort principle using the voices described in Lanfranco's guide. However, it cannot be assumed that violas da gamba were initially used one-instrument-per-voice. We can find more exceptions to the "standard" consort prior to Lanfranco's publication in 1533. In 1502, Isabella's brother Don Alfonso d'Este played in a consort of six viols of unknown sizes at his own wedding celebration in Ferrara.[56] Ian Woodfield explains that this early Italian viol consort configuration differed greatly from later configurations of the sixteenth century. According to Woodfield, the earliest Italian convention was apparently to have four instruments, either all basses, or a combination of basses and tenors. The use of a soprano or treble seems infrequent. As late as 1568, there was a description of a quartet of four basses in a Florentine *intermedio*, and only around 1586 did trebles begin to be described in performance.[57] The more common combination of tenors and basses is confirmed in iconography, in paintings such as the mid-sixteenth-

[55]Pio, *Liuteria Veneziana*, 51. Ganassi also refers to the fifth string as *Bordone.*

[56]Prizer, "Isabella d'Este and Lorenzo da Pavia." 104.

[57]Woodfield, *The Early History of the Viol*, 140. A tuning for a soprano instrument was mentioned on a manuscript leaf from the 1530s which describes a tuning model much like Lanfranco, but attributes the scheme to the famous "Alfonso della Viola."

century Bolognese "Angelic Quartet" by one of Francesco Francia's sons.[58] There is no iconographic source that depicts a consort which could match Lanfranco's graph of tunings with one instrument per voice.

Figure 8: G. Francia, Bologna, *Angelic Viol Quartet*, mid-sixteenth century.[59]

Consort violas da gamba shared many visual characteristics with liras da braccio, lutes, and even earlier Trecento fiddles. Yet they had many new features related to their function that distinguished them from their relatives. The most conspicuous physical attribute of violas da gamba was their large size; the elongated string length demanded a matching resonating body. Naturally, the sound-box of bass instruments increased in length, width, and depth. Since violas da gamba were designed to be bowed with single notes and without drones, a curved bridge and some type of indentations in the

[58]Ibidem, 160. A mid-sixteenth-century painting by Aurelio Luini: S. Maurizio, Milan, depicts a similar configuration, however it is more fantastic in character.

[59]Ibidem, 159.

instrument's sides were necessary for bow clearance.[60] For ease of pressing the strings down, the fingerboard was laterally arched, and the tailpiece was likewise curved, so as to not cause too much extra tension on the bridge. The peg-boxes of violas da gamba, now that six strings were common, assumed a more stable design. Instead of the leaf-shaped peg-box of the fiddle—which had only one surface in contact with the tuning pegs—makers opted for a peg-box, which stabilized the tapered pegs thanks to its two surfaces. A considerable amount of tension was now being put upon the instrument's soundboard, and iconography shows a variety of solutions to the problems that would have resulted from the pressure of the bridge. The most celebrated and debated innovation related to this problem is the arched soundboard, which could be made using several different techniques. As luthiers balanced these new instruments for the demands of playing and of sound production, a common visual characteristic resulted. Yet the iconography of the sixteenth century alludes to a diversity of strategies that luthiers employed for creating a visually, physiologically, and aurally satisfying instrument. It is by studying these techniques that we may learn which parts of violas da gamba were inspired by earlier instruments, and which features were truly new inventions.

Baldassarre Castiglione advised aspiring courtiers to be acquainted with many instruments, including consort violas da gamba. He began writing his guide to courtly life in 1508 in Urbino, and it was published in 1528. In those twenty years, consorts of viols had quickly become the preferred pastime of courtiers. Castiglione was not describing his "quattro viole" strictly in terms of novelty, but as an activity to surpass the older practice of singing to the accompaniment of a single bowed instrument. Although *il cantare alla viola* was a highly-regarded activity for professionals, it presented a social risk for those

[60]I will discuss the ideal balance of these elements of design in-depth in chapter III.

who wished to remain refined amateurs. The viella and lira da braccio had become associated with professionals, with the professional class of *improvvisatori*, and with all the symbolism that came with professional spectacle: lasciviousness, carnal love, tragedy, and passion. When Castiglione told his courtier to "take his own age into account; because truly it is uncomfortable and unseemly to see a man of any social standing, white-haired, toothless, wrinkled, playing with a 'viola' in his arms and singing in the midst of a company of women, even though he did a passable job," he was warning of the potential social discomfort that could arise when courtiers acted like professional entertainers, and was alluding to the aging performance practice.[61] The viola da gamba played in consort created a social distinction between courtiers and entertainers: it presented aspiring courtiers the opportunity to demonstrate their refinement and learning with the support of a group, and the new playing position was not associated with an established class of paid professionals.

The consort viola da gamba may have also generated a new printed repertoire. According to Peter Holman, the earliest genre developed specifically for the instrument

[61]Il Secondo Libro del Cortegiano del Conte Baldesar Castiglione a Messer Alfonso Ariosto, VII. "…e se il cortegiano sarà giusto giudice di se stesso, s'accommoderà bene ai tempi e conoscerà quando gli animi degli auditori saranno disposti ad udire, e quando no; conoscerà l'età sua; ché in vero non si conviene e dispare assai vedere un omo di qualche grado, vecchio canuto e senza denti, pien di rughe, con una viola in braccio sonando, cantare in mezzo d'una compagnia di donne, avvenga ancor che mediocremente lo facesse, e questo, perché il piú delle volte cantando si dicono parole amorose e ne' vecchi l'amor è cosa ridicula; benché qualche volta paia che egli si diletti, tra gli altri suoi miracoli, d'accendere in dispetto degli anni i cori agghiacciati."

"And if the courtier will be a fair judge of himself, he will adapt well to the moment and he will know when the minds of the listeners will be ready to hear, and when not; he will take his own age into account; because truly it is uncomfortable and unseemly to see a man of any social standing, white-haired, toothless, wrinkled, playing with a 'viola' in his arms and singing in the midst of a company of women, even though he did a passable job, and this, because most of the time when singing one speaks of love, and in old men love is a ridiculous thing; albeit that it sometimes seems that he enjoys—amidst some others of his miracles—to excite and delight frozen hearts despite his age." (translation mine).

may have been the *frottola*, which was being explored at Isabella d'Este's court in the first quarter of the sixteenth century.

Introduced as a single instrument in the late fifteenth century and quickly flourishing by means of the consort principle, the viola da gamba maintained its status as a solo instrument into the height of viola bastarda-style playing later in the sixteenth century. *Bastarda* is the practice of condensing a polyphonic composition to a single line by means of *passaggi* and new counterpoint while retaining the structure and character of the original composition (madrigal, chanson, or motet).[62] The popularity of this virtuoso style is difficult to gauge by musical examples alone, since it was a quasi-improvisatory practice. Yet works for solo bass viol constitute a sizeable portion of the repertoire from Italy. The presence of the viola bastarda style seems to have been in place before the rise of the English consort, indeed much earlier than the first descriptions of it, which appear in Girolamo Dalla Casa's 1584 treatise *Il vero modo di diminuir*. In the second decade of the seventeenth century, Michael Praetorius treated the "viola bastarda" as an instrument in itself, separate from consort viols. Before the term appeared, devotion to the practice was fervent: Diego Ortiz's *Trattado de Glosas* of 1553 remains the preeminent source for bastarda style, as it contains a wealth of information on *passaggi* and ornamental techniques.

While it may be impossible to prove a conceptual physical distinction between solo instruments and individual models that were part of a set or consort, the fact remains that individual viols were used in a variety of contexts. Viols appear in iconography in mixed ensembles and in various consort configurations, and they were also depicted as

[62]Lucy Robinson, "Viola Bastarda." *Grove Music Online*. *Oxford Music Online*. Oxford University Press, accessed 8/1/13, http://www.oxfordmusiconline.com/subscriber/article/grove/music/29444.

the centerpiece of an ensemble. It is unclear whether distinct models of violas da gamba were ever manufactured for the singular purpose of solo or bastarda performance after the concept of the complete consort became the norm. Those instruments used for soloistic practices may have been the bass or tenor from a complete set, and those appearing in mixed ensembles may have simply been taken from a set and used in a different context, one in which lutenists, keyboardists, vocalists, etc., may have been present. Yet despite the tradition of manufacturing violas da gamba in consort becoming firmly established in the sixteenth century, the idea of the viola da gamba as a singular entity goes back to its earliest origins, and continued throughout its lifespan. Therefore, to define the early Italian "viola da gamba," one must account for both the single instrument, and those used specifically in consort.

I believe that the mid-sixteenth-century establishment of consort viols in England marks the culminating point of Italian Renaissance violas da gamba. It has been shown that the Italians were responsible for the introduction of the viol into England, as they exported many sets or "chests" of viols to the court of Henry VIII.[63] This means that in the second half of the sixteenth century the Italians had solidified the concept of the viol consort, and had created a standard for export. This standardized consort punctuated the period of experimentation and development that characterized early sixteenth-century violas da gamba, and it paved the way for the arrival of the "classic" Baroque instrument of the seventeenth century. Therefore, in order to limit the discussion of Renaissance violas da gamba to the most relevant period, I will exclude iconographic sources that

[63]Howard Mayer Brown and Ian Woodfield, "Chest of viols." *Grove Music Online*. *Oxford Music Online*. Oxford University Press, accessed May 1, 2013, http://www.oxfordmusiconline.com/subscriber/article/grove/music/05543.

appear contemporaneously to the export of instruments to courts outside the Italian peninsula.

The physical nature of early violas da gamba in Italy has yet to be established. The earliest Italian examples had a separate function from seventeenth-century instruments of the same name, which were most often specifically intended for basso continuo. Sixteenth-century Italian violas da gamba were also different from consort viols developed in England and elsewhere toward 1600. However, the following questions remain: what structural and stylistic features distinguish early Italian Renaissance viols from later models? How did the intent behind their conception, which was relative only to the geographic and specific courtly context in which they would be used, inform their physical shapes? To what extent did a physical shape and internal architecture relate to the production of sound? To begin answering these questions, we must first set parameters by which we may explore the available information. The parameter of the instrument's origin has now been set: the viola da gamba in Italy was developed from the medieval violetta or viella, and not from the Aragonese vihuela de arco. From the mid-fifteenth through the mid-sixteenth century, it was ubiquitous in Italian courts, existing in a variety of shapes, and was used in a variety of ensemble configurations.

CHAPTER III

ICONOGRAPHY CONTAINING VIOLS

In his chapter on period instruments in the enlightening book *The End of Early Music*, Bruce Haynes advocates for building modern reproductions that were more relevant to the periods they were meant to represent, and not dependent upon our modern tastes.[64] He believed that what the historically-informed performance movement needed was "copies of specific originals, work-copies." Haynes spoke against generic style-copies, which he described as reproductions that merely looked like originals, but were designed and built to play as "well" as possible, without "faults." To counteract this problem, he argued for a "blind duplicate of an original—a stylistically authentic copy that would have pleased its original maker's contemporaries (to the best of our present knowledge), and that fools modern experts into thinking it is original." Haynes believed that the job of the luthier was to "compensate for the lack of original instruments in the world," in short to create facsimiles of artifacts from the period. Although his views are important to the culture of historical lutherie in general, Haynes' methodology cannot be applied to the earliest viols. Since no bowed-string instruments survive intact from the crucial period of their origins, how are modern makers to create them? How are we to learn from the instruments of the sixteenth century if we have no material examples? Answers may lay in the next best source of information, in the impressions left by contemporary artists in iconographic sources representing original instruments.

[64]Bruce Haynes, *The End of Early Music: A Period Performer's History of Music for the Twenty-First Century* (Oxford: Oxford University Press, 2007), 161.

There are dangers in using iconography as a basis for creating new instruments. The paintings from the period concerning the early viola da gamba were not always made with a firm representation of reality as a goal. It is difficult for us in this current age of photography to evaluate paintings from the sixteenth century. These paintings are not photo-realistic; they are sometimes symbolic, metaphoric, or fantastic, and often *represent* an object without utilizing principles of perspective and light. Peter Holman warns us that iconography depicting angel consorts tell us more about celestial instruments than about human instruments, and that we should be wary of drawing conclusions on performance practice or instruments from symbolic images.[65] He also cautions that our notions of "traditional" or "classic" shapes of instruments influence our ability to evaluate those that appear in paintings, which can lead us to ignore the variety of shapes that actually appear. Discussing bowed instruments, Holman reminds us that the sixteenth century was "a period of rapid change and adventurous experimentation in instrument-making, and it is not surprising that a number of shapes were tried for the violin before the 'classic' one emerged victorious in Italy around 1550," and that the 'classic' shape of the viol prevailed even later, in the seventeenth century."[66] Thus, what we know of 'classically-shaped' instruments may have little to do with those appearing in paintings before the middle of the sixteenth century.

Despite the inherent problems with interpreting sixteenth-century musical instruments in iconography, paintings are still the best source we have for gathering details about how the instruments may have been built. In evaluating the structural

[65]Peter Holman, *Four and Twenty Fiddlers: The Violin at the English Court, 1540-1690* (Oxford: Clarendon Press, 1993), 3.

[66]Ibidem, 3.

features that artists represented when depicting instruments, we can deduce features of historical instruments upon which the models in artwork may have been based. Some artists depicted objects in great detail and perspective, and the features they captured in their paintings tell us much about the ways those objects might have been constructed. Yet without having prior experience in building similar instruments, scholars have a hard time evaluating details of construction. Too often conclusions are drawn from iconography that do not make much sense in terms of construction, or that are too vague to lead us to any useful organological conclusions. Ultimately, I propose that unless a luthier can interpret an image in terms of methods of construction, the organologist should treat it as dubious on the grounds of the original artist's loose grasp of that specific instrument's architecture. In short, we need to trust the eye of the luthier to recognize implausible designs and details of musical iconography, because it takes a trained eye to find those details and interpret them in a meaningful way.

