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Keyboard Playing and the Mechanization of Polyphony in Italian Music, Circa 1600

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Publication Date
2015

Peer reviewed|Thesis/dissertation

Keyboard Playing and the Mechanization of Polyphony in Italian Music, Circa 1600

By

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A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

Music

in the

Graduate Division

of the

University of California, Berkeley

Committee in charge:
Professor Kate van Orden, Co-Chair
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Professor Massimo Mazzotti

Summer 2015

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Abstract

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Keyboard instruments are ubiquitous in the history of European music. Despite the centrality of keyboards to everyday music making, their influence over the ways in which musicians have conceptualized music and, consequently, the music that they have created has received little attention. This dissertation explores how keyboard playing fits into revolutionary developments in music around 1600 – a period which roughly coincided with the emergence of the keyboard as the multipurpose instrument that has served musicians ever since. During the sixteenth century, keyboard playing became an increasingly common mode of experiencing polyphonic music, challenging the longstanding status of ensemble singing as the paradigmatic vehicle for the art of counterpoint – and ultimately replacing it in the eighteenth century. The competing paradigms differed radically: whereas ensemble singing comprised a group of musicians using their bodies as instruments, keyboard playing involved a lone musician operating a machine with her hands. By replacing musicians with a machine, keyboard playing amounted to a mechanization of polyphony.

Chapter 1 outlines the mechanization of *ars perfecta* polyphony through keyboard playing. To illustrate its effects, I analyze several keyboard intabulations in relation to their vocal models, including Marcantonio Cavazzoni's adaptation of the chanson *Plusieurs regretz* by Josquin, and the intabulation preserved in the Turin Tablature of Rore's *Calami sonum ferentes*. I show how formal differences relate to changes in agency, script, and sensorimotor experience. Drawing on research in cognition and motor control, I discuss how experiencing polyphonic vocal music through keyboard playing affected how musicians parsed the art form. The remainder of the dissertation examines the relationship between keyboard playing and the ecclesiastical concerto, as exemplified in Lodovico Viadana's *Cento concerti ecclesiastici*

(1602). Chapter 2 investigates the complex material relationship between the vocal partbooks and organ continuo part in printed books of sacred music from the 1590s and early decades of the seventeenth century. I argue that the concerto print served as a virtual site for the convergence of the art of counterpoint and keyboard playing. Chapter 3 proposes that the redesign of the Italian organ in the fifteenth and sixteenth centuries was a crucial precedent for the "concertato style." The concertato style itself represents a stylization of the model of distributed cognition inherent in the sacred concerto.

To my parents, Jim and Judy, with gratitude

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PITCH NOMENCLATURE

With few exceptions, the Helmholtz system is used throughout the dissertation for differentiating octaves:

The exceptions are references to the physical keys of organs, since organ keys do not correspond strictly to particular octaves. (For example, Italian organs of the sixteenth century often extended down to a low F, which could sound at F_1, F, f, f', or f'' depending on the size of the organ and the registration used.) In these instances, I identify the keys through reference to their position relative to the lowest note of the keyboard ("the third C above the low F," etc.).

INTRODUCTION:
CYBORGS AT WORK

Hermann Finck began the fourth book, "On the modes," of *Practica musica* (1556) by asserting that aspiring composers must first acquire an understanding of the modes, just as those desirous of learning to speak and write in Latin must first acquire an understanding of the syntax of that language.[1] Although Finck exhorted his reader to attain mastery of the materials of music through diligent, systematic study, he admitted that there were many instrumentalists, especially organists, who did not heed this advice. These musicians preferred instead to skip what must have seemed to them to be an insufferably long and tedious journey to *Parnassus* in favor of a far more gratifying activity: playing music filled with running lines as fast as possible to the delight of themselves and "ignorant" listeners.[2] Finck was unimpressed: he criticized the hotheaded organists for getting caught up in petty rivalries, which discouraged them from admitting and correcting errors in their playing, and which resulted in an "unartful" music that sounded no better than the braying of an ass.[3]

Finck's criticism of these organists extended not only to their improvised playing, but also to their written-out compositions:

> They cannot compose anything properly: rather ... they harrass the clavichord for a long time until, with an air of having accomplished something, they hear some concord from the touch of the keys and the joints of the fingers and then transfer it to

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[1] "Tonorum cognitio valde necessaria est: Etenim veluti latine loquendi & scribendi rationem discere cupienti, in primis opus est, ut Syntaxin probe perdiscat: Ita quoque in arte Musica praeclaram operam navaturo necesse est, ut Tonorum cognitionem sibi comparet, quae quidem, tam in Compositione, quam in tractatione omnino necessaria est." Hermann Finck, *Practica musica* (Wittenberg: Erben, 1556), f.Ooii^v.

[2] "Cum autem aliquando in Instrumentis aut Organis artis suae specimen aliquod exhibere debent, ad unam hanc confugiunt artem, ut inanem strepitum confuse et sine ulla gratia faciant: utque indoctorum auditorum aures facilius demulceant, admirationemque sui ob celeritatem excitent, interdum per sesquihoram sursum deorsumque digitis per claves discursitant, atque hoc modo sperant, se per istum iucundum (si diis placet) strepitum etiam ipsos montes excitaturos esse, sed tandem nascitur ridiculus mus: fragen nicht darnach wo meister Mensura, meister Tactus, meister Tonus, und sonderlich meister bona fantasia bleibe." Ibid, f.Ooiii^r.

[3] "Ad istam aemulationem tanta nihilominus accedit persuasio, ut se emendari non patiantur. Et si quis est, qui ipsos per omnia non probet admireturque, huic Deum ipsum irasci arbitrantur." .... Musica, non dico artificum, sed sanorum saltem ac recte judicantium auribus non magis grata est, quam Asini rugitus." Ibid.

paper. And thus, finally, they produce a composition full of rests and mistakes, having no relation to any mode. The number of composers of this sort today is great.[4]

Their inadequate training in counterpoint meant that these composers – as they "dared" to call themselves ("audent etiam Componistarum titulum sibi arrogare") – took a long time to produce a thoroughly underwhelming result: according to Finck, all they could manage to produce after half a year's struggle was a mere "ditty" (*cantiunculam*) containing barely three consonances (*concordantias*).[5] Finck alleged that this situation was widespread: "The number of composers of this sort today is great."

     Finck scorned these composers for degrading the art of counterpoint. He objected, furthermore, not only to the resulting "ditties," but to the process by which they were produced. That is, the problem was not that hotheaded organists were composing in the same way as Josquin des Prez or Nicolas Gombert, two of Finck's model composers, and achieving inferior results. Rather, their approach to composition differed altogether. Instead of working out compositions primarily *a mente* and on paper or slate, these rule-snubbing instrumentalists relied heavily on the technological mediation of their musical instruments, which allowed them to work out structures through the tips of their fingers that they then wrote down.[6] It is not that there was a technological gulf *per se* between Finck and unschooled instrumentalist-composers (after all, Finck himself was an organist); it is that the technology – the musical instrument – took on a heightened role in composition and, more generally, in the formation of these musicians.

     At the time of Finck's writing, keyboards had no acknowledged role in orthodox methods of practical music theory. "Learn[ing] how to recognize a certain concord from the touch of the keys and the movement of the fingers and then transfer it to paper" was not a

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[4] "...nihil recte componere possint: sed ... saltem diu Clavicordium sollicitant, donec habitu qualicunque acquisito, ex clavium tactu & digitorum articulatione concentum aliquem animadvertere, eumque in cartam inde transferre discant. Ac sic tandem cantilenam repletam pausis & vitiis nulla toni ratione habita proferunt. Huiusmodi Componistarum hodie magnus est numerus." Ibid., f.Ooiii^v. The translation has been adapted from Jessie Ann Owens's in *Composers at Work: The Craft of Musical Composition, 1450-1600* (Oxford: Oxford University Press, 1997), 70 and Frank Kirby, "Hermann Finck's *Practica Musica*: A Comparative Study in Sixteenth-Century German Musical Theory" (Ph.D. diss., Yale University, 1957), 284. Edward Lowinsky brought this passage to attention in "On the Use of Scores by Sixteenth-Century Musicians," *Journal of the American Musical Society* 1 (1948): 17-23 at 20n15.

[5] "Praeterea multi ex illis, quorum mentionem feci, audent etiam Componistarum titulum sibi arrogare, cumque intra spacium dimidii anni multo sudore qualemcunque cantiunculam, quae vix tres concordantias habeat, fabricarunt." Finck, *Musica practica*, f.Ooiii^v.

[6] Jessie Ann Owens discusses the use of written and mental compositional strategies during the sixteenth century in *Composers at Work*. Owens includes a brief discussion of the use of instruments in the compositional process in which she considers the same passage from Finck's treatise (70-73).

desirable skill to cultivate. A similar disdain for this type of embodied, finger-centric knowledge characterizes a passage in a letter written nearly a century later by Giovanni Battista Doni to Marin Mersenne in which Doni describes the famous Roman organist Girolamo Frescobaldi as "a very coarse man...[who]...has all his knowledge at the end of his fingers."[7] As Michael Markham notes, this "decline and crisis" motif was used in criticisms of other renowned performer-composers as well, including Giulio Caccini and Giovanni Kapsberger.[8]

These criticisms reveal an anxiety on the part of the writers about the displacement of traditional musical authorities: a canon of written texts and teachers who were masters of the art of composition as traditionally defined. In the case of Finck's organists and, later, of Frescobaldi, traditional musical authorities were being supplemented by a technology, keyboard instruments, that presented students with a shortcut to *Parnassus* – one that circumvented the path delineated in counterpoint treatises and by masters of the art. The knowledge of music developed by these very physically interactive technologies promoted a different way of conceiving polyphonic music – one informed fundamentally by the sensorimotor experience of playing independent voices as a solitary musician operating a machine. The coupling of the player's physiology, centering on two coordinated hands, and the enabling constraints of the keyboard interface transformed the syntax of a contrapuntal idiom that had been designed for vocal tracts and group performance. Key among the syntactical changes was a reorientation towards the "vertical" aspect of harmony.

Finck's description of the heedless organist-composers can be read as eyewitness testimony at a moment of change, though the nature of his account raises questions as well. Did the compositions of instrumentalists have "no relation to any mode," only because they were ignorant of modal theory? Or was it also because modal theory was not as useful a tool in their compositional process and, more broadly, their conceptualization of music? At the keyboard, in front of a visual model (which obfuscated the hexachords), how did the immediate feedback through touch and hearing promote conceiving harmony in terms other than those implied by the idea of mode?

While keyboard instruments had been in use long before the mid-sixteenth century, their integration into everyday ecologies of polyphonic music making, including composition, performance, teaching, and rehearsal, was evidently perceived as a relatively recent phenomenon. There were organological reasons for this. Organs had long been used in churches but had assumed a design that allowed them to perform the contrapuntal idiom of

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[7] Frederick Hammond, *Girolamo Frescobaldi* (Cambridge, MA: Harvard University Press, 1983), 85. Doni's remark was made in a letter to Marin Mersenne, July 22, 1640.

[8] Michael Markham, "Sarrasine's Failure, Campaspe's Lament: Solo Song and the Ends of Material Reproduction," *Opera Quarterly* 26 (2010): 4-41 at 7-8. Tim Carter has also discussed the complex status of performance in "Printing the 'New Music,'" in *Music and the Cultures of Print*, ed. Kate van Orden (New York: Garland, 2000), 3–37.

Josquin or Giovanni Pierluigi da Palestrina only in the mid-fifteenth century. Stringed keyboards, much younger than the organ, had originated as experimental instruments in the workshops of astrologers and, in another life, as keyed monochords – a pedagogical tool.[9] The revamping of organs and stringed harpsichords in the fifteenth century laid the ground for a category of composer – the organist-composer – that Vincenzo Galilei, writing in 1581, perceived as new:

> Those like Annibale Padovano who have known how to play and write well are very few in comparison to the total number of keyboard players. In all of Italy, where the number is greater than in any other part of the world, I do not believe in any way that they exceed four in number. Among them I would [also] count Claudio da Coreggio [Merulo], Giuseppe Guami, and Luzzasco Luzzaschi.... The reason why these satisfy with both the pen and their playing is this. They first had many, many years under the discipline of the first men of the world in that profession and had many opportunities.... They studied that instrument all the time with greater diligence and assiduity than one can imagine and continue to study and learn. They have been in many parts of the world and worked with many different worthy men of their profession. They have been gifted by nature with a most beautiful genius, fine judgment, felicitous memory, and a forceful and graceful disposition of the hands.[10]

Galilei's perception of the organist-composer as a very recent phenomenon is clear. The four organists whom he singled out, Luzzaschi, Padovano, Merulo, and Guami, "had many, many years under the discipline of the first men of the world in that profession," which made them

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[9] See Edmund A. Bowles, "On the Origin of the Keyboard Mechniams in the Late Middle Ages," *Technology and Culture* 7 (1966): 152–62, and Standley Howell, "Medical Astrologers and the Invention of Stringed Keyboard Instruments," *Journal of Musicological Research* 10 (1990): 1–17.

[10] "Quelli come Annibale Padovano, che habbiano saputo ben sonare & bene scivere; à comparatione del numero che ci è de sonatori di tasti, sono pochissimi; & in tutta Italia di che n'è copiosa piu che altra parte del mondo, non credo in modo alcuno che passino il numero di quattro. Tra i quali si annoverano Claudio da Coreggio, Giuseppe Guami, & Luzzasco Luzzaschi ... La cagione poiche questi sadisfacciano si con la penna & col sonar loro, è questa. Sono primamente stati piu & piu anni sotto la disciplina de primi huomini del mondo in quella professione, & con molte comodità; hanno vedute & diligentemente essaminate tutte le buone musiche de famosi Contrapuntisti; con i quali mezzi si sono acquistati un Contrapunto purgatissimo & squisito; hanno studiato in esso strumento tutto quel tempo con la maggiore diligenza & assiduità che imaginare si possa, & del continouo vanno studiando & imparando; sono stati in piu parti del mondo & pratticato con diversi valenti huomini della professione loro; sono di piu stati dotati dalla natura di bellissimo ingegno, di grand giuditio, di felice memoria, & di fiera & insieme leggiadra dispositione di mani...." Vincenzo Galilei, *Dialogo della musica antica et della moderna* (Florence: Marescotti, 1581); English trans. by Claude V. Palisca, *Dialogue on Ancient and Modern Music* (New Haven, CT: Yale University Press, 2003): 138-39.

only the second generation of organists of stature. If we take at face value Galilei's assertion that these four learned their craft with "the first men of the world in that profession," that would mean that Adrian Willaert and Jacques Brumel were among the earliest organist-composers in Galilei's eyes. Of course, organist-composers certainly existed before Willaert's generation, among whom Francesco Landini and Paul Hofhaimer are but the best known. However, that a musical thinker as learned as Galilei should perceive the organist-composer as being a recent phenomenon in the 1580s is an intriguing point. What was the significance of these "new" organist-composers for the musical culture of the late Renaissance? How did their "diligence and assiduity" in the practice of keyboard playing shape knowledge of music? And in what ways did this particular haptic knowledge shape developments beyond keyboard music?

In this dissertation, I investigate how the particular sensorimotor experience of polyphonic music that the keyboard promoted revolutionized the ways in which musicians working in the decades surrounding 1600 conceptualized music and how, in turn, emergent styles bore the imprint of keyboard playing. My interest in the broader influence of keyboard playing stems in part from the ubiquity of keyboard instruments in later periods of Western music history – which continues in many realms of popular and art music today – and in part from a sense that the current explanation for the dramatic transformation of musical syntax circa 1600 is not wholly satisfying. Often it seems that the poietic justification for the *seconda prattica* – abandoning orthodox counterpoint for reasons of expressive license – is taken also to be the root cause of why "expressive" techniques, including unprepared dissonances and a tonal vocabulary that eschews modal unity, appeared in the first place. While the role of composerly poiesis in liberalizing the art of counterpoint should not be denied, the nature of the transformation points to a more systemic origin. Jessie Ann Owens, for one, recognizes a new "score-based" paradigm that emerged in the late sixteenth century.[11]

This dissertation begins with the premise that the verticality sighted by Owens and the rule-breaking evident in *seconda prattica* counterpoint both relate to a widespread change in musical practice: the rise of keyboard playing. Many scholars have noted the shift in the identity of composers over the course of the Renaissance. As Victor Coehlo and Keith Polk have pointed out, in 1500 professional instrumentalists worked primarily within an improvisatory tradition.[12] With some notable exceptions, very few players of this time were known to engage in written composition. By 1600, the balance had shifted dramatically. Instrumentalists frequently composed polyphonic vocal music. Celebrated composers of vocal polyphony included numerous organists (in addition to those mentioned by Galilei): Willaert, Thomas Tallis, Andrea and Giovanni Gabrieli, William Byrd, Heinrich Schütz, Samuel Scheidt, Orlando Gibbons, and Frescobaldi. A major turning point (which I discuss

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[11] Owens, *Composers at Work.*
[12] Keith Polk and Victor Coelho, "Instrumental Music," in *European Music 1520-1640*, ed. James Haar (Rochester, NY: Boydell Press, 2006): 528.

in Chapter 2) was the emergence of a new form of sacred music print in the 1590s that combined choral polyphony in partbook form with an accompanimental organ part (basso continuo). The rise of keyboard playing is suggested also by the private ownership of keyboard instruments. In a case study that illustrates this last point, the data compiled by Gastone Vio and Stefano Toffolo from their survey of sixteenth-century Venetian estate inventories suggest that that the private ownership of stringed keyboard instruments became widely popular in Venice beginning in the 1540s.[13] Sixteenth- and seventeenth-century keyboard instruments and their music, of course, have been the subject of many studies that have contributed to our knowledge of the biographies of musicians and instrument makers, musical sources, notation systems, performance practices, and repertoires. My research builds on this wealth of knowledge by extending the keyboard's domain of influence beyond the traditional confines of keyboard music to encompass also developments in the style, structure, and conceptualization of polyphonic vocal music.

One reason scholars have not attended to the relevance of keyboard practice to the extent I would argue is necessary relates not only to the negative assessments of early moderns such as Finck, but to the way those appraisals and the key volleys in the Monteverdi-Artusi controversy tend to bracket practice from theory. Theory can be correct or incorrect, but it always aspires to an ideal that exists beyond its material realizations in practice. (One might even argue that it resists the influence of practice.) Unaccepting of these distinctions, my research aims to take practice on its own terms. My inroad comes from recent developments in cognitive science that hold that our interactions with our environment fundamentally shape our knowledge. Looking at early modern musical culture through the lens of embodied experience can help elucidate how a shift in habitual modes of music-making, like the use of keyboard instruments in such quotidian tasks as composing, rehearsing, teaching, and performing, changed the way musicians conceptualized music and, by extension, changed the compositions they wrote down. The first chapter of this dissertation outlines the nature of such a "keyboardal" paradigm in relation to realizations of polyphony. The remaining chapters recover the imprints of keyboard playing on polyphonic vocal music and the cultures surrounding it. The resulting history revises traditional views of the relationship between Renaissance vocal and instrumental music, in which vocal music is seen to influence instrumental music but not vice versa.

By taking keyboard instruments as its point of departure, the dissertation stakes out a subject of potentially vast historical and geographical scope. No species of musical instrument is more pervasive in the history of European art music than keyboard instruments – organs, harpsichords, clavichords, pianos, and, most recently, their electronic counterparts. For centuries, they have served as vehicles of performance, rehearsal aids, tools for

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[13] Gastone Vio and Stefano Toffolo, "La diffusione degli strumenti musicali nelle case dei nobili, cittadini e popolani nel XVI secola a Venezia," *Il Flauto dolce: Rivista semestrale per lo studio e la pratica della musica antica* 17–18 (October 1987): 33–40.

composing and teaching music, instruments of scientific discovery, and visual models of tonal space. And yet their presence in histories of music is meager. The discrepancy is a symptom of the depth of the keyboard's influence over the musical thinking of so many of us who study early modern European music and the history of music theory. The ordinariness of the keyboard renders its influence invisible to us.

The rise of a keyboard-centered paradigm of polyphonic thinking – which I call the mechanization of polyphony – cannot be described within the confines of a firm geographical boundary. Especially before the 1590s, it was never tied to a particular person, school, or region. Earlier sites of investigation might include sources as diverse as German organ *fundamenta;* treatises by Spaniards Juan Bermudo and Tomás de Santa María; the keyboard intabulations published by Pierre Attaingnant; the works of Tallis, first Organist of the Chapel Royal; and the highly chromatic madrigals associated with the Estense court in Ferrara, home of the *archicembalo.* In the 1590s, however, with the publication of the first concertos (in the basic sense of music for one or more voices with a basso continuo), the scattered phenomenon of the mechanization of polyphonic vocal music went mainstream, with Italians leading the way. Printers in Venice and Milan in particular capitalized on the potential of ready-made organ parts to expand the market for polyphonic vocal music among churches with middling choirs (in other words, the vast majority of churches). The ways in which they commodified polyphony likely played an important role in legitimizing a new model for polyphonic music: one in which the voices are girded by the organ. This model became the new paradigm for contrapuntal writing, evident, for instance, in the concertato style. Ultimately, the fully harmonic perspective stimulated by it would serve as the basis for Jean-Philippe Rameau's *Traité de l'harmonie* in 1722. The Italian-centrism of the dissertation reflects the primacy of Italian composers, publishers, and markets for organ-accompanied sacred music.

Cognition, Experience, and Music History

The current prevailing theory of cognition, as embodied and situated, provides us with good reason to reach across the intradisciplinary partitions that cordon off vocal music from instrumental music, theory from organology, and secular music from sacred music. An embodied model of music cognition implies that all are connected and that one component cannot be fully understood in isolation of the others, to the extent that all form part of an environment shared by the human agents that created, performed, or used them. Embodied cognition replaces an earlier, disembodied mentalist model of human cognition. Eric Clarke and Jane Davidson, two researchers who have advanced cognitive methods in music studies, describe how, within the earlier, disembodied model, listeners and performers are

regard[ed] as information-processing devices, with inputs and outputs coming to and going from a central 'unit' which is located firmly in the head and which has little connection with anything as physical as an arm, a leg, a hand – or even an ear.[14]

This is the model of cognition used by one of the best known investigations of the cognitive basis for common practice tonality, Fred Lerdahl and Ray Jackendoff's *A Generative Theory of Tonal Music.*[15] In the early 1980s, the authors drew this disembodied model of cognition from generative grammar, which served as the inspiration for their investigative framework. Despite the evolution of cognitive science since the publication of Lerdahl and Jackendoff's treatise, there has been little attempt to redefine the link between cognition and the musical style of a major period in European music history. Scholars such as Clarke, meanwhile, have adopted an embodied, "ecological" approach (discussed further below), but in studies that focus primarily on ecologies of listening and performance rather than on the evolution of a historical musical style.[16]

Embodied cognition emphasizes the entanglements of conceptual thought with embodied experience. Thus, the way in which a person interacts with her environment, which includes other people, tools, spaces, and so forth, is an integral component of cognition. For this reason, the model is sometimes referred to as a brain-body-environment system. This embodied model of cognition has been articulated through an array of frameworks from various disciplines including psychology, anthropology, philosophy, linguistics, neuroscience, and artificial intelligence. Among the more frequently encountered formulations within musicology are distributed cognition, situated cognition, and ecological psychology, and, in music education, activity theory, and enactivism. The formulation that I prefer is cognitive ecology, which as articulated by Edwin Hutchins, enfolds many previous formulations and defines "the study of cognitive phenomena in context."[17] As Mattias Kristiansson notes, the formulation "cognitive ecology" has been used in cases that focus on "environments that are more tightly coupled and purpose-specific than environments of everyday life."[18] Such cases can include polyphonic music, insofar that it is a ritual, which participants enact in accordance with a script.

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[14] Eric Clarke and Jane Davidson, "The Body in Performance," in *Composition - Performance - Reception: Studies in the Creative Process in Music*, ed. Wyndham Thomas (Aldershot, UK: Ashgate, 1998), 74.

[15] Fred Lerdahl and Ray Jackendoff, *A Generative Theory of Tonal Music* (Cambridge, MA: MIT Press, 1983). Lerdahl has continued to explore this cognitive model in more recent writings, including *Tonal Pitch Space* (Oxford: Oxford University Press, 2001).

[16] Eric F. Clarke, *Ways of Listening: An Ecological Approach to the Perception of Musical Meaning* (Oxford: Oxford University Press, 2005).

[17] Edwin Hutchins, "Cognitive Ecology," *Topics in Cognitive Science* 2 (2010): 705–15 at 705.

[18] Mattias Kristiansson, "The Case of Cognitive Ecology for Cognitive Processes in Everyday Life Situations," in *Cooperative Minds: Social Interaction and Group Dynamics*, *Proceedings of the 35th*

Inquiries into the transformation of music around 1600 have traditionally foregrounded cultural factors that are at varying degrees of remove from the phenomenon of music making – humanism, religious reform, aesthetics, patronage, and so forth. Approaching these changes through the lens of cognitive ecology does not negate the importance of such cultural realities; rather, it emphasizes their channeling through sensory experience. In arguing for an ecological approach, Clarke writes that

> the construction of musical meaning through language and other forms of representation is undeniable, but it does not proceed independently of the affordances of musical materials. Ideologies and discourses, however powerful or persuasive they may seem to be, cannot simply impose themselves arbitrarily on the perceptual sensitivities of human beings, which are rooted in (though not defined by) the common ground of immediate experience.[19]

This explicit recognition of sensory experience as the filter of culture defines the revelatory potential of studying cognitive ecologies and can help move histories beyond the traditional limits of repertorial studies. This proves to be particularly crucial for understanding early modern music as it provides a practice-centered basis for the stylistic changes that Monteverdi defended as the appropriate idiom for the new expressive, text-centric aesthetic of the *seconda prattica*.

Though the framework of cognitive ecology might be relatively new to studies of early music, there have already been many studies that have investigated the relationship between music and embodied music-making, particularly in the medieval period.[20] One notable precedent for my investigation is Anna Maria Busse Berger's *Medieval Music and the Art of Memory*, which addresses the issue of cognition explicitly.[21] Busse Berger examines how the

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Annual Meeting of the Cognitive Science Society, ed. Markus Knauff et al. (Austin, TX: Cognitive Science Society, 2013), 2778. A previous study which adopts cognitive ecology to study a specialized environment is Evelyn Tribble's *Cognition in the Globe: Attention and Memory in Shakespeare's Theatre* (New York: Palgrave Macmillan, 2011). Both Tribble and Hutchins see cognitive ecology and distributed cognition as being essentially the same.

[19] Clarke, *Ways of Listening*, 43.

[20] Margaret Bent, for one, has written extensively on the relationship between process, concept, and notation. See, for example, Margaret Bent, "Resfacta and Cantare Super Librum," *Journal of the American Musicological Society* 36 (1983): 371–91; the essays in eadem, *Counterpoint, Composition, and Musica Ficta* (New York: Routledge, 2002); eadem, "The 'Harmony' of the Machaut Mass," in *Machaut's Music: New Interpretations*, ed. Elizabeth Eva Leach (Woodbridge: Boydell Press, 2003), 75–94; and eadem, "Reading, Memory, Listening, Improvisation: From Written Text to Lost Sound," *Basler Jahrbuch Fur Historiche Musikpraxis* 34 (2010): 13–28.

[21] Anna Maria Busse Berger, *Medieval Music and the Art of Memory* (Berkeley: University of California Press, 2005). Busse Berger's study mobilizes similar ideas about cognition as those

nature of memory contributed to the structure of music, its notational representation, and the procedures for improvising discants, drawing on theories developed in psychology, including "chunking." Of great pertinence to this dissertation is the material history elaborated in Owens's *Composers at Work*, which addresses the relationship between compositional process, the conceptualization of music, and the writing implements used by composers.

The title of this introductory chapter, "Cyborgs at Work," is meant as a tribute to Owens's monograph, particularly for its use of tools and other material evidence as a means of reconstructing the tacit craft knowledge of composers. Since my title might conjure up a dystopian image of robots taking over from Cipriano Rore or Palestrina, I would like to assure the reader that I do not believe seventeenth-century composers to have been androids. I do think, however, that, on the whole, seventeenth-century composers were cybernetically distinct from their forebears. Let us consider the notion of a score-based paradigm of composition, which, as mentioned in passing above, for Owens signals the chronological limit of her investigation, which she leaves off at around 1600 because

> the fundamental changes in musical style taking place during the second half of the sixteenth century and the beginning of the seventeenth toward a strong soprano-bass polarity characteristic of "baroque" music suggest different (and in fact, score-based) methods of composing.[22]

I agree that the new chordal, "polar" style suggests different methods of composing from those investigated by Owens. Her concern was compositional process, which she reconstructed based on sketches and material evidence generated by the physical acts of composition. Her conclusions regarding score-based compositional methods are entirely sensible given the chordal structures of the new style and the emergence of the vertically aligned score and various forms of open- and short-score circa 1600. I argue, however, that the roots of the new style go deeper than a change of notational technology. This is not to diminish the ramifications that such a change can have; indeed, score-based composition likely played a central role in reinforcing the new paradigm. The new paradigm itself is rooted in an expansion of the cognitive identity of the composer beyond the boundaries of her body to encompass also the technology of the keyboard. As Owens makes clear in *Composers at Work* and elsewhere, sketches formed a part of a larger ecology of composition – one that included not only paper, ink, and erasable tablets, but also memory and instruments (particularly *stromenti da corpo* – keyboards, lutes, and others capable of playing

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invoked in earlier discourse on on the transmission of Gregorian chant. See especially Leo Treitler, "Homer and Gregory: The Transmission of Epic Poetry and Plainchant," *Musical Quarterly* 60 (1974): 333-72.

[22] Owens, *Composers at Work*, 30.

polyphonic textures).[23] The root source of score-based composition, and of a style dominated by "vertical" thinking, is the convergence of composer and instrument, such that the instrument becomes a cognitive extension of the composer, who, like a cyborg, harnesses the technology to extend his built-in capacities.

The Keyboard – or Keyboard Playing – as a Mental Model for Music Theory

Few of the oppositions commonly invoked to explain the syntactical shift in music around 1600 are grounded squarely in the embodied cognition of contemporary music making. Dualities such as modality / tonality, horizontal / vertical, counterpoint / harmony, and music-centric / text-centric are all helpful, but they describe phenomena that are removed, to varying degrees, from concrete experience. They are missing a material link.

An exceptional theory of the conceptual transition behind the "new music" that centers on environment has been articulated by Harold Powers.[24] Powers sees the turn from "modality" to tonality (which he approaches primarily as two different conceptual paradigms of pitch relationships) as a function of the replacement of what he calls the "Guidonian diatonic" (the complement of pitches that make up the gamut), modelled as a ladder or hand, by the *claves* as arranged in a keyboard. Powers positions the Guidonian diatonic as "the ultimate raw material both of monophonic modal theory and of polyphonic compositional practice" and as "the conceptual system of pitch relationships to which all musicians were brought up and which all took for granted, a system that was not only pre-compositional but also pre-theoretical."[25] This paradigm was gradually supplanted by a conceptual system of pitch relationships based on the visual model of the keyboard – a transition which Powers dates to the late sixteenth and early seventeenth centuries.[26] Indeed, we already find a shift in the gamut afield in a letter written in 1523 by an anonymous corresponder to Pietro Aron. The writer expressed dissatisfaction with the hand for its incompatibility with the keyboard:

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[23] Jessie Ann Owens, "The Milan Partbooks: Evidence of Cipriano de Rore's Compositional Process," *Journal of the American Musicological Society* 37 (1984): 270–98 and eadem, "Palestrina at Work," in *Papal Music and Musicians in Late Medieval and Renaissance Rome*, ed. Richard Sherr (Oxford: Clarendon Press, 1998), 270–300.

[24] Harold Powers, "From Psalmody to Tonality," in *Tonal Structures in Early Music*, ed. Cristle Collins Judd (New York: Garland, 1998), 273–340.

[25] Idem, "Is Mode Real? Pietro Aron, the Octenary System, and Polyphony," *Basler Jahrbuch Fur Historiche Musikpraxis* 16 (1992): 14-15.

[26] Powers sees the transition as evident particularly in "the nomenclature of scale degrees": "the dual conceptual symbolic scheme of *litterae* A-B-C-etcetera combined with *voces* ut/do-re-mi etcetera, vocal in origin, was imperceptibly shifting over into a pair of practical symbolic schemes tied to the keyboard as model, where the nomenclature of scale degrees did have to be tied to actual pitch levels on whatever organ or other keyboard instruments was being used" (Ibid, 13n9).

Because the ordinary organ has more notes than those found on the hand, it was necessary to place twenty-nine white or natural keys and eighteen accidental or black keys on it – this for the convenience of organists, who certainly would be hampered by having only the twenty notes of the hand.[27]

Later in the century, authors of music theory books increasingly turned to illustrations of keyboards to explain the gamut. At first, images of keyboards were confined to books aimed at keyboardists, such as Santa María's *Arte de tañer fantasía* (1565) and Girolamo Diruta's *Il Transvilano* (1593, 1609). Soon, however, keyboards served as models for the gamut in books aimed at a wider readership. An image from one such book, Giovanni Filippo Cavalliere's *Il scolaro principiante di musica* (1634) combines the visual maps of both ladder and keyboard (Figure 0.1). Cavalliere included the latter "for those who want to learn to play using the *partimento.*"[28] The diagram neatly encapsulates the gradual transition from one conceptual paradigm to another.