Before the luthier is tasked with interpreting iconography for the purposes of reconstruction, we should identify the problems of our current culture of historical lutherie. Bruce Haynes has captured the prevailing views on reconstructions, which entails learning every detail of an "original" model. These details then become the vocabulary of historically-oriented luthiers, and define what a period instrument should be in the minds of performers and musicologists. "Original" instruments, including those from the seventeenth century, may not be representative of the performing culture from which they are presumably descending. Even if an instrument is from a given period, there is the possibility that it survived because it was not being played, or that it escaped the ravages of time because it was an anomaly. If we were to copy only surviving

instruments without consulting iconography, our current performing culture might have to choose from anomalies only. In this way, it would be impossible to approximate the sound of a specific historical period. We depend on iconography even when extant instruments are available to us. In the case of sixteenth-century viols, many copies have been made of false instruments without consulting available iconography. For example, it has long been assumed that the so-called Venetian viols of Ciciliano, Linarol, and Ventura are somehow representative of Italian Renaissance viols, even though there is little corresponding iconography to support this claim.[67]

I believe that the process of building historically-informed instruments should mirror the process of reviving musical sources in performance. Musical sources from the sixteenth century were often intended only as formal and stylistic guides that served a highly improvisatory performance practice. To revive music from our printed and manuscript sources, we therefore must often interject experimental ideas. Without ignoring the original information available to us, we must treat fragmentary sources as ingredients for completing a broader picture, but not as objects to be slavishly copied. In mirroring this approach to musical performance from the notated page by means of new but logical interjected material, the goal of luthiers might also be to recreate the historical impulse behind the craft of lutherie, as opposed to making exact copies of artifacts. Making painstakingly detailed copies of extant instruments is a modern activity, and has little to do with the historical craft of sixteenth-century luthiers, who were concerned

[67]Woodfield, *The Early History of the Viol*, Chapter 7, "Structural Development of the Italian Viol"; Martin Edmunds, "Venetian Viols of the Sixteenth Century" *The Galpin Society Journal* 33 (1980): 74-91; and Harwood, Ian, and Martin Edmunds. "Reconstructing Sixteenth-Century Venetian Viols" *Early Music* 6 (1978): 519-525.

primarily with satisfying their patrons quickly and with economics in mind. Embedded in depictions of instruments in iconography are the essential ingredients that these luthiers used for creating such types of instruments. Therefore, we should in fact be experimenting with making *style copies*. The result should be convincing objects that stem from historical information, so as to emulate the attitude that created new instruments in the sixteenth century.

The successful re-creation of a historical style copy depends on a deep knowledge of historical tools, materials, and crafting techniques. A maker must have a good understanding of the aesthetic principles of the period, including decorations, artistic conventions, and architectural principles. But most importantly, the instrument produced must have a clear musical intention—a goal for a historically-informed performance setting. Since musical intent determines the nature of its vehicles of sound delivery, instruments that are not crafted for a specific purpose will end up satisfying modern aesthetic criteria by default. Given our strict traditions in violin making today, the most obvious danger is that our historical bowed instruments end up sounding like modern violin family instruments. Since period instruments significantly alter the landscape of historical performance practice, special care must be taken to consult historical criteria of space, function, and the instrument's relevance to musical sources. In the following section, I will discuss the individual parts of the viola da gamba as we know it, and how those parts functioned in the architecture of sixteenth-century viols. I will then present iconography that should challenge and expand what is known about the earliest models of the instrument.

Parts of the Instrument

There is no single part of an instrument that does not affect the whole in some significant way. Certain features serve an immediate acoustic function, and other parts, which seem to serve a more ergonomic purpose, still affect the general "playability" of an instrument, and are therefore actually heard at some level. An instrument is limited by the human body for which it is designed, and is generally evaluated by its ability to translate human movements into prolonged resonance. Players and makers have designed their instruments to produce specific sounds, and to suit their listener's tastes for a specific "character" among a known instrument type.

Figure 9: Outline of a late sixteenth-century viol

While it is impossible to know exactly how an instrument sounded in the sixteenth century or earlier, we can create an approximation by recreating the parameters by which the instrument was designed and built. For creating these parameters, it is necessary to first categorize the instrument's parts. These categories must correspond to the features that can be compared between separate iconographic sources.

The outline of a stringed instrument is the ultimate intersection of visual style and acoustic function. It is the combination of ergonomic necessity and the artistic conventions of the time (Fig.9). The outline contributes to an instrument's visual character, and can help to communicate the instrument's internal architecture to the outside observer. The outline of a viola da gamba is determined by the join of the sides to the soundboard (the top) and the back. The presence or absence of indentations in the outline comes from the necessity of bow clearance, but was dealt with artistically, resulting in many interpretive designs. These designs were exchanged between makers, and were often shared between separate instrument types.

The sides or ribs of a viol follow the outline of the top and back, giving depth and dimension to the sound-box. They could be constructed of thin pieces of bent wood, or part of a larger carving scheme—a carved "garland" approach (Fig. 10), wherein the instrument's profile was cut and carved from a larger block of wood.

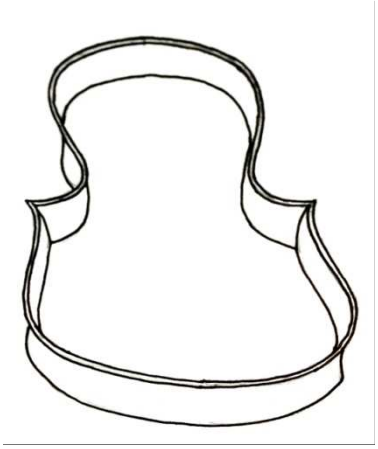

Figure 10: The carved "garland" approach.

In fiddles, the sides could be incorporated into a carved back and neck, after the body was hollowed out of a single block of wood (Fig. 11). It is possible that liras da braccio were also made this way, with a garland that also included a fully-carved neck

and peg-box. Such an approach is often difficult to detect in iconography, but the presence of *scalloped*, or concave, sides cannot be produced by bending, and therefore it always means that the instrument's profile was carved (see Fig. 12).

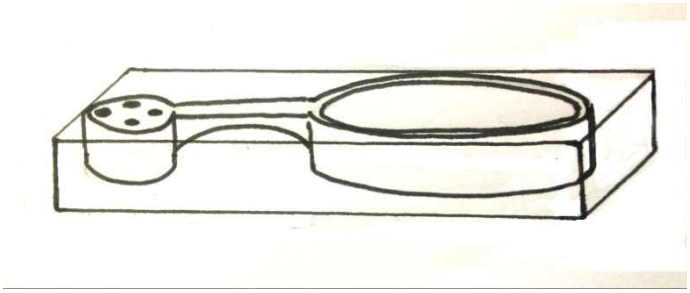

Figure 11: A fiddle carved from a single block.

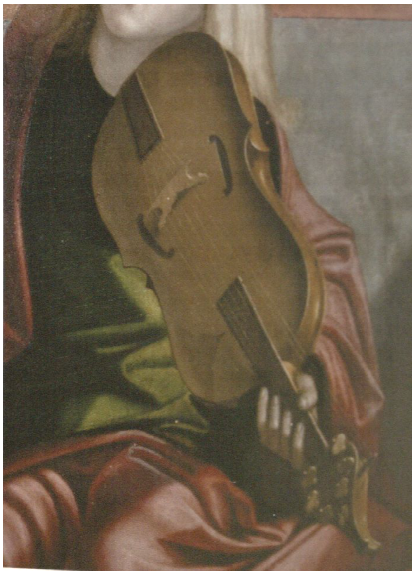

Figure 12: Example of a viola da braccio with scalloped sides and peg-box. Vittore Carpaccio, *Presentazione al Tempio*, 1510.[68]

The advantage of bent sides, as opposed to a carved garland, was that they were probably lighter, faster to make, and more economical in terms of wood use. In larger instruments, such as viols, a carved garland would require very large pieces of wood, and could have resulted in a quite heavy instrument once finished. By processing a large

[68]Pio, *Viol and Lute Makers of Venice*, 72.

block of wood into several thin pieces for bending, the potential waste from that block was minimized, making the bending technique more economical. Iconography of the first half of the sixteenth century shows an increase in rib height and body volume in violas da gamba, which precludes a carving approach.

In the case of bent sides, blocks are sometimes necessary for stabilizing corners and joins. Bent sides also often necessitate the use of linings to stabilize their join to the soundboard and back, as the surface area for gluing is very limited. For bending the sides, a structural mold could have been used to ensure a quick and uniform outline, but it is equally likely that makers bent sides without the aid of internal molds. Pio believes that the ribs were bent to fit patterns and geometric relationships that were drawn directly onto the wood with a ruler and compass.[69] He suggests that the internal mold was not utilized in Venice until the early eighteenth century.

The choice of materials for building instruments depends on economy and the resulting quality of sound in finished models. Certain woods are preferred over others because of their availability in a given area, their workability, their durability, and the perception of how well they contribute to a preferred sound character. The modern convention for building bowed string instruments is to use a workable "hardwood" for the sides, back, and neck, and to use "softwood" for the soundboard. Sixteenth-century iconography seems to support this convention. However, there are several exceptions to this rule, and by thinking of materials when observing iconography, many interesting questions arise as to the choices made by historical luthiers.

The neck of a viola da gamba is necessary for extending the length of the strings, for providing a place for the left hand to divide and finger the strings, and for supporting

[69] Ibidem, 55.

the fingerboard. The neck terminates with a peg-box with pegs for tuning the strings of the instrument. It also has a place designated for the nut, which stops the open strings and plays a role in establishing the string height over the fingerboard. The neck was either joined to the body as a separate piece, or, as in the case of fiddles and liras, it may have been incorporated into the body as part of a larger carving scheme.

The tuning pegs of fiddles and liras were normally implanted sagittally in the front or back of the peg-box. It often had a round or leaf-shaped profile, and could be carved with a length corresponding to the depth of the instrument's body (Fig. 13).

Figure 13: Lira da Braccio, Bernardino di Mariotto, Perugia 1528 (photo mine, 8/1/13).

In violas da gamba, makers preferred instead a double-walled peg-box with pegs inserted laterally. This approach had been previously utilized by rebec, guittern, and lute makers. In viols, the peg-box often terminated in a scroll or in a carved sculpture (Fig. 14). In nearly all images, the peg-box appears sickle-shaped, without a reverse curve.

Figure 14: Viola da Gamba peg-box with lion's head from Raphael's *Ecstasy of St. Cecilia* 1516-17.[70]

In modern bowed strings, the angle of the neck follows the angle of the strings to the bridge, and has a correspondingly slim fingerboard. In all sixteenth-century bowed instruments, the neck is joined in the same axis as the profile of the soundboard (Fig. 15). The fingerboard or the neck may follow the string angle through an increased thickness towards the bridge, thus creating a thicker neck connection at the body of the instrument. There is no evidence of a neck block connection as used in modern strings, but rather the neck may have continued into the body of the instrument to provide a stable gluing surface. A viol neck requires a large piece of wood for its shape, and it stands to be reasoned that it would be carved from the most economical block possible in order to minimize waste.

[70]Accessed 9/1/13, http://upload.wikimedia.org/wikipedia/commons/f/f0/Cecilia_Raphael.jpg.

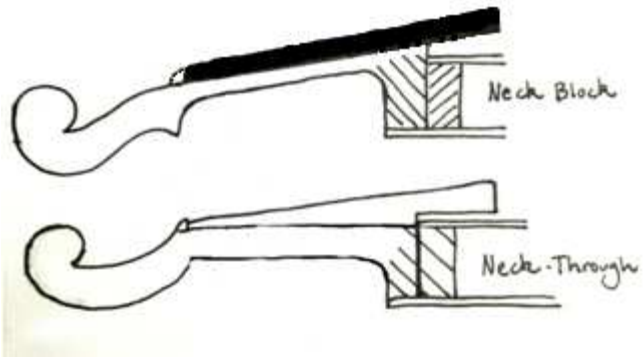

Figure 15: Modern neck connection vs. sixteenth-century neck connection and angle.

The viola da gamba's soundboard (top, belly, or front) has perhaps been its most debated structural feature. Viols appear in iconography with both flat and arched soundboards. The arch may serve a variety of purposes, first among them being the added support of the string pressure on the soundboard. The arch may also be intended to create greater string tension by increasing the angle of the strings passing over the bridge. Another function of the arch may have been to accentuate the bridge height, allowing greater bow clearance from the instrument's outline. By adding an arch to a given soundboard outline, the total surface area of the resulting soundboard, as well as the volume of the sound-box, is also increased.

In order to create an arched soundboard, a luthier must either carve it from a larger block of wood, or bend a flat piece into the desired shape. There are advantages and disadvantages to either approach. A carved soundboard can have more complex archings than a bent one, since the shape can be sculpted in a variety of directions. However, a carved soundboard requires more wood than a bent one, much in the same way that a carved garland requires more wood than bent ribs. According to luthier-musicologist Simone Zopf, bending a soundboard is much easier than carving one, and it

offers a more economical solution to arching. He has proposed a technique of bending two halves of a soundboard around wedges, and then gluing the resulting arches together (Fig. 16). Zopf states that "the advantage of this technique is the use of less material and the reduction of run-out grain, with a resulting increase in stability. The disadvantage is the danger of damaging the wood in the C-bouts, where there is the highest twisting of fiber. The shape of the wedges and the cross-grain stiffness of the wood act as a limit to the design of the arching."[71] It would also mean that hollowed or concave "dished" edges would not be possible, as in modern carved soundboards, because the curve of a bent soundboard is smoothly convex.

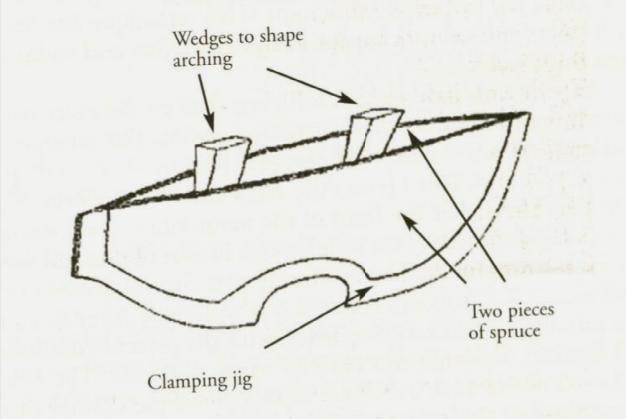

Figure 16: Simone Zopf, "The Bending of a Front."[72]

The soundboards of stringed instruments often need added support for the pressure induced upon them by string tension. Although an arching resolves much of the compressive stresses of the bridge, it is often not enough to keep the wooden soundboard

[71]Simone Zopf, "A Study of Three Viols Attributed to Antonio Ciciliano" in *The Italian Viola Da Gamba: Proceedings of the International Symposium on the Italian Viola da Gamba, Magnano, Italy, 29 April-1 May, 2000*. ed. Christophe Coin & Susan Orlando. (Solignac: Ensemble Baroque de Limoges, 2002): 195-204.

[72]Ibidem, 199.

from warping or cracking. A solution to this hazard is a brace or a post. Braces were certainly used in lute making in the sixteenth century, but it has yet to be demonstrated that they were used in viols. They appear in nearly all examples of "classic" or Baroque instruments in the form of a "bass bar." The bass bar of later instruments is normally placed under the bass side of the bridge, and passes from the upper part of the soundboard to the lower at a slight angle. According to luthier Luc Breton, "the bass bar works as an alternating lever producing at its extremity an amplitude larger than that of the bridge itself," thus activating the soundboard in a different way than without one.[73] Breton posits that braces were conceived of as a method for "pseudo-amplification" of the vibrating soundboard. Yet, while the effect of braces and a sound-post may indeed alter the sound character of an instrument, it cannot be assumed that they were invented with pseudo-amplification or harmonic-proportional goals in mind. More likely is that they were initially intended to provide structural support, and only later became involved and, in fact, central to the adjustment of an instrument's sound. It is therefore uncertain, if braces were actually utilized in early viols, where and how they would have been placed. Modern luthiers have experimented with many types of bracing, from lateral braces to centrally-carved ridges.

Another solution to the stress placed upon the soundboard is a post support. A great deal of speculation has surrounded the topic of the sound-post, which has culminated in the perceived dichotomy between sound-post-less instruments and those with sound-posts. While the sound-post does in fact transmit vibration from the bridge of the instrument to the back, it is unlikely that it was originally intended for this purpose. We do not know when the sound-post was invented, but its use, especially as a solution

[73]Luc Breton, "System and Proportions of Barrings on Viols." Ibidem, 181-194.

for supporting sinking soundboards, is quite simple, and to think that it was never used in early viols or even medieval fiddles is unlikely. However, the sound-post may not have been positioned in the same way as it is "traditionally" placed in violin-family instruments. It should be known that the isolated case of a surviving violoncello from the end of the sixteenth century (Freiberg Cathedral) indeed had a post, but it was square and pinned directly in the center of the soundboard.[74]

The back of a viola da gamba has the same outline as the top, except in cases where the sides of the instrument are not perpendicularly joined. In modern instruments, the back is not made of such softwoods as spruce or fir but it is made of a hardwood, such as maple. The use of hardwoods would have added to the durability of the historic instruments, and may have been part of a crafting convention that extends back into the Middle Ages. However, we cannot assume that backs were made exclusively from hardwoods. The backs of viols can be flat, or arched in a similar manner as the soundboard. The back was often drastically angled toward the neck to allow more comfortable access to the fingerboard, and possibly to save weight by shortening the neck's heel.

The fingerboard provides a platform for dividing the sounding strings. In viols it is usually divided by movable frets. The fingerboard's angle tends to closely follow the angle of the strings, which is created by the height of the bridge. This reduces the gap for pressing the strings down, and insures good intonation. Fingerboards can be laterally curved to match bridge curvature. However, fingerboards often appear flat, especially in

[74]Fontana, Eszter, Veit Heller, and Steffen Lieberwirth, *When Angels Make Music: Musical Instruments from 1594 in Freiberg Cathedral* (Dossel: Stekovics, 2008). This violoncello was painted gold and placed in the hands of an angel sculpture, and remained untouched from 1594 until the general restoration of the chapel in 2004.

fiddles and liras da braccio. Having a flat fingerboard does not necessarily mean that an instrument could only play drones or chords, as has often been assumed. However, if the fingerboard does not closely follow the curvature of the bridge, fingering notes becomes physically difficult, and controlling intonation becomes problematic. Iconography shows a variety of fingerboard shapes, and in general they feature much less curvature than our modern bowed string instruments.

The bridge creates a string height, a string curvature scheme, and determines bow clearance between the strings and the instrument body. The bridge translates the immediate vibration of the strings into the sound-box, as it is propped against the soundboard by the string tension. There has been a debate about bridge curvature (or the absence thereof), since many fiddles and viols appear to have flat bridges. Artists often seem to neglect depicting accurate curvature in bridges. For scholars, this uncertainty has created problems in interpreting the practical function of certain instruments. When speaking of Trecento fiddle bridges, Howard Mayer Brown stated that "the possibility of playing single notes throughout the entire gamut, the ability to play single-line melodies in any part of the range and hence individual lines in composed polyphony, depends, of course, on whether fiddles had arched bridges, for if all bridges are shown to be flat so that all the strings lie in the same plane, we would be forced to conclude that the instrument was capable only of playing chordal accompaniments, and hence could not have participated in any repertory except the monophonic, the formulaic and the purely instrumental." [75] Thus, looking at several works of art and finding a variety of bridge shapes means that we must adjust what we know of the instrument's possible repertory.

[75]Howard Mayer Brown, "The Trecento Fiddle and Its Bridges," *Early Music.* 17(1989): 318.

Bows of fiddles and early viols are extremely diverse, and would require a detailed exploration that is beyond the scope of this study. In general, Renaissance bows have a simple curve (much like the weapon that gives them their name), and are tightened with a wedge (frog). There was no screw-tightening mechanism, and securing the bow hair was likely accomplished without fitted blocks. Pernambuco wood was not yet used for bows in the sixteenth century, so the chosen wood was something else—not necessarily a dense or hard wood. I am convinced that the wood used for bows was not standardized, and that it may have been inspired by woods already used to make hunting bows, since these woods had been historically selected for their resilience in the face of tension and vibration.

Understanding historic strings and string-making technology would also require a discussion, which I need to exclude from this study. We know that twisted gut was used for all the strings of the viola da gamba, and there was no addition of metal windings or other materials. Ganassi talks about selecting strings for quality, and this information could be used again for the modern selection process. Gut was a readily available material until the twentieth century. String tension, whether equal across all strings or varied, is currently an active area of debate.

A viol's tailpiece provides a place for strings to be tied, and reduces unwanted vibrations in the unbowed portion of the divided string length. The tailpiece also serves an economical purpose in shortening the necessary length of gut for the strings, since the unbowed portion of string would extend to the bottom of the instrument without it. There were many methods of fixing a tailpiece to the instrument's body, and these variations may have had an effect on the sound of the instrument. The choice of decorations and

varnish on a viol may have had a resulting effect on the sound of an instrument. However, my study will only be concerned with the occurrence of these devices as artistic conventions, and will only observe them as they appear in iconography. The presence of colored varnish can usually be detected in paintings, but a clear finish on wood cannot. Much like the choice of woods, the details of the use of varnish cannot be ascertained through a study of iconographic sources.

The Iconography

I have narrowed my choices to those that I believe can be interpreted in terms of their construction. Obviously we have much more iconography depicting viols from the sixteenth century than I present here, but I have selected those images, which are useful in terms of my historical discourse (see chapter II) and knowledge of building methods. This section will not organize iconography according to type, but instead it will compare works of related subject matter. It will proceed chronologically from the earliest examples into the mid-sixteenth century.

Generally, paintings are the best source for examples of early viols. However, some very detailed examples also appear in drawings, woodcuts, and *intarsia*. Intarsia, or inlay, is particularly useful because it was normally used to produce an illusion of depth, in which subjects have been rendered in a false three-dimensional setting. The objects in intarsia are often meant to seem as though they are actually sitting on shelves or propped in cupboards. In some cases, intarsiated instruments display detail of relative size and proportion (if one is standing in a room with them), construction techniques, decorations, and possible wood choices.

Figure 17: Lira da Braccio from the Studiolo of Federico da Montefeltro, Urbino 1476.

This 1476 intarsia from the *studiolo* of Federico da Montefeltro in Urbino shows a lira da braccio (Fig. 17). It confirms several elements we already know about the instrument. The slightly curved bridge facilitates chordal playing with the possibility of an upper melody, just as is suggested from the tablature of the Pesaro Manuscript. This lira in the intarsia panel shows the scalloped sides of a carved garland building plan. The ribs could not have been bent. The instrument's soundboard is flat, and shows very detailed sound-holes. Perhaps the most interesting feature of this representation is the artist's use of wood grain direction. The soundboard displays grain directionality similar to that of modern violins, and is made of either spruce or pine. The artist chose to cut small slices of endgrain for the edges of the instrument's sound-holes—an attempt to communicate the realistic look of cut spruce or fir (Fig. 18).

Figure 5: Detail of Lira da Braccio from the Studiolo of Federico da Montefeltro, Urbino 1476.

From images such as these, luthiers can gain a sense of soundboard thickness for early bowed-string instruments. This instrument's top is much thicker than that of a modern viola. The apparent thickness could be a reason to suppose that the instrument did not need bracings.

Figure 19: Intarsiated viola da braccio by Antonio and Paolo Mola in the Palazzo Ducale of Isabella d'Este, Mantua, c1505.[76]

[76]Accessed 2/18/2014, http://www.wikigallery.org/wiki/painting_224024/Antonio-and-Paolo-Mola/Musical-instruments-2.Antonio.

Figure 20: Intarsiated viola da Braccio from Abbey of Monte Oliveto Maggiore, by Giovanni da Verona, 1503-05.[77]

Other intarsiated liras da braccio, such as that in the Palazzo Ducale in Mantua (Fig. 19) and the one from the Abbey of Monte Oliveto Maggiore (Fig.20), share many features with the instrument from Urbino, but they also present some interesting additional information. These liras have arched tops with a much thinner profile than the one in Urbino, and they share an outline style with many liras da braccio in paintings. Their sides appear scalloped, and are therefore of the carved variety. As we shall see, this type of outline, with corners only on the lower bout, will also be found in the earliest depictions of violas da gamba. With this style of instrument, the bridge is situated between inward-facing C-sound-holes and the outline style maximizes bow clearance.

[77]Giovanni Brizzi, and Enzo Carli, *Il coro intarsiato dell'Abbazia di Monte Oliveto Maggiore*, Cinisello Balsamo (Milan: Silvana, 1989), Tav. 40.

Lorenzo Costa's early violas da gamba share striking similarities to contemporary depictions of liras da braccio (Fig. 6). Their outlines are the single-cornered-bout style, with the waist positioned for bow clearance. Their sound-holes are of the inward-facing C variety, yet the bridge is positioned below them, not in between. Their slim profiles allow for the possibility that their sides were carved. Indeed, a close look reveals a possible scalloped effect. The fingerboards appear to be flat. The only significant differences between these instruments and contemporary liras are their large sizes, their double-walled peg-boxes with lateral pegs, their long necks, and their absence of drone strings. It would seem that the techniques used to make them would have been largely the same as those for liras.

The viola da gamba in Niccolò dell'Abbate's (b.1509 or 1512 – 1571) *Portrait of a Young Man* (Fig. 21) displays clear influence from the lira da braccio method of construction. While its large size, sculpted peg-box, absence of drone strings, and fretted neck *de facto* excludes it from the lira family, its scalloped sides are rarely (if ever) shared by later depictions of viols. This instrument appears to have been carved from a single block, as its neck does not have an angled join, but rather follows the curve of the carved garland.

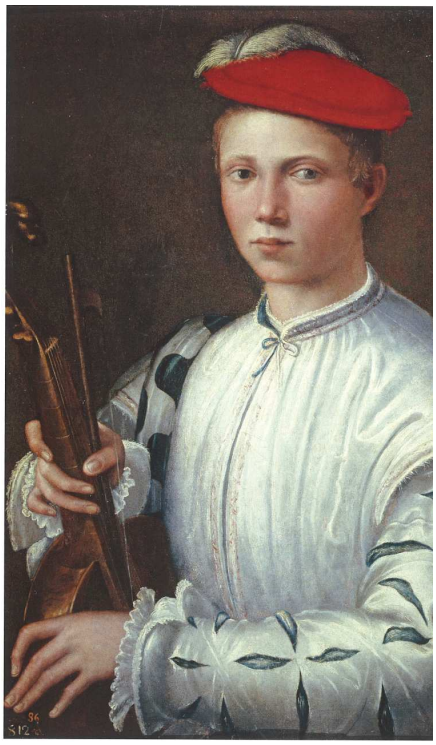

Figure 21: Niccolò dell'Abbate, *Portrait of a Young Man*.[78]

In cases where scalloped sides are not present, other features can allude to influences from the lira. In Benvenuto Tisi's (called il Garofalo) *St. Cecilia* (Fig.22), a viol without scalloped sides has a leaf-shaped peg-box instead of the double-walled type usually seen on larger instruments. The bridge is positioned below the inward-facing C-sound-holes, and there are no drone strings. This instrument has true C-bouts, or a waist with four corners. The neck has a clear perpendicular join to the body, and the instrument's width tapers toward this join, suggesting bent ribs.

[78]Anne-Emmanuelle Ceulemans, *De la vièle médiévale au violon du XVIIe siècle: étude terminologique, iconographique et théorique* (Turnhout: Brepols, 2011) 84.

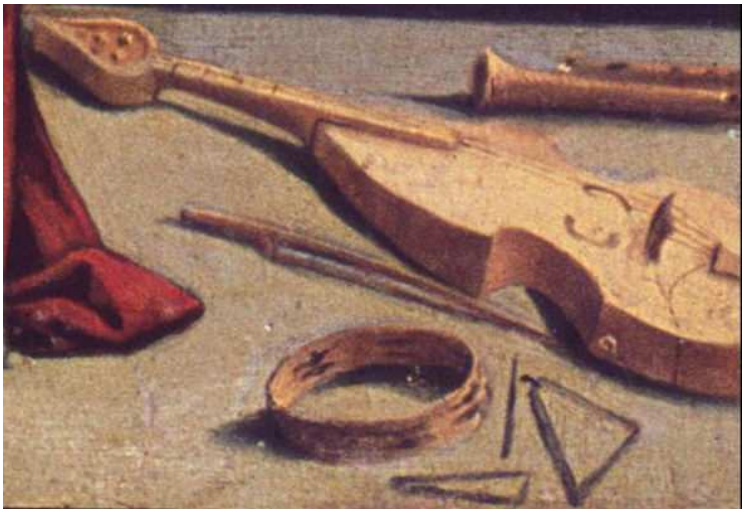

Figure 22: Benvenuto Tisi, *detto* il Garofalo (1481-1559) *St. Cecilia*.[79]

The larger and deeper violas da gamba are never depicted with carved sides. The economics of producing large bowed instruments to match the increasing demand for them after 1500 prohibited the carved garland approach. Toward the middle of the sixteenth century, liras da braccio and violas da gamba began to share fewer traits. Although another large viola da gamba (Fig.23) by Il Garofalo shares an outline style with the early Costa duet, it does not have a scalloped profile. For this massive instrument, bent sides would have relieved some weight, and would have eliminated the need for large blocks of wood from which the garland might have been carved. Aside from the single-cornered bout outline and inward-facing C-sound-holes, this instrument does not share stylistic features with shoulder-held instruments. It should also be noted that this viola da gamba's fingerboard has a very gradual curve, which matches the bridge.