Powers's thesis of the evolution of the organization of music as a symptom of a shift from one workaday model to another elegantly points to the junction between developments in formal music theory to changes in the everyday working environments of musicians.[29] Quotidian musical objects, the Guidonian hand and the keyboard, are linked with higher realms of musical thinking. This resonates with what cognitive linguists George Lakoff and Mark Johnson have written about the direct material connection between seemingly abstract concepts and embodied experience: "abstract concepts are largely metaphorical."[30] Our understanding of an abstract concept – like the gamut – is fundamentally shaped by concrete objects or experiences that relate to the concept in some way – like, the Guidonian hand, keyboard, or a mixture of both. Moreover, printed representations of these models of the gamut, such as the image in Cavalliere's treatise, allowed the knowledge they manifested to become "publicly accessible." Harry Heft describes the public accessibility of knowledge in the following terms:

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[27] Transcribed and translated in Bonnie J. Blackburn, Edward Lowinsky, and Clement A. Miller, eds., *A Correspondence of Renaissance Musicians* (Oxford: Clarendon Press, 1991), 934.

[28] "Con la tastatura del Organo per chi vorrà imparare à suonare sopra il partimento, & servirà anco per chi volesse sapere accordare ogni sorte de stromenti di tasti." Giovanni Filippo Cavalliere, *Il scolaro principiante di musica* (Naples: Nucci, 1634), 28.

[29] Another cognitive theory of the transition to tonality (this one is explicit in its adoption of a cognitive perspective, unlike Powers's) is laid out in Matthew Woolhouse, "Modes on the Move: Interval Cycles and the Emergence of Major-Minor Tonality," *Empirical Musicology Review* 5 (2010): 62-83. This approach, however, is based on a notion of cognition that is fundamentally passive, and one in which human culture is a secondary consideration. As such, it invokes the radical mentalist model of first-generation cognitive science, which the work of critics like Gibson redressed.

[30] George Lakoff and Mark Johnson, *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought* (New York: Basic Books, 1999), 3.

Figure 0.1. G.F. Cavalliere, Juxtaposition of *mano figurata* and keyboard.

> From the fact of their concrete embodiment, representations overcome limitations of biological memory with regard to durability, storage capacity, ease of modifying and pooling of collective knowledge, dissemination possibilities, and portability. But more than these changes, the existence of representations of knowledge alter *how* we think; and recognition of alterations in how we think as a result of the availability of representations clarifies a distinctive characteristic about *human cognition*.[31]

The cultural signification of images that, like Cavalliere's, mapped the gamut onto the keyboard lies in their objectification of the private, subjective sensorimotor experience that is keyboard playing.

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[31] Harry Heft, *Ecological Psychology in Context: James Gibson, Roger Barker, and the Legacy of William James's Radical Empiricism* (Mahwah, NJ: Lawrence Erlbaum, 2001), 349.

As insightful as Powers's Guidonian diatonic-to-keyboard model is, in positioning inanimate tools as the ultimate basis of practical conceptual schemes of working musicians and of formal theories of polyphonic music, it leaves embodied experience outside of the framework. In their work on metaphor and abstract thought, Lakoff and Johnson further note that "conceptual structure arises from our sensorimotor experience and the neural structures that give rise it."[32] By centering on the tools themselves, Powers's framework ends in a cul-de-sac just as it was about to encounter the real ultimate link between formal theory and theory "in the wild": the embodied act of using those tools.[33] It is keyboard *playing* (rather than the keyboard *per se*) that is, at least for the present purpose, of primary importance. The sensorimotor experience of playing polyphonic music on the keyboard is what links all the other actors of the network, including the keyboard instrument, the notation, and the player's mental model of the music. And it was, ultimately, the objectification of the subjective experience of keyboard playing that revolutionized music on a culture-wide level.

Investigating Embodied Practices of the Past

Investigating how musical style and theory are products of embodied experience involves understanding the foundations of sensorimotor experience. This introduces the possibility of using living human subjects as informants – with the assumption that we today have more or less the same nervous system as people living in the sixteenth and seventeenth centuries. Indeed, studies like Busse Berger's and Elisabeth Le Guin's have already made this leap, in the sense that they draw on the experience of living human subjects to make sense of historical phenomena. In the case of Busse Berger's study, living human subjects are indirect informants as participants in the experimental studies that the author cites in support of memory theory; in Le Guin's, the author herself is a principal subject, as are her colleagues in a string quartet.[34]

Others have shown how our knowledge of compositional process can be advanced through active experimentation with the techniques described in treatises – not only through written exercise, but through singing and instrument playing (Peter Schubert, for one, has

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[32] Lakoff andJohnson, *Philosophy in the Flesh*, 77.
[33] Edwin Hutchins explains that his use of the phrase "cognition in the wild," which is also the title of his most famous book, "refers to human cognition in its natural habitat – that is, to naturally occurring culturally constituted human activity.... I have in mind the distinction between the laboratory, where cognition is studied in captivity, and the everyday world, where human cognition adapts to its natural surroundings. I hope to evoke with this metaphor a sense of an ecology of thinking in which human cognition interacts with an environment rich in organizing resources." Edwin Hutchins, *Cognition in the Wild* (Cambridge, MA: MIT Press, 1995), xiii and xiv.
[34] Busse Berger, *Medieval Music and the Art of Memory;* Elisabeth Le Guin, *Boccherini's Body* (Berkeley: University of California Press, 2006).

shown this).[35] By enacting the instructions set down in treatises, internalizing them, and discovering solutions and new problems, we make ourselves hypothetical test subjects. Modern keyboardists too have come to grips with historical techniques for improvising fantasias and other forms through direct experimentation with the sources, and through the guidance of modern pedagogues who specialize in these historical practices. Recent studies on the *partimento* tradition have illustrated the role of the keyboard in teaching and learning counterpoint in the seventeenth, eighteenth, nineteenth, and early twentieth centuries.[36] Other scholars, including Massimiliano Guido, have begun to investigate a similar application of the keyboard as early as the late sixteenth century, with focus on major treatises, including Santa María, Diruta, and Adriano Banchieri.[37]

The studies mentioned above have demonstrated some of the creative methodologies that musicologists have used to get inside the minds of musicians from the distant past. In uncovering tacit knowledge, traditional forms of evidence – books, written music, archival documents, other forms of written evidence, musical instruments, visual artwork, architecture – can only get us so far. The recent publication of historian Ruth Goodman's *How to Be a Victorian* has generated discussion outside of musicology about the use of reenactment as a method of historical investigation.[38] Goodman has starred in several reality TV series that document life on a farm in different historical periods, including *Victorian Farm* and *Tudor Monastery Farm*, in which she and other cast members conduct daily life on the farm according to the customs of the period. In her books, Goodman notes how through reenacting daily routines in period clothing and spaces, using period technologies, she has confronted realities that evade documentation. These are often mundane yet highly

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[35] Schubert has released a series of short videos demonstrating how to sing improvised canons. They are available online through Schubert's YouTube channel, https://www.youtube.com/user/peterschubertmusic, accessed May 11, 2015.

[36] Key literature on the *partimento* tradition includes Robert Gjerdingen, *Music in the Galant Style* (Oxford: Oxford University Press, 2007) and Giorgio Sanguinetti, *The Art of Partimento: History, Theory, and Practice* (Oxford: Oxford University Press, 2012).

[37] Massimiliano Guido, "Counterpoint in the Fingers: A Practical Approach to Girolamo Diruta's Breve & facile regola di contrappunto," *Philomusica on-line* 12 (2012), http://riviste.paviauniversitypress.it/index.php/phi/article/view/1452.

[38] Ruth Goodman, *How to Be a Victorian: A Dawn-to-Dusk Guide to Victorian Life* (New York: Liveright, 2013). The concept of reenactment that I am concerned with here is distinct from that introduced by R.G. Collingwood in *The Idea of History* (Oxford: Clarendon Press, 1946). In Collingwood's reenactment, the historian reenacts the thought of a historical person, but the method presupposes that thoughts themselves are divorced from the physiological processes that give rise to them. Giuseppina D'Oro and James Connelly, "Robin George Collingwood," *The Stanford Encyclopedia of Philosophy* (Summer 2010 Edition), ed. Edward N. Zalta, http://plato.stanford.edu/archives/sum2010/entries/collingwood/.

determinant aspects of life.[39] Reenactment has been discussed by Tim Ingold and others, in sociology and anthropology, as a "sensory" methodology.[40] Angela Loxham suggests that this method can supplement classic texts in the history of the senses such as Constance Classen's *World of Sense: Exploring the Senses in History and Across Cultures.*[41]

Clearly, musicology avails of reenactment in subtle and sophisticated ways and has much to contribute to the discussion of this methodology. Yet, despite the recent productive ends to which this unorthodox strategy of historical investigation has been applied, basic questions have either not been asked or not been seriously pursued. John Griffiths is among the minority of writers who have broached the issue of using the tacit knowledge of living musicians as a source of evidence for early modern performance practices.[42] He addresses the issue obliquely in a discussion of present-day lutenists as living tradition bearers of a sixteenth-century musical tradition:

> Lutenists today learn many of the same skills that were practised by sixteenth-century players, among them the ability to decode in a credible fashion the polyphony of intabulated vocal works, including works whose models are no longer extant. ... This effectively places them at the end of a transmission chain that starts in the sixteenth century and, like any skilled tablature reader of the time, they are able to receive and comprehend polyphonic works notated in this format. This observation may seem provocative in that it includes contemporary musicians in the chain of transmission and reception that commenced in the sixteenth century, whereas as scholars, we tend to see ourselves as neutral observers, temporally distant from the practices of the remote past.[43]

Griffith's view of modern lutenists as the direct inheritors of a musical legacy that extends back to the 1500s is indeed provocative and worthy of further consideration. Its premise highlights the commonalities between sixteenth- and twenty-first-century lutenists, specifically shared skills and learning methods. As such, it is a foil to approaches to sixteenth-

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[39] Reviewer Angela Loxham cites, for example, that "through handling and wearing thick woolen fabrics (such as no longer exist today) for protracted periods, Goodman notes how she came to appreciate that Victorian fashions and fabrics made sense, due to their ability to provide insulation in frequently bitter indoor and outdoor temperatures." Angela Loxham, "Time Travel as a Tool for Sensory Research?" (book review of Ruth Goodman, *How to Be a Victorian*) *The Senses & Society* 10 (2015): 127.

[40] Tim Ingold, *The Perception of the Environment* (London: Routledge, 2000).

[41] Constance Classen, *World of Sense: Exploring the Senses in History and Across Cultures* (New York: Routledge, 1993).

[42] The strategy is inherent also in Le Guin, *Boccherini's Body* and Bruce Haynes, *A History of Performing Pitch: The Story of "A"* (Lanham, MD: Scarecrow Press, 2002).

[43] John Griffiths, "The Lute and the Polyphonist," *Studi musicali* 31 (2002): 97.

century music that, whether by accident or design, divorce historical experiences of music from our own. This tendency characterized certain strains of the early music movement in the latter half of the twentieth century, which fetishized the esoteric quality of early music. The project of coming to grips with early music *on its own terms*, unpolluted by modern norms of performance practice may have, in effect, encouraged a sense of alienation on the part of musicians from their native musical aesthetic and their own musical instincts and, thus, their physiology. This sense may have been further exacerbated through the debate in the 1980s and 90s over historically informed performance, which some characterized as a distinctly modernist cultural movement with little connection to the historical practices it ostensibly reenacted.[44]

Although not explicit, Griffith's notion of the continuity of skill and formation that links sixteenth-century instrumentalists with their modern counterparts depends on a belief in the deeper commonality of the nervous system. For instrumentalists both then and now, instruments represent their primary way of actively experiencing music. Then and now, the activity of playing a particular instrument involves the coordinated movements of the body working to manipulate strings, frets, keys, bows, reeds, and so forth. In the case of a keyboard instrument such as an organ, harpsichord, or clavichord (instruments common to the sixteenth and twenty-first centuries), the activity centers on the fingers operating a set of small levers - an activity that also recruits the hands, arms, nervous system, ears, and eyes. Keyboardists, across the centuries, often spend their entire lives enacting a shared set of ingrained motor programs with their instrument, day in and day out. Despite all the cultural differences between keyboardists in the sixteenth century and now, and despite the many differences in the worlds we inhabit, we are intimately united through the common ways the keyboard choreographs the use of our bodies.

In this dissertation, I harness the embodied knowledge of present-day musicians in a couple of different ways. First, my own first-hand experience as an organist and continuo player has highlighted for me how the mediation of the keyboard fundamentally shapes the way in which I conceptualize polyphonic music. In playing through intabulations of polyphonic vocal works by Josquin and other composers active in the first half of the sixteenth century, the way in which I parse the music is structured around my real-time sensorimotor experience of the polyphony. This includes such mundane considerations as which hand is playing the alto voice, how my hand should be placed to play a certain figure, where the next "downbeat" falls, and so forth. Such considerations were likely far removed from the mind of Josquin or other composers active in the era that predated what I call the mechanization of polyphony. My own keyboard playing also informs the perspective I present in Chapters 2 and 3 on the significance of the emergence of basso continuo and the

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[44] See, for example, Nicholas Kenyon, ed., *Authenticity and Early Music: A Symposium* (Oxford: Oxford University Press, 1988) and Richard Taruskin, *Text and Act: Essays on Music and Performance* (Oxford: Oxford University Press, 1995).

idiom commonly called the "concertato style." Second, I access the embodied knowledge of twentieth- and twenty-first-century subjects indirectly by engaging with experimental research on motor control and the cognition of movement. I bring this body of knowledge into my discussion on the sensorimotor experience of playing polyphony at the keyboard in Chapter 1 and return to it at the conclusion of Chapter 3.

<p style="text-align:center">*   *   *   *   *</p>

Chapter 1 investigates the embodied experience of keyboard playing, focusing particularly on aspects that enabled keyboard playing to serve as a useful substitute for the choir, the traditional medium of polyphonic music. Comparing keyboard intabulations and their vocal models offers a relatively clear-cut route to identifying how composers stylized the act of keyboard playing and how this differed from the stylization of choral singing. I analyze several pairs of polyphonic vocal works and keyboard adaptations, including the chanson *Plusieurs regretz* by Josquin and its adaptation *Plus ne regres* by Marcantonio Cavazzoni, and the secular Latin song *Calami sonum ferentes* by Rore and the intabulation of the work in the Turin Tablature. I then consider what keyboard tablature systems themselves reveal about the act of keyboard playing. Based on these discussions, in the final section, I propose that the concept of mechanization can help integrate keyboard playing into an account of emergent styles at the turn of the seventeenth century. Further, I introduce three principal criteria that help elucidate the difference between choral singing and keyboard playing: model of agency, script, and sensorimotor experience. These overlapping categories emphasize the embodied experience of choral singing and keyboard playing, the two central modes of polyphonic music making in the sixteenth and early seventeenth centuries.

In Chapters 2 and 3, I turn attention to the impact of basso continuo (organ accompaniments) on sacred music. In Chapter 2, I decode the material forms of early sacred concerto prints as evidence of the evolving status of the basso continuo within the musical work. Based on discrepancies between the basso continuo booklet and the vocal partbooks, such as non-concordant publication dates, title-pages, and paratexts, I argue that in the 1590s and early decades of the seventeenth century, the basso continuo was generally considered an unofficial part of the work. At the same time, however, the inclusion of the organ part along with the vocal parts in prints of sacred concertos created a virtual site for the commingling of the overlapping yet distinct arts of composition and organ playing. In this way, the concerto print became an important location for the synthesis of these two arts, akin to Pamela Long's notion of the book as a "trading zone" between high and low forms of knowledge in the Middle Ages and Renaissance.[45]

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[45] Pamela O. Long, *Openness, Secrecy, Authorship: Technical Arts and the Culture of Knowledge from Antiquity to the Renaissance* (Baltimore, MD: Johns Hopkins University Press, 2001).

Chapter 3 revisits the origins of the collection of compositional techniques commonly referred to as the "concertato style." While the question of origins is often not addressed directly, the explanation implied in much twentieth-century literature on the concertato style is that it was forged by composers in response to changing aesthetic values.[46] This view has been qualified in recent years by Noel O'Regan, Arnaldo Morelli, Jeffrey Kurtzman, and David Bryant and Elena Quaranta, among others, whose research has shown that the style likely emerged from unwritten performance practices in the sixteenth century. Building on their research, I argue that the characteristic features of the concertato style – contrasting textures, solo sections, instrumental ritornelli, and so forth – are fundamentally linked to the retooling of large, gallery organs as accompanimental instruments in the fifteenth century. Through the standardization of the keyboard interface and the addition of stops, the organ could become a real-time participant in polyphonic music. The basso continuo parts created for this role were commodified by printers (as discussed in Chapter 2). Whereas intabulation concerned the substitution of the keyboard for the choir, the concertato style was built upon the partnership of keyboard and choir. This, in effect, objectified the subjective, sensorimotor experience of keyboard playing. The concertato style, I argue, depended upon the heterophony of a choir and organ performing the same work in synchrony. It was, at its core, a stylization of this complementary relationship.

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[46] Key studies include Denis Arnold, "Giovanni Croce and the Concertato Style," *Musical Quarterly* 39 (1953): 37–48; Jerome Roche, *North Italian Church Music in the Age of Monteverdi* (Oxford: Clarendon Press, 1984); and Franco Piperno, "'Concerto' e 'concertato' nella musica strumentale italiana del secolo decimo settimo," *Recercare* 3 (1991): 169–202.

CHAPTER 1
INTABULATION AND THE MECHANIZATION OF POLYPHONY

Polyphonic vocal works abound in sources of keyboard music from the sixteenth and early seventeenth centuries. While a complete inventory of keyboard intabulations does not exist, Cleveland Johnson's study of sources notated in German Organ Tablature between 1550 and 1650 identifies 5500 intabulations.[1] Manuscript sources in particular teem with transcriptions and arrangements of motets, chansons, madrigals, and other forms of vocal music. Of the 888 works preserved in the Pelplin Keyboard Tablature, 797 are intabulations of vocal works.[2] Other major collections in German Organ Tablature, such as the Turin and Lublin tablatures also include a substantial caches of intabulations, as do several manuscripts notated in Italian *intavolatura*.[3] The Bardini and Layolle Manuscripts, for instance, comprise polyphonic vocal works exclusively, and the fascicles at Castell'Arquato include many intabulations as well.[4] Intabulations also abound in several British manuscript sources,

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[1] Cleveland Johnson, *Vocal Compositions in German Organ Tablatures, 1550-1650: A Catalogue and Commentary* (New York: Garland, 1989).

[2] PL-PE Mss. 304–8, 308a. The tablature was copied at the Cistercian Monastery in Pelplin between 1620 and 1630. The tablature is discussed in Adam Sutkowski and Oscar Mischiati, "Una preciosa fonte di musica strumentale: l'intavolatura di Pelplin," *L'organo: Rivista di cultura organaria e organistica* 2 (1961): 53–72.

[3] The Turin Tablature comprises I-Tn Mss. Giordano 1-8 and Mss. Foà 1-8. The tablature was copied in Augsburg between 1637 and 1640. The most comprehensive study of this monumental collection is Oscar Mischiati, "L'intavolatura d'organo tedesca della Biblioteca nazionale di Torino," *L'organo: Rivista di cultura organaria e organistica* 4 (1963): 1–154. See also Chapter Six of Robert Floyd Judd, "The Use of Notational Formats at the Keyboard: A Study of Printed Sources of Keyboard Music in Spain and Italy c. 1500-1700, Selected Manuscript Sources Including Music by Claudio Merulo, and Contemporary Writings Concerning Notations" (D.Phil. diss., University of Oxford, 1989). The Lublin Tablature, copied by Jan z Lublina between 1537 and 1548, is PL-Kó Ms. 1716. It is discussed in John R. White, "The Tablature of Johannes of Lublin," *Musica Disciplina* 17 (1963): 137–62.

[4] The Bardini Manuscript is I-Fmba Ms. 967. Craig Monson introduces it in "Elena Malvezzi's Keyboard Manuscript: A New Sixteenth-Century Source," *Early Music History* 9 (1990): 73–128. The Layolle Manuscript is I-Fl Ms. Acquisti e Doni 641. See Frank A. D'Accone, "The 'Intavolatura di M. Alamanno Aiolli': A Newly Discovered Source of Florentine Renaissance Keyboard Music," *Musica Disciplina* 20 (1966): 151–74. The Castell'Arquato fascicles are catalogued as I-CARcc Ms. 7832. See H. Colin Slim, "Keyboard Music at Castell'Arquato by an Early Madrigalist," *Journal of the American Musicological Society* 15 (1962): 35–47, and Knud Jeppesen, *Die italienische Orgelmusik am Anfang des Cinquecento* (Copenhagen: W. Hansen, 1960), 1:113-128. Slim has edited selections from the manuscripts in three volumes of the Corpus of Early Keyboard Music. The latest volume in particular features intabulations. *Keyboard Music at Castell'Arquato*, vol. 3, ed. H. Colin Slim, Corpus of Early Keyboard Music 37 (n.p.: American Institute of Musicology, 2003).

including the Mulliner Book and Additional Manuscript 29996 of The British Library.[5] Two of the largest Iberian manuscript sources for keyboard music, Manuscripts 48 and 242 at the University of Coimbra, both in open score, transmit a substantial cache of intabulations.[6]

Turning to printed sources, the earliest collection of keyboard music printed in Italy, Andrea Antico's anthology of *Frottole intabulate da sonare organi* (Rome, 1517), is made up entirely of intabulated frottolas. The century that followed witnessed the publication of dozens more anthologies featuring intabulations of vocal works, in Italy and elsewhere. The compilers included Antonio Gardano in Venice, Pierre Attaingnant in Paris, Elias Nikolaus Ammerbach and Johannes Rühling in Leipzig, Bernhard Schmid the Elder and Bernhard Schmid the Younger in Strasbourg, Jacob Paix in Strasbourg and Lauingen, and Johann Woltz in Basel.[7] Intabulated vocal works also figure in prints issued of music by keyboardist-

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[5] GB-Lbl Add. Mss. 30513 and 29996 respectively. The most recent major study of the former is Jane E. Flynn, "A Reconsideration of the Mulliner Book (British Library Add. MS 30513): Music Education in Sixteenth-Century England" (Ph.D. diss., Duke University, 1993). John Caldwell, "British Musem Additional Manuscript 29996" (D.Phil. diss., University of Oxford, 1965) remains the most significant study of the latter.

[6] P-Cug Mss. 48 and 242. The manuscripts are discussed and their contents listed in Santiago Kastner, "Los manuscritos musicales n.ˢ 48 y 242 de la Biblioteca General de la Universidad de Coimbra," *Anuario Musical* 5 (1950): 78-96.

[7] Angelo Gardano printed the anthology *Musica de diversi autori: La Bataglia francese et Canzon delli ucelli, insieme alcune canzoni francese* (Venice: Gardano, 1577) in open score. His compilation of all the four-voice madrigals of Rore in intabulated form, printed the same year, is likewise in open score. *Tutti i madrigali di Cipriano di Rore a quattro voci, spartiti et accommodati per sonar d'ogni sorte d'instrumento perfetto* (Venice: Gardano, 1577). Anthologies of intabulations for keyboard edited and published by Pierre Attaingnant include a volume of motets, *Treze motetz musicaulx avec ung prelude, le tout reduict en la tabulature des orgues espinettes et manicordions et telz semblables instrumentz*, and three books of chansons, *Dixneuf chansons musicales reductes en la tabulature des orgues...*, *Vingt et cinq chansons musicales reductes en la tabulature des orgues...*, and *Vingt et six chansons musicales reductes en la tabulature des orgues...*. All four volumes were published in Paris in 1531. Elias Nikolaus Ammerbach, ed., *Orgel oder Instrument Tabulatur* (Leipzig: Erben, 1571) and idem, ed., *Ein new künstlich Tabulaturbuch* (Leipzig: Beyer, 1575). Ammerbach's earlier volume was expanded and revised in 1583 (Nürnberg: Gerlach). Johannes Rühling, *Tabulaturbuch auff Orgeln und Instrument* (Leipzig, 1583). Bernhard Schmid the Elder, *Zwey Bücher einer neuen kunstlichen Tabulatur ... allen Organisten und angehenden Instrumentisten zu nutz* (Strasbourg: Jobin, 1577). Bernhard Schmid the Younger, *Tabulatur Buch von Allerhand ausserlesnen ... Motteten, Canzonetten, Madrigalien unnd Fugen von 4. 5. und 6. Stimmen ... auff Orgeln und Instrumenten zugebrauchen ... in die Hand accommodirt, zugericht und aussgesetzt* (Strasbourg: Zetzner, 1607). Jacob Paix, *Ein schön nutz unnd gebreüchlich Orgel Tabulaturbuch. Darinnen etlich der berümbten Componisten, beste Moteten, mit 12. 8. 7. 6. 5. und 4. Stimmen ausserlesen* (Lauingen: Willers, 1583) and *Thesaurus motetarum. Neuerlessner zwey und zweintzig herrlicher Moteten ... zusamen getragen und in diese breuchige Tabulatur gebracht* (Strasbourg: Jobin, 1589). Johann Woltz, *Nova musices organicae tabulatura* (Basel: Genath, 1617).

composers such as Marcantonio Cavazzoni da Bologna, Girolamo Cavazzoni, Antonio Valente, Antonio and Hernando de Cabezón, Sperindio Bertoldo, Claudio Merulo, Andrea Gabrieli, Manuel Rodrigues Coelho, Francisco Correa de Arauxo, and Girolamo Frescobaldi.[8]

What is so interesting about these thousands of pages of intabulated polyphonic vocal music is what they reveal about the circulation of music. As it pertains to this period of music history, the circulation of music is usually charted via the dissemination of works and repertoires as scholars seek to understand what music was performed, heard, or known where and by whom. Intabulations can be important informants in investigations of this nature (the transmission of French, Italian, and German vocal works in Polish organ tablatures offers a fascinating example). But the plethora of extant intabulations speaks not only to a dissemination of musical works; it also foregrounds a dissemination of a particular phenomenal experience of polyphony. The soundscape of early modern Europe that these extant intabulations conjure up is one that was abuzz with chansons, madrigals, and motets – all heard and experienced as keyboard music. In this guise, the normal conveyance of polyphonic music is stripped of its personnel – singers – and replaced by a single musician operating a keyboard.

For many early moderns, the mechanized guise was the predominant mode of encountering polyphonic music. Intabulation was a great equalizer: it allowed monumental polychoral motets to permeate tiny choirless churches, strains of chansons to resound in churches and barbershops alike, and madrigals composed for Italian princes to be practiced in modest dwellings and churches, from eastern Europe to the English countryside. A passage from a laudatory poem prefacing Bernhard Schmid the Younger's 1607 anthology of sacred vocal music intabulated for organ conveys a sense of wonder at polyphonic music's shape

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[8] Marcantonio Cavazzoni, *Recerchari, motetti, canzoni … libro primo* (Venice: Vercelensis, 1523). Girolamo Cavazzoni, *Intavolatura cioè recercari, canzoni, himni, Magnificat … libro primo* (Venice: s.n., 1543). Antonio Valente, *Intavolatura de cimbalo, recercate, fantasie et canzoni francese desminuite* (Naples: Cacchio d'Aquila, 1575). Antonio de Cabezón, *Obras de música para tecla arpa y vihuela … recopiladas y puestas en cifra por Hernando de Cabeçon su hijo* (Madrid: Francisco Sanchez, 1578). Sperindio Bertoldo, *Canzoni francese intavolate per sonar d'organo* (Venice: Vincenti, 1591). Claudio Merulo, *Terzo libro de canzoni d'intavolatura d'organo … a cinque voci fatte alla francese* (Venice: Gardano, 1611). Andrea Gabrieli, *Il terzo libro di ricercari … tabulati per ogni sorte di stromenti da tasti* (Venice: Gardano, 1596), idem, *Canzoni alla francese et ricercari ariosi, tabulate per sonar sopra istromenti da tasti … libro quinto* (Venice: Gardano, 1605), and idem, *Canzoni alla francese per sonar sopra istromenti da tasti… libro sesto & ultimo* (Venice: Gardano, 1605). Manuel Rodrigues Coelho, *Flores de musica para o instrumento de tecla & harpa* (Lisbon: Craebeeck, 1620). Francisco Correa de Arauxo, *Libro de tientos y discursos de musica practica, y theorica de organo, intitulado Facultad organica* (Alcalá de Henares: Antonio Arnao, 1626). Girolamo Frescobaldi, *Il secondo libro di toccate, canzone … d'intavolatura di cimbalo et organo* (Rome: Borboni, 1627).

shifting in the hands of the intabulator. The poet, Leonhardus Angelus Francus, highlighted intabulation as a vehicle for moving music composed for elite venues to more modest spaces:

> He is a thief/robber bee (*fur*) in spirit who can quicken souls with melodies and take over the function of the voice with his fingers..... For just as the busy looter of the Hyblean fields collects from the sweet-flowing hives with her mouth, thus you [Schmid] turn the heart-moving scrolls of the muse's playing and select with careful art songs suitable for livening the sacred dome and sweetening the elegant courses at the table with the strumming of the lyre. Therefore ... let the shrines and households resound with your modes. For who is of greater virtue than you and [who is] more worthy in art, this art which the court of the nobility fondly cherishes.[9]

The double meaning of the Latin word *fur*, thief and robber bee, portrays the phenomenal metamorphosis of the music wrought through intabulation as a sort of magic trick – a sleight of hand; at the same time, the imagery of the bee emphasizes the respectability of the intabulator's work as a diligent artisan. The passage also highlights the role of this metamorphosis in paving the way for "this art which the court of the nobility fondly cherishes" to infiltrate the humbler spaces of "shrines and households."

In recent years, musicologists have increasingly shifted their attention to the symbiotic relationship of music and technology. These studies have enriched our understanding of how music notation, printed partbooks, automated instruments, sound recording, electrified musical instruments, post-production editing techniques, and so forth have influenced the ways in which musicians practice their craft and the style of their music. The rhetoric of Francus in the above quotation evokes the utopian wonder that has colored centuries of responses to technology's capacity to transform the familiar and make the impossible possible. Francus was not alone in voicing amazement of intabulation; the Spanish organist Correa described *cifra*, Spanish number tablature, as a godsend that revolutionized music and made masterworks of polyphony accessible to the uninitiated (I discuss Correa's perspective further below). This sense of wonder, however, is all but lost in traditional studies of intabulations, particularly those for keyboard. For a long time, practitioners of the art were derided as "colorists," and intabulated vocal works were likely to be left out of modern editions in favor of a ricercar or toccata on a neighboring page in the

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[9] "Fur animis quicunque animos animare melodis / Est potis & digitis vocis obire vices. /... Nam velut hyblaei populatrix sedula campi / Undique dulcifluos colligit ore favos. / Sic tu Musai trahicorda volumina ludi / Volvis, et exacta seligis arte mele, / Queis animare tholos sacros dulcareque mensa / Vibrissante fide fercula lauta licet. / Ergo ... modulis templa laresque sonent. / Nam quis te melior virtute et dignior arte hac / Arte, megistanum quam fovet aula libens." Schmid the Younger, *Tabulatur Buch*. The author of the poem is Leonhardus Angelus Francus. The translation is based on one from Clyde William Young, "The Keyboard Tablatures of Bernhard Schmid, Father and Son" (Ph.D. diss., University of Illinois, 1957), 232.

same primary source.[10] Indeed, in anglophone musicology the very word *intabulation* – a new word to English – leads us away from the phenomenal and toward genre – a more abstract level of textuality than that signified in the sixteenth and sevententh centuries by the Italian word *intavolatura* or German *Tabulatur*.[11] This is not to imply that formal comparative analysis of intabulations and their vocal models is unproductive. On the contrary, close examination of intabulations has helped to elucidate aspects of their models, not least of

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[10] The epithet "colorist" can be traced to August Gottfried Ritter, *Zur Geschichte des Orgelspiels, vornehmlich des deutschen, im 14. bis zum Anfange des 18. Jahrhunderts*, (Leipzig: Hesse, 1884), 1:111-13. Ritter accuses "die Koloristen" of massacring genuine compositions through the addition of mindless figuration. "Begnügte sich der kolorierende Künstler anfänglich mit kurzen weltlichen Liedern, die er mit Hilfe ein- und aufgelegter Figuren zum Gebrauche für die Tasten-Instrumente, in specie für die Orgel zurecht machte: so greift er schliefslich nach bogenlangen 8- bis 12stimmigen geistlichen Gesängen, um sie seiner Kunst zum Opfer zu bringen; im gleichen Maße mit der zunehmenden Breite des Stoffs wächst das Geistlose der Behandlung, die endlich bis zum Verstummen elend wird.... Ihre Figuren-Arbeit ist kein instrumentales Beleben – sie ist ein fortwährendes und leichtsinniges Töten an und für sich gesunder Organismen." Ibid., 111. Willi Apel ascribed to a similar view of intabulation. He assessed the "innumberable intabulations" for keyboard instruments from the sixteenth century as "occupy[ing] a much larger space than they deserve relative to their historical and artistic significance." Willi Apel, *The History of Keyboard Music to 1700*, trans. Hans Tischler (Bloomington, IN: Indiana University Press, 1972), 288. Perhaps in an effort to right this perceived imbalance, Apel devotes a mere two pages to intabulation in his 488-page history of early keyboard music.

[11] *Intabulation* and *intabulate* were added as draft entries to the *Oxford English Dictionary* only in 1993, with definitions apparently derived from Howard Mayer Brown, "Intabulation," *Grove Music Online. Oxford Music Online* (Oxford University Press), accessed July 3, 2015, http://www.oxfordmusiconline.com/subscriber/article/grove/music/13823. The terms do not appear anywhere in the first edition of Grove's *A Dictionary of Music and Musicians*, 4 vols., ed. George Grove (London: Macmillan, 1879-1890) nor in the third edition Baker's *A Dictionary of Musical Terms*, ed. Theodore Baker (New York: Schirmer, 1897). To the best of my knowledge, they are not used in early modern sources to mean the practice of adapting polyphonic works to the keyboard or lute, or anything related to it. In the discussion of setting music in lute tablature in the Burwell Lute Tutor, for instance, the scribe uses the word *pricking*, as in "the way and manner for pricking Lessons to the Lute." See Thurston Dart, "Miss Mary Burwell's Instruction Book for the Lute," The Galpin Society Journal 11 (1958): 3–62. *Intabulation* and *intabulate* do appear, however, in seventeenth- and eighteenth-century dictionaries with non-musical definitions. In one, *intabulation* is defined as "a laying on of boards or planks;" in another, *intabulate* is defined as "to write in Tables." Respectively, Edward Phillips, *The New World of Words; Or, Universal English Dictionary* (London: J. Phillips, 1658), and Thomas Blount, *Glossographia; Or, A Dictionary Interpreting All Such Hard Words of Whatsoever Language Now Used in Our Refined English Tongue* (London: G. Sawbridge, 1661).

which has been the application of musica ficta.[12] Intabulations are also an unparalleled tool for reconstructing lost vocal models.[13] Further, by foregrounding formal differences between choral and solo instrumental versions of a piece – which might include differences of key, ornamentation, voice leading, and organizational strategies – traditional analysis can play a vital role in investigating the historical significance of the phenomenal wonder of intabulation in the sixteenth and early seventeenth centuries and, ultimately, how the experience it encapsulates influenced broader developments in music during the period.

  In this chapter, I take the formal differences between polyphonic vocal works and their keyboard adaptations as symptoms of the confrontation of two paradigms of polyphonic music-making in the sixteenth century: choral singing and solo keyboard playing. The sustained interface of these modes of musical engagement, one longstanding, the other a more recent development, was at the foundation of the musical revolution evident in sources from the decades surrounding 1600. It transcended the specifics of any particular branch of the "new music," be it monody, the *seconda prattica*, or the "concertato style." An essential preliminary for understanding the role of keyboard playing in reshaping the idiom of polyphonic vocal music – and the conceptualizations of music that informed the new idiom – is to come to terms with the nature of keyboard playing as a mode of experiencing polyphonic music and, particularly, how it differs from choral singing.

  The question of the role of keyboard playing in the musical revolution would seem to be central to an investigation of this moment in music history. It brings two major narratives to bear on each other: the emergence of the "new music" and the keyboard's "coming out." Yet the question is rarely posed, much less explored. The cause is partly institutional: the traditional methods and narrative frames of early music history are designed to engage the act of music-making itself only indirectly at best. Further, the disciplinary partitioning of style history from the history of music theory from organology frustrates attempts to come to grips with the interactive evolution of the grammar of music, abstract musical concepts, and the sensorimotor experience of music making.[14] Yet we cannot truly understand any of these individual components without understanding how they play against one another in an ongoing dialogic evolution. Cognitive science tells us this. A new model for cognition has emerged in recent decades, replacing the radical mentalist model in which the brain is a

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[12] See, for example, Howard Mayer Brown, "Accidentals and Ornamentation in Sixteenth-Century Intabulations of Josquin's Motets," in *Josquin des Prez. Proceedings of the International Josquin Festival Conference Held at The Julliard School at Lincoln Center in New York City, 21-25 July 1971*, ed. Edward Lowinsky (London: Oxford University Press, 1976), 475–522.

[13] See Howard Mayer Brown, "The Importance of Sixteenth-Century Intabulations," in *Proceedings of the International Lute Symposium, Utrecht, 1986*, ed. Louis Peter Grijp and Willem Mook (Utrecht: STIMU Foundation for Historical Performance Practice, 1988), 1-29.

[14] Roger Moseley discusses the tension between organology and "its supposed sister disciplines of ethnomusicology and historical musicology" in "Digital Analogies: The Keyboard as Field of Musical Play," *Journal of the American Musicological Society* 68 (2015): 178-79.

central processing unit, divorced from the body and environment.[15] The new model sees brain, body, and environment interacting in a tight-knit weave. As the cognitive linguists George Lakoff and Mark Johnson tell us, "conceptual structure arises from our sensorimotor experience and the neural structures that give rise to it."[16] Thus, seemingly abstract concepts are in fact not abstract at all in their origin; rather they are metaphors informed by situated, embodied experience. This newer framework of cognition entreats scholars across the disciplines to reexamine the relationship between concept, utterance, and the bodily mechanisms that result in that utterance. In the case of music from the period around 1600, "concept" includes both notation and music theory in a broad sense (everything from formal treatises to musicians' working knowledge); "utterance" is the sound object of music and, on a more universal level, musical style and structure; and the embodied actions include singing and instrument playing – alone or in an ensemble – as well as composing and teaching.[17] In short, the embodied model of cognition precludes our maintaining that developments in keyboard music only affected the history of keyboard music.

On the surface, the difference between choral singing and keyboard playing is obvious enough: one involves a group of people making music with their voices, the other a single person making music by manipulating an instrument with her hands. The reason that this difference is obvious is because the juxtaposition is mundane – not because it is simple. Alexander Silbiger highlights the underlying affordances of keyboard playing in a beautiful paragraph that opens his edited volume *Keyboard Music before 1700*. I quote it in full:

> With the introduction of a keyboard, musicians lost direct contact with the source of their music. A mechanism, sometimes elementary, sometimes formidably complex, was interposed between vibrating strings or air columns and their own bodies. Yet this device proved to be a tool of unprecedented power, allowing a single individual to harness music's full harmony, whether for private solace or for the spiritual uplift of a multitude. Few of the instrument's qualities were as consequential as the ability of each of the player's hands to produce music by itself. The two hands could be like two players, both emerging from one, and easily merged back into one. This effect determined much of keyboard music's special character as well as the forms of notation; the early history of keyboard music can be seen as a history of the exploration and exploitation of this two-handed potential.[18]

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[15] See the Introduction to this dissertation.

[16] George Lakoff and Mark Johnson, *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought* (New York: Basic Books, 1999), 77.

[17] Thomas Christensen discusses "embodied music theory," citing the *partimento* tradition as an example, in "Fragile Texts, Hidden Theory," in The Work of Music Theory: Selected Essays (Burlington, VT: Ashgate, 2014), 55–73.

[18] Alexander Silbiger, "Introduction: The First Centuries of European Keyboard Music," in *Keyboard Music before 1700*, ed. A. Silbiger (London: Routledge, 2004), 1.

Silbiger's description acknowledges basic aspects of keyboard playing which are rarely explored: the interposition of a keyed interface between the musician and the sound source, the consolidation of control over a polyphonic texture to a single musician, and the generation of polyphonic music through the coordination of the two hands.

The goal of this chapter is to outline the affordances of keyboard playing. It is divided into two parts. The first part illustrates how various formal features of polyphonic keyboard music are symptoms of the experience of keyboard playing. Through a comparison of several intabulated vocal works and their respective models, I show how differences in organization, texture, figuration, and other formal aspects are manifestations of fundamental differences in the cognitive and motor experience of choral singing and solo keyboard playing. The specific observations made here inform the second part of the chapter, in which I sketch a typology of affordances by which to compare keyboard playing and choral singing. I discuss the three principal categories of the typology: 1) model of agency; 2) script (really a subcategory of agency); and 3) sensorimotor experience. At its very core, engaging polyphony through the mechanism of the keyboard is defined by incorporation: music made by the voices of several independently-willed people becomes music made by a single body.

As the title of this chapter suggests, I frame the relationship between the two modes of polyphonic music-making in terms of mechanization. The topic of mechanization, which I outline in relation to polyphony at the beginning of the second part, helps to foreground the question of the cultural function of keyboard intabulation – a highly specialized topic of historical investigation in the grand scheme of things – by encouraging a comparison of this technological transformation of music to other historical instances of mechanization. The transformation of polyphony exemplified in the intabulation of vocal works for keyboard does not fit perfectly into the mould set by classic examples of mechanization. No doubt this is one reason that, for all the discussion of major stylistic and conceptual shifts in music at the beginning and end of the sixteenth century, mechanization has not been recruited in any major way to help elucidate either of these transitions.

<p style="text-align:center">*   *   *   *   *</p>

Comparing Polyphonic Vocal Works and Their Keyboard Adaptations

Included in Marcantonio Cavazzoni's *Recerchari, motetti, canzoni* (Venice: Bernardo Vecelensis, 1523) is a piece entitled *Plus ne regres.* In 1972, Martin Picker identified this piece as an arrangement of the five-voice chanson *Plusieurs regretz* by Josquin.[19] Picker provided an informative analysis of the relationship between Marcantonio's arrangement and its

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[19] Martin Picker, "A Josquin Parody by Marco Antonio Cavazzoni," *Tijdschrift van de Vereniging voor Nederlandse Muziekgeschiedenis* 22, no. 3 (1972): 157–59.

model. He classified the arrangement as an instance of a "paraphrase-parody," in accordance with a typology developed by John Ward for vocal-derived instrumental music.[20] In paraphrase-parodies, "literal quotation of the model is rare ... motives are borrowed, structural detail copied, not slavishly, but as a point of departure for a new music."[21] The music-as-text orientation of this category, which was typical for the time, is apparent also in Picker's discussion of the two pieces (Picker's musical examples are reproduced as indicated):

> Cavazzoni faithfully preserves the paired motives of the opening, though he colors the upper voice with considerable ornament [Ex. 1.1]. The bass entry in measure 3 is retained, as is the half-cadence in measure 5. From this point on Cavazzoni proceeds with little reference to Josquin's chanson, making no effort at all to incorporate its canonic framework. Nevertheless, he preserves a major structural feature: the exact repetition of the first section (Josquin mm . 1-12 = 13-24; Cavazzoni mm. 1-22 = 23-44). Another, less obvious feature is brought in toward the end. Cavazzoni, in measures 56ff., appears to paraphrase, very freely, motives from the concluding section of Josquin's piece (mm. 43 ff.) [Ex. 1.2].[22]

Example 1.1. Comparison of *Plus ne regres* and *Plusieurs regretz*, opening.

(a) M. Cavazzoni, *Plus ne regres*

(b) Josquin, *Plusieurs regretz*

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[20] Ibid., 158. Ward presented the typology in "The Use of Borrowed Material in Sixteenth-Century Instrumental Music," *Journal of the American Musicological Society* 5 (1952): 88–98.
[21] Quoted in Picker, "A Josquin Parody," 158. The original quotation comes from Ward, "The Use of Borrowed Material," 95.
[22] Ibid.

Example 1.2. Comparison of *Plus ne regres* and *Plusieurs regretz, mi-fa-mi* motif.

(a) M. Cavazzoni, mm. 56-60.

(b) Josquin, Quintus, mm. 48-51.

Picker's approach to comparing the two pieces emphasizes textual commonality. This analytic is evident in phrases such as "Cavazzoni faithfully preserves the paired motives," "preserves a major structural feature," and "appears to paraphrase, very freely." The foregrounding of the textual commonality is only reinforced by Picker's descriptions of Cavazzoni's deviations from the model, as in "though he colors the upper voice with considerable ornament" and "making no effort at all to incorporate its canonic framework."

Another way to compare the chanson and the keyboard arrangement is to approach them through the respective experiential modes of performance that they imply. A performance of the chanson *qua* chanson involves the participation of five singers: five autonomous, independently willed people. The five singers read from five partbooks, each containing a unique part. The physiology of their performance centers on their vocal tracts, respiratory system, and associated muscles which manipulate the size and shape of resonators in the head, neck, and chest. A performance of the chanson as an intabulation, meanwhile, implicates a single musician – a keyboardist – operating a contrivance – an organ or stringed keyboard instrument. The keyboardist reads from an *intavolatura*, or, if the keyboardist is Marcantonio Cavazzoni himself, he might play without reading notated music, instead improvising, probably according to a pre-determined plan of some sort. The physiology of his performance centers on the fingers of the two hands, all working in coordination to depress and release the desired keys at the desired time and in the desired manner.

Marcantonio's rendition of *Plusieurs regretz,* as impressed upon the pages of Bernardo Vercelensis's print, illustrates some of the effects on the musical *corpo* of translating polyphony conceived for five singers to polyphony for a single agent operating a machine. As Picker noted, the keyboard arrangement does not adhere to the chanson's structure. Indeed, its structure suggests that its composition was not so much the result of a careful study of Josquin's chanson as it was the fruit of aural memories that the chanson had left in Marcantonio's ears. (For reference, the chanson and the intabulation are reproduced in their entirety in Appendix A.) The piece does not seem to have been produced by transliterating the five parts of the chanson into *intavolatura*, perhaps via the intermediary step of a transcription into open score, the process of intabulation as described in the

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contemporaneous *Fundamentum* of Hans Buchner and, later, in Girolamo Diruta's *Il Transilvano*.[23]

Aspects of the chanson that we find retained in the keyboard intabulation tend to be ones that are easily heard. These include the opening point of imitation, the repetition of the opening section (it is no matter that the opening section itself of the keyboard arrangement differs considerably from that of the chanson), and the motif illustrated in Example 1.2, featuring the expressive *mi-fa-mi* gesture, all of which Picker noted. The *mi-fa-mi* figure, in fact, pervades the latter half of the chanson: we hear it as part of the point of imitation beginning in measure 24, with the figure resounding first in the Tenor (mm. 24-26), then the Quintus (mm. 26-28), and then the Superius, where it is most clearly audible (mm. 28-30) (Ex. 1.3). The whole point of imitation is immediately repeated (mm. 33-42) before the voices introduce the motif illustrated in Example 1.2b, beginning with the Superius (mm.43-44), then the Tenor (mm. 46-47), and then the Quintus (mm. 48-49). Finally it is sung again by the Superius (mm. 51-52). An additional aural feature of the chanson that we hear in the keyboard arrangement is the static motif that the Superius sings in measures 8-9 (repeated in mm. 20-21) (Ex. 1.4). In the keyboard arrangement, we find this, for instance, in the lower part played by the right hand in measure 54.

Example 1.3. Josquin, *Plusieurs regretz,* mm. 24-30.

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[23] Hans Buchner, "Fundamentum, sive ratio vera, quae docet quemvis cantum planum, sive (ut vocant) choralem redigere ad iustas diversarum vocum symphonias." The oldest copy of the treatise, dating from c.1520, is preserved in CH-Zz Ms. 284. Buchner's method involved transliteration into old German organ tablature (rather than Italian keyboard *intavolatura*). Diruta used *intavolatura*. Girolamo Diruta, *Il Transilvano: Dialogo sopra il vero modo di sonar organi et istromenti da penna*, 2 vols. (Venice: Vincenti, 1593, 1609).

Example 1.4. Josquin, *Plusieurs regretz,* mm. 8-9.

While all the aurally salient figures discussed so far are also visually salient in the chanson – they leap out when looking at the partbooks or a score of the chanson – others are far more obvious to the ear than to the eye. One such figure is the imitative entry at the octave that we hear in measure 17 of the chanson, in which the Contratenor sings *c′*, followed a half-note later by *c″* sung by the Superius (Example 1.5a). Marcantonio mirrors this effect in the right hand octave leap from *e′* to *e″* in measure 16 (repeated in m. 38) (Example 1.5b). Because the octave occurs between different voices in the chanson, it is visually obscure; nonetheless, it is eminently audible.

Example 1.5a. Josquin, *Plusieurs regretz,* mm. 16-17.

Example 1.5b. Marcantonio Cavazzoni, *Plus ne regres,* mm. 15-16.
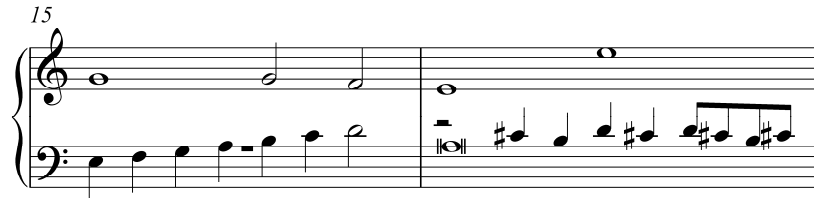
      The notion that Marcantonio's arrangement was shaped less by a visual knowledge of the chanson (acquired through, say, studying the partbooks and/or combining all of the parts in a score) than by aural memory is further supported by the absence of certain features of the chanson and the transformation of others. Most blatant is the absence of the canon (as Picker noted) at the fifth between the Tenor and Quintus – the core structural device of the chanson. The canon is characterized by a mixture of short and long note values for the first half of the chanson (Ex. 1.6a); in the second half, the canon is more static and consists mostly of breves and semi-breves (Ex. 1.6b). In a choral performance of the chanson, the canon is effective: the two voices in canon represent two unique sound sources, distinct from one another in spatial position and timbre. At the same time, the two voices are bound together not only through the commonality of their melodic line, but their shared text. If we were to intabulate this chanson for keyboard performance, without alteration, the result would be a slow-moving canon between adjacent "voices" in the middle of the keyboard texture. It would simply not be discernible as a canon, either aurally or, to the player, haptically: he would inevitably treat the canon as a series of dyads, or more likely, as a constituent of block harmonies.

Example 1.6. Josquin, *Plusieurs regretz,* canon a) mm. 3-7, b) mm. 24-28.

a)

b)
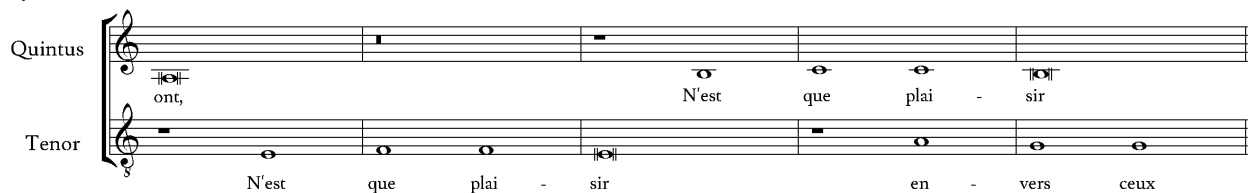
Other aspects of the keyboard arrangement highlight the new ecological context of the chanson. As the polyphony now unfolds under the central control of a single agent, the agent's hands operate with a limited degree of autonomy from one another: in the new ecology of the chanson, the hands are the closest equivalent to the independent voices of singers. Whereas in the collective model, imitation unfolds through the coordination of five autonomous agents, in the individual model, it becomes the bilateral task of two quasi-independent hands. The agential discrepancy is clearly manifest in the respective notational systems used for the chanson and the keyboard arrangement. The five separate partbooks of *Plusieurs regretz* as printed, for instance, in *Plusieurs regretz,* from *Livre contenant XXX. chansons tres musicales a quatre, cinque & six parties* (Paris: Attaingnant, 1549) reflect the autonomy of the five singers (Fig. 1.1). By contrast, the *intavolatura* is designed to be read by a single agent, and its two joined staves acknowledge the semi-autonomy of the two hands: the notational system is designed such that notes to be played by the left hand are confined to the lower staff, while notes to be played by the right hand appear on the upper staff (Fig. 1.2).

The voices of the five singers form a stereophony that gets converted into the monaural signal of the keyboard. It shows an indifference towards preserving the integrity of the five vocal parts. For instance, the moving quarter-note figures that are passed from one voice to another in the collective performance are conflated into extended quarter-note diminutions that run up and down the keyboard. In Example 1.7, the moving semiminims are passed between the Contratenor and Tenor. By contrast, Example 1.8 shows how a similar moving passage in Marcantonio's arrangement of the chanson is confined to the right hand (Ex. 1.8a) or passed between the two hands (Ex. 1.8b). Again, the nature of this conversion captures more the aural impact of the chanson than its formal (visual) structure.

Usually a run of semiminims in one hand is accompanied by chords or a slow-moving part in the other. When both hands play semiminims simultaneously, they almost invariably move in contrary motion – a simple strategy that an improvising keyboardist can use to avoid playing parallel fifths and octaves. Blatant parallels do occur in the block chords played by the left hand underneath the moving right hand. One of many instances is illustrated in Example 1.9. This motion, which is ubiquitous in early keyboard music, illustrates the ergonomics of keyboard playing pushing back against the conventions of counterpoint – conventions that had been established for intersubjective vocal performance.

Figure 1.1. Josquin, *Plusieurs regretz*, from *Livre contenant XXX. chansons tres musicales a quatre, cinque & six parties* (Paris: Attaingnant, 1549).

a) Tenor

b) Superius

c) Contratenor

d) Bassus

e) Quinta pars (bottom)

Figure 1.2. M. Cavazzoni, *Plus ne regres*, from *Recerchari, motetti, canzoni* (Venice: Vercelensis, 1523).
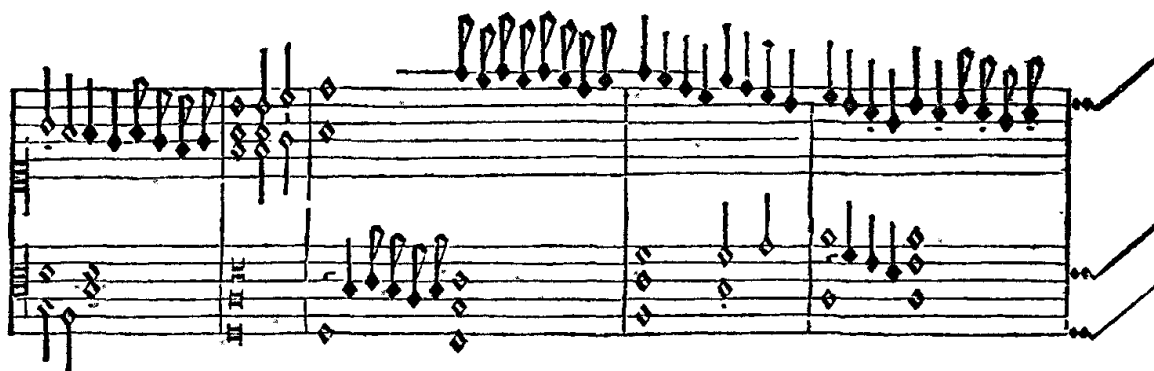
Example 1.7. Josquin, *Plusieurs regretz,* mm. 7-9.

Example 1.8. M. Cavazzoni, *Plus ne regres,* a) mm. 11-12, b) mm. 20-22.

a)

b)

Example 1.9. M. Cavazzoni, *Plus ne regres,* mm. 30-31.

Another difference between the original version of the chanson and the keyboard arrangement is in the communication of inflected pitches. In manuscript and print sources for *Plusieurs regretz,* inflections, such as the cadential g sol re ut *(g′)* and f fa ut *(f′)* sung by the Superius in measure two (Ex. 1.1b), are not explicitly indicated. The absence of indication highlights mutability as an intrinsic property of sung notes.[24] In the intabulation, however, Marcantonio's original intention (or preference, at least) for the realization of this figure is unambiguous (barring the possibility of typographical error). In Vercelensis's print of Marcantonio's compositions, all flats and sharps are indicated by the same sign: a dot placed above or below the notehead. In Figure 1.2, for instance, the *c♯′* in measure one and the *e♭* played by the left hand in measure two are both represented with a dot. In Figure 1.2, it is also clear that the *g′* and *f′* in the cadential figure (m. 2) are not inflected.

In general, chromatic inflections are marked far more in lute and keyboard intabulations than in the polyphonic vocal works that they are based on. Howard Mayer Brown and others have noted the usefulness of intabulations as sources of evidence for the realization of ambiguous melodies in the performance of the polyphonic vocal works from which the intabulations are derived. Mapping the vocal lines onto the keys of the keyboard removes, in effect, the relativism of solmization and pins the gamut to a set of fixed levers. The visual and haptic image created by the keyboard does not easily support the notion of raised and lowered versions of a note being *accidental*: since, for instance, the notes *c′* and *c♯′* are operated by discrete keys, the semitone that separates them marks out a difference of kind rather than of degree. Further, the commonality of symbol, the dot, for raised and lowered notes foregrounds the affordances of the keyboard more than notational systems which feature the two distinct symbols of the sharp and the flat for raised and lowered notes respectively. The single symbol provides no more information than that which is essential for the user to execute the note accurately. Within the constraints of meantone temperament, all that the user needs to know is that the note in question is altered or, in other words, she is meant to play a key in the upper row (the "black" keys) rather than one in the lower row (or vice versa): a dotted G becomes G♯, a dotted E becomes E♭, and a dotted B♭ (as in pieces which include a key signature of ♭) becomes a B♮.

<p style="text-align:center">*   *   *   *   *</p>

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[24] Recordings of *Plusieurs regretz* demonstrate the different ways realizing this passage. For example, Ensemble Clément Janequin's interpretation of the piece raises the *g′* and *f′* whereas the recording of the piece by Capella Sancti Michaelis does not. See *Adieu mes amours et autres chansons*, Ensemble Clément Janequin, Harmonia Mundi CD, HMC 901279, 1988 and *Masters from Flanders: Polyphony from the Fifteenth and Sixteenth Century Vol. VIII,* Capella Sancti Michaelis, Etcetera CD, KTC 1380, 2008.

Many of the musical changes to Josquin's five-voice choral version of *Plusieurs regretz* that we find in Marcantonio's arrangement – the disappearance of the canon, the preponderance of parallel perfect intervals, the conflation of multiple parts into one, the addition of diminutions and ornamentation, and the elimination of voice crossings and unisons – are characteristic of keyboard intabulations of polyphonic vocal works from the sixteenth and early seventeenth century in general. In order to see more clearly how such changes are a product of a keyboardal ecology of composition and performance, it is worth considering some of them further.

Since Marcantonio's arrangement of *Plusieurs regretz* is not based closely on formal aspects of the chanson, it is worth examining the intabulation of another chanson featuring a canon. Andrea Gabrieli's much later intabulation of the five-voice setting *Qui la dira la peine de mon cœur* by Willaert approaches the model as a formal template.[25] The chanson features a canon at the fifth between the Tenor and Contratenor (Ex. 1.10).

Example 1.10. Willaert, *Qui la dira la peine de mon cœur* a 5, canon, mm. 4-8.

Gabrieli retained the canon in its entirety in his intabulation of the chanson and used it as a truss to support the chords, ornaments, and *passaggiati* that surround it. Though integral to the structure, the canon is no longer particularly salient aurally or haptically in the context of

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[25] Gabrieli's intabulation appears in Andrea Gabrieli, *Canzoni alla francese per sonar sopra istromenti da tasti... libro sesto & ultimo* (Venice: Gardano, 1605), ff.26v-30v, where it is entitled, "Canzon Francese detta Qui la dira. Di Clemens Ianecquin. A Cinque voci." However, Janequin is not known to have composed a chanson by this name. It was Giuseppe Clericetti who identified the model as Willaert's five-voice "Qui la dira." Giuseppe Clericetti, "Le compositioni per strumenti a tastiera di Andrea Gabrieli. Catalogo bibliografia, varianti," *L'organo: Rivista di cultura organaria e organistica* 25-26 (1987-88): 9-61 at 39. Willaert's chanson appeared in the anthology *Livre de meslanges contenant six vingtz chansons ... soit des autheurs antiques, soit des plus memorables de nostre temps* (Paris: Le Roy & Ballard, 1560) and again in the anthology *Mellange de chansons tant des vieux autheurs que des modernes* (Paris: Le Roy & Ballard, 1572). A modern edition of the intabulation appears in Andrea Gabrieli, *Complete Keyboard Works*, ed. Giuseppe Clericetti, vol. 6, *Canzoni alla francese, libro sesto & ultimo* (Vienna: Doblinger, 1997). An edition of the chanson can be found in Willaert, *The Complete Five and Six-Voice Chansons*, ed. Jane A. Bernstein, The Sixteenth-Century Chanson 23 (New York: Garland, 1992).

the intabulation. The initial entry of the Tenor, the *ductus* of the canon, is hardly discernible, squeezed between the Quintus and Superius. Due to its position in the middle of the texture and its long note values, the canon is all but lost as an audible aspect of the piece; its linear identity dissolves into the vertical harmonies surrounding the individual notes that it comprises. From the perspective of the player, the sensorimotor experience of playing the piece frustrates the perception of the canon. The two voices involved in the canon are variably assigned to one hand or the other, or one to each hand, in order to best accommodate the moving outer parts.

Example 1.11. *Qui la dira la peine de mon cœur*, mm. 3-5. a) Willaert, b) A. Gabrieli

Canons of the sort that we find in *Plusieurs regretz* and *Qui la dira* – the sort that serve as the skeleton for a complex polyphonic work – are outgrowths of a compositional process that centers on the assembly of a comprehensive, detailed written script. It is the sort of compositional process implied in John Milsom's analysis of the genesis of *Plusieurs regretz* which, according to Milsom, involved the composer painstakingly stitching together quotations from other chansons that he had written – a procedure that would appear to rely heavily on on writing.[26] Furthermore, canons are indigeneous to a performance paradigm

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[26] John Milsom, "Josquin and the Act of Self-Quotation: The Case of Plusieurs Regretz," in *Uno gentile et subtile ingenio: Studies in Renaissance Music in Honour of Bonnie J. Blackburn*, ed. M. Jennifer Bloxam, Gioia Filocamo, and Leofranc Holford-Strevens (Turnhout, Belgium: Brepols, 2009), 521–32.

that is intersubjective and stereophonic. The paradigm is intersubjective in the sense that each part of the canon is enlivened by a dedicated human musician – in other words, each metaphorical voice corresponds to a real voice – and the execution of the canon depends on the cooperation of multiple musicians. It is stereophonic in the sense that each voice has a distinct sonic profile.

Much of the salience of the canon dissolves once it is translated from its indigeneous performance context to keyboard playing. In this new context, the individual voices of the canon no longer correspond to a unique, dedicated human agent: all voices are incorporated through the singular agency of the keyboardist. Their individual identities dissolve as they are redefined by the sensorimotor experience of playing the keyboard. In *Qui la dira*, the constituent notes of each voice of the canon are rarely played by a hand that is entirely dedicated to them. Almost invariably they have to share a hand with other notes. And being inner voices, the player frequently passes them from one hand to the other, as the *intavolatura* prescribes. Most of the movement occurs at the outer edges of the texture, replete with trills and glosses that demand rapid alterations of the fingers. Arguably, the player's attention is focused primarily on these more complex movements. The distinct inner voices of the chanson melt into a harmonic molten mass that subsumes the canon.

Further abetting the dissolution of the autonomy of the voices is the keyboard instrument itself. The elimination of the text from the performance of the work, of course, removes an aspect of the individual identities of the voices. Yet in a textless performance on viols or cornetts, for instance, the voices maintain distinct identities. Solo performances of polyphonic music often dissolve the individual lines to a much greater extent.[27] Since the entire texture of *Plus ne regres* and that of the intabulated version of *Qui la dira* is played on the same registration, the distinct tonal identities of the voices – stereophonic channels in the context of a choral performance – collapse into one. Not only are Superius and Contratenor, Tenor and Bassus timbrally identical, they are enlivened by the same strings or pipes: a *c′* sung by the Superius is the same as that sung by the Contratenor, which is the same as that sung by the Tenor, Quintus, Bassus, and so forth.

Unisons highlight this "monaural" problem of the translation of a polyphonic vocal work into an arrangement for solo instrument succinctly. In polyphonic singing, the unison as a harmonic interval is a phenomenological reality: two distinct voices sing the same pitch. In the context of keyboard playing, however, the interval of a unison is purely hypothetical. In a duo keyboard texture, for instance, the convergence of the two parts on a single pitch

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[27] This is true, at least, for polyphonic music in which all parts are played on the same registration. The design of organs characteristic of certain regions of Europe, such as northern Germany and, in the seventeenth century, in France and Spain, enabled the player to divide the polyphonic texture between two or three divisions of the organ. Still, much imitative music, including ricercars, fugues, and intabulated vocal works were played on a single registration on these organs. The undivided, single-manual organs that predominated in Italy until the nineteenth century, however, invariably required the player to play all the voices of a polyphonic texture on a shared registration.

amounts to a reduction in the texture, from dyad to monad, rather than an interval which comprises two distinct voices singing (or playing) the same note. Arnolt Schlick noted this problem, writing in 1511 in *Spiegel der Orgelmacher und Organisten* that "sometimes the voices come too close together so that they coincide, as at a cadence."[28] This can become a conspicuous problem when works featuring close imitation in the same range are played on a keyboard. An example is found in *Faulte d'argent*, a five-voice chanson by Josquin. The chanson opens with the Bassus and Tenor singing in close imitation. The Bassus enters on *bb* and is followed immediately by a syncopated entry of the Tenor on the same note (Ex. 1.12a). The two voices in succession descend a minor third to *g* and return to *bb*. At the Tenor's return to *bb,* the voice once again forms a unison with the Bassus. While this point makes for elegant choral voice leading, when it is played on a single-manual keyboard, it gets lost in translation. If played literally, the effect approximates Example 1.12b, a repeated *bb* followed by a repeated *g- bb* dyad, followed, in turn, by *bb*. In a keyboard adaptation of *Faulte d'argent* published in his *Intavolatura cioè recercari, canzoni, himni, Magnificat* (Venice: s.n. 1543), Girolamo Cavazzoni (Marcantonio's son), chose instead to eliminate the original point of imitation altogether, replacing it with a more keyboard-appropriate point still based on the original *soggetto* (Ex. 1.12c). The imitative voice now follows the initial voice after a breve (instead of a minim), and the imitative voice enters a fifth below (instead of at the unison).

Example 1.12. a) Josquin, *Faulte d'argent* a 5, opening; b) hypothetical literal transcription for keyboard; c) G. Cavazzoni, *Canzon sopra Falt d'argens*, opening.