[79]Accessed 5/28/2013, http://www.artstor.org/index.shtml.

Figure 23: Benvenuto Tisi (Il Garofalo) 1481-1559.[80]

Il Garofalo painted another viola da gamba (Fig. 24), which shows precise details of neck construction. A line running below the courtier's hand reveals the join of the angled fingerboard. This neck and scroll could have been carved from one slim block, thereby minimizing wood waste and overall weight. The correct string height in this instrument is achieved through the fingerboard's increasing angle. I should also note that this early viola da gamba's outline seems to be of the more "classic" style, with full C-bouts and wide bent ribs. It does, however, display inward-facing C-sound-holes.

[80]Woodfield, *Early History of the Viol*, 92.

Figure 24: Benvenuto Tisi (Il Garofalo), *Man with Viola da Gamba*.[81]

A striking instrument (Fig. 25) painted by Francesco Mazzola (il Parmigianino), reveals several important construction details. For the first time in iconography, the C-shaped sound-holes are depicted facing outward. This instrument's sides are obviously bent, and the artist's choice to paint the mottled refraction lines in the wood may tell us something about wood choices. The appearance of the sides seems to indicate maple, which is commonly used in violin-family instruments. The soundboard, obviously of a different wood type, is very thick around the sound-holes.

[81]Accessed 5/28/2013 http://www.artstor.org/index.shtml.

Figure 25: Francesco Mazzola (il Parmigianino), 1520.[82]

Method for Constructing Renaissance Violas da Gamba

It is important for makers who are interested in building Renaissance violas da gamba to be familiar with all the available iconography depicting the earliest models. Care must be taken to capture the "feel" of these iconographic models in our modern interpretations, and not to assume that modern techniques will produce similar results to those of the early sixteenth-century. Luthiers must attempt to operate in a similar mode to the makers of the earliest violas da gamba, taking care not to falsely project the ideals of modern or classic instruments onto an earlier model or form. Before utilizing known

[82]Accessed 5/28/2013, http://www.artstor.org/index.shtml.

construction solutions, one must allow a particular painting to inform a new plan. A drawing of an outline and profile must be created from a particular image, and the drawing should be balanced by a sensible geometric scheme; elements of style, and artistic and architectural principles of the time, should be observed.

When creating a schematic drawing based on iconography, it is necessary to proceed according to what is known of how makers thought about their own models. Luc Breton states that "…there is good reason to believe that a change occurred during the nineteenth century abandoning the vision of the Universe which had been the principal objective of the ancients. This objective had reigned until at least the first half of the eighteenth century and was intrinsically allied to artistic practice. One must begin by being convinced of the validity of this vision and not allow it to be ridiculed by modern science."[83] Breton is referring here to the concepts of Platonic Ideals, proportion, and geometry as the basis of virtually all creative activities in the Renaissance, meaning that luthiers probably thought of their instruments as representative of the harmony underlying the cosmos. We know from treatises such as Arnault of Zwolle's mid-fifteenth-century treatise *Speculum musicae* that instruments were thought to have a geometric essence or framework that informed their designs. Therefore, when creating a schematic drawing of an instrument based on a painting from the sixteenth century, we must observe these rules of harmonic proportion and geometry. The difficulty in observing these rules now, as it was five hundred years ago, is reconciling the human body, motion, and aural impression with an aesthetically stable instrument.

[83]Luc Breton, "The System and Proportion of Barring on Viols" in *The Italian Viola Da Gamba: Proceedings of the International Symposium on the Italian Viola da Gamba, Magnano, Italy, 29 April-1 May, 2000*. ed. Christophe Coin & Susan Orlando. (Solignac: Ensemble Baroque de Limoges, 2002), 193.

It is reasonable to assume that Renaissance makers began their designs by finding the length of the sounding string to which the instrument would be tuned. Although there was no standard pitch in the sixteenth century, we know that instruments were made to suit voice types. When ordering a lute from Lorenzo da Pavia in 1497, Isabella d'Este requested that it be pitched two steps higher than a viola he had made, because the viola was too low for her voice.[84] This would have required calculating a specific string length, and perhaps shortening and adjusting a known lute design. Today viols are made in a variety of string lengths for each voice. Depending on the pitch required, string gauges (and therefore tensions) are chosen, and suitable models can be constructed with this specific length taken into account. Therefore I propose that before beginning a schematic drawing of an instrument from iconography, a string length should be found that matches the intended performing pitch of the finished model. Starting from that chosen string length, the rest of the instrument can be "built" upon the drawing by using proportion and geometry.

After the string length has been determined, the body outline and neck shape, and the relative proportion of the neck to the body can be decided. Finding precise ratios in paintings is an unrealistic task, but we can determine generalities by comparing models and by hypothesizing proportions. Through a comparison of the two viols in Lorenzo Costa's Ghedini Altarpiece (Fig.13), John Bryan has been able to determine size discrepancies, and adapted the apparent ratios to fit Renaissance proportion ideals.[85] He

[84]Holman, *Four and Twenty Fiddlers*, 15.

[85]John Bryan, "'Verie Sweete and Artificiall': Lorenzo Costa and the Earliest Viols." *Early Music*. 36 (2008): 3-17. Bryan states that "Measurements are particularly difficult to pin down, as we have here no absolute standard from which to work. However, it is clear that Costa has set out to show two viols of different sizes: the body of the larger viol is approximately 10 per cent longer than that of the smaller, but

then successfully built a consort of tenor and bass viols based on these proportions. The proportions between two instruments in a single painting or the proportions present in a particular iconographic model may be used, but the relationship of the instrument and its depicted player must be treated with caution. In the case of Costa's painting, John Bryan was not able to use the size of the players to estimate the instruments' sizes. Often, artists depicted angels performing, and their sizes do not correspond to those of human beings. However, the instruments pictured may contain their own internal ratios, such as body/neck and neck/scroll. This may be the case in the *Angel Concert*, Ferrara, c.1510-15, at the Chiesa di Santa Maria della Consolazione, painted by either Michele Coltellini or Ludovico Mazzolino (Fig. 26), or Bonaficio Veronese's *Lazarus the Beggar* of c.1540 (Fig. 27).

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this masks the true difference in size. The larger viol has a comparatively longer neck in comparison to its body size, accounting for a nut–tail measurement exceeding that of the smaller viol by approximately 17 per cent, and when its lower bridge position is taken into account, it has a string length some 22 percent longer than its smaller partner. This would make it capable of sounding a fourth or fifth lower and it would thus be reasonable to consider these as a tenor and bass (or possibly treble and tenor) pair of viols, confirming their function as instruments designed to play polyphonic strands of different ranges."

Figure 26: *Angel Concert*, Ferrara, c.1510-15, details from The *Coronation of the Virgin*, at the monastery-church Chiesa Santa Maria della Consolazione, painted by either Michele Coltellini or Ludovico Mazzolino.[86]

Figure 27: Detail from Bonaficio Veronese's *Lazarus the Beggar* of c.1540.

[86]Irving Godt, "Ercole's Angel Concert." *The Journal of Musicology* 7 (1989), 335.

These viols, along with many others in iconography, seem to have a body-to-neck ratio of about 1:1. If a string length has been chosen, the internal proportions of a specific iconographic model can inform a schematic design.

I recommend that all curves in Renaissance viol designs be built using geometric proportions, namely “golden” or “divine” ratios, sequences, and simple arcs. The undulation, or reversing of a curve, is generally not seen, except in the upper shoulders of some instruments. When present, the reverse curve is often interrupted by a clear point or corner (Fig.28). The same principle of simple curves should be observed in sound-holes and other decorations.

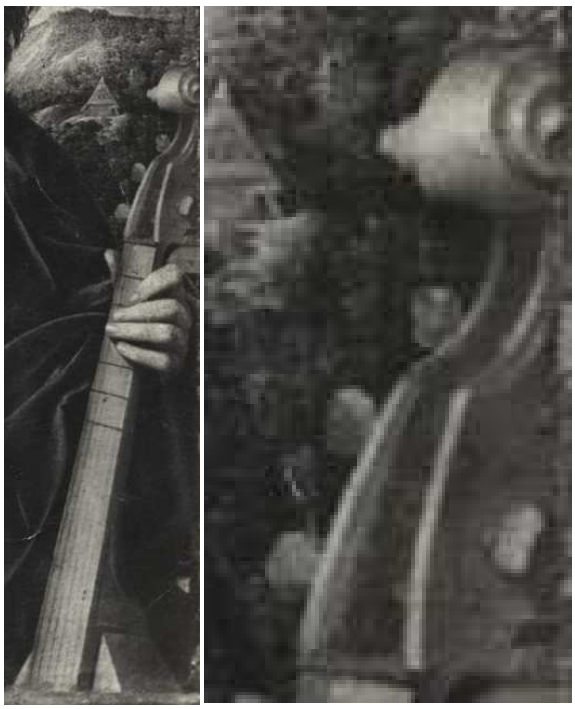


Figure 28: Peg-box with pointed reverse curve (i.e. convex from the nut to the middle of the pegbox, and concave to the scroll). Anonymous sixteenth century, Collezione duca di Pistoia, Torino.[87]

[87] Accessed 11/1/13, http://www.artstor.org/index.shtml.

There is evidence in iconography for many building techniques and conventions that survive in modern lutherie. The traditional selection of woods for specific instrument parts seems largely similar to those recognizable in iconography. One historical record of the problem of woods comes to us from Isabella d'Este and Lorenzo da Pavia, and can serve us as a cautionary tale against using the wrong type of wood for a specific instrument part. When ordering a lute from Lorenzo, Isabella apparently requested that the bowl be made entirely of ebony—an extremely hard, dense wood that would have been exceedingly difficult to find in that time.[88] Lorenzo advised Isabella against the wood choice because it would look strange and "would sound like a piece of marble." He recommended using "good cypress" instead—a more readily available and easily workable wood. When building historically inspired instruments today, one should also be aware of the economics behind wood selection, and should carefully choose woods for their known sound qualities. The ease of "workability" and durability of different wood types is something that informed luthiers in the Renaissance, and affected nearly every part of a finished instrument, from its tuning pegs to the thickness of bent ribs.

When making the soundboard, it is essential to plan an arching, and to account for stresses placed upon it by the strings. If a bent soundboard is chosen, the wedges made for bending must correspond to the desired arching height. Depending on the instrument's outline, a certain amount of bow clearance is necessary, and this will be partially created by the height of the soundboard. Therefore at this junction a test drawing

[88]William F. Prizer, "Isabella D'Este and Lorenzo Da Pavia, 'Master Instrument-Maker'." *Early Music History* 2 (1982), 109.

should be made to represent the bridge, fingerboard angle, and bow clearance across the outline cross-section (Fig. 29).

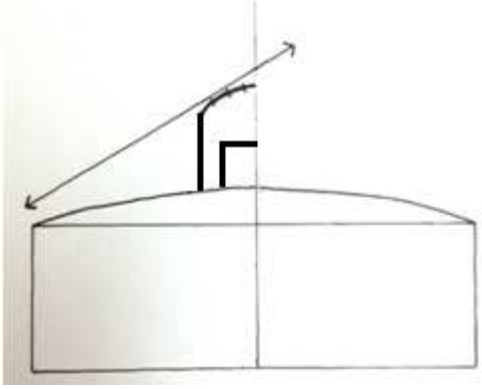


Figure 29: Cross section of a viol at the bridge, displaying projected bow clearance against the instrument's body according to bridge curvature and height.

I also suggest that the soundboard should initially be made without bracings. Makers may have created arched tops that supported the stresses of the strings by their arching designs alone. In iconographic models that have inward-facing C-sound-holes, a modern offset bass bar would not have been possible, as it would have passed beneath the openings of the holes. A centrally-carved ridge may have been utilized, as it would have strengthened the glued seam in the center of the soundboard, and could be easily removed if deemed unnecessary later on (Fig.30). However, the centrally-carved ridge can only be accomplished on a carved soundboard, and the only evidence of its use comes from falsely "extant" instruments. It stands only as an intriguing solution to the problem of supporting a soundboard where using traditional methods would be anachronistic. The sound-post should be treated with similar skepticism: it should be used as a solution to soundboard stress and problems with sound production, and not necessarily as a planned feature of an untried model.

Figure 30: My own interpretation of a descant viol top, showing a centrally carved ridge.

The most reasonable approach to making a successful soundboard is to try one method, set up the instrument, and adjust thicknesses by ungluing the top and removing excess wood where inflexible, thereby strategically graduating the thickness of the carved top. Bracings and the sound-post can be added or removed where they are needed. Above all, we should remember that an instrument's soundboard functions as a vibrating membrane; great attention must have been given to the balance between flexibility and stability in the sixteenth century, just as there is today. Experimentation is the key to a successful model in this sense, because no planned bracing or sound-post scheme has any historical validity. However, experimenting with solutions to the soundboard must have occupied much of the historical luthier's time, and it is unreasonable to think that all available solutions were not tried in the sixteenth century.

Ultimately, the instrument must play well. Instruments that were theoretically governed by ideal geometric proportions were also subjected to ergonomic criteria. Much of our current knowledge about string height, bridge curvature, frets, and other elements

that affect the “playability” of bowed instruments should be useful in fine-tuning a re-created sixteenth-century model based in iconography. Where the artist failed to communicate a specific ergonomic detail, our modern solutions may fill the gap. The issue of wood waste is also connected with the subject of ergonomics, since the high costs of wasted wood is related to the cost of human work required to execute the individual parts of the instrument. It may be difficult, in our modern era of mechanized tools, to understand the economic mindset of Renaissance luthiers, where time and the limits of the human body strongly influenced the approaches to making stringed instruments. However, the iconographic sources that represent the earliest violas da gamba seem to confirm certain ergonomic and economic realities, and they are therefore crucial sources to luthiers and performers. In the same way that performers strive to produce innovative and satisfying modern performances of Renaissance music, luthiers must attempt to operate in the fashion of ancient luthiers. This is our only hope for creating instruments that may approximate a sixteenth-century sound.

CHAPTER IV

REPERTOIRE

In chapter III I clarified an array of possible models of violas da gamba from around the time of Castiglione's *Il Cortegiano*. In this last chapter the central question to pose is: for what repertoire were these instruments intended? Castiglione wrote his description of violas da gamba at the time a range of fifteenth-century viol and lira practices were being supplanted by whole consorts. The repertory of Castiglione's viols almost certainly consisted of frottole and popular Burgundian chansons.[89] However, since the standard consort configuration and its repertoire was still crystallizing during this period, the true details of Castiglione's delightful quartet of four *viole da arco*, along with other descriptions of performances, remain unclear to us. Shedding light on the problem of contemporary instrumental repertoire should add texture to our understanding of the viola da gamba's physical and functional evolution.

In the previous chapter I explained that historically-inspired instruments should not be made without a clear musical goal. In this final chapter I will highlight what is already known of the earliest possible repertoire for viols in Italy, as well as the later development of repertories specifically intended for structured consorts of viols. Beginning with unambiguously "instrumental" practices such as diminutions upon tenors and intabulations, and exploring possible instrumental repertories within untexted polyphonic chansons; finally, I will present repertoires clearly intended for instrumental consorts. Understanding these musical sources should sharpen our perception of the

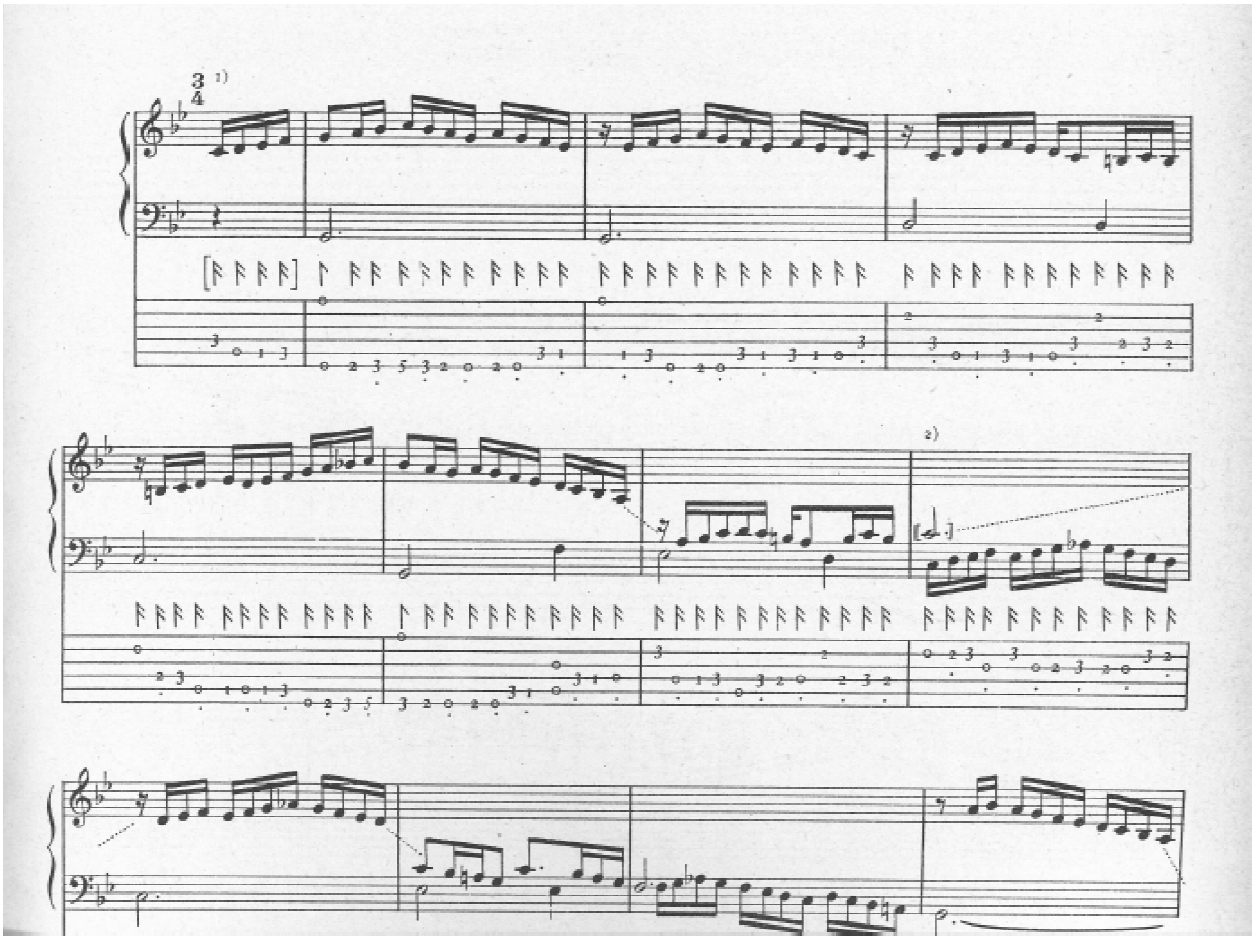
[89]Peter Holman, *Four and Twenty Fiddlers: The Violin at the English Court, 1540-1690* (Oxford: Clarendon Press, 1993), 16.

performance practices of the viola da gamba as it developed in Italy, which is ultimately essential for maintaining an informed approach to re-creating plausible historical models.

Our perception of the viol's origins depends upon our understanding of the conceptual rise of instrumental music in the fifteenth century. We know that the development of the viol is invariably linked to this complex period of compositional experimentation and establishment of style and genre. Composers at this time were only beginning to think in terms of separate "instrumental" and "vocal" models for creating new pieces. Sixteenth-century sources of intabulations, instrument tutors, and publications that designate specific performing instruments reveal the distinct natures of instrumental styles. Earlier sources of intabulations, such as the Faenza Codex 117, reveal idiomatic techniques for the realization and embellishment of essentially vocal music. When compared with purely instrumental practices of diminutions on known tenors, these intabulations provide a valuable glimpse into the developing instrumentalist's craft. Exploration of the problem of fifteenth-century "instrumentality" as it relates to untexted chansons, intabulations of vocal models, and the emergence of purely instrumental music, is essential to our understanding of the emergence of the viola da gamba.

As I explained in chapter II, the earliest possible sources of music for viols, which includes the instrumental consort repertoire or the 'songs-without-words' genre, and much of the repertoire for six-course lute, had an ambitus unsuitable for shoulder-held bowed instruments. The lower voices of most lute tablatures could not be accommodated by rebecs or fiddles if the upper voice were performed on a tenor-range instrument (Ex. 1). By identifying the contexts for vocal music performed on instruments and the rise of

new music specifically intended for instruments, we may finally understand the impetus for the creation of lower-voiced bowed instruments held *da gamba*.



Example 1: Opening of a two-part diminution upon La Spagna from the 'Capirola Lute Book,' printed in Venice between 1515 and 1520.[90]

The driving forces behind the sudden popularity of the viola da gamba in the sixteenth century become clearer in light of the shifting performance ideologies of the time. As instrumental practices increasingly favored vocal models and familial instrument (or whole) consorts, the functionality and technical features of viols adapted, following the new criteria for performance. The change in practice is reflected in the

[90]Otto Gombosi [editor], *Vincenzo Capirola Lute Book (Circa 1517)* (New York: Da Capo, 1983), 73.

contents of early sixteenth-century printed sources. In this case stylistic characteristics are linked to developments in the social realms of musical patrons, professional musicians, and courtiers. The social environment of consort practices shaped the course of the viol's career in Italy and elsewhere, wherein the amateur court culture blossomed by way of convenient printed collections of idiomatic music.

In clarifying Tinctoris's use of the terms *res facta* and *cantare super librum*,[91] Margaret Bent opened several questions concerning instrumentality in late fifteenth-century music. It seems that making counterpoint, whether written down or "fully-conceived" in mutually related voices (*res facta*) or performed spontaneously (*cantare super librum*), involved careful forethought and craft. In Tinctoris's time, both written and improvised pieces followed the same rules of counterpoint, and distinction between *res facta* and *cantare super librum* may have been so subtle "as to defy diagnosis." Bent states that "our heavy dependence on writing as a means of preserving and transmitting music, serving us as a substitute for both memory and aural control, should not blind us to the possibility of music fully or sufficiently conceived but nevertheless unwritten."[92] Quoting Willi Apel's definitions of "improvisation" and "extemporization," she argues that our current understanding of improvisation commonly excludes the role of memory and careful preparation, which was not necessarily the case for fifteenth-century performers.[93] Although Tinctoris was speaking of vocal practice, his description

[91]From Tinctoris, *Liber de arte contrapuncti*, 1477.

[92]Margaret Bent," 'Res facta' and 'Cantare Super Librum'." *Journal of the American Musicological Society* 36 (1983), 378.

[93]Ibidem, 374.

illustrates the mechanics behind the burgeoning fifteenth-century processes of instrumental improvisation as well.

Since the thought processes behind written and "improvised" pieces in the late fifteenth century were so closely related, it is not surprising that distinguishing "instrumental" pieces from vocal compositions is often difficult. Furthermore, the absence of a text in an otherwise vocal piece does not necessarily bespeak an instrumental realization of the notes. The notated or preserved practice could have been intended to be used as a *contrafactum*, which often left polyphonic music that did not bear an accompanying text in the source. There would have been little need for professional instrumentalists to arrange a discrete written object to aid in the performance of a vocally-modeled piece of music. The fifteenth-century mentality toward composition and its closely-related concept of improvisation involved fluidity between vocal and instrumental practices, and purely instrumental pieces have therefore left few traces amongst surviving manuscript sources.

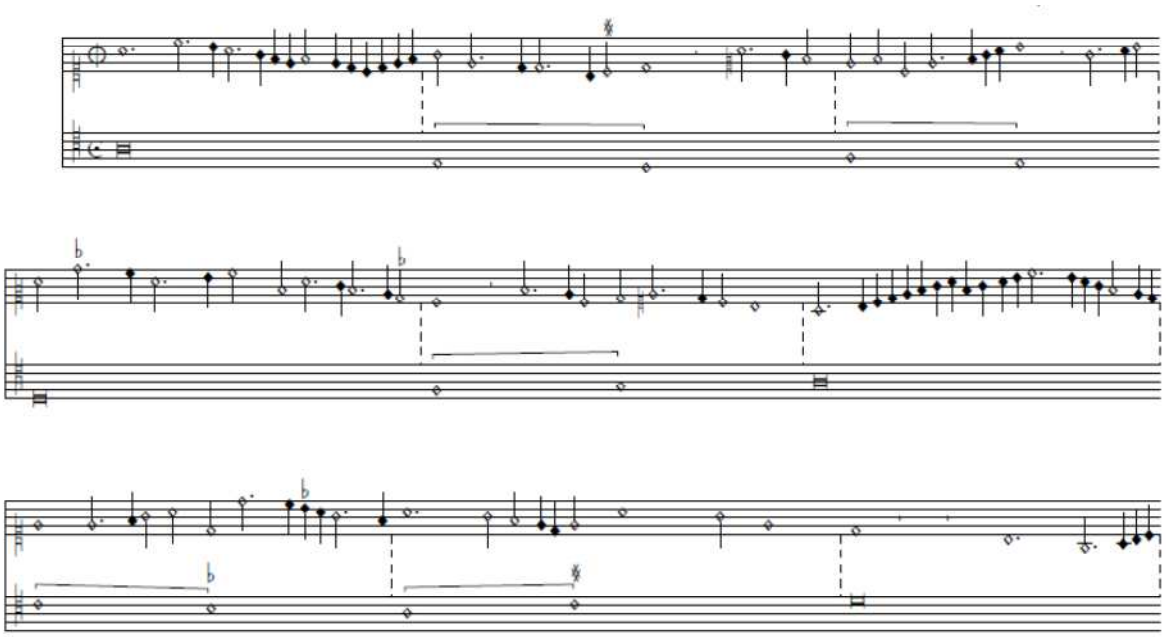
In the fifteenth century, intabulation—essentially the flattening of a composed polyphonic vocal piece to its underlying contrapuntal grammar for performance on an instrument[94]—was the chief instrumental practice. Intabulation practices are commonly associated with instruments capable of producing polyphony, whereby an original vocal model is transplanted onto the instrument's technical palette. For Tinctoris's generation this demanded the preservation of as much original material from the vocal model as possible, as well as the addition of ornaments and embellished passages. However, in the case of an intabulation performed on two single-voiced instruments, the sounding result

[94]Intabulation—to put something onto a table or flat surface—can be thought of as "flattening," because the texture and timbres of the original piece are smoothed out and presented on a single instrument.

would seem very much like spontaneous *cantare super librum*, and the original material would need to be redistributed amongst both voices while remaining recognizable. When we imagine what Lorenzo Costa's viol duet may have been playing, we can assume that fully-conceived but "improvisatory" music was its main repertoire, while players also adeptly intabulated well-known "composed" polyphonic pieces into two embellished lines with idiomatic string techniques and ornaments.

Next to intabulated chansons, two-voiced diminutions upon well-known tenors are among the earliest possible repertoire choices for viol duets. These diminutions were primarily part of an improvised tradition, but many sources survive that have captured their essential style. These sources include: Burgundian-influenced *bassa danza* tenors, music from the Codex Faenza 117, and the many settings of the tenor *La Spagna* (Ex.2).[95] Bassa danza tenors mainly survive in dance treatises, but the great frequency in which they appear attests to their popularity, especially in a quasi-improvisatory performance context. This dance tenor genre has also informed the only surviving pieces for lira da braccio, and heavily influenced the mid-sixteenth century *bastarda* tutors of Ganassi and Ortiz. Given the developmental connection between lira and viola da gamba, it is safe to assume that the polyphonic intabulations of a *Romanesca* and *Passamezzo* in the Pesaro manuscript are also representative of the embryonic repertory of viola da gamba consorts.