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[28] Arnolt Schlick, *Spiegel der Orgelmacher und Organisten, allen Stiften und Kirchen* (Mainz: Drach, 1511). Quoted in translation in Kimberly Marshall, "From Motet to Intabulation: An Overview of German Keyboard Arrangements from the Late Middle Ages to the Baroque," in *Proceedings of the Göteborg International Organ Academy 1994*, ed. Hans Davidsson and Sverker Jullander (Göteborg: Department of Musicology, Göteborg University, 1995), 11-14.

The example of Girolamo's *Canzon sopra Falt d'argens* highlights the challenge of making keyboard arrangements of polyphonic settings in which the ranges of the voices overlap substantially. We find a more extreme illustration of the problem in the intabulation of Cipriano de Rore's *Calami sonum ferentes* preserved in the Turin Tablature.[29] The famous secular Latin song features the unusual scoring of four bass voices. The piece appeared in Susato's 1555 anthology *Le quatoirsiesme livre a quatre parties*.[30] Gardano included it in the 1577 compilation of Rore's four-voice madrigals, *Tutti i madrigali di Cipriano di Rore a quattro voci, spartiti et accomodati per sonar d'ogni sorte d'istrumento perfetto, et per qualunque studioso di contrapunti* ("All the madrigals by Cipriano de Rore for four voices, scored up and adapted for playing on all sorts of perfect instrument, and for students of counterpoint").[31] The edition is in open score, saving keyboardists, and others wanting a synoptic view of the madrigals for the purpose of study, the trouble of creating the score themselves from partbooks. The transcription of *Calami sonum ferentes* in Gardano's print is basically literal, though the inclusion of bar lines necessitates tied notes that do not appear in the unbarred partbook edition (Fig. 1.3).

Figure 1.3. Rore, *Calami sonum ferentes*, *Tutti i madrigali di Cipriano di Rore* (Venice: Gardano, 1577), opening.

The four voices all occupy the same range more or less (the fourth voice occupies a slightly lower range, as the F5 clef assigned to it suggests – the other voices are written with F3 clefs) (Fig. 1.3). As a result, voice crossing is rampant. The literal transcription presents Rore's voice leading clearly – important for an edition intended as a study aid for composers and students of counterpoint. As a script for keyboard performance, however, it does not convey the information that the player requires very efficiently. The frequent voice crossing makes it difficult for the player to determine immediately how to divide the four parts between the two hands and which fingers to use to play the notes.

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[29] I-Tn Ms. Foà 4.

[30] *Le quatoirsiesme livre a quatre parties* (Antwerp: Susato, 1555).

[31] For a recent discussion of early printed scores, see Anthony Newcomb, "Notions of Notation around 1600," forthcoming in *Il saggiatore musicale* 22 (2015).

The intabulation of *Calami solum ferentes* in the Turin Tablature is more player-friendly (see the excerpt in Fig. 1.4). On hearing a keyboard performance of *Calami sonum ferentes* from this intabulation, listeners might be left with the impression that it is a literal transcription of the four vocal parts that comprise the madrigal. Indeed, from a harmonic perspective, the scribe left the madrigal virtually unaltered, save for the addition of a single cadential trill and a handful of other minor modifications. The voice leading, however, is completely transformed. After the third of the four voices enters in measure 8, there is hardly a measure unaffected by some alteration of the voice leading. Example 1.13 illustrates one of the many passages in which the scribe swapped notes between voices in order to make the notation easier to perform (mm. 7-10). For further reference, a transcription of the full intabulation is included in Appendix B, juxtaposed with a textless, two-staff transcription of Rore's madrigal that preserves the original voice leading.[32]

Figure 1.4. Rore, *Calami sonum ferentes*, excerpt (I-Tn, Ms. Foà 4, f. 62ʳ).

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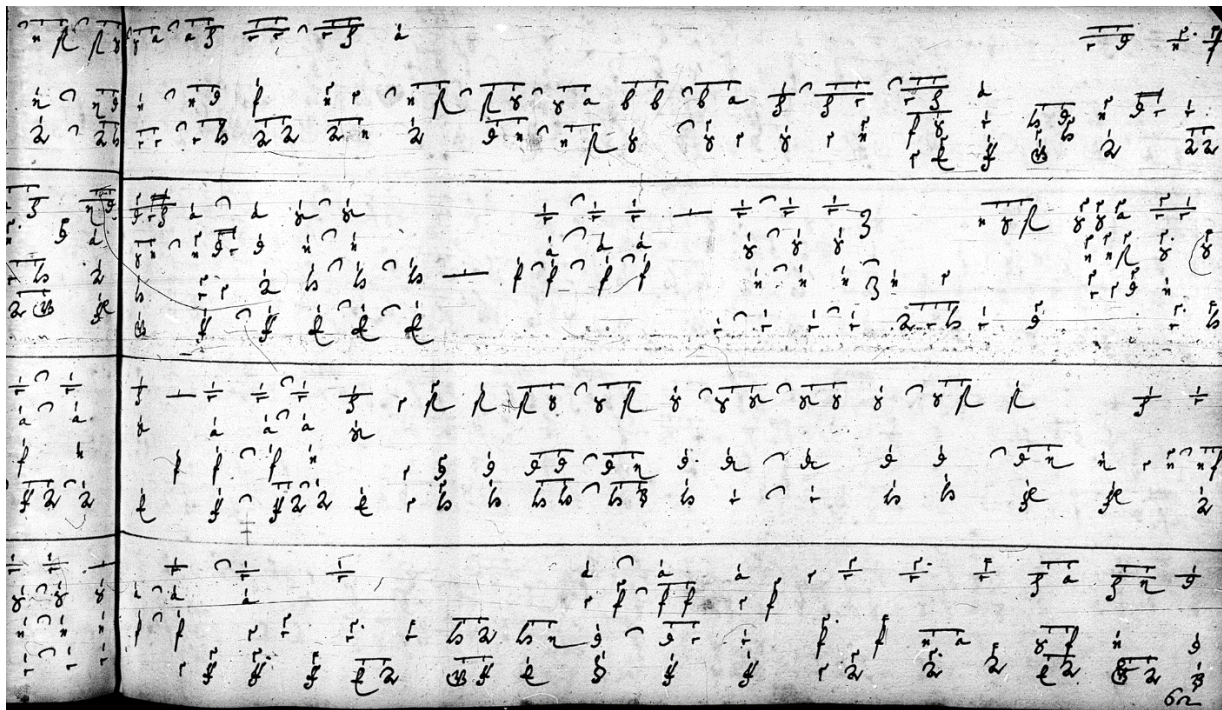
[32] The intabulation of the work in Gardano's *Tutti madrigali di Cipriano di Rore* is barred; the intabulation the Turin Tablatures is unbarred. The measure numbers refer to the modern edition in Appendix B.

Example 1.13. Rore, *Calami sonum ferentes* (mm. 7-10) as it appears in a) *Le quatoirsiesme livre a quatre parties* (Antwerp: Susato, 1555); b) I-Tn Ms. Foà 4.

The constant note swapping alters the registers of the parts and reduces the extent to which they overlap. The graphs in Figure 1.5 show the compression of ranges. The four parts are represented in each graph by four lines. The horizontal axis of the graphs represents the compass of all four parts combined, *D* to *d′*. The vertical axis represents the frequency with which a given pitch occurs in a particular voice. This is determined by the total duration of the given pitch using the semiminim as the base unit.

Figure 1.5. Distribution of pitches among the four parts of *Calami sonum ferentes* as a) Rore's vocal setting, and b) the intabulation in the Turin Tablature.

a)

Vocal model

b)

Keyboard adaptation
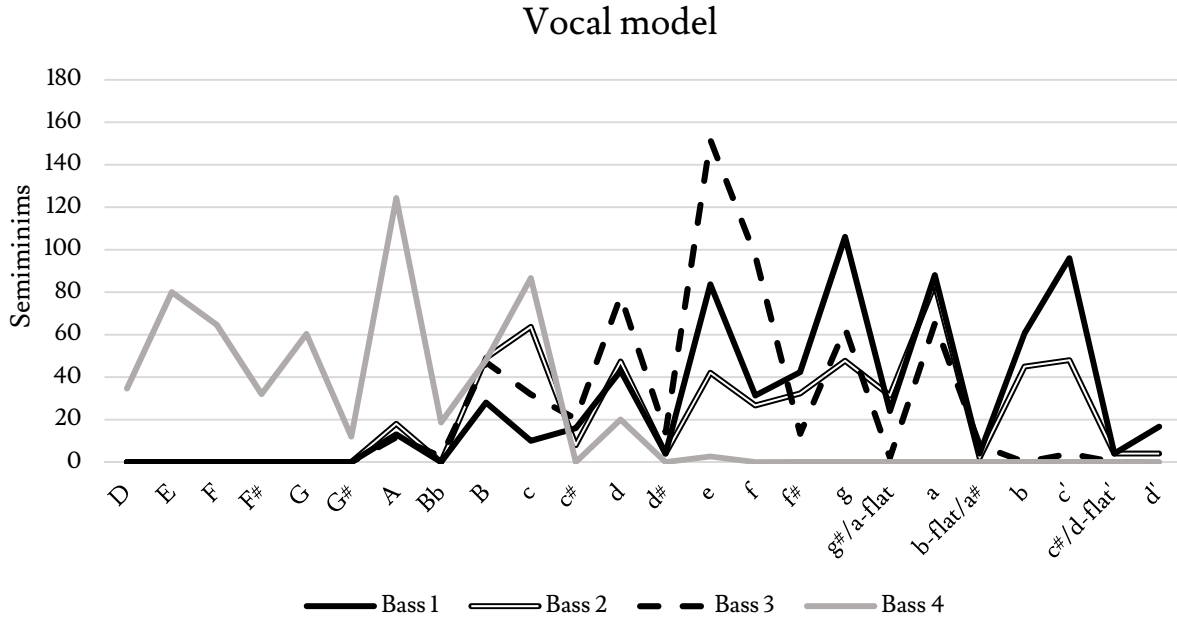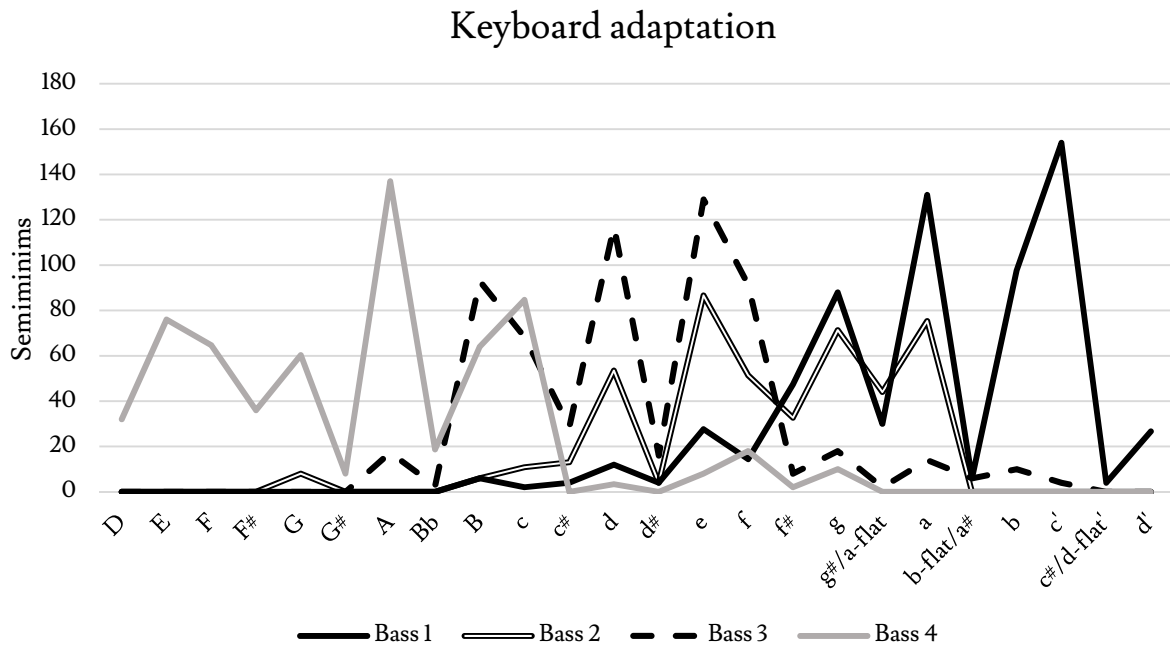
Comparing the graphs, we can see that the distribution of pitches shifts significantly. In the intabulation, Bass 1, Bass 2, and Bass 3 occupy a much more condensed range on the whole. In the vocal version, 59% of the notes sung by Bass 1 fall between g and d'. In the keyboard version, the proportion of notes in the same range increases to 82%. The difference is even more dramatic for Bass 2. Forty-seven percent of pitches assigned to Bass 2 fall between e and a in the vocal version, whereas in the keyboard version it is 79%. For Bass 3, the percentage of pitches occuring between B and f in the vocal version is 72%; in the keyboard version it is 87%. By contrast, the distribution of pitches in Bass 4 remains relatively constant, even narrowing slightly from vocal to keyboard version: the proportion of pitches falling between E and c is 90% in the vocal version and 88% in the keyboard version.

The graphs illustrate further that the parts in the keyboard version tend to occupy discrete, complementary ranges. This is true for Bass 1, Bass 3, and Bass 4 (Bass 2 straddles Bass 1 and Bass 3). By contrast, in the vocal version, Bass 1, Bass 2, and Bass 3 are nearly equal, while Bass 4 occupies a distinct, lower range. The redistribution of the voices from vocal model to keyboard adaptation reflects a conceptual shift that is informed directly by the anatomy of the hands and the sensorimotor experience of using them to play the piece on the keyboard.

Another notable difference between the original vocal version of *Calami sonum ferentes* and the keyboard adaptation is the distribution of rests. The total percentage of breves that are rests for the four voices is about the same for the vocal and keyboard version of the madrigal. Of the 400 breves that comprise the piece (100 breves or measures per voice), 97.33 breves (24%) in the vocal model and 105 breves (26%) in the intabulation comprise rests. The difference lies in the distribution of the rests among the four voices, illustrated with pie charts in Figure 1.6. Bass 2 contains the most rests in both the vocal model (a) and intabulation (b). The unevenness of the distribution of rests, however, is more pronounced in the intabulation, in which 41% of the total rests are relegated to Bass 2. Further, in the intabulation almost half of the breves that comprise the line of Bass 2 are occupied by rests (43 of 100).

The intabulator's decision to reassign pitches from Bass 2 to other voices was evidently not in service of any sort of stylistic change: the resultant harmonies and rhythms of the voices are virtually identical to Rore's version. The same can be said of the decision to rearrange the voices such that the ranges they cover are narrower and complementary rather than equal. Rather, these seemingly superficial changes to the notation of the work reflect the adapting of the vocal piece to a different ecology of music making. These redistributions reflect a new model of agency.

Figure 1.6. Distribution of rests among the voices in a) the original version of *Calami sonum ferentes* by Rore and b) the intabulation of the work in the Turin Tablature.

a)

Distribution of rests: Vocal model
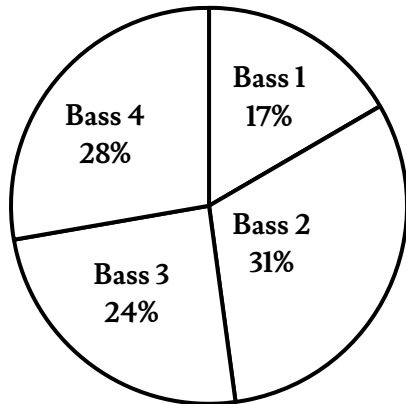
b)

Distribution of rests: Intabulation
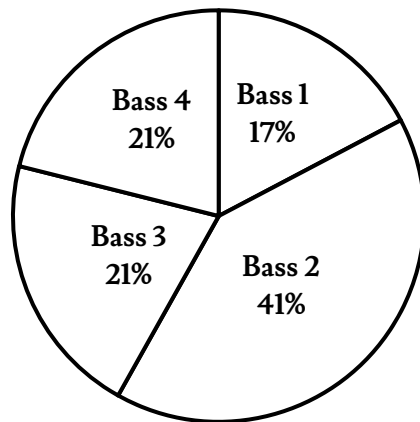
Synoptic Notation: Agency and Embodiment

My analysis of intabulations and their vocal models has been spurred thus far by cues largely of a formal nature – discrepancies in voice leading, imitation, organization, figuration, and so forth. All of these formal traits are, of course, communicated through notation. Notation serves as the bridge between music as text and music as a material, embodied practice. Thus, it is worth comparing the notational systems themselves. The intent here is not to consider the myriad systems of keyboard music – among others, old and new German organ tablature, *intavolatura* and other varieties of keyboard score, Spanish *cifra*, open score, and short score. Nor is it to dwell on differences between the systems – excellent surveys already exist.[33] My concern is to understand how these various forms of tablature, taken as a whole, compare to standard notational layouts for group polyphony – parbook and choirbook (the discussion below focuses on music transmitted in partbooks).

Figure 1.7 shows two copies of the madrigal *Lasso che desiando vo* by Jacquet de Berchem as it appears in (a) *Il secondo libro de madrigali di Cipriano de Rore a cinque voci insieme alcuni di M. Adriano & altri autori* (Venice: Gardano, 1544/1551R) and (b) the Bardini Manuscript. Though the two versions of the piece are virtually identical from a formal perspective, on paper they differ considerably. The version in Gardano's anthology is spread across five partbooks; the version in the Bardini Manuscript is confined to a few openings of a single book. In one, the music is notated on a single five-line staff; in the other, it is written on two staves joined together, the upper six-line, the lower eight-line. The parts and *intavolatura* reflect and reinscribe a particular cognitive and physiological model of polyphonic music-making. The sprawling form that the motet takes on with the partbooks represents the stratified agency of a group of singers, in which the agency of each singer is concentrated in a single part and reflected in the physical separation of the lines of counterpoint. The success of the singers' task depends upon cooperation to bridge this distance.[34]

The model that the *intavolatura* represents is radically different. Here the motet is presented with all parts on a single page – centralized, like its agent.[35] The parallel streams of music on the two staves reflect the quasi-independence of the two hands of a person: whereas in modern piano notation, the two staves represent distinct regions of the gamut, in *intavolatura*, they represent distinct hands. The "extra" lines of the staves facilitate this

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[33] For a practical overview, see Melissa K. Moll, "A Performer's Guide to Keyboard Notation from the Middle Ages to the Beginning of the Baroque" (DMA diss., University of Iowa, 2006).

[34] For nuanced discussions of the relationship between the collective act of ensemble music making, and the material form of the music, see Richard Wistreich, "Music Books and Sociability," *Il saggiatore musicale* 18 (2011): 230-44, and Kate van Orden, *Materialities: Books, Readers, and the Chanson in Sixteenth-Century Europe* (New York: Oxford University Press, 2015), 3-8.

[35] Of course, choirbook format also provides a synoptic view of the music. However, in this format, each part is cordoned off in a separate quadrant of the opening.

mapping of hand-to-staff, of staff-to-hand, since the middle range of the keyboard, the common ground of both hands, is represented *twice* in the *intavolatura*: in the bottom lines of the upper staff (the first line corresponding to *a*) and the top lines of the lower staff (the eighth line corresponding to *g'*). As we have already seen, under the jurisdiction of the hands, the "voices" lose their individual identity. In the right hand's opening gesture, for instance, the first note, a *d'*, launches an ornamental figure that lands on the tied-over semibreve *a'*. In the choral version of the motet, the same *d'* and *a'* represent the entry of two different singers. Approaching the parallel thirds in the left hand staff in measures two to three, the player instinctively treats each dyad as a unit. They are easy to play; executing the parallel thirds perfectly is a far easier task on the keyboard than in jointly in a choral setting, where the two singers must tune and synchronize their voices.

The representation of *Calami sonum ferentes* (Fig. 1.4) in new German organ tablature is even further removed from the mensural notation used in partbooks and *intavolatura*, doing away with staves altogether and replacing them with the letters A through H, indicating pitch, and accompanying symbols to indicate rhythm. The same can be said for the excerpt in Spanish *cifra* from Francisco Correa de Arauxo's *Facultad organica* (Fig. 1.8, discussed below), in which numbers representing pitches are written on a "staff" of four or more lines, each representing a different voice.

An affordance that *cifra, intavolatura,* and new German organ tablature share is that they provide a synoptic view of the polyphonic texture. Indeed, this is an inherent characteristic of tablature according to Thurston Dart, John Morehen, and Richard Rastall who define it as "a score in which the voice-parts are 'tabulated' or written so that the eye can encompass them."[36] Correa heaped praise upon *cifra* for this reason in his *Facultad organica* (Alcalá de Henares: Antonio Arnao, 1626). The notational system had been used previously in Luys Venegas de Henestrosa's *Libro de cifra nueva* (Alcalá de Henares: Joan de Brocar, 1557) and Hernando de Cabezón's edition of the *Obras de musica* (Madrid: Francisco Sanchez, 1578) of his father, Antonio. Correa included a prologue in *Facultad* entitled "In praise of *la cifra*," in which he described *cifra* superlatively: it "is so easy and also so perfect that there cannot be another which surpasses it."[37] He considered *cifra* the product of "divine intervention" with the collaboration of "the masters of music."[38]

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[36] Thurston Dart, John Morehen, and Richard Rastall, "Tablature," *Grove Music Online. Oxford Music Online*. (Oxford University Press), accessed April 20, 2015, http://www.oxfordmusiconline.com/subscriber/article/grove/music/27338.

[37] Translated in Jon Burnett Holland, "Francisco Correa de Arauxo's *Facultad organica*: A Translation and Study of Its Theoretical and Pedagogical Aspects" (DMA diss., University of Oregon, 1985), 151.

[38] Ibid., 150-151.

Figure 1.7. Berchem, *Lasso che desiando vo* as appearing in a) *Il secondo libro de madrigali di Cipriano de Rore a cinque voci insieme alcuni di M. Adriano & altri autori* (Venice: Gardano, 1544/1551R), and b) Bardini Manuscript 967.

a)

b)

Correa noted that *cifra* made music accessible that would otherwise have been beyond the grasp of many, including beginners. What made *cifra* accessible, according to Correa, was its synoptic presentation of the music:

> in *cifra*, not only the master, but also the reasonable student would see how the first voice enters, how the second voice relates to the first voice, how the third voice relates to the second voice, and the fourth voice relates to the third voice.[39]

Correa remarked on how *cifra* allows the student to see easily formal structures of the music, such as full points of imitation, from beginning to end, how ornamented passages fit with the accompanying voices, the intervals between voices, when voices rest, "downbeats and upbeats" (*donde da y alça*) and the beginning, middle and end of measures (*compáses*), and cadences. Such insight into the music, according to Correa, is normally attained "only with great difficulty and at the end of many years of study" of polyphonic music notated in parts.[40]

Correa's zeal for *cifra* is exemplified in the curious pointers that he frequently inserted in the works of the *Facultad* (Figure 1.8). These direct the user's attention to "many examples of licenses, of falsas, and of gallantries which are to be noted and which I have noted in very serious composers who use them in their compositions."[41] Correa noted that such harmonic niceties "are not often noted or acknowledged," when the voices are notated in separate partbooks. They need to be notated in *cifra* so that they can be seen, studied, and appreciated: "very few are able to see [them] quickly, unless the music can be obtained in *cifra* form."[42]

Figure 1.8. Correa, *Facultad organica*, example of *cifra* notation and pointers.

The synoptic benefits of *cifra*, which foreground the harmonic (vertical) aspect of music, became qualities that musicians would take for granted a century later, when synoptic systems of notation (if not *cifra* specifically) overtook complementary forms – mensural

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[39] Ibid., 151.
[40] Ibid., 153.
[41] Ibid., 161.
[42] Ibid.

notation laid out in partbooks and choirbooks. Synoptic notation facilitated a mode of hearing with the eyes that approximated modern modes of musical reading such as silent, solitary score study.[43] Indeed, prints such as Gardano's open-score edition of Rore's madrigals, and similar contemporaneous printed scores of polyphonic vocal works constitute the beginning of this tradition.[44]

A more recent commentator to echo Correa's point about the accessibility of *cifra* is John Griffiths, who, referring to a range of tablature systems, writes that they "allowed players with negligible musical training to perform some of the most sophisticated music of the era."[45] Griffiths observes that "the effect was to broaden the consumer base for vocal polyphony immeasurably, especially for what we might call active participant consumers."[46] Both Correa and Griffiths evoke an emerging type of consumer of printed music. Both authors emphasize the needs of novices and musicians with little formal training. Certainly, these constituted important new markets for polyphonic music. But the emerging type of "active participant consumer" that *cifra* and other forms of synoptic notation encouraged was one that was fundamentally defined by self-sufficiency. That is, printed books of tablature encouraged consumers – keyboardists, lutenists, and *studiosi* – to experience polyphony alone, without the intervention of other musicians.

The experiences encouraged by tablature differs in a number of ways from those set up by music in parts. The former is solitary, involving a player and instrument. The latter social: the compartmentalized nature of partbook notation implicates the participation of multiple singers or instrumentalists. The former requires the cooption of a polyphonic instrument – a keyboard or lute – while for the latter the intervention of instruments is not necessary (though it remains a possibility). Tablature facilitates a performance of polyphonic music characterized by a centralized agency: the execution of all parts falls to one musician – to one nervous system. This solo performance is subjective in the sense that it is the domain of a single human subject. Partbook notation, by contrast, encourages a performance characterized by decentralized agency and by intersubjectivity. Tablature is also aligned with a sensorimotor experience centered on the hands of the player and their interaction with the instrument. Isolated from any particular context of use, partbook format is less prescriptive in terms of the sensorimotor experience it implicates. For the purpose of argument, however, I associate partbook layouts primarily with singing – a sensorimotor experience altogether different from keyboard or lute playing and centered on the vocal tract and associated organs.

Of these criteria, sensorimotor experience is the one that traditionally has been most closely associated with tablature. However, other criteria, particularly the centralized model

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[43] I borrow the phrase "hearing with the eyes" from Cristle Collins Judd, *Reading Renaissance Music Theory: Hearing with the Eyes* (Cambridge, UK: Cambridge University Press, 2000).
[44] See Newcomb, "Notions of Notation."
[45] John Griffiths, "The Lute and the Polyphonist," *Studi Musicali* 31 (2002): 93.
[46] Ibid.

of agency, are just as integral to the musical experiences supported by tablature. Moreover, the sensorimotor and agential experience of polyphony that tablature promotes is the material foundation of a mode of conceptualizing polyphony that emerged in the sixteenth century and that became the standard in the eighteenth century.

The claims I am staking here contrast with prior accounts of tablature, even some of those that raise some of the same questions of agency. One excellent analysis by Silbiger, for instance, questions whether *intavolatura* is truly a tablature system. His nuanced answer hinges ultimately on whether *intavolatura* adheres to what he sees as the definitive characteristic of tablature, namely that

> it provides no information beyond what is required to realize a piece of music physically; or to put it less kindly: tablature addresses the fingers of the players rather than their musical understanding – their bodies rather than their minds.[47]

Silbiger wonders whether the emphasis on "the vertical at the expense of the horizontal" that we find in *intavolatura* simply reflects the physicality of keyboard playing or whether it

> reflects an earlier recognition by Italian keyboard players of the rising to the foreground of the harmonic aspects when full-voiced passages are performed on their instruments, and thus, might it have formed a progressive strain in their thinking about music? If such were indeed the case, *intavolatura* should not be regarded as a tablature, since it would represent musical reality as conceived in the minds - not just in the hands - of those musicians.[48]

By placing the body and mind in opposition, Silbiger assumes a radical mentalist model of cognition. The approach divorces the musical thinking of keyboardists from the acts that shape that thinking. By contrast, a more holistic view of cognition tells us that the "progressive thinking" of the Italian keyboardists – their tendency to highlight the "vertical" or harmonic aspect – was likely a direct result of conceiving music "in the hands," as a solo musician at a keyboard. Rather than thinking of keyboardists as anticipating broader developments, we might think of them as instigating those developments. Or, we might think of the conceptualization of music that keyboard playing promotes as the instigator. This "off-line" keyboardal perspective of music is evident, for instance, in the use of keyboard notational formats, such as new German organ tablature, for uses other than keyboard playing, including conducting and study.[49]

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[47] Alexander Silbiger, "Is the Italian Keyboard 'intavolatura' a Tablature?" *Recercare* 3 (1991): 93.
[48] Ibid., 98.
[49] As Kimberly Marshall notes: "Tablatures would provide at a glance all the information needed by a musician rehearsing or conducting the vocal music, and there would be no need to accommodate the

<p style="text-align:center">*　　*　　*　　*　　*</p>

The Mechanization of Polyphony

The translation of polyphonic music from partbook format to tablature symbolizes a move between two ecological paradigms of music making. It was this ecological shift that enabled the diffusion of polyphonic vocal works from "the court of nobility" to "shrines and households" and to other spaces such music was unlikely to penetrate in the guise of choral works. The sort of discrepancies between polyphonic works designed to be sung by a choir and intabulations of those same works, designed to be played on a keyboard as detailed earlier in the chapter – differences of voice leading, the elimination of canons, and so forth – are symptoms of the distinction between the two ecologies – a distinction that encompasses cognition, sensorimotor experience, the use of technology, and the distribution of agency. Each one of the thousands of extant keyboard intabulations of polyphonic vocal works, in *intavolatura*, *cifra*, German organ tablature (old and new), open score, or any other variety of synoptic notation, represents a powerful ecological conversion of music.

The microcosmic instances of this conversion, as well as a historical culture-wide trend toward a keyboard-centric ecology, can be described as the mechanization of polyphony. In the history of trades, mechanization – harnessing a machine to replace human workers or otherwise streamline a task – often activates a chain reaction of cultural change, transforming everything from the nature of the work itself (for those human workers that remain) to the product; from the economic status of the workers (and those who lose their jobs), to that of those who benefit from lower production costs.[50]

Certainly, there are vast differences between the mechanization of an art form, like polyphony, and more classic examples of mechanization, such as weaving. (Organs and engine looms were both destroyed in early modern Europe – but under very different circumstances.) For one, technological unemployment due to the use of keyboards and other polyphonic instruments was a moot point. For the patrons of polyphonic music – the Church, courts, people of high or rising social standing – the savings produced by the cheaper means of mechanized polyphony often did not make up for the loss of features unique to the unmechanized (choral) product. Ostentatious display of wealth – and power – was itself the

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original vocal texture to a keyboard idiom. Werckmeister documents this use of tablature scores in his *musicalische Paradoxal Discourse* of 1707, and since he writes in the past tense, he may be describing an outmoded practice that was no longer needed because tablature had by the early eighteenth century been replaced by staff notation." Marshall, "From Motet to Intabulation, 21." The use of tablatures for conducting is further discussed in Johnson, *Vocal Compositions in German Organ Tablatures,* 192-231. See also Newcomb, "Notions of Notation."

[50] Sigfried Giedion, *Mechanization Takes Command: A Contribution to Anonymous History* (Oxford: Oxford University Press, 1948).

motivation behind lavish performances featuring multiple choirs. (A solo performance of Striggio's forty-voice motet "Ecce beatam lucem" on a spinet or lute would not have had the same impact as a performance by ten choirs.[51]) In some cases, the performance centered upon the bodies of the singers, particularly those of female singers in performances of secular forms. In others, the text was an essential component of the performance. In short, the value placed on economy was more variable in polyphonic music than in weaving or farming. Further, the differences between the product of a non-mechanized version of a task, like handwoven wool, and that of a mechanized version of the same task, like machine-woven wool, are not as visible as the differences between non-mechanized (vocal) polyphony and mechanized (keyboardal) polyphony. At least, they generally carry less weight in traditional historical accounts of industry than do differences between unmechanized and mechanized polyphony. Diminutions matter.

      Still, in a basic sense, the organ and other keyboard instruments resemble classic mechanizing technologies, such as the spinning jenny and threshing machine, in the sense that they have the capacity to transform a task that normally required several into a one-person job. And as with these other machines, the keyboard radically transforms the nature of the given task. In the case of polyphonic music making, the task unabetted by a keyboard involves several musicians singing in close coordination with each other; with a keyboard, the task involves a single musician using her fingers to depress the right combination of levers at the right time. Like the spinning jenny and threshing machine, the keyboard resembles an *artifact* as psychologist Harry Heft identifies it within his account of "ecological knowledge." To elucidate the concept of artifact, Heft offers the illustration of the way in which the pocket calculator transforms the task of calculation:

> In a literal sense, an individual does not actually do mathematical operations on a calculator (although it is true that some mathematical reasoning is required); rather, what one actually does is operate this instrument. The individual pushes particular keys in a particular order, and the calculations are performed by the instrument. The

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[51] For a discussion of the power-brokering surrounding Striggio's gargantuan *Missa sopra Ecco sì beato giorno*, see Davitt Moroney, "Alessandro Striggio's Mass in Forty and Sixty Parts," *Journal of the American Musical Society* 60 (2007): 1-70. While the Striggio example is hypothetical, a historical (and slightly more complicated) instance of an intabulation of a forty-part work is found in Venegas de Henestrosa's *Libro de cifra nueva para tecla, harpa y vihuela* (Alcalá de Henares: Juan Brocar, 1557). The work is an intabulation in *cifra* of *Unum cole deum*, which Davitt Moroney identifies as an anonymous, lost setting of the text of the Ten Commandments. The work is a canon and is notated in four voices intabulated for a single player. For its realization, ten keyboardists, vihuelists, and/or harpists are needed to play the four-part texture in canon. Moroney discusses the piece in his program notes for the concert, "The Polychoral Splendors of Renaissance Florence," performed at First Congregational Church, Berkeley, CA, 3-4 Feb. 2012, presented by Cal Performances, available at <https://calperformances.org/learn/program_notes/2011/pn_polychoral.pdf>.

operations required to use the calculator are less demanding than most of the mathematical operations it performs.[52]

Analogously, performing the passage from the Tenor of Luzzasco Luzzaschi's madrigal *Quivi sospiri* in Example 1.14 with one's own voice requires much greater expertise than does performing the same part on a keyboard.[53] The relative ease of performing a single line on a keyboard, and the replacement of the voice with fingers, enables a single musician to perform an entire polyphonic texture – an achievement beyond her own ability unenhanced by the artifact of the keyboard.