[95]Suzanne G. Cusick, "Spagna." *Grove Music Online*. *Oxford Music Online*. Oxford University Press, accessed May 6, 2014, http://www.oxfordmusiconline.com/subscriber/article/grove/music/26340. The *La Spagna* tenor is one of the few fifteenth-century bassa danza tenors of Italian origin. In the sixteenth century it was widely used for both instrumental compositions and exercises in counterpoint. La Spagna also served as a cantus firmus in several vocal works, including a motet by Josquin (*Propter peccata quae peccastis) and Isaac's Missa 'La Spagna'* (printed by Petrucci, 1506).



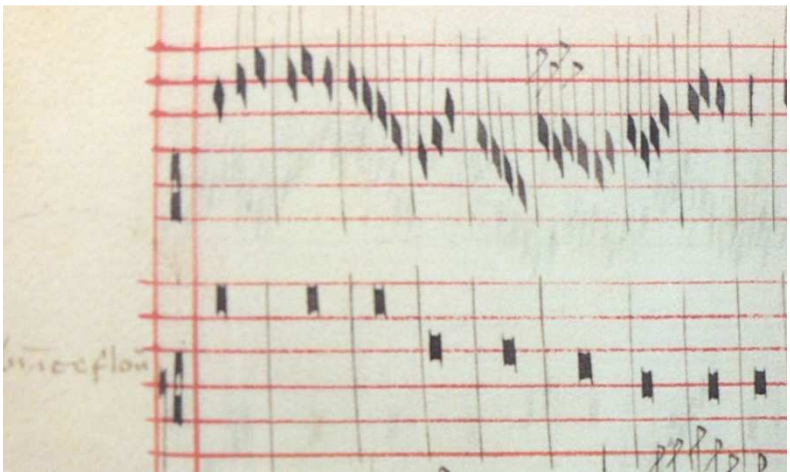
Example 2: The earliest polyphonic setting of La Spagna, 'Falla con misuras' attributed to Gugliemo Ebreo da Pesaro (c.1420--c.1484) from his *De pratica seu arte tripudii* (*On the Practice or Art of Dancing*) authored around 1463.[96]

The Codex Faenza 117 intabulations were most likely intended for one of the few polyphonic instruments of the time. However, the style of the Codex Faenza can also be applied to a duet configuration of two single-voiced instruments, such as winds or strings. Although a lira da braccio was capable of performing a limited repertoire with chords, a single viol could not perform two lines of music in most cases (e.g. when intervals exceed fourths or fifths). While the lute lost its plectrum to accommodate multi-voice realizations with the fingers,[97] the viol was limited by its bow and the potential problem of sounding too many strings at once, since large leaps would require skipping strings. With a curved bridge, it is normally not possible to continually sound more than two

[96]Accessed 4/1/2014, http://imslp.org/wiki/File:PMLP45063-Falla_con_Misuras.pdf.

[97]A "mixed style" of plectrum and fingers has been convincingly explored by modern performers of fifteenth-century repertories. Crawford Young should be credited with expanding the technical possibilities of plectrum lute playing to accommodate styles such as the Codex Faenza's two-voice diminutions.

notes together. Therefore the duet configuration is necessary for the realization of two separate voices in bowed strings. The presence of the "tenorista" who often accompanied the lutenist Pietrobono may further point to a lower-voiced bowed cantus firmus line that served as a foundation for virtuosic diminutions, even in the case of a plucked upper line.[98]



Example 3: Upper voice embellishments of the tenor "Biance Flour" from the Codex Faenza 117. [99]

Using a bowed instrument for this type of "held" lower voice could offer good sustain and shape, whereas a plucked instrument might not provide enough support against the florid notes of the upper line. It is easy to imagine two bowed instruments performing diminutions from the available lute repertory, since their tunings likely matched the lute, and since the first viol players were probably also lutenists. Therefore the single-cornered, carved-garland violas da gamba, such as those depicted in the *Ghedini*

[98]Lewis Lockwood, *Music in Renaissance Ferrara, 1400-1505: The Creation of a Musical Center in the Fifteenth Century* (Cambridge, Mass: Harvard University Press, 1984), 100.

[99]Pedro Memelsdorff, *The Codex Faenza 117, Instrumental Polyphony in Late Medieval Italy*. Introductory Study and Facsimile Edition by Pedro Memelsdorff (Libreria Musicale Italiana, Lucca 2013), 56v.

Altarpiece, should be thought of as intended for bicinium performance with a functionally similar repertory to the lute. When this style of instrument is seen in a duet configuration but with larger models, it should be considered that the same bicinium practice had merely been extended into the bass register. The creation of this bass-voiced strain of repertoire can therefore be traced from the tutors for virtuosic bastarda playing of the mid-sixteenth century, namely those of Silvestro Ganassi and Diego Ortiz, back to the diminution practices of the fifteenth century.

Some scholars believe that we can detect features of instrumentality in the so-called "songs-without-words" repertory of the Josquin generation (1460-1500). Many chansonniers from the late fifteenth century in Italy contain untexted chansons and motets of Burgundian composers. [100] If in fact these textless pieces were intended for instrumental performance, it would be tempting to imagine that viols could have sounded the lines. Howard Mayer Brown has examined one rich source of possible instrumental consort music in depth, with attention to difficult questions of performance practice.[101] In his examination of the chansonnier Florence Biblioteca Nationale Centrale MS Banco Rari 229, Brown supposed that the many textless or partially-texted polyphonic compositions contained in the manuscript were intended for instruments. Brown believes that some features of the textless pieces in Florence 229 may help us identify the distinct

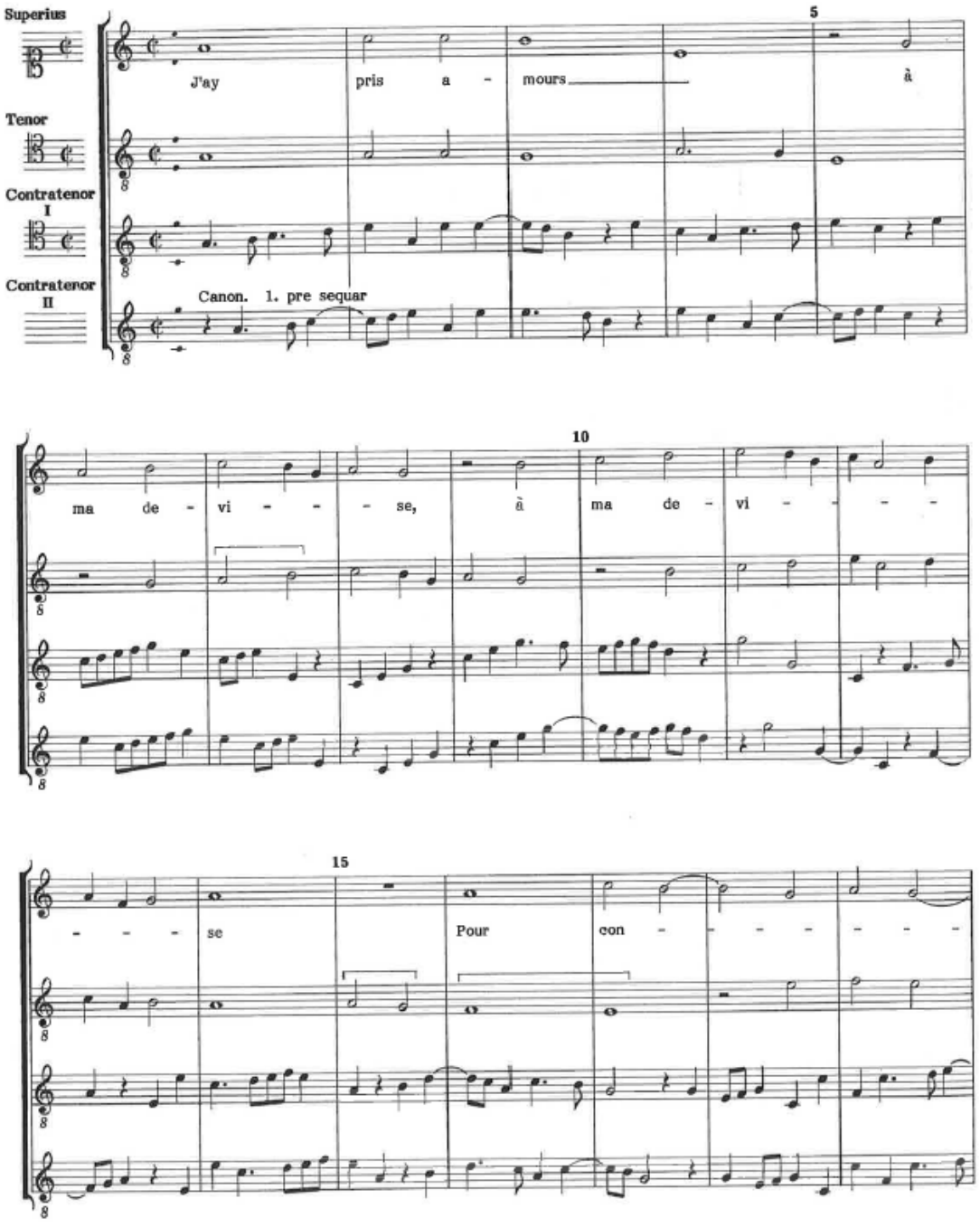
[100] These sources include MS *Perugia, Biblioteca Comunale 431* (Naples, 1480s), either of the fragments *Seville, Biblioteca Colombina 5–I–43*; *Paris, Bibliothèque Nationale n.a.fr.4379, ff.1–42* (Naples, 1480s), the "Isabella d'Este chansonnier" *Rome, Biblioteca Casanatense, 2856* (Ferrara? 1485), the MS *Bologna,* Museo Internazionale e Biblioteca della Musica, Q16 (Naples, 1487), the MS Florence, Biblioteca Nazionale Centrale, *B.R. 229* (Florence, 1490s), the MS Rome, Biblioteca Vaticana, C.G.XIII 27 (Florence, 1490s), the MS Florence, Biblioteca Nazionale Centrale, Magl. XIX.178 (Florence 1490s), the MS Bologna, Museo Internazionale e Biblioteca della Musica, Q17 (Florence, 1490s). Oxford Music Online 'Instrumental Music' accessed 10/1/13.

[101]Biblioteca Nazionale Centrale di Firenze, Howard Mayer Brown, Brian Jeffery, and Max Knight, *A Florentine chansonnier from the time of Lorenzo the Magnificent: Florence, Biblioteca nazionale centrale, MS Banco rari 229* (Chicago: University of Chicago Press, 1983).

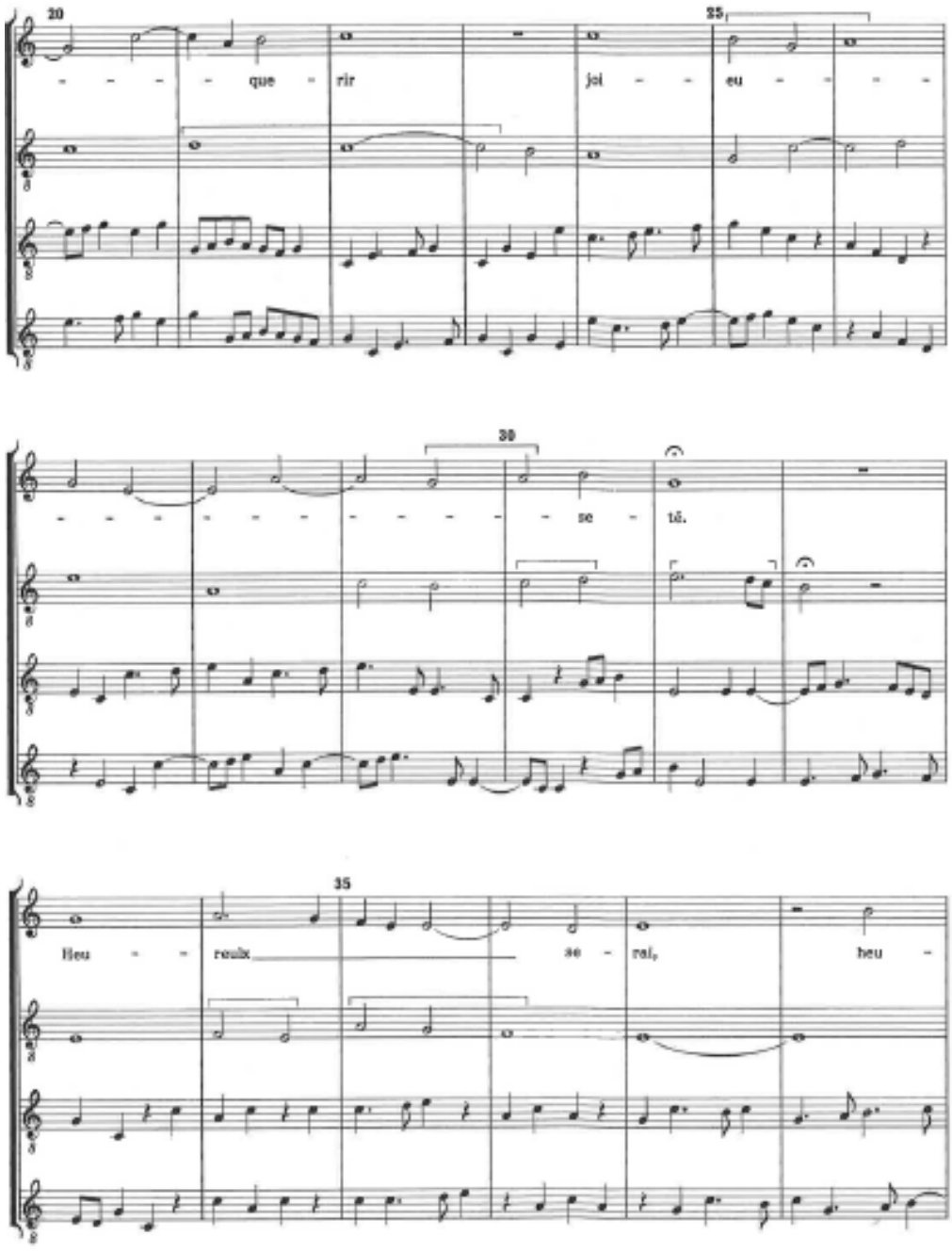
characteristics of this early instrumental consort repertory. The placement of a slow-moving vocally-conceived chanson melody against many fast-moving or fragmentary passages constitutes a significant style difference from vocal models.[102] Brown also states that short, concise, syncopated motives which are normally formed into long melodic lines are instead traded, transposed, placed in sequences, or stated in turn while the voice rests in these pieces—techniques better suited to instruments than sung lyrics. He cites De Planqard's arrangement of *De Tous Biens Plaine* and both Isaac and Martini's versions of *J'ay pris Amours* as examples of this hypothetical instrumental style (Ex.4).