Example 1.14. Luzzaschi, *Quivi sospiri*, Tenor, mm. 10-13.

Ris - so - na - van per l'a - er sen - za stel - - le,
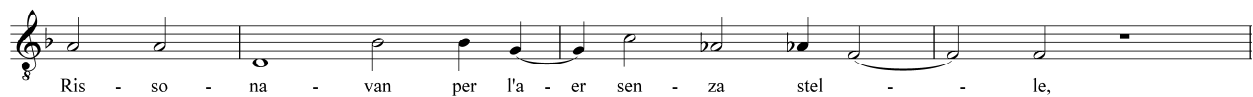
Table 1.1 provides a synopsis of the effect of mechanization on the act of performing polyphonic music. It compares the two models of polyphonic performance under consideration, vocal (unmechanized) and keyboardal (mechanized).

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[52] Harry Heft, *Ecological Psychology in Context: James Gibson, Roger Barker, and the Legacy of William James's Radical Empiricism* (Mahwah, NJ: Lawrence Erlbaum, 2001), 343.

[53] From Luzzasco Luzzaschi, *Secondo libro de madrigali* (Venice: Gardano, 1576). A modern edition of the piece appears in Luzzaschi, *Complete Unaccompanied Madrigals, Part 4*, ed. Anthony Newcomb (Madison, WI: A-R Editions, 2010). For a discussion of the piece, see Anthony Newcomb, "Luzzaschi's Setting of Dante: 'Quivi sospiri, pianti, ed alti guai,'" *Early Music History* 28 (2009): 97–138.

Table 1.1. Comparison of the unmechanized (vocal) and mechanized (keyboardal)
performance of polyphonic music.

	Unmechanized / Vocal	Mechanized / Keyboardal
Agency	-multiple, independent human agents working in tightly-scripted coordination -intersubjective -decentralized control -parts are unincorporated	-single human agent operating a machine -subjective -centralized control -parts are incorporated
Script	-objective; explicit, predetermined, detailed	-subjective or objective; flexible
Sensorimotor experience	-manipulating breath, voice, articulators, resonators in coordination with 1) one's own part and 2) other singers -confined to the (non-extended) body of the agent -largely concealed from view (of both agent and onlooker)	-manipulating ten fingers, two hands to depress particular keys in accordance with a script -involves the manipulation of an external object -much more visible (especially to the agent herself)
- enabling constraints	-range of voice -range of breath -flexibility / speed of associated muscles	-bimanual coupling -enslavement of fingers
Sound production	-biological -vocal tract, lungs, diaphragm, resonators, etc. -texted / semantic -stereophonic -flexible pitch / tuning	-mechanized -pipes or strings activated by fingers through the keyboard interface -non-texted / non-semantic -monaural -fixed pitch / tuning

The first three of the four categories detailed in the table, agency, script, and sensorimotor experience, are explored further below, but some general explanations are warranted. The distinction between the two models of agency hinge principally on number: in choral polyphony, there are multiple agents (most often three to eight in sixteenth-century polyphony); in keyboardal polyphony, there is a single agent. Script refers to the program of actions that governs a performance. I adopt the word *script* here for its connotations of both

written action programs and implied behavorial expectations.[54] In the present context, script encompasses notated parts and unwritten procedures for the performance, including those that require little to no prior verbal communication (as in, perhaps, instructions for approaching the chromatic inflection of pitches at typical cadences, determining who tunes to whom at a given moment, adding some types of embellishments, deviating subtly from the tactus at the end of major sections, etc.) and those that do require prior discussion and sometimes rehearsal (as instructions for technically difficult passages, more complex cases of improvisation, passages that are complicated or ambiguous in some way, etc.). The nature of the script is determined largely by the model of agency, with the multiple-agent model requiring a more explicit and detailed script than single-agent model.

The sensorimotor experience refers to the physical work accomplished by the musicians as understood from the cognitive perspective of the agents themselves (rather than a listener's perspective or a purely phenomenal one). The term *sensorimotor* refers to the integration of the motor and sensory systems – thus, the coupling of action and perception.[55] From a cognitive perspective, the tasks of choral singing and keyboard playing, like other complex movements, are defined by the coupling of perception and action. In this context, *perception* refers to two different things: 1) sensory feedback (such as hearing one's own voice, those of other singers, or the keyboard, or the haptic sensation of the fingers on the keyboard, or that of the relative position of the larynx); and 2) the "offline" perception or mental model that one has of the task when not physically engaged with it (as developed from related prior experiences). Both of these elements influence, and are influenced by, the motor program that an individual uses to execute the task. Listed under the descriptions of the sensorimotor experience are some of the principal enabling constraints that shape the morphology of the music.

The final category, sound production, overlaps with sensorimotor experience in that it too describes mechanisms of production, but it represents a perspective at a further remove from that of the agents while actively engaged in the task. It is useful to consider this complementary category since the affordances of the keyboard influence the musical morphology, yet not all are necessarily conspicuous from a sensorimotor perspective. Among such affordances is the "monaural" nature of the keyboard (discussed above), which puts into relief the "stereophonic" quality of the choir.

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[54] My use of script is adapted from the concept presented in D.A. Gioia and P.P. Poole, "Scripts in Organizational Behavior," *Academy of Management Review* 9 (1984): 449–59. The authors use script as a "framework for understanding the cognitive dynamics underlying many organizational behaviors and actions" (449).

[55] A seminal article for sensorimotor theory is Kevin J. O'Regan and Alva Noë, "A Sensorimotor Account of Vision and Visual Consciousness," *Behavorial and Brain Sciences* 24 (2001): 939–1031.

Agency

Polyphonic choral singing presents a model of group work quite unlike the intersubjective tasks that are most often the subjects of investigation. The choir differs, for instance, from the naval team, the focus of Edwin Hutchins's landmark study of distributed cognition, *Cognition in the Wild*.[56] The work of the naval team is shaped by a fluctuating environment, diverse technologies, a hierarchy of personnel, and highly differentiated roles. Polyphonic singing is distinct in several significant ways from military units: the goal of the choir's work is to create an object (a sound object); the function of its work is aesthetic; its script is highly stylized, as is its execution; the skilled actions performed by the group members center squarely on their bodies, with minimal resort to artifacts. (In this last way, choirs differ also from most other musical ensembles, such as orchestras, gamelans, bands, or any other ensemble featuring instruments.) But as with navigating a military vessel and other group operations, in polyphonic singing agency is shared among the members of the group. And as in other musical ensembles, no individual member has the physical capability to accomplish the task without the other group members, and none exerts absolute control over the resultant musical object.

Core concepts of polyphonic music before 1600 are fundamentally shaped by the tension inherent in the decentralized agency of the choir, between the free will of autonomous individuals and the collective goal, which necessitates an exceptionally intimate coordination among the singers. The concept of counterpoint itself springs from the multi-agent model of polyphony. Johannes Tinctoris's definition of counterpoint in the *Liber de arte contrapuncti*, "a moderate and reasonable concord made by placement of one voice against another," uses imagery that implies multiple agents, all with their own free will and in need of coordination.[57] Counterpoint is a ritualized regulation of independent, competing wills. As such, it is a prime illustration of a core aspect of joint action as described by cognitive scientist Günther Knoblich and colleagues: "Coordinating one's actions with others to achieve a joint outcome … seems to require some kind of interlocking of individuals' behaviors, motor commands, action plans, perceptions, or intentions."[58] Counterpoint is an example of a script for "interlocking" the bodies and wills of individuals. While the use of the word "voice" to refer to an individual line in a polyphonic texture became increasingly metaphorical as the presence of ensemble and solo instrumental music grew in discourse on counterpoint, it did not originate as a metaphor but as the literal signification of the line's source. Even the proximity of the voices, with constant voice-crossing among tenor, bass, and

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[56] Edwin Hutchins, *Cognition in the Wild* (Cambridge, MA: MIT Press, 1995).

[57] "Moderatus ac rationabilis concentus per positionem unius vocis contra aliam effectus." Johannes Tinctoris's "Liber de arte contrapuncti" (c. 1477) is preserved as I-Bu Ms. 2573. Translation by Albert Seay (n.p.: American Institute of Musicology, 1961), 17.

[58] Günther Knoblich, Stephen Butterfill, and Natalie Sebanz, "Psychological Research on Joint Action: Theory and Data," *Psychology of Learning and Motivation* 54 (2011): 60.

contratenor, is predicated upon the stereophony of voices wrought by autonomous agents. Other concepts that originated in the context of decentralized-agent polyphony include: compositional techniques such as canon, rondellus, rota, imitation in general, hocket, and catch; the compositional tool of the solus tenor; *tactus* (a tactile or visual cue which helped keep the choir together); the Italian concept of *concerto* and the *concertato* idiom which developed out of it; and the "conflation" variety of basso seguente.[59] Even institutions associated with polyphonic singing, including the *cappella musicale* and *schola cantorum*, owe their identity to polyphony as collective action. The métier of *maestro di cappella*, as an instructor of choral singing and mediator among singers, is also intimately connected to the multi-agency of the choir.

Ercole Bottrigari and Giovanni Maria Artusi both extolled the Nuns of San Vito in Ferrara as an example of a musical ensemble that was exceptionally successful in bridging the gap between the physical and psychological autonomy of the individual musicians and the synchrony that the collective goal demands.[60] Bottrigari attributed the nuns' success in no small part to their unusually rigorous rehearsal schedule and their limited repertoire, which allowed them to maximize rehearsal time devoted to perfecting nuances of performance.[61] In addition to numerous rehearsals, the nuns lived together, ate the same food, and shared the same daily routines. Such intimacy would have helped them to achieve the ideal of the *concerto*, which as Bottrigari described in reference to another musical ensemble, the "Rivaruoli" of Bologna, involved transcending the division wrought by their bodies "to make one body" and "a true union of their respective voices."[62]

The form and structures of the musical object that the choir produces reflect the intersubjectivity of the task. For example, the relative independence of each part from one another in terms of voice-leading, rhythm, and meter is a product of the cognitive and physiological segregation that is essential to the nature of a choir. The intricacy of each line is contingent upon the devoted attention of a singer, or a section of singers, within the choir. Subtleties of the rhythmic profiles of individual lines, in particular, can be difficult, if not impossible, to maintain in cases in which the vocal model is transcribed for keyboard or lute.

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[59] I discuss the concerto, concertato idiom, and basso seguente further in Chapters 2 and 3. For a discussion of the *solus tenor* see Bent, *Counterpoint, Composition, and Musica Ficta*, 38-46 and 241-54.

[60] Ercole Bottrigari, *Il Desiderio, overo de' concerti di varii strumenti musicali* (Venice: Amadino, 1594); Giovanni Maria Artusi, *L'Artusi, overo delle imperfettioni della moderna musica ragionamenti dui* (Venice: Vincenti, 1600). I discuss Bottrigari's and Artusi's discussions of the San Vito Nuns further in Chapter 3 of this dissertation.

[61] Bottrigari, *Il Desiderio*, 49.

[62] Ibid., 46. The translation is taken from *Il Desiderio*, Carol MacClintock, trans. (n.p.: American Institute of Musicology, 1962), 56. A systematic description of select cognitive processes involved in expert ensemble music appears in Peter E. Keller, "Joint Action in Music Performance," in *Enacting Intersubjectivity*, ed. F. Morganti, A. Carassa, and G. Riva (Amsterdam: IOS Press, 2008), 205-221.

Points of imitation might be seen as a structural device that harnesses the free will of the individual singers in a controlled ritual.[63]

Script

The intersubjectivity of polyphonic singing shaped the nature of the scripts that sixteenth-century choirs used as well as the way in which those scripts were learned. The coordination of the voices in a choir depends upon a basic shared understanding of the task of choral singing, the basis of which might be laid in the early education of singers. No one singer has mastery over the sound object as a whole, and its generation depends on the intimate coordination of several co-agents in a sort of ritualized emergence.[64] The success of this coordination depends on a shared mental model of the music – one whose existence is made possible in no small part through a common music education which, in the case of singers in *cappelle musicali*, involved a childhood of grooming in matters of chant, solmization, mensural notation, counterpoint, Latin, and liturgy.[65] This common framework of the basic task allowed singers to coordinate their parts with relative efficiency, allowing them to anticipate the actions of their co-agents and respond accordingly without explicit

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[63] Discourse on other traditions of music, including jazz, free improvisation, African American spiritual music is more amenable to understanding form in terms of regulating the free will of independent co-agents of a common task (e.g., the alteration of solos among the members of a big band and call-and-response in spirituals), as well as technical concepts that arise from multiagent music-making (such as groove). See, for example, Paul Berliner, *Thinking in Jazz: The Infinite Art of Improvisation* (Chicago: Chicago University Press, 1994), Ingrid Monson, *Saying Something: Jazz Improvisation and Interaction* (Chicago: Chicago University Press, 1996), and Guy Madison, "Experiencing Groove Induced by Music: Consistency and Phenomenology," *Music Perception: An Interdisciplinary Journal* 24 (2006): 201-8.

[64] By definition, *emergence* describes situations in which "interaction among constituent components leads to overall system behavior that could not be predicted from a full and complete analysis of the individual components of the system." R. Keith Sawyer, "Improvisational Cultures: Collaborative Emergence and Creativity in Improvisation," *Mind, Culture, and Activity* 7 (2000): 183. Influenced by Margaret Mead's "emergence of the novel," Sawyer adopts the concept of *collaborative emergence* in the investigation of improvisational theater: "the performance that results is truly a collaborative creation; the performance cannot be understood by trying to reduce it to a study of the psychology of individual actors." Sawyer, "The Emergence of Creativity," *Philosophical Psychology* 12 (1999): 449.

[65] The concept of a shared mental model as it underlies multipart musical ensembles is similar to the idea of the team mental model articulated by Mohammed and colleagues: "team members' shared, organized, understanding and mental representation of knowledge about key elements of the team's relevant environment." Susan Mohammed, Rachel Telser, and Katherine Hamilton, "Time and Team Cognition: Toward Greater Integration of Temporal Dynamics," in *Theories of Team Cognition: Cross-Disciplinary Perspectives*, ed. Eduardo Salas, Stephen M. Fiore, and Michael P. Letsky (New York: Routledge, 2012), 96.

communication.[66] Still, even with the *a priori* common framework that such a shared formation instills, arriving at a shared mental model of whichever motet they find in front of them on a given day requires the singers to coordinate with each other explicitly. As Philippe Canguilhem paraphrases the sixteenth-century theorist Vicente Lusitano, "it was impossible 'however talented the singers', for them to give a satisfactory performance without having prepared in advance, and having 'concerted' on some key decisions."[67] This coordination might involve rehearsal and discussion prior to the performance, as well as visual, auditory, and haptic cues during the performance.[68]

Without the time-intensive burden of coordinating with others, the player of the intabulation can, in theory, spend less time in rehearsal and take greater liberties in performance. The concept of "communication overhead" might be helpful in considering the economic costs of ensemble polyphony.[69] The concept comes from business studies, where the centrality of monetary investment brings the efficiency of group work into vivid focus – much more so than in musicology, despite the centrality of group-generated art in the discipline. Extending a piece, ending it early, or interpolating a new section, for example, are adaptations that are easily within the grasp of an experienced keyboardist, but would likely exceed the capabilities of all but the most intimate group of upon-the-book singers, unless agreed upon and perhaps rehearsed beforehand.[70] Ending a piece early is a possibility that Frescobaldi encouraged the keyboardist to exploit in the preface to the 1615-16 issue of *Toccate e partite d'intavolatura di cimbalo...libro primo* (Rome: Borboni). The composer

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[66] The tacit expectations that singers had of each other in performance are particularly apparent in improvised polyphony or singing *super librum*. Philippe Canguilhem discusses some of the basic strategies of improvised polyphony that served as essential collective mental maps of the task *in situ*. Philippe Canguilhem, "Improvisation as Concept and Musical Practice in the Fifteenth Century," in *The Cambridge History of Fifteenth-Century Music*, ed. Anna Maria Busse Berger and Jesse Rodin (Cambridge: Cambridge University Press, forthcoming).

[67] Canguilhem, "Singing upon the Book according to Vicente Lusitano," *Early Music History* 30 (2011): 81-82.

[68] These strategies resonate with the concept of "implicit" and "explicit" coordination in group performance as outlined by J. Alberto Espinosa, F. Javier Lerch, and Robert E. Kraut in "Explicit versus Implicit Coordination Mechanisms and Task Dependencies: One Size Does Not Fit All" in *Team Cognition: Understanding the Factors that Drive Process and Performance*, ed. Eduardo Salas & Stephen M. Fiore (Washington, DC: American Psychological Association, 2004), 107-129. According to Espinosa et al., explicit coordination includes "precoordination" interchanges in the form of "communication" and "task programming," whereas implicit coordination involves the "synchronization of member actions based on unspoken assumptions about what others in the group are likely to do" (112).

[69] Jean MacMillian, Elliot E. Entin, and Daniel Serfaty, "Communication Overhead: The Hidden Cost of Team Cognition," in Salas and Fiore, *Team Cognition: Understanding the Factors,* 61-82.

[70] The sophisticated art of improvised polyphony, as discussed by Vicente Lusitano in the manuscript treatise "Trattato grande di musica pratica," is investigated in Canguilhem, "Singing upon the Book."

advised the player that "each one of these passages [that comprise the toccatas] may be played separated the one from the other" and that he should feel at liberty to "end them [the toccatas] wherever it will most please him."[71]

It is common to discuss "idiomatic" genres in relation to early keyboard music, with the implication that "idiomatic" refers to structures produced by bodily motions that arise easily in the act of keyboard playing. But some keyboard works may be said to be more "idiomatic" than others in terms of exploiting the advantages of the unstriated agency of a single player. "Idiomatic" works in this sense would include works that are unconstrained by the objectification necessarily involved in coordinating a shared mental model of the work among a plurality of agents. In other words, these works do not need to be written out, or written out fully; they are improvised, and their model need not be extricated from the subjectivity of the keyboardist-composer. Such works include, among others, those based on the composer's aural memory of one or several polyphonic vocal works, which could include intabulations, fantasias, ricercars, tientos, and ensaladas, though such keyboard works are not confined to a particular genre. Indeed, most keyboard pieces would fall somewhere on this spectrum, with the exception of "literal" intabulations and other keyboard pieces developed entirely through writing. Of course, publishing subjectively formed music presents a conundrum: as with the publication of improvisations today, we should normally assume that the process of writing out an improvisation fully and, much more so, publishing it, intervenes in the creative process, creating a gap between the piece as initially played by the composer and the one represented in notation.

Sensorimotor Experience

A clear connection between motor experience and cognition is only beginning to emerge in experimental research: as one research team observes, it is "only recently" that "empirical evidence has begun to appear indicating that the human motor system and its actions may actually modulate people's experience, perception, and understanding of sound and music."[72] Nonetheless, there have been extensive experimental studies on aspects of human motor performance involving sequences with one and two hands that are central to the task of keyboard playing, including: 1) the perception and execution of rapid sequences with the fingers, 2) bimanual coordination, and 3) motion enslavement of the fingers. Integrating this knowledge into an account of the mechanization of music around 1600 can help ground it in the bodies of musicians.

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[71] "Nelle toccate ho havuta consideratione non solo che siano copiose di passi diversi, et di affetti: ma che anche si possa ciascuno di essi passi sonar separato l'uno dall'altro: onde il sonatore senza obligo di finirle tutte potrà terminarle ovunque più li sarà gusto." Frescobaldi, *Toccate e partite d'intavolatura di cimbalo ... libro primo* (Rome: Borboni, 1615). The translation is from Frederick Hammond, *Girolamo Frescobaldi: A Guide to Research* (New York: Garland, 1988), 188.

[72] Pieter-Jan Maes, Marc Leman, Caroline Palmer, and Marcelo M. Wanderley, "Action-Based Effects on Music Perception," *Frontiers in Psychology* 4 (2014), Article 1008: 8.

In a review of experimental studies of motor sequencing, Katsuyuki Sakai and colleagues conclude that "the findings ... suggest a chunk representation for a motor sequence: a motor sequence is hierarchically organized with chunks of subsequences."[73] What this means for keyboard playing is that individual notes are perceived and executed by the player as part of a larger grouping. This gesture could map on to a variety of motor factors, including finger sequence and proprioception of the hands. The paired and grouped fingerings discussed in treatises and written into scores from the sixteenth and seventeenth centuries feature a built-in metrical organization, which means that the beginning of a new fingering sequence frequently corresponds with the beginning of a beat. This is not always the case, though, and, as Santa María noted, "very often the fingers are combined in many ways which cannot be classified under rules."[74] Example 1.15, a transcription from Diruta's *Il Transilvano*, illustrates the alignment of fingering and metrical organization.[75] Diruta classifies the fingers according to whether they play "good" notes or "bad" notes: the first (thumb), third, and fifth fingers play the bad notes; the second and fourth fingers play the good notes. Diruta does not indicate which finger specifically should play each note, just whether it should be played by a good or bad finger (in Ex. 1.15, B is short for *buona* [good] and C is short for *cattiva* [bad]).

Example 1.15. G. Diruta, *Il Transilvano*, fingering.

This mechanism of parsing a melodic line – through a motor program involving the fingers, hands, and arms – is obviously very different from parsing strategies associated with singing, which might include "semantic" chunking based on the text as well as technical chunking based on the sensations that different vowels and intervals create in the vocal tract.[76] The difference in the mechanisms comes to the forefront in a subsequent section in which Diruta advises the player to practice playing "bad" leaps (*salti cattivi*), including sevenths upwards and downwards – melodic intervals that are by convention avoided in polyphonic vocal music because of the difficulty of singing them.

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[73] Katsuyuki Sakai, Katsuya Kitaguchi, and Okihide Hikosaka, "Chunking during Human Visuomotor Sequence Learning," *Experimental Brain Research* 152 (2003): 229.
[74] Tomás de Santa María, *Libro llamado Arte de tañer fantasia: assi para tecla como para vihuela, y todo instrumento* (Valladolid: Cordova, 1565). The passage is quoted in Peter Le Huray, "Fingering," *The Harpsichord and Clavichord: An Encylopedia*, ed. Igor Kipnis (New York: Routledge, 2007), 177.
[75] The example is transcribed from G. Diruta, *Il Transilvano*, 1:14.
[76] For a fascinating discussion of the relationship between chunking, singing, and composition, see Chapter Six of Busse Berger, *Medieval Music and the Art of Memory*.

The biomechanics of the hand are such that individual fingers on the same hand are not completely independent of one another. Excluding the thumb, the adjacent fingers of most hands are incapable of playing intervals larger than about a third on the keyboard. In 1511, Schlick mentioned the hands' limited range as a constraint in playing polyphonic settings and "many smaller songs" on the organ:

> For with the hands alone it is impossible to play every piece containing many parts correctly and with the parts in proper relation. ... Not only polyphony, but also many smaller songs cannot be played perfectly on the manuals as is the case when parts go too far from each other, so that one voice must give way to another or be silent at times altogether because one cannot reach it with the hands.[77]

Further, the degree of motion enslavement varies among the fingers. This is clear to anyone who has tried to extend the ring finger while the hand is clenched in a fist, or to any keyboardist playing a trill with the index and middle fingers followed by a trill with the ring finger and pinky. One experimental study observes that "the amount of enslaving on the middle and ring fingers exceeded more than 60% of their own maximum angular displacements when a single adjacent finger moved," quantifying something we already know about the workings of our hands: the middle and ring fingers move a lot involuntarily when we deliberately move an adjacent finger.[78] This constraint is anatomical, related to the branch-like tendons that connect multiple fingers to the same muscle.

The limited autonomy of the fingers of a hand is in stark relief to the complete autonomy of the voices comprising choir. This has implications for the performance of polyphonic vocal music on a keyboard instrument. Playing two or three voices with the same hand limits not only the tonal range of the voices relative to one another (to within an octave or tenth or whatever the span of an individual keyboardist's hand may be) but also the rhythmic independence of the voices. And while it is generally easier for a keyboardist to perform a diminished passage in a single part with a hand than it is for a singer to perform the diminished passage with his voice, a passage that features two diminished voices usually demands considerably more technically from a single hand. When playing more than one voice of a polyphonic texture, the hand generally favors homorhythm in slow to moderate note values, or complementary rhythms, which can be more varied in pace. Examples include the spellbinding tientos by Correa for two trebles (*dos tiples*) or two basses (*dos baxones*). In the tientos for two trebles, for instance, the duo *cornetti*-like treble parts are played together with the right hand (to the accompaniment of the left hand's slow moving chords). Though

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[77] Schlick, *Spiegel der Orgelmacher und Organisten*. The passage is quoted in translation in Marshall, "From Motet to Intabulation, 11-14.

[78] Zong-Ming Li et al., "Motion Enslaving Among Multiple Fingers of the Human Hand," *Motor Control* 8 (2004): 1.

the two upper parts are considerably ornamented at times, rarely do ornaments in the two voices coincide. *Glosas, quiebros*, and the like tend to alternate from beat to beat, as illustrated in by the two treble voices (on the upper staff) in Example 1.16, an excerpt from Correa's tiento for two trebles on the seventh tone.[79]

Example 1.16. Correa, Tiento de medio registro de dos tiples de septimo tono, *Facultad organica* (1626), mm. 25-30.

Reproduced from Correa, *Libro de tientos*, ed. Santiago Kastner, vol. 2, Monumentos de la Música Española 12, (Barcelona: Instituto Español de Musicología, 1952), p. 107.

Concerning the coordination of the two hands, experimental literature highlights three salient points. First, in a task that involves a person moving opposite limbs simultaneously (as in two hands, or two legs), there is a tendency for the motion of the individual limbs to move in the same spatiotemporal pattern in an in-phase or anti-phase relationship.[80] The way in which these relationships pertain to two-handed keyboard playing can be illustrated through the performance of two-handed rhythms. In Example 1.17, (a) represents an in-phase pattern and involves what Verheul and colleagues describe as the "simultaneous activation of homologous muscles;" (b) represents an anti-phase pattern and

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[79] The wide spacing of the accompanimental parts in mm. 29-30 in Ex. 1.16 is within the span of moderately large hands due to the short octave.

[80] This tendency is explained within the Haken-Kelso-Bunz theory of motor coordination. Hermann Haken, J.A. Scott Kelso, and Heinz Bunz, "A Theoretical Model of Phase Transitions in Human Hand Movements," *Biological Cybernetics* 51 (1985): 347–56.

involves the "simultaneous activation of nonhomologous muscles."[81] Both are stable states of bimanual movement and, for most, are simple to perform. These two stable states act as "attractors" for more complex patterns, like the simple rhythms of (c) or polyrhythms of (d) and (e), meaning that the attempts of untrained/inexperienced subjects at more complex rhythms have a tendency to result in patterns that approximate an in-phase or anti-phase relationship.[82]

Example 1.17. Bimanual coordination exercises.
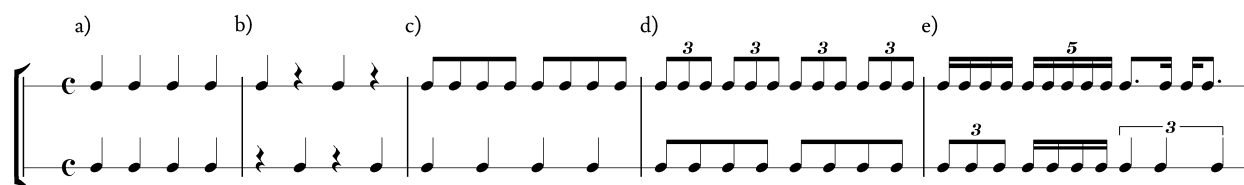
Second, a task involving bimanual coordination, like tapping a two-handed rhythm, is perceived as an integrated whole rather than as two parallel streams of motion. Recent research has, in fact, shown the integrated perceptual model to be the cause of the kinematic tendencies described in the first point above.[83] In the integrated perceptual model, the movement of the right hand and left hand form a unified motor program. This comes to the surface in teaching students how to tap the polyrhythms in Example 1.17 d) and e). A common strategy is to provide students with a phrase whose syllables, when spoken, reflect the composite rhythmic pattern of the two hands together; for three against two, for instance, the phrase might be "nice cup of tea" or "ugly baby."[84] The speech pattern helps to focus the student's attention on the integrated model of movement, which greatly increases

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[81] Martine H.G. Verheul and Reint H. Geuze, "Bimanual Coordination and Musical Experience: The Role of Intrinsic Dynamics and Behavioral Information," *Motor Control* 8 (2004): 271.

[82] The notion of the "attractors" is discussed in Verheul et al. (2004). A different study found that 2:3 ratios were rendered closer to 1:2. Bruno H. Repp, Justin London, and Peter E. Keller, "Production and Synchronization of Uneven Rhythms at Fast Tempi," *Music Perception: An Interdisciplinary Journal* 23 (2005): 61–78.

[83] Charles H. Shea, Attila J. Kovacs, John J. Buchanan, "Perceptual and Attentional Influences on Bimanual Coordination," in *Art in Motion: Musical and Athletic Motor Learning & Performance* (2009): 227-253 at 229. Previously, it was thought, as Shea et al. note, that "the tendency for in-phase movements" was "due to a bias originating in the motor portion of the perception-action system. In other words, the models were developed based on the kinematics of the limbs motion, and not based on the perceptual input driving the action" (229).

[84] The problem of the integrated perceptual model for bimanual coordination comes to the forefront in Ingrid Monson's description of her experience in practicing the balafon with Neba Solo in "Jazz as Political and Musical Practice," in *Musical Improvisation: Art, Education, and Society*, ed. Gabriel Solis and Bruno Nettl (Urbana, IL: University of Illinois Press, 2009), 26-28.

the chances of an accurate performance. The integrated perceptual model applies also to professional pianists, whose virtuosity can at times appear to involve "decoupled" hands. However, experimental studies have shown that this effect simply reflects pianists' ability to perceive and execute highly complex (yet integrated) motor programs successfully.[85]

Third, implicit in this last point is that the individual movements of the two hands within the motor program are perceived in "chunks," or hierarchical units. In the performance of triplets and duplets, for example, the five taps comprising one iteration of the pattern, coinciding with one utterance of "ugly baby," constitute a chunk. The anchor for this chunking pattern is the stable in-phase (1:1) state of movement unfolding at a regular tempo with each beat. Indeed, for all the rhythmic patterns illustrated in Example 1.17 (with the exception of b) the in-phase movement of the hands anchors the performance.

The basic point that I take from this is that in keyboard playing, it is not just a disembodied tactus or beat, but the haptic node of the downward motion of the hands onto the keyboard that serves as a visceral anchor for chunking. Moreover, the chunks themselves as temporal units tend to be global in nature: they comprise the motions of all the fingers and both hands, and all the musical material they play within a short stretch of time. The scare quotes that normally accompany talk of the "vertical" dimension of music betray an inquietude about the stopgap nature of this descriptor for what is at other times called the "harmonic" or "simultaneous" aspect. Whatever we call this aspect, in many contexts from the late sixteenth-century onward, it merges with an objectification of a particular mode of experiencing polyphonic music: alone at a keyboard instrument.

The Incorporation of Polyphony

As a historical development, the mechanization of polyphony, through the harnessing of a machine, redistribution of agency, and conversion of the sensorimotor experience, was as complex as it was diffuse. It is difficult to capture the totality of its significance for music history in a single phrase. One that comes close is the *incorporation of polyphony* in the sense that all of the voices are combined quite literally into a single body. In this new guise, the contrapuntal idiom changes at its core. The tactus shifts from being a means of keeping independent parties in synchrony to a cognitive anchor for chunking. The viscerality of meter is intensified through the physical momentum of releasing the natural weight of the

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[85] A recent outline of research investigating this question can be found in Eitan Globerson and Israel Nelken, "The Neuro-Pianist," *Frontiers in Systems Neuroscience* 7 (2013): Article 35. Earlier studies investigating bimanual coordination,including one that considered the skills of pianists, L. Henry Shaffer, "Performances of Chopin, Bach, and Bartok: Studies in Motor Programming," *Cognitive Psychology* 13 (1981): 326–76, suggested that complex movements were the result of a high level of independence between the two hands. This interpretation is called into question in Ève Poudrier and Bruno H. Repp, "Can Musicians Track Two Different Beats Simultaneously?" *Music Perception: An Interdisciplinary Journal* 30 (2013): 373.

arms into the keys in accordance with the tactus (or in deliberate conflict with the tactus, as in syncopation). The notation of the polyphony reflects incorporation through its synoptic presentation, and the new anchoring role of the tactus is visible through the partitioning effect of bar lines. The unique rhythmic and metrical profiles of individual voices are regularized and assimilated into a centralized program, whose cognitive and physiological underpinning promote homorhythm and rhythmic complementarity.

In incorporated polyphony, harmony and meter are intertwined, as both are cognitively anchored by the downward motion of the hands onto the keyboard. Chords are no longer conglomerates of simultaneous pitches but truly atomic, unified by the haptic chunking of arm motion. This is far removed from the concept of simultaneous harmonies native to "unincorporated" polyphony, in which the autonomous will behind each note in the chord frustrates a concept of the chord as a unified, atomic-like unit. In this way, the "chords" that a theorist such as Pietro Aaron heard and described were fundamentally different from chords known to eighteenth-century musicians.[86]

Tonally, the melodic profile of individual voices, particularly of middle voices, is flattened, such that there is less need for voice crossing and less overlap in the ranges of the parts. Movement is concentrated more at the edges of the texture, as the more static inner voices can be taken over by a single hand while the other plays diminished passages. The notes of the gamut, no longer kites in the wind, are pinned down to levers and made absolute. Tuning shifts from the context-specific mutual negotiation that is just intonation to a one-size-fits-all tempered scale. Chromatic notes are not so much mutable inflections of diatonic notes as they are distinct pitches in their own right and with their own lever (granted their levers are shorter than their diatonic counterparts').

In terms of its structure, incorporated polyphony typically absorbs aspects of the single-agent script native to keyboard playing. That is, it is often shaped fundamentally by an unwritten or minimally written script (literal intabulations are among the exceptions). Compositional techniques indigenous to unincorporated polyphony, such as canon and imitation, are used, but are adapted to an ecology in which, as Silbiger put it, "the two hands could be like two players, both emerging from one, and easily merged back into one."[87]

The question remains of the relationship between the "incorporated" polyphonic idiom outlined here and the *stili moderni* that emerged in vocal composition around 1600. The similarities are obvious. Even the *stile antico* – the conservative new style – usually displays several features of incorporated polyphony, including a simplification of the rhythmic profiles of individual lines, a systematization of meter, and chordal thinking. (The

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[86] Cf. Bonnie J. Blackburn, "The Dispute about Harmony c.1500 and the Creation of a New Style," in *Théorie et analyse musicales 1450-1650. Actes du colloque international Louvain-La-Neuve, 23-25 septembre 1999*, ed. Anne-Emmanuelle Ceulemans and Bonnie J. Blackburn (Louvain-la-Neuve: Collège Érasme, 2001), 1–37.

[87] Silbiger, "Introduction: The First Centuries of European Keyboard Music," 1.

idiom of Seth Calvisius's parody on the motet "Praeter rerum seriem" by Josquin springs to mind as an illustration.[88])

Traditionally, the relationship between the two idioms has been cast as a one-way street from vocal composition to instrumental music. But this perspective presupposes that polyphonists composed and singers sang in a world devoid of instruments. It is simply not realistic. Keyboard instruments affected singers and composers on all levels, from the visceral to the abstract. Primary sources are filled with examples of keyboard instruments prevailing directly upon bodies engaged in music making. A particularly acute example is the distress that organs that were pitched too high inflicted upon choristers.

As an antidote to the vocal-to-instrumental view of style development, I propose that the "modern" styles of the late sixteenth and early seventeenth centuries exemplify how composers exploited – or adapted to – the affordances of keyboards and, in some cases, to other "perfect" instruments, such as the lute. The naturalistic declamation of the *stile recitativo* hinged on the flexible accompaniment that the continuo player or group afforded the singer. The successful performance of highly chromatic vocal works (such as *Calami sonum ferentes*) all but required the use of an enharmonic instrument, such as the *archicembalo* or the *cembalo cromatico comune*, in rehearsal – if not in the performance itself. And the concertato idiom was founded upon the organ's dual role as a substitute and harmonic safety net for the singers of run-of-the-mill *cappelle musicali*. It is this last context that I explore further in the remainder of this dissertation.

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[88] Calvisius's parody, *Praeter rerum seriem,* subtitled, *Parode ad Josquini*, was published in the anthology *Florilegium selectissimarum cantionum* (Leipzig: Lamberg, 1603).

CHAPTER 2
BASSO CONTINUO AND THE TRANSFORMATION OF THE PRINTED BOOK OF SACRED MUSIC

> It will likewise be a good thing that the organist should first cast an eye over the concerto which is to be sung, since, by understanding the nature of the music, he will always execute the accompaniments better.[1]

The preface to Lodovico Viadana's *Cento concerti ecclesiastici* (Venice: Vincenti, 1602), the source of this sensible piece of advice, has long been synonymous with the emergence of basso continuo in the sacred sphere – the ecclesiastical counterpart to Caccini's *Le nuove musiche* (Florence: Marescotti, 1601). And for not quite as long a time, scholars have questioned the significance of the début of basso continuo in the medium of print around the turn of the seventeenth century, arguing that it amounted to "little more than 'print culture' catching up with a long-standing performance practice."[2] Thus, the organ continuo part of *Cento concerti* and those of other prints of sacred concertos that were published around the same time represented nothing truly new. Or so the argument goes.

Accepting this perspective requires assuming that books are mere inert repositories of ideas. The book is, of course, much more than this: a site of discourse, virtual public platform, social filter, commodity, object of mass production, and product of a skilled trade. As Marshall McLuhan succinctly put it, the introduction of a medium to an activity will "amplify or accelerate existing process," introducing "change of scale or pace or shape or pattern into human affairs," resulting in "psychic and social consequences."[3] Music historians who have devoted attention to printers, their relationships with composers, the printing process, markets for printed music, the circulation of printed music, and the ways in which music prints were used have shown vividly how printing can actively shape taste, style, and canon.[4] The perspectives offered by histories of music printing and critical analyses of

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[1] "Sarà se non bene, che l'Organista habbia prima data un'occhiata à quel Concerto, che si ha da cantare, perche intendendo la natura di quella Musica, farà sempre meglio gli accompagnamenti." Lodovico Viadana, *Cento concerti ecclesiastici* (Venice: Vincenti, 1602). The translation is from F.T. Arnold, *The Art of Accompaniment from a Thorough-Bass as Practised in the XVIIth and XVIIIth Centuries* (New York: Dover, 1965), 1: 11.

[2] Jonathan Wainwright, "Richard Dering's Few-Voice 'Concerto' Motets," *Music & Letters* 89 (2008): 172.

[3] Marshall McLuhan, *Understanding Media: The Extensions of Man* (New York: McGraw-Hill, 1964): 7.

[4] Among most immediately relevant studies to the topic at hand are Jane A. Bernstein, "Financial Arrangements and the Role of Printer and Composer in Sixteenth-Century Italian Music Printing," *Acta Musicologica* 63 (1991): 39–56; eadem, *Print Culture and Music in Sixteenth-Century Venice* (New York: Oxford University Press, 2007); David Bryant and Elena Quaranta, "Come si consuma (e

the book alike contradict the notion that the transformation of a private practice, like basso continuo, into print is *simple*.

Despite the rich literature on Italian music and printing in the sixteenth and seventeenth centuries, the role of print in the stylistic transition around 1600 remains murky. In an illuminating article on the activity of Italian music printers at this time, Tim Carter concludes that "fundamental questions have yet to be asked" about stylistic change in the seventeenth century, particularly the continued circulation of older genres and styles in printed books.[5] In this chapter, I offer a preliminary response to Carter's prompt by reexamining the debut of printed basso continuo parts for publications of sacred music. Although the earliest music prints that include a basso continuo part are in some sense conservative, since they document a longstanding performance practice, we might just as well construe them as radical. In the case of sacred music prints, the addition of the basso continuo partbook altered the material form of ecclesiastical music just as drastically as the advent of printing itself. It inscribed the organ, a machine, onto the material fiber of a centuries old musico-liturgical repertoire that had been designed for human voices: polyphonic settings of texts used during the services of the Catholic Church. This chapter and the next approach the beginnings of basso continuo from this premise. The current chapter examines the change through the lens of the material object of the early concerto print itself. Chapter 3 positions the emergence of printed basso continuo within the context of organ history, offering an alternative perspective on the nature of the concertato style.

As printed objects, publications of polyphonic vocal music from the sixteenth century are distinctive. Materially, the identity of the work straddles multiple partbooks, usually one for each vocal part, all issued together as a set. In general, each partbook is an essential component of the work. Apart from the actual notes and the voice designation (Canto, Alto, etc.) at the top of the pages, the partbooks comprising a publication resemble each other very closely. They are identical in size and layout. They usually have an identical pagination. Their title pages are usually identical. Any paratext – a dedication, note to the reader, index, etc. – that appears in one partbook of the first edition of a sacred print from the late sixteenth or early seventeenth century usually appears in all the others. The text underlay for each of the pieces is very similar across the partbooks. The music notation is also broadly uniform across the partbooks, each part consisting of a single line of music notated upon a single staff.

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perché si produce) la musica sacra da chiesa?" in *Produzione, circolazione e consumo: Consuetudine e quotidianità della polifonia sacra nelle chiese monastiche e parrocchiali dal tardo Medioevo alla fine degli Antichi Regimi*, ed. David Bryant and Elena Quaranta (Bologna: Società Editrice il Mulino, 2006), 17–66; Tim Carter, "Music Publishing in Italy, c.1580-c.1625: Some Preliminary Observations," *Royal Musical Association Research Chronicle* 20 (1986-87): 19–37; Martha Feldman, *City Culture and the Madrigal at Venice* (Berkeley: University of California Press, 1995); Kate van Orden, *Music, Authorship, and the Book in the First Century of Print* (Berkeley: University of California Press, 2013).

[5] Carter, Music Publishing in Italy," 35.

Introducing an organ part into sets of vocal partbooks threw a wrench into the well-established, homogeneous material identity of sacred music. Organ parts often needed to be larger than the vocal partbooks, or printed in oblong dispositions even if the vocal partbooks were in upright formats. The notation of the organ part was not standardized: many were written in the shorthand format of a single line (not unlike the vocal parts), while others were written as open scores, and there were many variants along the intervening spectrum. Those organ parts in open score and other notational formats that fell on the "comprehensive" side of the spectrum were inevitably longer and their pagination different from their vocal counterparts. Often, dedications were left out of continuo parts. They sometimes had their own preface, not included in the vocal partbooks. In many cases from the 1590s and first decade of the seventeenth century, continuo parts were issued separately from vocal partbooks. Such discrepancies are superficial, but emblematic of a deeper divide, for they point to a crucial function of the continuo part that has yet to be explored.

Continuo parts played a variety of roles. Most obviously, they were (and remain today) performance scores. Continuo parts for ecclesiastical music were almost always intended for organists to accompany singers of the *cappella musicale*. Researchers have also noted that providing continuo parts helped printers expand the market for printed sacred music (discussed further below).[6] Seen in this light the propagation of a new musical style relying on continuo hinged more on the business interest of printers than on the artistic ambitions of composers. As such, the story of the beginnings of the sacred concerto presents a powerful foil to the account of the beginnings of monody and opera which, in its traditional telling, locates the new style more or less exclusively in disembodied genius.

In this chapter, I argue that, alongside these known functions, continuo parts for sacred music allowed the practice of keyboard playing to be assimilated to the art of counterpoint. In certain ways, this function resembles one that Pamela Long identifies with the book in her research on the rise of mechanical arts in the late Middle Ages and early Renaissance.[7] Long sees books that combine knowledge from the mechanical skills with those from traditional subjects of higher learning as "trading zones."[8] During this time,

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[6] Carter, "Music Publishing in Italy;" David Bryant and Elena Quaranta, "Traditions and Practices in Fifteenth- and Sixteenth-Century Sacred Polyphony: The Use of Solo Voices with Instrumental Accompaniment," in *Music as Social and Cultural Practice: Essays in Honour of Reinhard Strohm*, ed. Melania Bucciarelli and Berta Joncus (Rochester, NY: Boydell Press, 2007), 105–18; and David Bryant, Elena Quaranta, and Francesco Trentini, "'Cappelle musicali' and the Economics of Sacred Music Production: Proposals from Treviso for a Broadened Historiographical Model.," in *Cappelle musicali fra corte, stato e chiesa nell'italia del rinascimento. Atti del Convegno internazionale Camaiore, 21-23 ottobre 2005*, ed. Franco Piperno, Gabriella Biagi Ravenni, and Andrea Chegai (Florence: Leo S. Olschki, 2007), 107–20.
[7] Pamela O. Long, *Openness, Secrecy, Authorship: Technical Arts and the Culture of Knowledge from Antiquity to the Renaissance* (Baltimore, MD: Johns Hopkins University Press, 2001).
[8] Ibid., 15.

technical knowledge of practical crafts as diverse as bookkeeping, architecture, and metallurgy, which had long flourished outside of the realm of discourse, became the subjects of books. With the entry of these mechanical arts into written discourse, they were translated into "like terms" derived from with traditional liberal arts, including the quadrivium, trivium, and philosophy. The book became a virtual site where speculative and practical knowledge could be put together, with each informing and transforming the other – hence Long's "trading zone."

The commingling of the art of counterpoint and keyboard playing presents a relatively subtle instance of the mixing of two related but socially distinct fields. Neither counterpoint nor keyboard playing was a traditional subject of learning.[9] And in practice, both arts already overlapped considerably by the second half of the sixteenth century. The art of counterpoint, however, was the intellectual acme of practical music. It was taught in universities and was well established as a subject of treatises. The link between *musica speculativa* and the art of counterpoint was further strengthened with the publication of Gioseffo Zarlino's *Le Istitutioni harmoniche* in Venice in 1558. Keyboard playing, meanwhile, held a more ambiguous status.[10] The craft itself relied far less on music literacy and writing than did counterpoint. It could be learned through apprenticeship, without studying writings or musical works. As a subject of written texts, it was only beginning to find its feet in the latter half of the sixteenth century, still flourishing largely in what Michel de Certeau called the "mute jurisdiction of practices."[11] Many of the earliest written documents of keyboard playing come not from humanists but from practitioners and organ builders – tradesmen – such as Arnolt Schlick, Girolamo Diruta, and Costanzo Antegnati.[12] The most in-depth treatment of keyboard playing of the sixteenth century was *Arte de tañer fantasia* by the Domenican organist Tomás de Santa María.[13] It provides a fascinating foil to Zarlino's *Le istitutione harmoniche*, for whereas Zarlino carefully constructs his exposition on counterpoint upon the foundation of *musica theoretica*, Santa María's instructions for keyboard technique are concerned emphatically with immediate experience.

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[9] Some useful background information on the bifurcated status of music is provided in Joseph Dyer, "The Place of Musica in Medieval Classifications of Knowledge," *Journal of Musicology* 24 (2007): 3–71.

[10] In his *Dizionario delle arti e de' mestieri*, Francesco Griselini divided "musica pratica" into two categories: "l'arte della composizione," which he considered a sophisticated industry, and "l'esecuzione," which he did not. (Venice: M. Fenzo, 1768-1778): 9: 228.

[11] Michel de Certeau, *The Practice of Everyday Life*, trans. Steven Randall (Berkeley: University of California Press, 1984), 67.

[12] Schlick, *Spiegel der Orgelmacher und Organisten;* G. Diruta, *Il Transilvano*; and Costanzo Antegnati, *L'arte organica: dialogo tra padre e figlio ... con l'indice de gli organi fabricati in casa loro* (Brescia: Tebaldino, 1608).

[13] Santa María, *Arte de tañer fantasia*.

The incorporation of the continuo part – organ music – into the materiality of sacred music – vocal polyphony – was key to closing the gap between these two knowledge traditions. The impact of this convergence with keyboard playing on the praxis of composition and the conceptualization of music was profound. The keyboard, formerly excluded and even shunned from orthodox compositional process, became a basic tool of composition and the dominant medium through which music was conceived, visualized, and explained. Counterpoint became intertwined with the phenomenology of keyboard playing, and keyboard playing became closely aligned with composition and the pedagogy of music, as recent research on the *partimento* tradition has helped to underline.[14]

The prints of sacred music at the focus of this chapter are those that were published with an organ part within the decade surrounding 1600.[15] Appendix C provides a complete chronological list of such prints published prior to 1606, beginning with the earliest one known, Giovanni Croce's *Motetti a otto voci*, published in Venice by Vincenti in 1594. There are eighty-six unique titles in total.[16] With the exception of Tomás Luis de Victoria's *Missae, Magnificat, motecta, psalmi, & alia quam plurima* (for eight, nine, and twelve voices), issued in Madrid in 1600 by Flandrus, all of the prints were published in Italy. Of these, over half (47) came from Venetian presses, twenty-nine from Milan, six from Rome, and one each from Naples, Palermo, and Parma.[17] (The first German print to be issued with an organ part, Gregor Aichinger's *Cantiones ecclesiasticae tre & quattro voci cum basso generali et cantu ad usum organistarum* [Dillingen: Metzler] was not published until 1607 and thus postdates this list.)

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[14] Robert Gjerdingen, *Music in the Galant Style* (Oxford: Oxford University Press, 2007), and Giorgio Sanguinetti, *The Art of Partimento: History, Theory, and Practice* (Oxford: Oxford University Press, 2012). See also Salvatore Carchiolo, *Una perfezione d'armonia meravigliosa: prassi cembalo-organistica del basso continuo italiano dalle origini all'inizio del XVIII secolo* (Lucca: Libreria Musicale Italiana, 2007), 3-6. John Butt discusses German contexts for the use of *basso continuo* in composition pedagogy in *Music Education and the Art of Performance in the German Baroque* (Cambridge: Cambridge University Press, 1994), 118.

[15] That sacred music prints were the primary site for continuo in the early decades of the seventeenth century is borne out in the statistics presented by Tim Carter. Carter notes that, in 1600, 14% of sacred collections issued by Italian printers included a basso continuo part versus 7% of secular collections. In 1605, the disparity is dramatic: whereas 60% of sacred prints contained a continuo part, only 14% of secular prints did. And in 1620, a full 100% of sacred prints were issued with continuo, while 83% secular prints contained a continuo part. Carter, "Music Publishing in Italy," 31.

[16] The three volumes of Giovanni Luca Conforti's *Salmi passaggiati* (Rome: Muti) for soprano (1601), tenor (1602), and bass (1603) are counted individually.

[17] Noel O'Regan provides an enlightened study of the organ part for Victoria's *Missae* (1600) in "What Can the Organ Partitura to Tomás Luis de Victoria's 'Missae, Magnificat, motecta, psalmi et alia quam plurima' of 1600 Tell Us about Performance Practice?" *Performance Practice Review* 14, no. 1 (2009): Article 5.

The terms that publishers used to label the organ partbook varied widely (*basso continuo, partitura,* and *basso generale* are but a sampling of many), and there is no obvious relation in sources from this period between a particular term and a particular type of accompaniment or notational format.[18] This issue is discussed further below, but it is worth noting for the moment that the term *basso continuo* was used for parts that are in open score as well as those notated as a single bass line, and it referred to doubling parts as well as independent parts. This usage of *basso continuo* is somewhat less constricted than usage of the term today, which most commonly refers to an independent part notated as a figured or unfigured bass line. Unless otherwise specified, my own usage of *basso continuo* in this chapter and the next reflects the term's wider signification.

I proceed from here by taking up this issue of the discrepancy in the connotation of *basso continuo* then and now. I then review the significance of basso continuo parts as a new product for music printers in the decade surrounding 1600, before basso continuo had become a normal component of the sacred print. As noted above, scholars have compiled much evidence to suggest that the impetus behind printing basso continuo parts was utilitarian. Even Viadana, one of the first proponents of printed basso continuo parts, was interested in them as a means to the very practical end of allowing average choirs to pull off quality performances. Viadana aside, the minority of composers who voiced an opinion on basso continuo expressed sentiments which usually fell somewhere near indifference and derision. Thus basso continuo parts were marginalized as components of the musical work, something underscored by the material forms in which they were conveyed. To elucidate this fact, I compare basso continuo parts to the sets of vocal partbooks to which they belonged, focusing particularly on discrepancies in their title pages and paratexts, including dedication letters and prefaces.

The epigraph at the beginning of this chapter is the third of the twelve "rules" outlined by Viadana in the prefatory remarks to his most famous publication. These rules have been painstakingly studied by scholars and musicians – F.T. Arnold, for one, devotes a full twelve pages to them in *The Art of Accompaniment from a Thorough-Bass*.[19] From the preface, we have gleaned valuable insights from the period on performance practices associated with the sacred concerto. Indeed, Viadana's text and others like it, including the preface to Josephus Gallus's *Sacri operis musici* (Milan: Tini, 1598), which I examine below, tend to be read primarily for factual information about performance practice and other substantive content. According to Pamela Long, such content-centered reading of technical paratexts and standalone treatises is typical also in the study of late medieval and Renaissance trades. The writings of practitioners, Long notes, are usually studied today "for the arts that they

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[18] For a fuller inventory of terms used for early organ parts, see Tharald Borgir, *The Performance of the Basso Continuo in Italian Baroque Music* (Ann Arbor, MI: UMI Research Press, 1987), 12-13.
[19] Arnold, *The Art of Accompaniment*, 1: 9-21.

practiced;" however, in that period "writing a treatise about a craft is significant in itself, and an unusual activity for craft practitioners" which in and of itself merits our attention.[20]

Of Viadana's twelve rules, the third, advising the organist to look over the music before performing it, has perhaps received the least attention. It is the only rule related to continuo playing that Arnold passes over without comment.[21] Considering that the rule's recommendation is blatantly obvious, this is completely understandable. Even reading the rule in relation to the emergence of the craft of keyboard playing as a subject of writing, its presence in a printed book like *Cento concerti* might seem at first to be of secondary interest; after all, Viadana was hardly the first to convey mundane, on-the-job advice about keyboard playing. However, in the sixteenth century, the written communication of the craft knowledge of keyboard playing had been confined to books aimed more or less exclusively at keyboardists. *Cento concerti*, and other early sacred concerto prints, represented a new, mainstream platform for this craft knowledge at the turn of the seventeenth century. In this forum, keyboard playing mingled with the art of counterpoint and was assimilated into one of the art's best established and most elite written manifestations.

<p style="text-align:center">*　　*　　*　　*　　*</p>

Concepts of Basso Continuo Then and Now

Scholarly discussion of basso continuo has been funneled through a modern typology that is at odds with the concept of the practice in the late sixteenth and early seventeenth century. The term *basso continuo* was one of dozens used in collections of ecclesiastical music before 1620 to refer to organ accompaniment. Other terms included *basso principale*, *basso generale*, *ad pulsandum organis*, *partimento*, *spartitura*, *partitura*, *partitio*, *basso seguente*, and *baritonantium divisio pro organi pulsatore*.[22] These terms were mostly interchangeable and many were used liberally to describe a wide variety of notational formats and styles of accompaniment. The variety in terminology is symptomatic of the status of basso continuo as an unregulated quotidian practice that was only beginning to coalesce in writing and as a subject of discourse.

Today, we usually use the term *basso continuo* to refer to a specific sort of continuo part: an accompaniment that is contrapuntally essential and that is notated as a single-bass line, with or without figures (Example 2.1a). A distinction is often made between "basso

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[20] Long, *Openness, Secrecy, Authorship*, 141.
[21] Arnold, *The Art of Accompaniment*, 1: 11.
[22] A more comprehensive list of terms is provided in Tharald Borgir, *The Performance of the Basso Continuo in Italian Baroque Music* (Ann Arbor, MI: UMI Research Press, 1987).

continuo" and "basso seguente" (another modern redefinition of a historical term), the latter being a conflation of all vocal parts into one, with the selection of individual notes resulting from an algorithm of lowest pitch (Example 2.1b). It is contrapuntally non-essential and derived *post rem* from the voices through a process that is mechanical and not governed by the rules of counterpoint.

Example 2.1. Modern categories of basso continuo.

a) "Basso continuo" in Gian Paolo Cima, Haec dies, *Concerti ecclesiastici* (Milan: Tini & Lomazzo, 1610), excerpt.

b) "Basso seguente" in Gabriello Puliti, Credo, *Missa concertata*, from *Il secondo libro delle messe* (Venice: Vincenti, 1624).

This modern concept of "basso seguente" is often linked to Adriano Banchieri, who used the term on the title page of the organ part for his *Eclesiastiche sinfonie per sonare et cantare et sopra un basso seguente* of 1607 and in discussions of basso continuo in his treatises.[23] Peter Williams and David Ledbetter, for instance, describe *basso seguente* as "a

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[23] Adriano Banchieri, *Eclesiastiche sinfonie per sonare et cantare et sopra un basso seguente* (Op. 16) (Venice: Amadino, 1607). Banchieri discusses basso continuo in Adriano Banchieri, *Conclusioni nel*

term used by Adriano Banchieri in *Ecclesiastiche sinfonie* ... to describe the work's continuo bass part, which was drawn from whichever part in the ensemble was the lowest at any one moment."[24] Williams and Ledbetter are quick to point out, however, that other composers do not adhere to this strict meaning, citing the example of the "basso seguito" of Piccioni's *Concerti ecclesiastici* of 1610.[25] For the most part, the Basso seguente of the *Ecclesiastiche sinfonie* does indeed double the voices, but on occasion, the part is contrapuntally essential, as in the excerpt from the *Quinta Sinfonia* ("Sacerdotes, & Levitę") transcribed in Example 2.2.

Example 2.2. Banchieri, *Quinta Sinfonia* ("Sacerdotes, & Levitę"), *Ecclesiastiche sinfonie* (Venice: Amadino, 1607), mm. 18-20.

Banchieri's usage of the term *basso seguente* provides little to suggest that he intended to make a distinction between basso seguente and basso continuo. His employment of the terms in the 1614 edition of his *Cartella musicale* (another source often cited in conjunction with basso seguente) are equally fluid. In one passage, Banchieri mentioned the writings of the "soavissimi compositori" Viadana, Francesco Bianciardi, Agostino Agazzari in which they

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suono dell'organo (Op. 20) (Bologna: Rossi, 1609), the second edition of idem, *L'organo suonarino* (Op. 25) (Venice: Amadino, 1611), and the third edition of idem, *Cartella musicale nel canto figurato, fermo, & contrapunto* (Venice: Vincenti, 1614).

[24] Peter Williams and David Ledbetter, "Basso seguente," *Grove Music Online. Oxford Music Online* (Oxford University Press), http://www.oxfordmusiconline.com/subscriber/article/grove/music/02279, accessed May 13, 2014. Other studies that attribute the restricted concept of basso seguente to Banchieri include Jörg-Andreas Bötticher and Jesper B. Christensen, "Generalbaß," *Musik in Geschichte und Gegenwart*, 2nd ed. 2008; and Arnold, *The Art of Accompaniment*, 1: 899.

[25] Williams and Ledbetter, "Basso seguente."

discussed how to play upon the "basso continuo, seguente, or barittono – whichever we choose to call it," suggesting that Banchieri viewed the terms *basso continuo* and *basso seguente* as synonyms.[26] In another passage, Banchieri opined that barred *bassi continui* ("bassi continui spartiti") were much better than "uninterrupted" or unbarred parts ("bassi continui seguenti"), since the former made it easier for the organist to keep the *concerto* "on the beat."[27] It is worth emphasizing that the distinction here is between "spartiti" and "seguenti" rather than "continui" and seguenti."

While the second passage from *Cartella musicale* cited above suggests that Banchieri associated basso seguente or, more precisely, "bassi continui seguenti," with unbarred parts, a passage from his earlier treatise *Conclusioni nel suono dell'organo* (1609) suggests the contrary. In *Conclusioni*, Banchieri discussed "three manners" in which "bassi seguenti" are printed: 1) as a short score ("il basso seguente con il soprano sopra"); 2) as a barred up bass line ("un basso seguente spartito") with accidentals to indicate the quality of the thirds; and 3) as a bass line without the addition of such figures.[28] The second of these manners, the barred up bass line, seems at odds with the distinction that Banchieri later drew between *bassi continui spartiti* and *seguenti* in *Cartella*. In a third treatise, the second edition of *L'organo suonarino* (1611), Banchieri discussed "suonare sopra gli bassi continui" without drawing any distinction between basso continuo and basso seguente.[29]

All this suggests that Banchieri used the terms *basso continuo* and *basso seguente* more or less interchangeably and that, perhaps most importantly, he was primarily concerned with the practice of accompaniment / basso continuo in a general, unrestricted sense. In other words, the art that was Banchieri's subject encompassed both basso continuo and basso

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[26] "Lodovico Viadana, Francesco Bianciardi, & Agostino Agazzari, soavissimi conpositori de nostri tempi, hanno questi dottamente scritto il modo che deve tenere l'Organista in suonare rettamente sopra il Basso continuo, seguente ò Barittono che dire lo vogliamo." Banchieri, *Cartella musicale*, 214.

[27] "Lodo però & à mio giuditio stanno molto meglio gli Bassi continui spartiti che seguenti, per maggior sicurezza dell'Organista in condurre rettamente il concerto in Battuta, & cio basti in materia di Bassi continui." Ibid, 215.

[28] "...il modo di componero questi bassi seguenti viene in tre maniere stampato ne tratteremo ordinatamente. Tiburtio Massaini ... & Ieronimo Iacobi ... hanno posto alle stampe il basso seguente con il soprano sopra, il qual modo à me pare di molto utile, vedendo l'Organista gl'estremi, & considerando gli accidenti, che occorrono, p[articolarmente] iteresse delle terze, & decime. Gio. Iacomo Castoldi [Gastoldi] ... & Benedetto Bagni ... hanno posto un basso seguente spartito, il quale hà gli diesis avanti le note, che mostrano (à chi hà attentione d'orecchio) le terze, & decime. Pompeo Signorucci ... & Gabrielle Fattorini ... hanno composto il basso senza gl'accidenti, à questi per quelli organisti, che non hanno cognitione di tali accidenti ricercasi udito perfetto, & meglio (à mio giuditio) riuscitanno, per non far sentire seconde false trà il nero, & bianco, sfugge le consonanze di terze, overo decime." Banchieri, *Conclusioni nel suono dell'organo*, 25.

[29] Banchieri, *L'organo suonarino*, 5. Further, as Harald Borgir notes, Banchieri used *basso continuo* and *basso seguente* as synonyms in *Gemelli armonici* (Venice: Amadino 1609). Borgir, *The Performance of Basso Continuo*, 13.

seguente as they defined by modern scholars. The same held true for other sources as well: one example is Camillo Cortellini, *Messe a 4, 5, 6, & 8 voci, con il basso continuo per l'organo* (Venice: Vincenti, 1609), in which the *basso continuo* of the title identifies an organ bass that doubles the net bass of the voices. The terms *partitura* and *basso generale* are applied to an equally diverse range of notational strategies.

Another strategy for classifying early keyboard accompaniments has assumed an opposition between accompaniments presented in full score or short score (with two staves on which the highest and lowest parts of the texture were transcribed) and "basso continuo" (in the stricter present-day sense). Previous studies of early accompaniments in full and short score have emphasized a conceptual division with the single-bass line "basso continuo." In a seminal article on the subject, Imogene Horsley described the "emergence of a new concept of the function of accompaniment and, above all, the development and acceptance of a thoroughly figured continuo bass, [which] were crucial factors in the final abandonment of the older practice" and which were likewise reflected in accompaniments in full and short score falling out of favor and "[giving] way to the *basso continuo*."[30] Gregory Johnston also emphasizes a firm line between basso continuo and scored-up accompaniments.[31]

The difficulty with this interpretation is that it assumes that different notational forms signified different practices. I am aware of no evidence from the early seventeenth century to support such a reading. Indeed, there are numerous early printed organ accompaniments that alternate between full or short score notation with a single bass staff line, as Horseley herself noted.[32] For example, the organ parts for polychoral collections typically consist of a double or triple bass score (in accordance with the number of choirs), but reduced sections for a single choir might appear in four-part open score. Moreover, there is no correlation between the terms used to describe organ parts and their notational format. Figure 2.1 provides examples of the five most common notational formats used for organ continuo parts in the early decades of the seventeenth century: a) the single bass line, b) two bass lines in score, c) three bass lines in score, d) full open score, and e) short score. Terms commonly used to refer to the organ accompaniment could refer to parts notated in several of these formats. For example, *partitura* is used to identify a two-bass score in Croce's *Messe a otto voci* (Venice: Vincenti, 1596), a three-bass score in Antonio Mortaro's *Messa, salmi, motetti* (Milan: Tini & Besozzi, 1599), a short score in Giuseppe Guami's *Canzonette alla francese* (Venice: Vincenti, 1601), a full score in Benedetto Binago's *Coronae divinarum laudum* (Milan: Tini & Lomazzo, 1603), and a single bass staff in Leone Leoni's *Sacri fiori* (Venice: Amadino, 1606). *Bassi* could refer to a two- or three-bass score (common in

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[30] Imogene Horsley, "Full and Short Scores in the Accompaniment of Italian Church Music in the Early Baroque," *Journal of the American Musicological Society* 30 (1977): 466–99 at 466.
[31] Gregory S. Johnston, "Polyphonic Keyboard Accompaniment in the Early Baroque: An Alternative to Basso Continuo," *Early Music* 26 (1998): 51–64.
[32] Horsley, "Full and Short Scores," 469.

polychoral works) or just a single bass staff.[33] The consistency throughout all of these prints is that, with rare exception, the bass parts are all printed in separate partbooks.[34] This template persisted for the remainder of the seventeenth century, even for many collections for solo voice, which had become particularly fashionable by the 1630s.[35]

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[33] One of the few consistencies in the terminology of the early organ accompaniments is the use of *partitio, partitura,* and related terms to refer to parts which are barred up (partitioned).

[34] Prints that were issued as a single volume including the vocal parts and continuo scored up together were rare in the realm of sacred music in the early decades of the seventeenth century. The three collections of *Salmi passaggiati* by Giovanni Luca Conforti for solo soprano (1601), solo tenor (1602), and solo bass (1603) are exceptional for the use of this notational format. They were printed by the Roman firm Muti, which also had shown an inventive approach to the representation of music in Cavalieri's *Rappresentatione di anima e di corpo* in 1600. Another notational format that was used only rarely for keyboard accompaniments to sacred music was the *intavolatura* or keyboard score. The Rome-based engraver Simone Verovio included a keyboard *intavolatura* designated for harpsichord in several volumes of small-scale settings, including some of devotional music. These include the anthology *Diletto spirituale a tre e a quattro* (1586) and *Dialogo pastorale a tre* (1600) by G.F. Anerio. In these, the keyboard *intavolatura* appears on the same opening as the vocal parts as well an *intavolatura* for lute (Verovio's secular anthologies *Ghirlanda di fioretti musicali* of 1589 and *Lodi della musica* of 1595 use the same format). These prints, however, were not intended for liturgical use (as the designation of the *intavolatura* for "cimbalo" indicates).