[102]Ibidem, 141.

Example 4 (three pages): *J'ay pris Amours* by Joannes Martini in Florence 229 f. 189v—190.[103]



[103]Ibidem, 408.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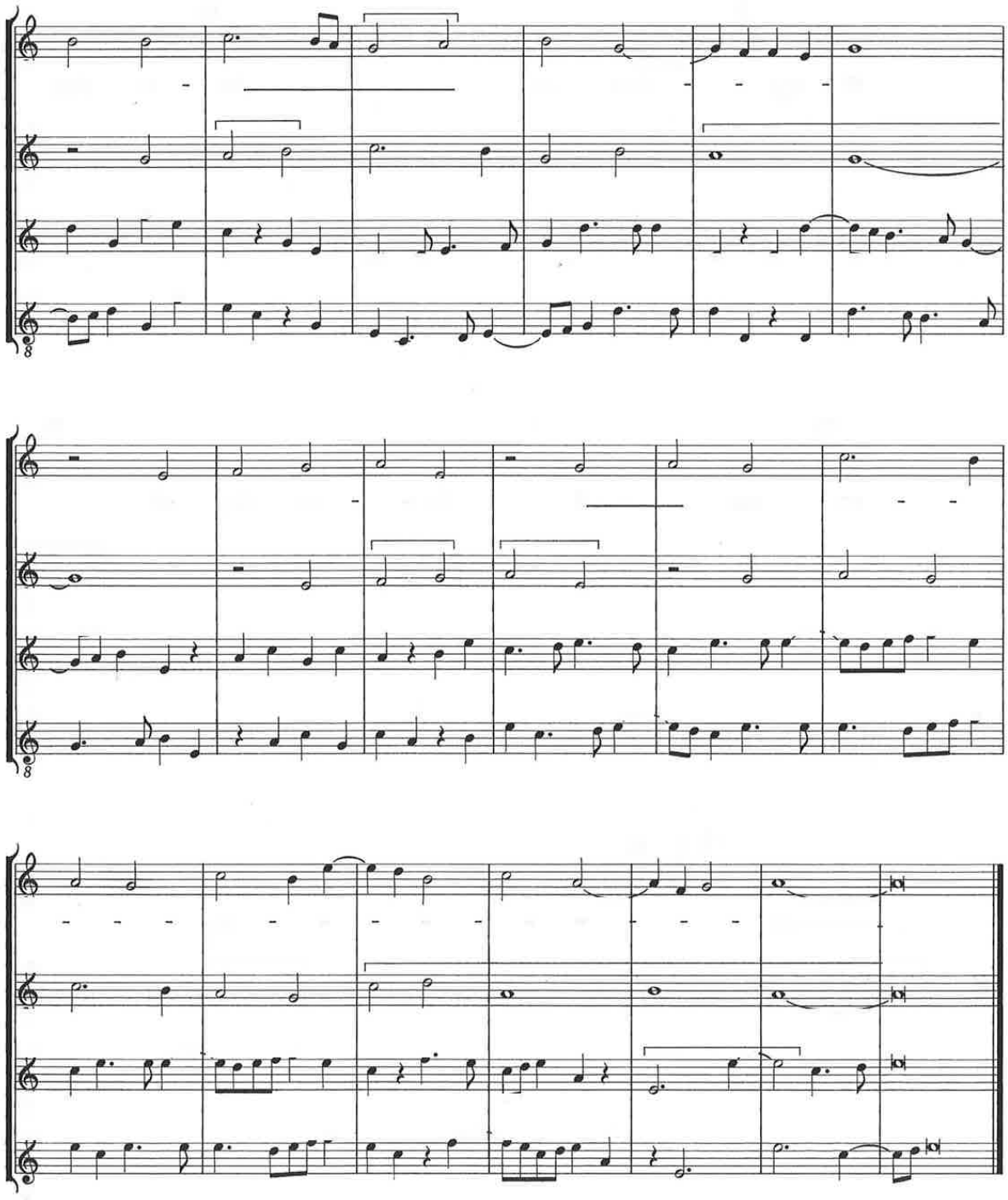


Jon Banks argues for an instrumental consort practice in the "songs-without-words" repertory by exposing many more signs of instrumentality within the genre. Banks believes that textlessness in chansonniers was not always the result of "casual incompleteness," rather it was often deliberately planned.[104] Sources such as the Segovia Codex or the Florence Panciatichi 27 have carefully organized texted and untexted sections. Banks identifies eight specific textless chansons almost certainly intended for instruments based on their ranges alone, which exceeds two octaves.[105] Referring to these types of textless chansons as 'res facta' based on their use of pre-composed secular melodies, Banks argues that their textlessness, wide ranges, and the "perversely complicated proportional contortions" in their melodies makes them prime candidates for late fifteenth-century instrumental consort pieces. He likewise identifies more than 100 other 'res facta' pieces that share these characteristics.[106] Banks also believes that instrumental consort pieces exist that are not based on vocal traditions, but are instead newly-composed 'consort ricercari' for either consorts of lutes or keyboard.[107] In light of what we know of the early viol, we might suppose that it was used for this repertory as well.

Not only do intabulations, two-part diminutions on tenors, and "songs-without-words" demonstrate instrumental performing styles, but the Italian frottola also provides

[104]Jon Banks, *The Instrumental Consort Repertory of the Late Fifteenth Century* (Aldershot: Ashgate, 2006), 5.

[105]Ibidem, 17, 18. The pieces include: Roelkin's *De tous biens plaine* in Segovia, Perugia 1013 and Breslau 2016; Agricola's *Tandernaken* in Segovia; *Canti C* and *RISM 1538,* and *D'ung aultre amer* in Segovia; Adam's *De tous biens plaine* in Segovia; Tinctoris's *Le Souvenir* in Segovia; two versions of *Le Serviteur* by Hanart in *Canti C,* ff.135v.-136r., and an anonymous composer ff.166v.-167r.; and a nameless piece by an anonymous composer in Verona 757, ff.67v.-68r.

[106] Ibidem, 48.

[107] Ibidem, 66, 85. See tables 3.1 and 3.3 for a list of possible 'consort ricercare' compositions.

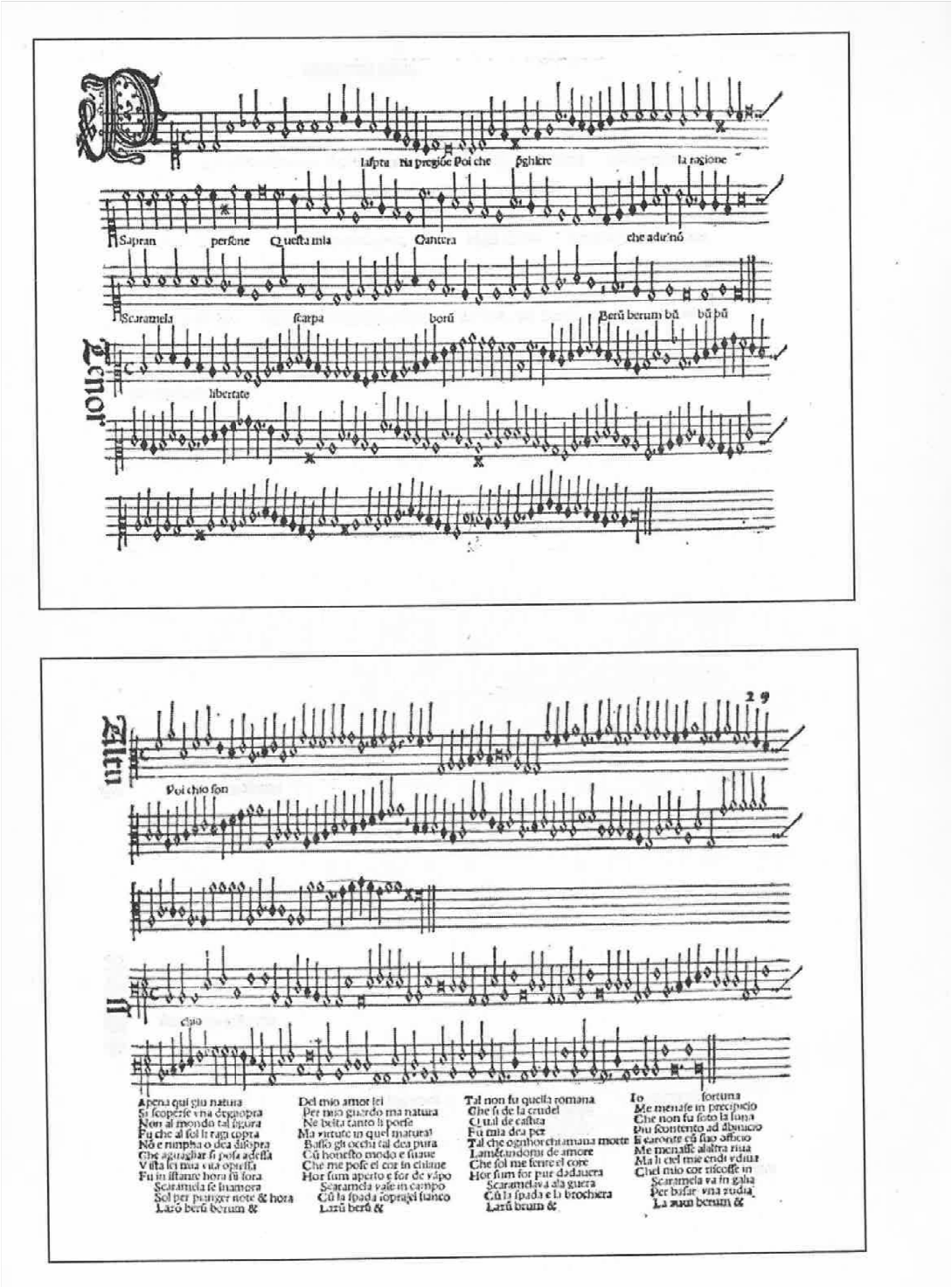
a plausible repertory for instrumental consort. In the search for the earliest music for a consort of violas da gamba, the frottola emerges as the genre with the clearest connections to the instrument's birthplace and fledgling performing environment.[108] Although a designation for violas da gamba was never explicitly stated for any frottole, corroborations of time, place, social context, and certain stylistic traits place these instruments squarely within the genre's performance practice setting. We now turn to sources of repertoire with indigenous Italian origins, narrowing the focus of this survey to the cusp of plausible performance sources.

In the context of late-fifteenth-century polyphonic music, the frottola stands as a uniquely Italian practice intended to elevate local music to the social standing of the French chanson. The published frottola of the early sixteenth century emerged from a formal tradition extending back to the fourteenth century. However, the major sources of frottole are Ottaviano Petrucci's eleven books printed in Venice from 1504 to 1514 (Ex.5). These pieces feature four separate parts with only the top voice texted, possibly suggesting a solo voice performance with an instrumental consort accompaniment.[109] The career of the frottola in the Northern Italian courts mirrors the rise of the viola da gamba, and its role as a vehicle for the developments of lira and viol makes it a particularly important genre in the history of those two related instruments.

[108] Peter Holman, *Four and Twenty Fiddlers: The Violin at the English Court, 1540-1690* (Oxford: Clarendon Press, 1993), 16.

[109]William F. Prizer, "Performance Practices in the Frottola: An Introduction to the Repertory of Early 16th-Century Italian Solo Secular Song with Suggestions for the Use of Instruments on the Other Lines." *Early Music* 3 (1975), 230.

Example 5: From Ottaviano Petrucci's *Frottole Libro Septimo*, Venice 1507.[110]



[110]Ottaviano Petrucci, *Frottole. Venezia 1507*. Edited by Lucia Boscolo (Padua: CLEUP, 1999).

Polyphonic settings of native Italian verse can be traced as far back as the 1460s, where patrons of famous poet-improvisers, or *improvvisatori*, strove to cultivate the current native lyric tradition.[111] The term "frottola" later became a blanket title to represent a number of lyric forms. The lyric forms that appear in Petrucci's prints include, in order of most to least frequent, the *barzelletta*, *strambotto*, sonnet, *capitol*, and *oda*.[112] Before Marchetto Cara (c.1470-1525) and Bartolomeo Trombonico (c.1470-after 1524) used the frottola as their chief model for multi-part music at the Gonzaga-Este court, the solo song was likely accompanied by a single instrument, such as the lira da braccio, the lute, the harp, or possibly a keyboard. However, no music, nor any instrumental designation, survives to accompany lyrics before Cara and Tromboncino's time. The first known poet-musician to favor the strambotto was the Venetian Leonardo Giustiniani (13881446), and it is thought that music once existed with his texts.[113] Giustiniani's strambotti informed many fifteenth-century improvvisatori, most importantly Luigi Pulci (1442-1484) and Serafino dall'Aquila (1466-1500), who in turn inspired Cara and Tromboncino. Although Serafino's fame was won primarily through his own strambotti, his skills had been honed in setting Petrarch's sonnets to music, and his employment in the service of Cardinal Ascanio Sforza in Rome made him a friend to Josquin des Prez. [114] His instrument was either a lira da braccio or a lute. Once Serafino

[111]Allan W. Atlas, *Music at the Aragonese Court of Naples* (Cambridge: Cambridge University Press, 1985), 144.

[112]Prizer, *Performance Practices in the Frottola*, 228.

[113]Walter H. Rubsamen, *Literary Sources of Secular Music in Italy (ca. 1500)* (Berkeley and Los Angeles: University of California Press, 1943), 2.

[114]Alfred Einstein, Alexander Haggerty Krappe, Roger Sessions, and W. Oliver Strunk. *The Italian Madrigal*. (Princeton: Princeton Univ. Press, 1949), 40. Josquin had already composed several frottole in Rome, some of which survive in print as well as in manuscript.

became an itinerant professional, he inevitably found his way to the Gonzaga-Este court in Mantua in 1494, where Isabella rewarded his virtuosity, and Tromboncino set many of his verses as multi-voice polyphonic frottole.