[35] We find more diversity in the material presentation of secular music with basso continuo, in part because it was not as homogeneous as ecclesiastical music, as it included operas, oratorios, madrigals, and solo songs. Even the smaller-scale secular forms, though, required more creativity on the part of the printer, who had to decide how (or whether) to accommodate the different notation systems of the two types of instrument commonly used to play the continuo part in private settings, namely the lute and the harpsichord. Verovio's solution to this problem, described in the previous note, was as elegant as it was rare.

Figure 2.1. Notational forms of basso continuo parts in partbook sets.

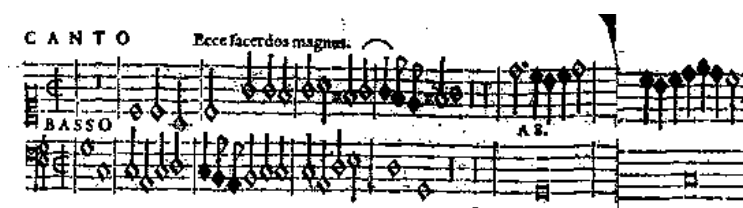a) single bass line[36]

b) two bass lines in score[37]

c) three bass lines in score[38]

d) full open score[39]

e) short score[40]

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[36] Excerpted from Giovanni Gabrieli, *Symphoniae sacrae . . . liber secundus* (Venice: Gardano/Magni, 1615).

[37] From Pietro Lappi, *Missarum octonis vocibus, liber primus* (Venice: Gardano, 1601 [vocal parts], 1602 [Spartitura]).

[38] From Costanzo Antegnati, *Liber XIIII, in quo habentur Missa Borromea, mottecta* (Venice: Gardano, 1603).

[39] From Victoria *Missae, Magnificat, motecta, psalmi* (Madrid: Flandrus, 1600).

[40] From Adriano Banchieri, *Concerti ecclesiastici a otto voci* (Venice: Vincenti, 1595).

Based on evidence from primary sources, the relationship between accompaniments notated on a single bass staff and those notated in short or full scores would be better construed in the sense that the former originated as a shorthand for the latter. Contemporary writers expressed diverse opinions on the advantage of one form over the other. Some praised the full score for its accuracy while others praised the single bass staff for its efficiency and legibility. Others expressed concern that the single bass staff encouraged organists with an inadequate knowledge of counterpoint and accompaniment to tackle music beyond their abilities, while later writers emphasized the importance of the ability to realize single bass lines as a skill required of organists. [41] All of this serves to reinforce the notion that scores and bass lines represented the same performance tradition. Gregory Johnston presents a different perspective on the issue in his valuable study of fully written-out keyboard accompaniments in the early seventeenth century. Johnston draws much needed attention to a type of source – the full score – that has been neglected in favor of sources that adhere more closely to the anachronistic notion of continuo. He conceives fully notated accompaniments as an "alternative" to basso continuo and observes that the former "[gave] way" to the latter in the first quarter of the seventeenth century. As discussed above, primary sources suggest that the concept of basso continuo in the early seventeenth century rather enfolded fully notated accompaniments. And while the appearance of fully written-out accompaniments did indeed diminish as the popularity of single-bass-line accompaniments grew in the early seventeenth century, it would be worth considering how the long coexistence of the two notational strategies in the second half of the sixteenth century might fit into this narrative.[42]

Yet another common method of classifying early continuo parts distinguishes them as figured or unfigured. This criterion is particularly unhelpful for the study of the early ecclesiastical concerto since figures are relatively rare in this repertoire and are largely

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[41] Adriano Banchieri famously differentiated between "organists" who "practice good playing from score and improvisation, and ... bassists who, overcome by sheer laziness, are content with merely playing [from] the bass." *Conclusioni nel suono dell'organo*, translated in Arnold, *The Art of Accompaniment*, 1: 81. Nonetheless, Banchieri took the practice of continuo seriously, as his writings on the subject attest (discussed above). Girolamo Diruta also expressed reservations about playing from bass lines. Arnold observes that "Diruta's conception of the ideal accompaniment is, evidently, that it should exactly reproduce the texture of the vocal harmony." Ibid.

[42] There is evidence to suggest that the bass-line accompaniments were in use as early as the 1560s. Davitt Moroney astutely notes that a lost 40-part work by Orlando di Lasso must have included a Bassus ad organum part in 1564 based on a reference to the work's "forty-one parts" in a letter from Maxilimian II to Albrecht V. Moroney, "Alessandro Striggio's Mass," 23n71. Given the monumental size of this work, we can only assume that the organ part was not a full score; much more likely, it took the form of a bass part notated on one or more bass staves. Moroney further speculates that the *bassus ad organum* was "an essential part" of the conception of other gigantic polychoral works from the sixteenth century, including Striggio's Mass and Thomas Tallis's 40-part *Spem in alium*. The earliest known sources for these works are manuscript copies from the seventeenth century. Ibid, 53.

confined to only one notational format of the many that early basso continuo took: the single bass staff. Due to the nature of the harmonic language in the early seventeenth century, figures are not as helpful as they are in later music. For music from the first decade or so of the century, the continuo player could deduce most harmonies readily from the bass line: most sonorities are what we now call root position chords, with occasional first inversions and 7-6 and 4-3 suspensions. The quality of the third is a pervasive ambiguity in some tonal contexts, and there is often no way of knowing whether or not to inflect the third in these instances from the organ part alone. In these and other cases of uncertainty, the organists relied on listening to the singers or consulting the vocal partbooks.

In sum, modern strategies for classifying early published accompaniments are shaped by an understanding of *basso continuo* as it existed in the late Baroque. Studies of the early ecclesiastical concerto have relied fundamentally on teleological inferences about basso continuo that have resulted in accounts of the beginning of continuo that contradict the evidence presented in primary sources. Common ways of classifying early accompaniments today, whether along the lines of "basso continuo" / "basso seguente", polyphonic accompaniment / "basso continuo," or figured bass / unfigured bass, describe the music more as an abstract text than as a culturally situated act. These artificial distinctions have contributed to the neglect of an attentive examination of basso continuo parts during the first decade of their printing. They have had the effect of marginalizing unfigured doubling parts (both of the "basso seguente" and full score type), which comprise the vast majority of continuo parts printed during this time. Approaching all these as different representations of essentially the same practice and art form is both simpler and more historically sympathetic.

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The Impetus for Printed *Basso Continuo* Parts

Basso continuo's life as a printed object began largely with commercial interests.[43] The earliest champions of printed basso continuo parts were printers, and occasionally

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[43] On the commercial nature of early sacred concertos, Lorenzo Bianconi, for one, notes that "statistically much more widespread and (hence) significant is the middle- to low-range performance bracket, as represented by provincial musical establishments, as also by the choirs of minor churches in the larger cities: the restricted vocal resources of these *cappelle musicali* find succour in an essentially consumer repertory of limited technical demands and wide circulation, frequently linked to the peregrinations of a variety of religious and clerical *maestri di cappella*, expert or not." Lorenzo Bianconi, *Music in the Seventeenth Century*, trans. David Bryant (Cambridgess: Cambridge University Press, 1987), 117. For a more extensive discussion, see Bryant and Quaranta, "Traditions and Practices."

composers, of an entrepreneurial spirit interested in widening the market for printed collections of polychoral music and other many-voiced settings. Printed continuo parts were born into a world of sacred printed music that in the late sixteenth century predominately comprised large, expensive prints of music for five or more voices from the Venetian firms Vincenti and Gardano, and the Milanese firm Tini. Printing these collections did not necessarily turn a profit. Of the dozens of *cappelle musicali* throughout the Italian peninsula, only a small minority had the numbers and skill to perform these works competently.[44] Middling choirs comprised a potential market for printed music that would be large, reliable, and perpetuating, if it could be tapped. As a new medium, printed *basso continuo* parts bridged this gap between product and market.

Evidence of the commercial impetus behind printing *basso continuo* parts can be found in the concerted collections themselves, beginning with the earliest known concerto print, Croce's *Motetti a otto voci*, published by Vincenti in 1594. The *continuo* part for the collection is entitled "Spartidura" and consists of a two-staff score reproducing the "seguente" bass for each of the two choirs. It contains a note from Vincenti to the "honorable virtuosi" for whom the booklet was intended. In the note, the printer makes it clear that he considered the innovative aspect of the *continuo* part to lie in the convenience it afforded its user:

> You have come to expect new inventions from me that help ease the path to the musical pieces for you, as with *intavolature, passaggi, and partiture*, of which I have already made a number of specimens, and I will continue to make them, as long as I see that you are served by them, and that you're happy with my work.[45]

The inclusion of this note in the Spartidura part for Croce's motets suggests that this was the first time that Vincenti had printed a basso continuo part. His comment "I will continue to make them, as long as I see that you are served by them" could be read as a prompt to his clients to let him know how they like it. We can infer from the note that Vincenti saw the Spartidura under the umbrella of technical "inventioni" he had issued, along with *intavolature, passaggi*, and (other) *partiture*, and which were designed to assist his consumers in mastering particular works.[46] Evidently, the Spartidura itself fell under the category of

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[44] Stanley Boorman argues that the print-runs for sacred music, especially music for large forces ("seven or eight voices") and special offices, were relatively small. See Boorman, "Thoughts on the Popularity of Printed Music in Sixteenth-Century Italy," *Fontes Artis Musicae* 48 (2001): 139-40.

[45] "Aspettate honorati Virtuosi da me continuamente nove inventioni per facilitarvi la strada alle fatiche, con Intavolature, Passaggi, & Paritdure: delle quali già ne ho fatte alquante sorte, & ne andrò tuttavia facendo, come vegga che voi ve ne serviate, & che vi sia grata l'opera mia."

[46] Vincenti might have been thinking of such publications as the two posthumous volumes of organ works by Sperindio Bertoldo, *Canzoni francese intavolate per sonar d'organo* and *Tocate, ricercari et canzoni francese intavolate per sonar d'organo ... nuovamente stampati* in *intavolatura*, that he had

partiture, a term Vincenti likely intended to refer generally to works appearing in barred-up mensural notation, perhaps especially works in score, rather than to basso continuo parts exclusively.[47] It is noteworthy that Vincenti did not articulate the specific nature of the "inventione" of the Spartidura.

This early continuo score must have been well received.[48] In the last years of the sixteenth century, basso continuo parts for at least fifteen more prints of ecclesiastical music were printed by Vincenti and two other firms that had been associated with Vincenti: Amadino, also in Venice, and Tini in Milan. Most were settings for five or more voices, by Banchieri, Croce, Josephus Gallus, Orfeo Vecchi, Lucretio Quintiani, and Giovanni Bassano, among others, as well as an anthology (details of the prints are listed in Appendix C). The production of concerted ecclesiastical music continued to grow steadily in the early years of the seventeenth century. By the end of 1605, at least eighty-six collections with basso continuo had appeared since 1594. Within another decade, concerto prints replaced *a cappella* prints as the standard issue for ecclesiastical music, and from 1625 onwards, very few sacred prints were issued without a basso continuo.[49]

The mass production of basso continuo parts for ecclesiastical music relieved organists who required such parts of the long, tedious hours they would otherwise have spent constructing their own scores or conflated basses. Evidently, organists came to rely on this convenience. Not only were newly composed ecclesiastical compositions published with a basso continuo part; music from earlier generations, previously issued without an organ part, was republished in new editions with a basso continuo (App. D lists single-author prints of this nature). In the first three decades of the seventeenth century, dozens of concerted

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issued in *intavolatura* in 1591 and Riccardo Rognoni's *Passaggi per potersi essercitare*, which he had published in 1592.

[47] Martin Morell interprets this passage differently, reading "delle quali..." as referring not to the "nove inventioni" in general, but to the "partidure" only. Assuming that Vincenti used the term "partidure" to refer only to basso continuo parts, Morell takes the note as evidence that this Spartidura was not the first basso continuo part published by Vincenti. This reading is certainly possible, if not the most straightforward. Less convincing, however, is Morell's explanation for the absence of any known basso continuo parts printed by Vincenti before 1594. Morell argues that Vincenti printed the Croce Spartidura years after 1594, despite the fact that this is the date given on the colophon of the Spartidura. Martin Morell, "The Performance of Giovanni Gabrieli's Vocal Works," *Music & Letters* 72 (1991): 516–17.

[48] The popularity of Croce's *Motetti a otto* is clear from its numerous reeditions. Six subsequent editions are partially extant, dating from 1596, 1599, 1603, 1607, 1615, and 1622. All were published by Vincenti save the last, which was published in Antwerp by the younger Pierre Phalèse in 1622. Organ parts survive for editions dating from 1607 and 1615. The title of Phalèse's edition specifies the inclusion of the organ part ("cum basso ad organum"). It is not clear whether the other known editions were issued with an organ part.

[49] Carter, "Music Publishing in Italy," 31.

anthologies appeared, often combining new music with refurbished works of sixteenth-century composers, including Merulo, Philippe de Monte, the Gabrielis, Palestrina, Lassus, and Clemens non Papa (App. E provides a list of such anthologies). They were issued by printers all over Europe, from Venice to Antwerp, and were instrumental in making old music accessible to new generations of organists and choristers.[50] Palestrina's works were especially well represented in concerted re-editions.[51] Alessandro Nuovoloni, editor of a concerted edition of Palestrina's Fourth Book of Masses for Four and Five Voices issued with a "Basso principale" in 1610, intimated that the availability of a basso continuo was a deciding factor in whether a work got performed. He noted that the organ part was so successful and "embraced by all" that compositions lacking this technology were simply not sung anymore.[52]

Transformed into concerti replete with a basso continuo part, music that would otherwise have been beyond the limitations of more modest *cappelle musicali* came within reach. For those invested in the commercial success of printed music, this was a boon. But for composers who were more concerned with artistic integrity, this democratization of their music was not always welcome. Among the skeptics was Giovanni Domenico Rognoni Taeggio, editor of an anthology of *canzoni* published in 1605.[53] Rognoni Taeggio was reluctant to include a continuo part for this print out of concern that it would make the music accessible to untrained or poorly trained organists incapable of playing from an open score:

> I thought of not printing this Partito, both because some would think that I had brought it to light so that the greater accessibility would give it greater reception; and because even the learned practitioners (*studiosi*) in this profession are becoming

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[50] These refurbished works often appeared alongside more current fare in such anthologies, as for example, Vincenti's *Motetti e salmi* of 1599 (the earliest basso continuo anthology), Michael Praetorius's *Musarum Sionar* (Nurnberg: Wagenmann, 1607) and the monumental volumes of the two *Promptuarii musici* series printed in Strasbourg in the 1610s and 20s, to name just a few of many.

[51] Palestrina's Fourth Book of Masses for Four and Five Voices (Venice: Gardano 1582) was republished with a basso continuo part by Alessandro Nuovoloni (Milan: Tini & Lomazzo, 1610). His Fourth Book of Motets for Five Voices (Rome: Gardano, 1583) was reissued with a basso continuo part in three separate editions, two of which appeared in the same year: RISM P725 (Venice: Raverius, 1608), P726 (Venice: Gardano, 1608), and P727 (Venice: Magni, 1613). His *Hymni totius anni* (Rome: Torniero & Donangelo, 1589) was reissued with a Bassus ad organum: RISM P740 (Rome: Soli, 1625). Palestrina's works were also included in numerous anthologies, most notably *Messe a quattro voci* (Rome: Soldi, 1619), which included Masses "Iste Confessor," "Sine Nomine," and "Papa Marcello." This anthology was reissued six times, in 1626, 1635, 1639, 1646, 1662, and 1689.

[52] "Questa Innentione [il Basso principale], come più facile, e commoda, è stata di modo tale abbracciata da tutti, che si lasciano hora da canto le compositioni, che tale commodità non hanno." *Basso prencipale co'l soprano del quarto libro delle messe a quattro e cinque voci … novamente fatto d'Alessandro Nuovoloni, organista* (Milan: Tini & Lomazzo, 1610).

[53] Giovanni Domenico Rognoni Taeggio, *Canzoni à 4. & 8. voci* (Milan: Tini & Lomazzo, 1605).

lukewarm towards printing, whereas at the beginning they found it practical and drew much fruit from it. But some friends told me that this work would be played regularly, and that there was a need for the Partito; thus, to please them, I've printed it, knowing that in any case the Partito is better than the Basso continuato.[54]

Archangelo Borsaro was similarly apologetic about the inclusion of the Parte di basso in his *Concerti ecclesiastici* (Venice: Amadino, 1605). The composer wrote that he took pains to "always include a bass part" even though it might seem superfluous to others; nevertheless, those who play such instruments as the "trombone as well as the lute" would understand that the inclusion of this part is "not outside of reason," hence he felt it was reasonable to include it.[55] Bastiano Miseroca's tone is similar in a note to the readers which appears in the Parte continuata for his *Messe, vespro, motetti, et letanie a otto voci*:

> It should not appear superfluous to you that I have placed the "parte continuata per l'organo" before you, because even though it is not necessary, it will at least be helpful, and I will have satisfied myself.[56]

Major composers could also be sheepish about the inclusion of a basso continuo part. Regarding his *Cantiones sacrae quatuor vocum, cum basso ad organum* (Freiberg:

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[54] "Havevo pensato di non dar' alle stampe questo Partito, sì perche alcuni non pensassero ch'io lo dassi fuori, accioche con questa commodità l'opera havesse maggior ricapito; sì perche anco gli studiosi di questa professione divengono con questa commodità tepidi, ove nel partire si fanno prattici, & ne cavano molto frutto: Mà alcuni amici m' hanno detto che questa opera ordinariamente sarà suonata, & che vi fà bisogno del Partito; onde per compiacerli l'hò dato fuori, conoscendo che in ogni caso meglio è il Partito, che il Basso continuato." This note "alli virtuosi Organisti" prefaces the organ booklet (Partito). Rognoni Taeggio, *Canzoni à 4. & 8. voci*. I gratefully acknowledge the assistance of Jennifer MacKenzie with the translation of this passage. James Ladewig has edited a modern edition of the collection, which appears as vol. 16 in the series Italian Instrumental Music of the Sixteenth and Early Seventeenth Centuries (New York: Garland, 1992).

[55] "Havendo io altresi havuto in tal compositione questa particolar cura, & diligenza, che (benche il Concerto sii à una, due, & più voci) d'introdurvi sempre una parte di Basso, ad Altri forsi parerà superfluo, Nondimeno à chi si diletta di concertare con Trombone, & Liuto ancora, (come di questo n'hà V. S. particular diletto & conoscenza) non sarà (dico) cosa punto fuori di raggione, anzi à mio giuditio, ragionevolmente introdottavi." Borsaro's decision to refer specifically to the lute may have been on account of the dedicatee, Andrea Moschino, who played the lute.

[56] Bastiano Miseroca, *Messe, vespro, motetti, et letanie a otto voci* (Venice: Amadino, 1609). "Non dovrà parere alle SS. VV. superfluo ch'io habbi premesso alla parte continuata per l'Organo questo mio poco raggionamento perche se bene non è necessario sarà almeno giovevole, & havrò satisfatto a me stesso."

Hoffmann, 1625), Heinrich Schütz recounted that the publisher, "thinking that this slight work would be more agreeable [to the public], wrested this basso continuo from me."[57]

With few exceptions, the composers who positioned themselves at the vanguard of basso continuo during the first decade of the endeavor were of middling repute. None of the works of Giovanni Gabrieli, for instance, were printed during his lifetime with a basso continuo part.[58] Monteverdi's first collection to be published with a basso continuo part did not appear until 1605, when his Fifth Book of Madrigals was issued with one, without any comment from the composer about the new part.[59] A rare first-rate composer actively invested in the endeavor was Tomás Luis de Victoria, and even in this case, the primary incentive was financial rather than artistic. Like the Venetian and Milanese printers, the entrepreneurial Victoria saw basso continuo as a commodity. His collection of Masses, motets, psalms, and a Magnificat from 1600 was published with an organ part labelled "in hoc libro ad pulsandum in organis" by the printer Flandrus in Madrid, the earliest concerto print issued outside of Italy. The collection was unusual for Victoria in other ways: his previous publications had consisted mostly of settings for few voices along with a small number of polychoral works; this collection, however, consisted of the reverse: a majority of polychoral works with a small number of settings for few voices. Noel O'Regan notes that

> Victoria was taking a risk in publishing so much music for eight and twelve voices in his 1600 print... People might well have been put off buying the 1600 print if they thought they had to have eight or twelve singers to perform it, and so he is providing an alternative for churches that had fewer singers, but at least employed an organist.[60]

Clearly Victoria was aware of the potential of basso continuo to mitigate the problem of the large human resources that the works of the collection demanded. In fact he used it as a selling point in a letter accompanying a copy of the *Missae* that he sent to the Jaén Cathedral Chapter in 1601, writing

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[57] Quoted in translation in Johnston, "Polyphonic Keyboard Accompaniment," 56. The insertion is Johnston's.

[58] Handwritten transcriptions of many of his sacred works in German organ tablature are extant, and presumably some of these were used for accompaniment. The list of works in David Bryant's *New Grove* article on Giovanni Gabrieli is meticulous in including manuscript intabulations of vocal works. David Bryant, "Gabrieli, Giovanni," *Grove Music Online. Oxford Music Online* (Oxford University Press), accessed June 23, 2015, http://www.oxfordmusiconline.com/subscriber/article/grove/music/40693.

[59] Claudio Monteverdi, *Il quinto libro de madrigali a cinque voci ... col basso continuo per il clavicembalo, chittarone od altro simile istromento, fatto particolarmente per li sei ultimi, et per li altri a beneplacito* (Venice: Vincenti, 1605).

[60] Noel O'Regan, "What Can the Organ Partitura," 2.

> this particular book for the organ ... is produced for organists in the case where there are not four voices present or just one who sings with the organ – similarly the [triple--choir] Mass and Magnificat [can be sung] with voices, organ and instrumentalists.[61]

Confident of the appeal of his *Missae* when equipped with a basso continuo, Victoria paid for the press run entirely himself. Evidently it paid off; as Jane Bernstein notes, Victoria's income from this one print equaled "his annual income from all his benefices."[62]

Material and Discursive Discrepancies

As a book, the early concerto was anything but coherent. As noted above, a striking divide is apparent between the vocal partbooks and the basso continuo parts that make up these prints. Here the partbook – well-established as a mode of conveying a single vocal part to a polyphonic composition – was made to accommodate the basso continuo part, the printed forms of which were only just beginning to be forged. The gap is not only notational but cultural. As book types, the partbook set and the organ part booklet signified distinct (though overlapping) musical professions and, correspondingly, carried their own set of performative functions.

Title pages

Surveying concerto prints from the decade or so following 1594, it is apparent that adding a basso continuo part to the standardized forms of the partbook set was not seamless. The organ parts are generally homelier and tend to include more errors in comparison to the vocal partbooks. The frequent errors would further suggest the limited role of the composer in preparing the basso continuo part.[63] The title pages of organ parts often differ considerably

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[61] Quoted in ibid. The translation and insertions are O'Regan's.

[62] Jane A. Bernstein, "Financial Arrangements and the Role of Printer and Composer in Sixteenth-Century Italian Music Printing," *Acta Musicologica* 63 (1991): 51-52. See also Robert Stevenson, *Spanish Cathedral Music in the Golden Age* (Berkeley: University of California Press, 1961), 368. For two instances of Victoria having gifts of his partbooks refused, see Jane A. Bernstein, *Music Printing in Renaissance Venice: the Scotto Press, 1539-1572* (New York: Oxford University Press, 1998), 142 and 150.

[63] Such is John Steele's assessment of the case of a reprint with *basso continuo* of a collection by Peter Philips: "There are rather too many misprints for comfort, untouched by hand correction in the surviving exemplars (unlike the vocal parts, which do contain a few such corrections). This suggests carelessness either at the copy preparation or proof-reading stages, or both. On the other hand, the vocal parts, while not impeccable, maintained a very high standard of accuracy, especially in such finicky matters as text underlay. A plausible explanation for all this might be that Philips was as reluctant as Schütz to allow publication of an expedient crutch that would allow lamed performances of his carefully-wrought polyphony, but was eventually persuaded or overridden by an insistent

in terms of layout, decoration, and wording from those of the vocal partbooks.[64] The degree of variation between the title pages for Luigi Balbi's *Ecclesiastici concentus* (Venice: Raverius, 1606), which are reproduced in Figure 2.2, is not uncommon among early concerto prints. Here the titlepage of the vocal partbooks is outlined with a border decorating a Latin title, while the titlepage of the organ booklet contains only a segment of the same border, at the top of the page, above an Italian title. It is likely that such differences are the result of the organ booklet being issued separately from the vocal partbooks, perhaps later in the calendar year.

The language discrepancy in the Balbi title pages occurs in several other early concerto prints, a selection of which are listed in Table 2.1. Most often, the titles of the vocal partbooks are in Latin and those of the organ parts are in Italian, as in the Balbi print. An exception is the Sicilian print of Vincenzo Gallo, which employs Italian titles for the vocal partbooks while the basso continuo title is in Spanish. The language discrepancy between the different components of these prints brings to mind the better known, if somewhat different, case of the publication history of Orlando di Lasso's "Opus 1" in 1550s Antwerp by Susato. Whereas the first issue of the first edition, the second edition, and third edition all appear under the French title *Le quatoirsiesme livre a quatre parties contenant dixhuyct chanson italiennes...*, the second issue of the first edition bears the title Italian title *Il primo libro dovesi contengono madrigali....* While this case does not involve a basso continuo part, it shows a printer manipulating the language of a title as part of an effort to reach different markets.[65] In the case of the bilingual concerto prints, the discrepancy in language represents something slightly different: it reflects the different functions of the vocal partbooks and continuo booklet (discussed further below).

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publisher to allow a hack to prepare the continuo parts." "Continuo Accompaniment for Full Voices: Some Explanations, Difficulties and Embarrassments in the Music of Peter Philips," in *Aspects of Keyboard Music: Essays in Honour of Susi Jeans on the Occasion of Her Seventy-Fifth Birthday*, ed. Robert Judd (Oxford: Postif Press, 1992), 145.

[64] An idea of the frequency with which the titles on organ partbooks differed from their vocal counterparts can be gleaned from browsing the entries in Jeffrey Kurtzman and Anne Schnoebelen, *A Catalogue of Mass, Office, and Holy Week Music Printed in Italy, 1516–1770*, JSCM Instrumenta 2; http://www.sscm-jscm.org/jscm/instrumenta_02/catalogue/, accessed January 27, 2014.

[65] See Kristine Forney, "Orlando di Lasso's 'Opus 1': The Making and Marketing of a Renaissance Music Book," *Revue belge de musicologie* 39/40 (1985/1986): 33-60.

Table 2.1. "Bilingual" early sacred concerto prints.

Title of vocal partbooks	Title of organ partbook
Costanzo Antegnati, *Liber XIIII, in quo habentur Missa Borromea, mottecta cantionesque gallicae tribus choris concinendae* (Venice: Gardano, 1603)	*Spartitura de bassi dei concerti a tre chori*
Giovanni Domenico Ripalta, *Missa, psalmi ad vesperas, Magnificat, motecta et psalmorum modulatines qui octonibus vocibus concinuntur* (Milan: Tradate, 1604)	*Partidura de bassi della messa...*
Costanzo Porta, *Psalmodia vespertina omnium solemnitatum octo vocibus decantanda . . . cum quattuor Canticis B. Virginis itidem octo vocibus concinnendo* (Venice: Gardano, 1605)	*Il basso general per l'organo, delli salmi a otto voci*
Luigi (Alviso) Balbi, *Ecclesiastici concentus canendi una, duabus, tribus, & quatuor vocibus, aut organo, aut aliis quibusvis instrumentis eiusdem generis, & alii quinque, sex, septem, & octo, tum ad concertandum, tum ad vocibus canendum accommodate* (Venice: Raverius, 1606)	*Partidura delli concerti ecclesiastici a una, due, ... otto voci, per sonare nell'organo o altri instrumenti*
Vincenzo Gallo, *Salmi del Re David che ordinariamente canta Santa Chiesa ne i vesperi ... libro primo a otto voci, con il suo partimento per commodita degl'organisti* (Palermo: Maringo, 1607)	*Partimento de los Salmos de Visperas a dos choros a ocho vozes*
Claudio Merulo, *Misse due, cum octo, et duodecim vocibus concinende, additeque lytaniae BMV octo vocum, cum parte organica* (Venice: Gardano, 1609)	*Partimento de bassi per l'organo*
Sigismondo d'India, *Novi concentus ecclesiastici binis, ternis vocibus coninendi* (Venice: Gardano, 1610)	*Basso continuo delli concerti ecclesiastici a due & tre voci*

The disjunction between the basso continuo part and vocal partbooks is further suggested by the lack of acknowledgement of the basso continuo in the titles given on the partbooks. Of the eighty-six prints of ecclesiastical concertos published prior to 1606 listed in Appendix C, only thirty-eight (less than half) have titles that refer to the basso continuo part.[66] Of the forty-three prints in which the basso continuo part is not mentioned in the

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[66] Five prints are not included in the tally. No vocal partbooks survive for two prints, the Second Book of Motets for Five and Eight Voices by Guglielmo Arnone (1599) and the First Book of Motets for

titles of the vocal partbooks, five are cases in which the organ part was published in a calendar year later than the vocal partbooks. This could explain the absence of a reference to the basso continuo in the vocal partbooks of such prints as Orfeo Vecchi's *Psalmi integri in totius anni solemnitatibus* of 1596 (the Basso principale da sonare appeared in 1598), Giovanni Croce's *Vespertina omnium solemnitatum psalmodia octonis vocibus decantanda* of 1597 (the Basso per sonare of 1601), Giovanni Bassano's *Motetti per concerti ecclesiastici a 5, 6, 7, 8, & 12 voci* of 1598 (the Bassi per l'organo of 1599), Antonio Mortaro's *Psalmi ad vesperas, triaque cantica Beatae Virginis, octo vocibus* of 1599 (the Baritonantium divisio pro organi pulsatore of 1603), and Pietro Lappi's *Missarum octonis vocibus liber primus* of 1601 (the Spartitura de' bassi appeared in 1602). [67]

An alternative explanation for the physical discrepancies between the vocal partbooks and the organ part of early concerto prints is provided by Martin Morell.[68] Morell argues that an organ part could be printed years after the publication date indicated on the colophon and that this stamped date cannot be taken at face value: publishers keen to clearly identify the organ part with the previously issued collection for which it was intended may have regularized the publication dates as a matter of consistency. Morell cites the Spartidura for Croce's 1594 collection of Motets for Eight Voices to illustrate such a scenario. While the colophon of the Spartidura is dated 1594, Morell argues that the printer Vincenti printed it "separately at some later time, and backdated it to 1594" to identify the Spartidura as belonging to the motet collection.[69] As evidence, Morell points to physical discrepancies between the Spartidura and the vocal partbooks, including the rendering of the date (on the Spartidura it appears as MDXCIV, whereas on the vocal partbooks it is MDXCIIII), the lack of signature marks in the organ partbook (compared to marked signatures in the vocal partbooks), the inclusion of an organ part for "only thirteen out of the eighteen pieces in the collection," and a publisher's note included in the organ part that suggests that Vincenti had already issued organ parts for a number of prints of polyphonic vocal music.[70]

Five Voices by Orazio Nantermi (1601). The wording of the titles of these prints is not known. The remaining three prints are the three collections of *Salmi passagiati* by Luca Conforti (1601, 1602, and 1603), all of which are presented as a single score with the continuo part.

[67] Full publication information for these prints appears in Appendix C.

[68] Martin Morell, "The Performance of Giovanni Gabrieli's Vocal Works," *Music & Letters* 72 (1991): 516-17.

[69] Ibid., 517.

[70] Ibid., 516-17.