Many professional musicians could have participated in the earliest performances of frottole at the Gonzaga-Este court. By 1470, the court had acquired Andrea and Giampaolo della Viola, *'pulsatores lirae et familiares sue Excellentiae.'* In the meantime there had been several other visiting musicians of note: Salamon dall'Arpa (1455-60), Matteo de la Violetta (1465) and Alessandro de Alemagna and Antonio, *cantori e suonatori di viola* (1470). Under Ercole d'Este (1471-1505), contemporary polyphonic repertoires of three and four-part vernacular songs (frottole) were being performed both a capella and with a variety of instruments. Many local singers and composers were also lutenists, including Cara, Tromboncino, and Michele Pesenti.[115]

Although there is no instrumental designation for the altus, tenor, and bassus voices in Petrucci's prints, we may piece together performance practice traditions of the frottola through several other means. In most printed frottole, the *bassus* voice contains too few notes to accommodate the syllabic lyrics, and the *altus* and *tenor* behave in a manner better suited to instruments (Ex. 6).[116] A letter of 1535 from Tromboncino to the theoretician Giovanni del Lago suggests that his three-part *'Se la mia morte brami'* be performed with one voice and a lute, and that if it were to be sung a capella, it would need an alto voice added to its texture.[117] In Francesco Bossinensis's 1509 intabulations

[115]Lewis Lockwood, *Music in Renaissance Ferrara*,143.

[116] Prizer, *Performance Practices in the Frottola*, 235.

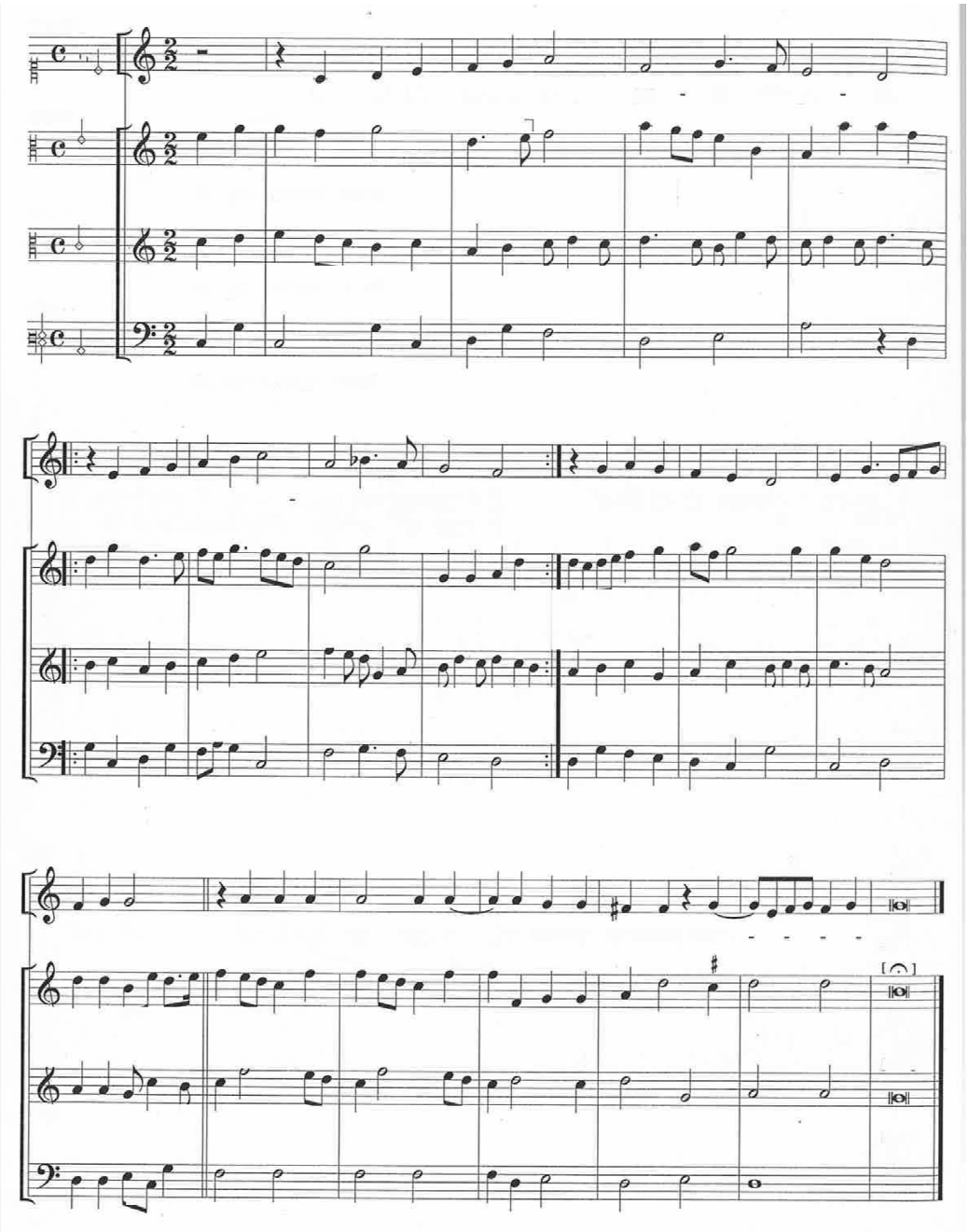
[117]Einstein, *The Italian Madrigal*, 48.

of four-part frottole for lute, the alto voice is deliberately suppressed, and the tenor and bass parts are intabulated.[118] Although Petrucci published lute transcriptions of several of his frottole, he never did so for keyboard; he left that to his competitor Andrea Antico da Montona, in his 1517 book of *Frottole intabolate da sonare organi*.[119]

[118]Ibidem, 49.

[119]Ibidem, 77. Around 1520 Petrucci published *Frottole de Misser Bortolomio Tromboncino et de Misser Marcheto Cara con tenori et bassi tabulati et con soprani in canto figurato per cantar et sonar col lauto.* Antico's *Frottole intabolate da sonare organi* contains 26 transcriptions for organ, in which all but one can be corroborated with a vocal model.

Ex. 6: Cara's *Se per chieder mercé gratia s'impetra* from Petrucci's eighth book of Frottole, 1507.[120]



[120]Petrucci, *Frottole Libro Octavo. Venezia 1507*. Edited by Lucia Boscolo (Padua: CLEUP, 1999), 136.

We can understand Petrucci's publications as formalized settings of "professional" music for a burgeoning amateur consumer culture. The substance of Petrucci's frottole was drawn from the contemporary traditions of Isabella d'Este's Mantuan retinue, where the lira of the late fifteenth-century improvvisatori and the new violas da gamba were used extensively. The two instruments almost certainly participated in realizations of the same frottole, alternating only according to the social status of the performer. The same was true of practices in Urbino, where Baldassarre Castiglione contrasted the old 'professional' poet/recitative style *con lira in braccio* against the new 'amateur' pastime of playing viols in consort. Castiglione did not contrast the genre of music performed in those separate contexts, only the performance contexts themselves. It is safe to assume that Castiglione was imagining frottole to be performed on his four *viole da arco*. The viola da gamba of the early sixteenth century is therefore the ideal instrument for performing the three untexted voices in Petrucci's prints.

Identifying the possible repertorial sources for the early viola da gamba in Italy strengthens the case for the instrument's physical parameters and performance contexts previously determined in chapters II and III of this study. The implications for instrument sizes, ranges, and performance configurations set forth by sources for early diminutions on tenors, consort genres based on polyphonic vocal models, and frottole, fit neatly within the viol's known contextual framework. These implications strengthen the case for a discrete Italian "Renaissance" viol that, along with its distinctive shape(s), had a sounding characteristic that was intended to serve these repertoires. With greater attention to late fifteenth-century and early sixteenth-century sources and performance practices

relating to these sources, a clearer picture of the early viola da gamba's historical environment should emerge.[121]

[121]Rodolfo Baroncini, "Contributo alla storia del violino nel sedicesimo secolo: i 'sonadori di violini' della Scuola Grande di San Rocco a Venezia." *Recercare* 6 (1994): 61-190. In-depth information is available on the development of the early violin in Italy. This information is particularly important to my study because of the violin's potential developmental relationship to the viola da gamba in terms of consort make-up and repertoire choices. Rodolfo Baroncini's article explores the historical activities of musical confraternities in Venice, the Venetian *scuole grandi*. In the 1530s, the prosperous Scuola Grande di San Rocco employed a permanent company of violins, which was devoted to performing its own specialized repertoire. Initially consisting of four *violini*, the ensemble was expanded to six: two soprano instruments, alto, tenor, "basseto," and "basson". One of the soprano instruments could be replaced by a "falsetto" voice in a higher range. The violin ensemble of San Rocco did not perform pieces from the polyphonic vocal repertories, but instead played motets and *laude*. The group was at first used for elaborate musical processions (which excluded by nature the immobile viola da gamba), but had become by the mid-sixteenth century a permanent fixture of a high-paying, progressive para-liturgical musical institution.

CHAPTER V

CONCLUSION

In the previous chapters, I have explored many avenues to uncover historical information about the earliest viols in Italy, including references from literary, pictorial, and musical sources. Using Baldassarre Castiglione's description of violas as a significant signpost in an indefinite landscape of primary-source material, I have attempted to piece together a clearer picture of the early viola da gamba's socio-musical context. I then used this context, along with my experience as a luthier, as a basis for defining the parameters by which we may interpret the corresponding iconography of the instrument. When we view iconography with an informed eye, we may begin to identify discrete conventions of construction revealed in the works of fifteenth- and sixteenth-century visual artists. By relating the building techniques that appear in iconography to our modern knowledge of instrument-making, we can develop a sense of the differences between building conceptions in the late fifteenth and early sixteenth centuries and those that stem from later "surviving" instruments. I have demonstrated that there are distinct models of early viols that differed greatly from those of the later sixteenth century. By placing these models within the musical framework of plausible repertoires, we can begin to imagine a sound world that is new, different, and exciting.

How should this new information about the viol's origins affect the way we perceive, build, and use early viols in the twenty-first century? We must view the early viol as a direct descendant of the medieval fiddle, or viella. The first viols were the logical extension of the fiddle types already in use; the need for a lower voice stimulated luthiers to make larger bowed-string instruments. The shapes and features of fiddles were

extremely variable, and in Italy the 'violetta' and lira da braccio retained this variety of stylistic characteristics. The shapes of the first violas da gamba presented a balance between the visual style of Italian fiddles and the ergonomic necessities of holding the larger instrument between the knees. Although the arrival of the Spanish *vihuela d'arco* probably exerted some stylistic influence on the shapes and designs of later violas da gamba, the earliest physical parameters of the Italian instrument are the direct result of its indigenous fifteenth-century ancestors.

We must use our knowledge of the viola da gamba's early history—its shift from being the lute's companion in bicinium repertoire to being a member of a whole consort—to interpret the iconography showing the instrument during that time. However, we should also trust the historically oriented luthier's eye to glean precise details of construction from paintings and intarsia. The only true physical details of the viol's early construction that survive for us are embedded in artistic representations, especially in reliable sources such as Lorenzo Costa's *Ghedini Altarpiece* (Ch.3, Fig. 13). We are not able to gather this information from any "extant" instruments, since we cannot be certain that surviving physical characteristics escaped alteration (or forgery). We must then allow our reassessment of iconography to help us formulate a new, clarified history for the viol. This new history relies upon the appearance and reoccurrence of specific building conventions and styles of design. The presence of viols with carved sides in the style of liras and viellas presumes a direct connection to the building techniques of medieval instrument makers. Shared outlines, sound-hole shapes, and tuning mechanisms between the two instrument families strengthen this case, and should be included in our conception of the earliest viola da gamba models. The best iconographic sources that

show these shared visual features include the aforementioned *Ghedini Altarpiece,* Niccolò dell'Abbate's *Portrait of a Young Man* (Ch.III, Fig. 21), and Benvenuto Tisi's (il Garofalo) *St. Cecilia* (Ch. III, Fig. 22).

In what way can my clarification of the repertoire relevant to the viola da gamba's early development affect the way we build early viols today? This task involves looking back to the period in the viol's history that has thus far furnished us with little primary-source information. Addressing the problem of repertoire choices for the instrument situates this organological study in a territory that continually concerns scholars interested in early sixteenth-century performance practice. Since instrumentalism in sources before 1500 must be deduced through means other than direct designations in the music, we must place the viola da gamba amongst plausible sources only by its historic proximity and by the information we have concerning its function. The so-called 'songs-without-words' genre of Josquin's generation seems to be a likely candidate for early viol music, and the frottola is surely connected to Isabella d'Este's desire for having violas da gamba at her court. Both of these repertories require an instrument with good sustain, sufficient loudness to support a solo voice, and having the ability to blend seamlessly with the higher- or lower-voiced consort members. For this music the early viola da gamba would have needed to 'activate' quickly under the bow, yet the ability to rapidly shift between colors and dynamics was probably not necessary. Clarity within lines of "perversely complicated proportional contortions" was the most important feature of the early viol's sound.[122] The demands of this repertoire on a chosen instrument seem to lend credibility to what has already been said about the early viol's shape and proportions. Most early viols were made with a 1:1 ratio between neck to body, and this means that

[122] Jon Banks, *Instrumental Consort Repertory*, 48.

they had smaller bodies than later violas da gamba (or proportionally longer necks). A smaller body has less overall mass, and would activate more easily than the later sixteenth-century models. When the use of the viola da gamba expanded to full consort, new building techniques and styles were needed to accommodate the specific sizes of the group.

Thus far, our cultures of scholarship, performance, and lutherie have ignored the characteristics of appearances of early viols in iconography, and have long relied on models that do not represent a historical reality. In this study, I have identified plausible historical models, namely those painted by Lorenzo Costa, Francesco Francia, Benvenuto Tisi (il Garofalo), and Francesco Mazzola (il Parmigianino). I have discussed techniques that would have been used for building these models, which includes approaches to creating an outline and sides, carving or bending a soundboard, and adjusting an instrument's design for playability. I have also established a series of plausible repertoire choices for which the early viola da gamba was best suited, which ranges from fifteenth-century tenors and diminutions (identical to lute repertory of that time), the 'songs-without-words' of the Josquin generation, and the indigenous Italian frottola. The next step in this process of discovering the early Italian viola da gamba would be to build style copies of these instruments, and to create performances that match the situations in which the early viola da gamba would have been used. By following the development of instrumental repertoire, the performance practice surrounding bowed-string instruments, and the iconography showing fiddles and viols, we might be able to imagine the sounds that characterized the evolution of the viola da gamba, from poet's aid to courtier's pastime.

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