Figure 2.2. Luigi Balbi, *Ecclesiastici concentus* (Venice: Raverius, 1606), titlepages of the Altus partbook and Partidura.
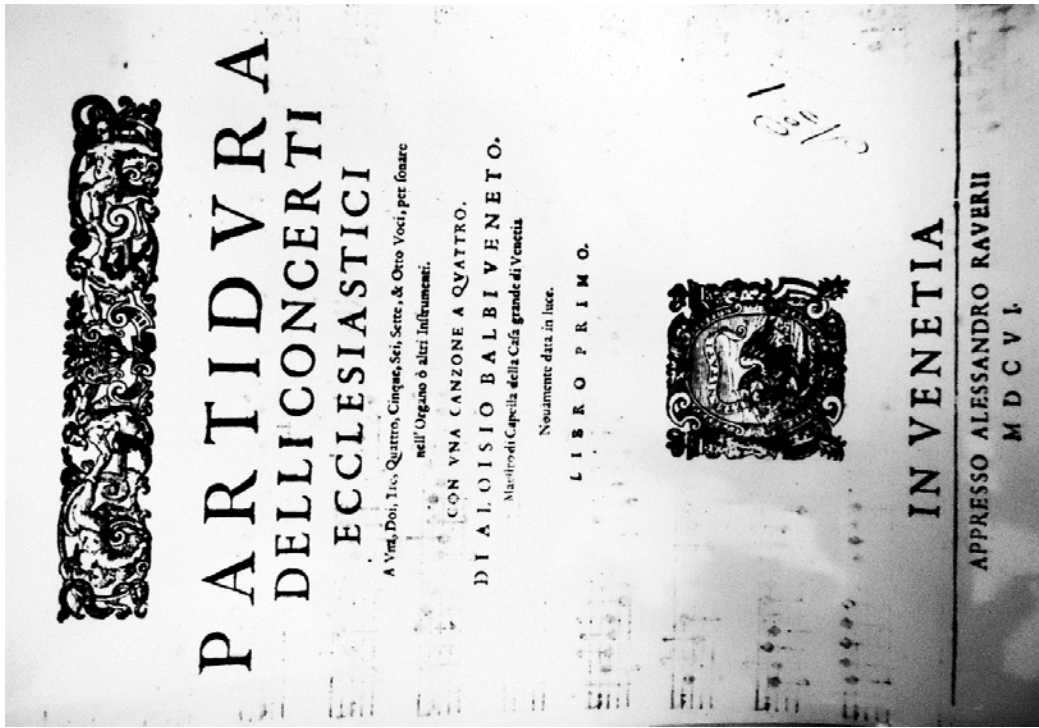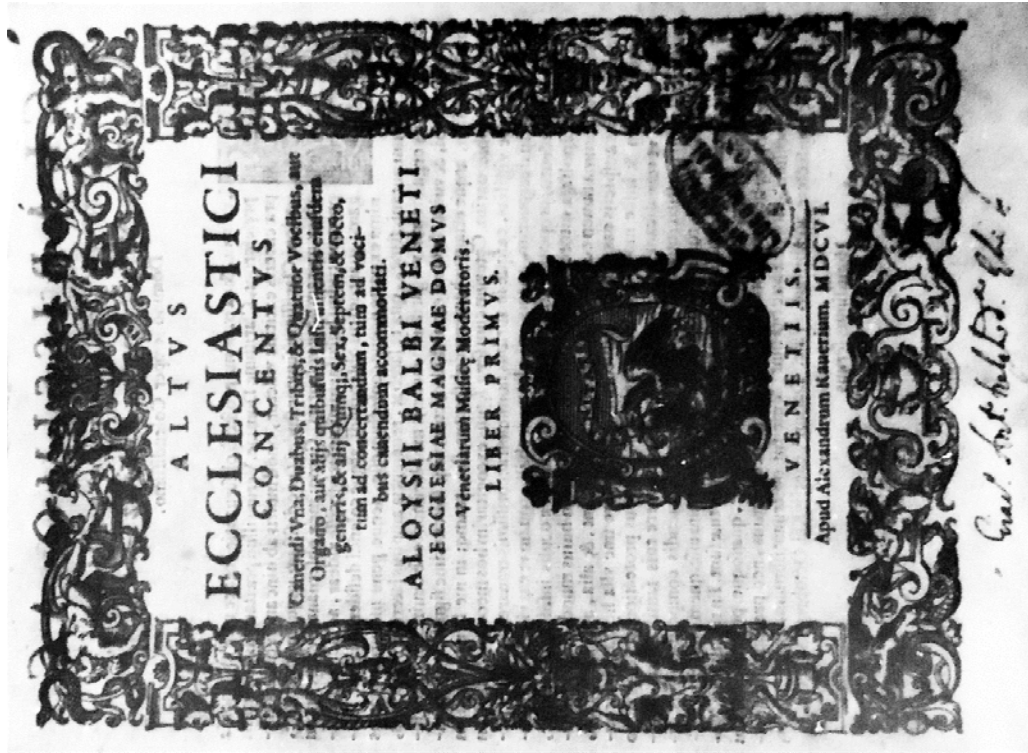
While Morell's hypothesis is plausible, it does present some problems. For one, the notion that the publication date of a printed work served as a meaningful identifier of that work is anachronistic. Citations of printed volumes of music in inventories and other archival documents from the early seventeenth century refer to them by title and composer, but normally not by year of publication.[71] As noted above, there are cases in the 1590s in which a delay between the publication of a print of polyphonic vocal music and the issue of an organ part for it is reflected in the publication dates imprinted on the respective volumes. Further, there are a number of prints from the 1590s and the first decade of the 1600s that are similarly marked by discrepancies in the title pages of the vocal and organ partbooks, yet the titles on the vocal partbooks refer explicitly to the organ partbook. Such is the case of Pompeo Signorucci's *Salmi, falsobordoni e motetta a tre voci … con il basso continuato per maggior commodità de gli organisti* (Venice: Vincenti, 1603). As Figure 2.3 shows, the titlepage of the Canto (and other vocal partbooks) differs in obvious ways from the titlepage of the organ partbook. The borders and the shape and size of the central image are different. So too are the placement of the part name ("Canto" appears within the border whereas "Basso per sonar nell'organo" appears below the border) and the relative size of the part name and title. The most direct challenge to Morell's argument is presented by the rendering of the publication date: on the vocal partbooks, the date appears as MDCIII, whereas on the organ partbook it is rendered 1603. As for the lack of signature marks in the Spartidura for Croce's 1594 motets, the disjunction of signature-marks between the vocal partbooks and organ partbooks is commonplace in early printed collections of concertos. Organ parts for concertos from the first quarter of the seventeenth century frequently have their own sequence of signature marks, beginning with A1, even when the pages of the corresponding vocal partbooks form a continuous sequence of signature marks (e.g., the canto has signature marks beginning with A1, the tenor with B1, the alto with C1, the basso with D1, and the organo starts a new series with A1).[72]

The difference in the general appearance of basso continuo parts compared to their corresponding vocal partbooks, the linguistic code-switching of their titles, and the absence of acknowledgement of the basso continuo part in the vocal partbooks suggest that the different booklet types brought together in the concerto print performed different functions.

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[71] For example, very few (if any) of the works appearing in the 67 indices and inventories of printers and booksellers in the sixteenth to eighteenth centuries transcribed by Oscar Mischiati in *Indici, cataloghi e avvisi degli editori e librai musicali italiani dal 1591 al 1798* (Florence: Leo S. Olschki, 1984) are identified by date. In the Vincenti stock lists, for example, the dates of the prints are absent.

[72] In some cases, the parallel systems of signature marks can be explained by a difference in paper size (e.g., the vocal parts are printed in quarto and the organ part in folio) or the length of the collection (e.g., the organ part encompasses signatures A through Xx). In other cases, each partbook is issued with its own series of signature marks (i.e., the Canto, Alto, Tenor, Basso, and Organo all begin with A).

Specifically, the vocal partbooks constituted an object for presentation and comprised fully the musical work – without the basso continuo. The basso continuo part, meanwhile, served as a sort of accompanying instructional manual for the work. Accordingly, in general, there was less concern given to the finer details of its appearance, its inclusion was not advertised within the work itself, and any prose within it was written in a straightforward, vernacular idiom for the practitioners for whom it was exclusively intended.

Dedication Letters

The notion of the basso continuo part of a sacred concerto print as a borderline component of the work is further supported by the paratexts – the dedications, prefaces, and other notes – contained in the booklets of the concerto print. The treatment of the dedication letter is particularly revealing. Though there have been studies devoted to the dedications and other paratexts of music prints and manuscripts, I am not aware of any that address the issues of the pervasive, though unique, case of the concerto print.[73] Among concerto prints published prior to 1606 containing a dedication letter, it is far more common for the letter to be left out of the basso continuo part than it is for it to be included in this part. This is telling. The dedication letter was paramount to a vital performative function of the book, as an offering from client to patron within a gift economy. The convention of leaving the dedication letter off of the basso continuo part signals that the part was not considered a part of the musical work as a public entity. To the parties involved in the printing of concerto collections, the cultural signification of the organ part was one that suggested it was an ephemeral object intertwined with the subjectivity of anonymous organists – artisan-like professionals whose proficiency in the written aspects of music varied considerably. As such, the organ part was beyond the normal jurisdiction of public written discourse.

There are a small number of prints in which the organ part contains a dedication different from that in the vocal partbooks. A particularly interesting case is *Liber XIIII* (Venice: Gardano, 1603) of famed organ builder Costanzo Antegnati, a collection containing a Mass setting, motets, and textless canzonas for triple choir.[74] All twelve partbooks for the print contain a dedication letter addressed to Cardinal Federico Borromeo, Archbishop of

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[73] See *"Cui dono lepidum novum libellum?" Dedicating Latin Works and Motets in the Sixteenth Century*, Ignace Bossuyt, Nele Gabriëls, Dirk Sacré and Demmy Verbeke, eds. (Leuven: Leuven University Press, 2008), and Demmy Verbeke, *Latin Letters and Poems in Motet Collections by Franco-Flemish Composers (c.1550-c.1600)* (Turnhout: Brepols, 2010).

[74] Other examples of concerto prints featuring a difference in dedicatee between the vocal partbooks and organ part include Orfeo Vecchi's *Motectorum quae in communi sanctorum quatuor vocibus concinuntur liber primus* (Milan: Tradate, 1603) (with vocal partbooks containing a dedication to Francisco Bernardino Cassinae Baroni de Boulers and the organ Partitio to Antonio Goretto) and Giovanni Antonio Cangiasi's *Sacrae cantiones tribus vocibus concinendae* (Milan: Tradate, 1607), in which the dedication in the vocal partbooks is addressed to Joanni Lussio Subsylvano, while in the Partitio it is addressed to Francesco Trevano.

Figure 2.3. Signorucci, *Salmi, falsobordoni* (Venice: Vincenti, 1603), titlepages of Canto II and Basso per sonar.
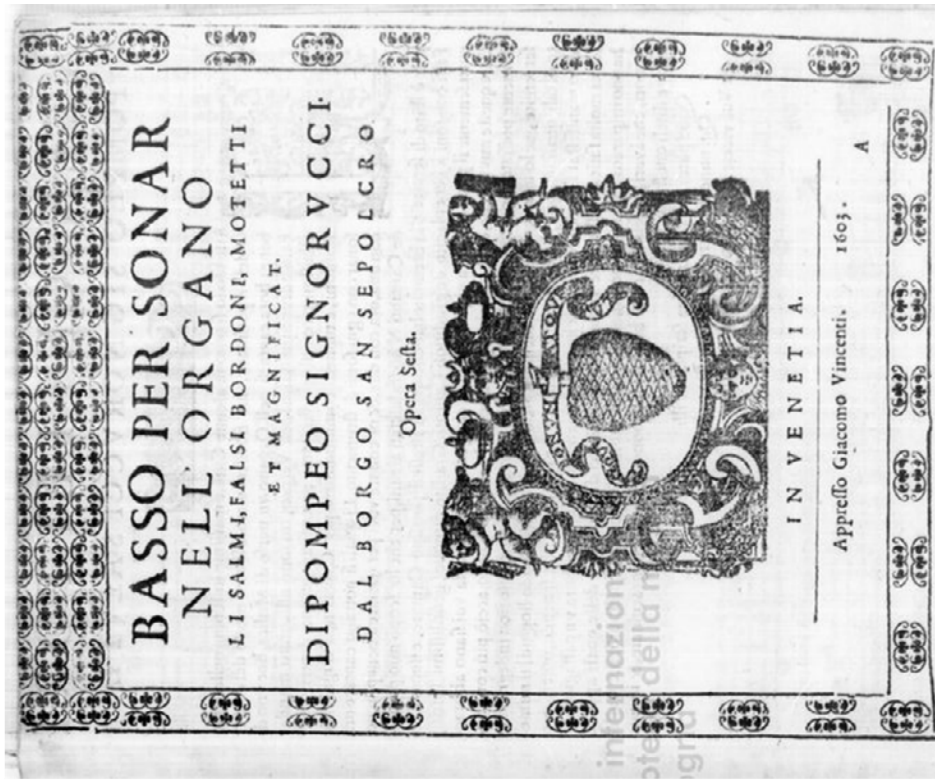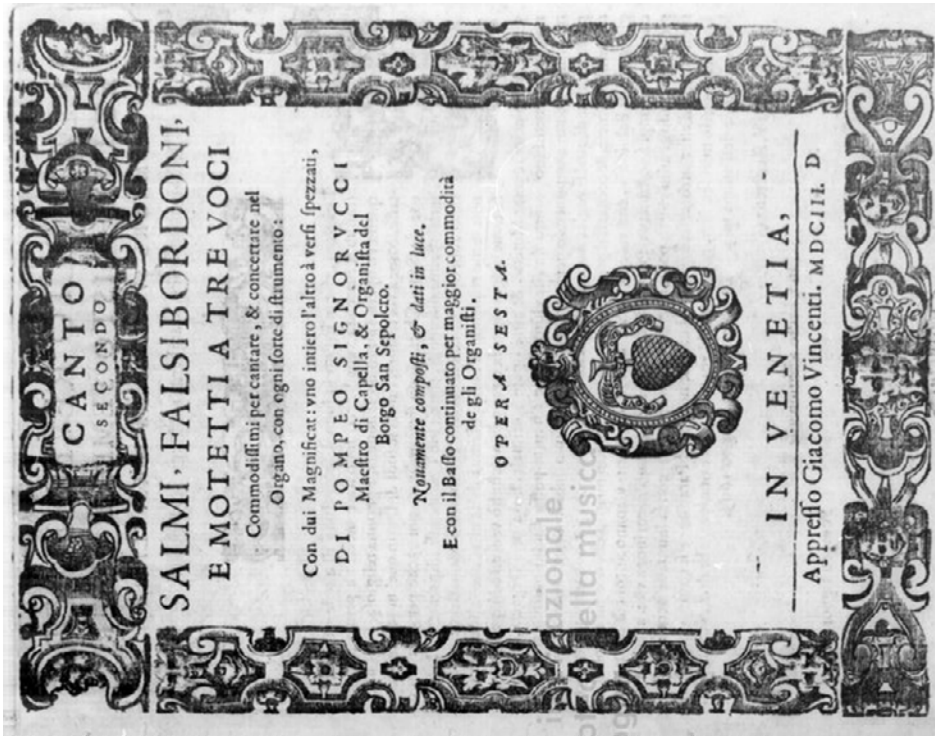
Milan, and signed by Antegnati. It is written in Latin using a formulaic style that one would expect of a dedication to one of Borromeo's stature and reveals little about the music in the collection. The organ part for this collection, however, is dedicated not to the Cardinal but to Carlo Battezzi, a young pupil of Antegnati, who is credited (under the spelling "Baltezzi") as the composer of two compositions in the collection.[75] The dedication letter is written in Italian and provides interesting glimpses of Antegnati's attitude towards the Spartitura and the relationship between master and pupil. Of the Spartitura, Antegnati writes:

> Here is the *partitura* of my *Concerti*, which I discussed with you many times that it would bring as much relief to organists, from the moment they would have a copy, as would a loyal companion to wayfarers.[76]

The notion of the basso continuo part as a guide is echoed by other writers. Aurelius Ribrochus (discussed further below) referred to the basso continuo as a "propitious star" (*dextro... sydere*), Adriano Banchieri referred to it repeatedly as "surest guide" (*sicurissima guida*).[77] In *Conclusioni nel suono dell'organo* Banchieri posed the rhetorical question, " In plainsong, does [the organ] not guide the chorus correctly and avoid any scandal that might happen in finding the notes in succession?"[78] The organ accompaniment prevented the voices from going astray. As Banchieri noted, "accidents sometimes happen when the voices sing without the organ and take notes higher or lower than the mode, so that one does not hear the sweetness that one searches for and needs."[79] Agazzari noted that organs and other continuo instruments "guide and support the whole body of voices and instruments in the said *concerto*."[80] Praetorius called it a "'guida,' that is, leader, escort, or guide."[81] In the article announcing the discovery of this collection, Claudio Sartori noted that he had no other

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[75] The motet *Ego sum qui sum* and the canzona *La Solda* are attributed to Battezzi.

[76] "Eccola Partitura di miei Concerti, della quale io piu volte n'hò ragionato con voi c'havrebbe alli Organisti apportato tanto all[e]viamento, qual'hor innanti n'havessero copia, quanto alli caminanti una fidata scorta."

[77] The phrase occurs numerous times in Banchieri's *L'organo suonarino*. Instances can be found on pp. 1, 2, 3, 44, 70, and 112.

[78] Lee Raymond Garrett, "Adriano Banchieri's *Conclusioni nel suono dell'organo* of 1609: A Translation and Commentary" (DMA diss., University of Oregon, 1972), 114.

[79] Ibid.

[80] "Come fondamento sono quei, che guidano, e sostengono tutto il corpo delle voci, e stromenti di detto Concerto: quali sono, Organo, Gravicembalo &c. e similmente in occasion di pochi, e sole voci Leuto, Tiorba, Arpa &c." Agostino Agazzari, *Del sonare sopra 'l basso con tutti li stromenti e dell'uso loro nel conserto* (Siena: Falcini, 1607), 3.

[81] "Guida, Dux, Führer, GleitsMann, or Wegweiser." The translation is Jeffrey Kite-Powell's. Praetorius, *Syntagma musicum III*, trans. Jeffrey Kite-Powell (Oxford: Oxford University Press, 2004), 133.

information about Battezzi.[82] In the dedication itself, Battezzi is identified as the organist of S. Pietro Olivaro, a parish church in Brescia, and Antegnati intimates that Battezzi assisted him while performing his duties as organist of the Cathedral of Brescia.[83] In her archival research on Brescian families, Barbara Bettoni makes note of a Carlo Battezzi who is identified as an outfitter for falconry ("fabbricante fornimenti e cappelletti per astori e sparvieri") in a document from 1640.[84] Falconry outfitting was evidently the Battezzi family's trade.[85] An inventory of Battezzi's house paints the picture of a relatively well-to-do artisan, whose possessions included a lute and spinet.[86] Yet since the Battezzi family were *meccanici*, they were excluded from the council of Brescia: their name does not appear among the 220 families who were members of the city council between 1580 and 1650.[87] In short, the dedication to the young Battezzi seems to be motivated not so much by Antegnati's desire for patronage as the friendship between master and pupil.

Antegnati's dedication of the Spartitura to a friend of middling status, manifest in a letter that discusses the utilitarian quality of the score shows similarities to dedications in certain prose treatises. The relationship between the organ part and vocal partbooks of printed concertos does not have a clear parallel in non-musical publications. Still, there are a few situations in which multiple dedications are attached to the same work, sometimes in multiple languages. In a famous case, Leon Battista Alberti dedicated the Latin and Italian versions of his manuscript treatise *De pictura* / *Della pittura* (1435/1436) to different people. The Latin version was dedicated to potential patron Giovanni Francesco Gonzaga. In the letter to Gonzaga, Alberti "is quite overtly seeking patronage" and, accordingly, he takes advantage of the opportunity to flatter the prince and promote his own abilities.[88] The letter

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[82] "È una dedica in italiano a un giovane allievo dell'Antegnati, il signor Carlo Battezzi (die pero nell'interno del volume sarà chiamato Carlo Baltezzi), del quale sino ad oggi non si aveva notizia." Claudio Sartori, "L'archivio del Duomo di Piacenza e il Liber XIIII di Costanzo Antegnati," *Fontes artis musicae* 4 (1957): 30.

[83] "Voi, che sempre vi diletta l'imparare, benche hoggimai nel sonare habbiate fatto tanto profitto in questa vostra età, che pochi o nissuno vi camina innanti, come havete mostrato ne' vostri Concerti, che piu volte si sono fatti nel Duomo, per aiuto mio...." Antegnati was afflicted with paralysis later in life, which affected his playing. By 1605, he could no longer play without making many mistakes, according to Cathedral authorities, who tried to dissuade Antegnati from continuing in his duties. Paolo Guerrini, "Gli organi e gli organisti delle cattedrali di Brescia in alcuni documenti del comune, della fabbrica e del capitolo," *Note d'archivio per la storia musicale* 16 (1939): 219-222.

[84] Quoted in Barbara Bettoni, *I beni dell'agiatezza: stili di vita nelle familigie bresciane dell'età moderna* (Milan: FrancoAngeli, 2005), 134.

[85] Ibid, 37.

[86] Ibid, 134, 290.

[87] Joanne M. Ferraro, *Family and Public Life in Brescia, 1580-1650* (Cambridge: Cambridge University Press, 1993): 61, 228-230.

[88] James A.W. Hefferman, "Alberti on Apelles: Word and Image in 'De Pictura'," *International Journal of the Classical Tradition* 2 (1996): 354.

says next to nothing about the content of the treatise. As one would expect, it is written in a formal tone, appropriate for Gonzaga, the Marquis of Mantua. In stark contrast, the Italian version was dedicated to a friend of Alberti's, the architect Filippo Brunelleschi, whose social standing was below the author's. This letter is written as a discourse between two craftsmen. Alberti refers to other artisans Donatello, Lorenzo Ghiberti, Luca Della Robbia, and Masaccio, provides a brief synopsis of the treatise, and praises Brunelleschi while asking for his input on how the text might be improved. The tone is more informal than in the Latin letter to Gonzaga, and Alberti addresses Brunelleschi with familiar pronouns. Antegnati's *Liber XIIII* presents an intriguing analogy, with its dedications to Borromeo and Battezzi, though with a difference. Whereas Brunelleschi presented each dedicatee with a tailor-made edition of *De pictura*, Antegnati dedicated different components of *Liber XIIII* to different people.

Prefaces

The earliest writings on basso continuo appeared as prefaces to concerto prints. The best known of these, the preface in Viadana's *Cento concerti ecclesiastici,* is a focal point in scholarship on the emergence of *continuo*. Viadana's preface consists of an introductory section, in which the composer discusses his objective and inspiration for the collection, followed by a list of twelve practical points for performance, most of which are directed towards the organist. It gives the impression of a church musician more interested in the solution that a large collection of easy, small-scale, accompanied pieces for use in church provides to average choirs than in the "invention" of basso continuo itself. As we might expect of a pioneering attempt to formulate a craft practice into written knowledge, the logic of the ordering of Viadana's list of twelve directives is not entirely obvious: points one and eleven are directed to singers, points three and six give advice to the organist on how to prepare his or her part before attempting to play, while the other points provide recommendations in varying degrees of detail on diverse aspects of the performance of the organ part, including the different roles of the two hands, effective use of register, appropriate registration (the combination of organ stops), when to play "un tasto solo" instead of chords, the importance of paying attention to the accidental signs indicating the quality of the third, and the permissibility of parallel fifths and octaves (in the organ part only). Viadana's idiosyncratic selection of information is also symptomatic of a craft that has not been established as a subject of discourse. He does not, for example, bother to explain something as essential as how to determine the correct harmony to play over a given note, instead presuming that his readers either already know how, or that they can figure it out without needing explicit verbal instructions.

Further contributions to the public discourse on basso continuo followed Viadana's preface, in the form of additional paratextual writings in concerto prints, as well as sections within compendia on organ playing and practical aspects of church music, such as Banchieri's writings (discussed above) standalone treatises, such as Agazzari's *Del sonare sopra 'l basso*

con tutti li stromenti e dell'uso loro nel conserto, and crib sheets, such as the broadside *Breve regola per imparar' sonare sopra il basso con ogni sorte d'istrumento* of Francesco Bianciardi.[89] All of these works merit further attention for their role in establishing basso continuo as an object of discourse. Here, though, I limit my discussion to an earlier, lesser known text. Like Viadana's essay, it takes the form of a preface to a concerto print. *Sacri operis musici* by Josephus Gallus (Milan: Tini, 1598) contains a Mass, eight motets, and three instrumental canzonas for eight to nine voices. No complete copy of the volume is known, but copies of the Partitio and some of the vocal partbooks survive.[90] Gallus's collection was published posthumously by Aurelius Ribrochus, a noble from Tortona, who also wrote the preface and was responsible for the compilation of the organ Partitio. All of the liminary material is in Latin, including a dedication to the protonotary apostolic Baldassare dal Corno, and the prefatory remarks, which appear only in the Partitio. The composer, editor, and dedicatee were all members of the Somascan Order, and the dedication letters suggest that Ribrochus intended the print as a memorial in honor of the deceased Gallus. Given the significance of the preface as the first printed text on basso continuo playing, and the interest of its rhetorical style, I quote it here in full with a translation:[91]

Aurelius Ribrochus candidissimis cum Organorum, tum caeterorum instrumentorum musicorum pulsatoribus, aliisque Musicis prestantissimis, S.P.I.

Surgite, candidissimi Pulsatores, caeteriq vos omnes praestantissimi Musici: surgite, inquam, tollite, canite, pulsate in Psalterio iucundo, & cithara; in tympano, & choro; in chordis, & organo; in tibiis, & sistris; in cymbalis benè sonantibus. Ecce novam industriam, novum studium, novum laborem: ecce sacri operis musici Libri primi Partitiones, sive quas Partituras vocatis: ecce allatam vobis facilitatem omnia libentissimè canendi, modulandique. Ars longa, vita

Aurelius Ribrochus to the brightest players of both organs and other musical instruments, and to other most excellent musicians.

Arise, fairest organists, and all you other most outstanding musicians: arise, I say, take up [instruments], sing, strike the pleasing psaltery and lyre, drum and chorus, strings and organ, tibias and shakers, and the resounding cymbals. Behold a new industry, a new study, a new labor: behold the *partitiones*, or what you call the *partiturae*, of the first book of the sacred musical work. Behold the ease that is brought to you of singing and playing most

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[89] Francesco Bianciardi, *Breve regola per imparar' sonare sopra il basso con ogni sorte d'istrumento* (Siena: Zucchi, 1607).

[90] RISM A/I (G270, GG270) lists incomplete copies in the private collection of Dr. Erwin Reuben Jacobi in Zurich and at GB-T, a soprano partbook at CH-Zz, the Alto I partbook and Partitio at D-Mbs (openly available in digital format online), and an incomplete Partitio at GB-Ob.

[91] I'm grateful to Raymond Clark and Emerson Morgan for their help with the translation of this text.

brevis, aiebat ille. Sed addimus nos: Multi adeò per multos iactantur labores, ut quandoque pluribus intenti seipsos destituant, quod optimum est relinquant, ac saepenumerò ab instituto resiliant opere. Apertius loquar: multi subterfugiendi laboris gratia, etiam quod aptum, quod conveniens, quod opportunum, immò quod necessarium penitus esset, turpiter negligunt, praetereunt, transmittunt: idq; praecipuè in arte Musica fieri conspicimus. Nonne plures, deficiente partitione, quae periucunda, pergrataq; animis ad audiendum forent, insuavia, inconvenientia, absona, & discrepantia modulantur? Ne quid igitur sacro operi musico nostro deesset, illud in gratiam non modò Organistarum, verùm etiam caeterorum canentium quàm diligentissimè partitum volvimus: quam operam, & oleum, quaeso, non limis oculis, non torvo aspectu, sed hilari fronte, dextroq; sydere accipite.

Tria tamen, Humanissimi Modulatores, vos diligentissimè monitos cupimus.

Primum. Si hoc nostrum sacrum opus musicum pulsare, concinereq; haud gravabimini, Partiturae ipsius Libri duo sunt vobis habendi, ut hinc & inde, hoc est, in utroq; Choro omnia facilius, suavius, & expolitius modulemini.

Secundum. Partem hoc signum crucis † sub se notatum habentem, vel Bassum esse, vel Bassi parte functuram.

Tertium. Non prohiberi, quin in utroq; Choro, & praecipuè in concentibus

freely. A famous man used to say, Art is long; life is short. But we add: Many men are so tossed about by many labors, that while thinking of more they at some time forsake their very own selves, abandon what is best, and shrink from the work ahead. I will speak more frankly: many, in order to avoid work, shamefully disregard, neglect, and skip over even what is useful, conventional, convenient, and, more to the point, thoroughly (or completely) necessary. This we see occurring especially in the art of music. Is it not true that many, lacking a score, play what would otherwise be agreeable and pleasant for the soul to hear, as pieces that are disagreeable, irregular, discordant, and out of tune? Lest anything, then, be wanting in our sacred musical work we have wished it to be scored as scrupulously as possible in order to please not only organists but also the rest of the singers. Receive this work and inspiration, I pray, not with eyes askance nor with a grim view, but with a cheerful countenance, and as a propitious star.

We desire that you, humanist musicians of the highest degree, be advised most diligently of three things.

First, if you are willing to play and sing this sacred musical work of ours, you ought to have two books of the score itself, so that from the one or the other, that is to say in either "chorus" you will play everything easier, sweeter, and with more polish.

Second, that the part having this sign of the cross † notated beneath it either is the bass, or performs the function of the bass.

Third, there is no preventing (the) instruments from being used, indeed in

| duplicibus nuncupatis instrumenta adhibeantur. Valete. | whichever of the two choirs, and especially in music for double choir. Farewell. |

The preface is unusual among early texts on basso continuo for its use of Latin and its oratorical flair, something generally unremarked in discussions that concentrate on the practical points at the end.[92] In the first two thirds of the preface, Ribrochus presents his rationale for including the Partitio with the edition. From the very opening, he couches his subject, organ accompaniment, in a style befitting a humanist treatise on music theory, establishing the craft practice in a rhetorical mode that includes Biblical and classical imagery. The Latin is stylish. The opening exhortation "surgite" is magnified by the rhythm of the three parallel imperatives that follow it ("tollite...canite...pulsate"). In a later set of parallel phrases ("quod aptum, quod conveniens, quod opportunum, immò quod necessarium") the crescendo effected through the gradual increase in syllables corresponds to a swell in the insistence of the meaning of the words.

The preface also hints in several ways that the subject, accompaniment by organists, might not be deemed by all to be one suited to the mode of discourse that Ribrochus has established for it, or that the Partitio might not be well received by all. He makes a point of naming both a Latin and Italian term for the organ score (*partitiones* and *partiturae* respectively), assigning the Italian term specifically to his organist readers ("sive quas Partituras vocatis" / "the *partitiones*, or what you call the *partiturae*"). The choice of the second person plural for the verb tense (*vocatis*) stands in contrast to Ribrochus's use of the royal we further below in the preface. It is as if Ribrochus is making a subtle distinction between his own social status and that of the organists for whom the Partitio was intended. The antagonism is slightly less subtle in the rationale that Ribrochus provides for publishing the Partitio: organists could not be trusted to prepare their own score properly. Musicians, Ribrochus alleges, are more careless or lazy by nature than others and are wont to take shortcuts in their work whenever possible, sacrificing their art in the process. He appended the score to ensure that the "agreeable and pleasant" music in the print did not turn into something "disagreeable, irregular, discordant, and out of tune" due to unprepared organists.

Ribrochus's preface stands in marked contrast to Viadana's, which appeared four years later. Viadana favored a plain, pragmatic approach, addressing the reader in the vernacular, quite unlike Ribrochus's stylized Latin. Viadana stated that he decided to compose "questa sorte di Concerti" in response to performances of polyphonic music in church that lack a full complement of singers to cover all vocal parts:

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[92] Previous discussions of this preface include Otto Kinkeldey, *Orgel und Klavier in der Musik des 16. Jahrhunderts* (Leipzig: Breitkopf & Härtel, 1910), 198-200, and Robert Floyd Judd, "The Use of Notational Formats," 2: 52-54.

I saw that singers wishing to sing to the organ, either with three voices, or two, or to a single one by itself, were sometimes forced by the lack of compositions suitable to their purpose to take one, two, or three parts from motets in five, six, seven or even eight; these, owing to the fact that they ought to be heard in conjunction with other parts, as being necessary for the imitations, cadences, counterpoints, and other features of the composition as a whole, are full of long and repeated pauses; cadences are missing, there is a lack of melody, and, in short, very little continuity or meaning.[93]

Like Ribrochus, Viadana's stated motivation for issuing a collection of sacred music with an organ part is to avoid incompetent performance. The details, however, differ starkly. While Ribrochus saw his publication as a solution to bad accompaniment (which he attributes to organists' laziness), Viadana saw his as filling a demand for repertoire for use in liturgical celebration that can be performed successfully by a small number of musicians. He provided a practical volume of music for church musicians, who evidently adopted a utilitarian attitude towards the music available to them in the church's music library. Ribrochus's criticism lies squarely with organists and was personal in nature, whereas Viadana's criticism was systemic: the root problem is the dearth of liturgical music scored for a small group. The attitude apparent in Viadana's prose towards incompetency is altogether different. Ribrochus, who consciously identified himself as an outsider, did not differentiate between competent and incompetent organists and other professional musicians. He blamed organists in general, without qualification, for botched performance and called into question their professionalism and virtue. In contrast, Viadana, who was himself a church musician, showed an understanding of the circumstances which give rise to botched performances of music in churches and sympathy for the musicians involved. Unlike Ribrochus, Viadana did not condemn them. Viadana also conveyed more practical information to the user, further suggesting that he felt more aligned with the users of his print than Ribrochus did with the users of his.

Despite the major differences between the prefaces by Ribrochus and Viadana, they are both pioneering and relatively substantial instances of the expansion of discourse on music to include the craft practice of playing basso continuo. Viadana's advice on the performance of basso continuo, as well as his descriptions of the contemporary use of the organ to accompany singing in churches, have garnered much attention. What is most

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[93] "Il vedere cioè, che volendo alle volte qualche Cantore cantare in un'Organo ò con Tre voci, ò con Due, ò con una sola erano astretti per mancamento di compositioni à proposito loro di appigliarsi ad Una ò Due, ò tre parti, di Motetti à Cinque, à Sei, à Sette, & anche à Otto, le quali per la unione che devono havere con le altre parti, come obligate alle fughe, cadenze, a'contrapunti, & altri modi di tutto il canto, sono piene di pause longhe, e replicate, prive di cadenze, senza arie, finalmente con pochissima, & insipida seguenza." Viadana, *Cento concerti*, "A' benigni lettori." The translation is from Denis Arnold, "Giovanni Croce and the Concertato Style," Musical Quarterly 39 (1953): 37. I have replaced Arnold's "close" with "cadence."

remarkable, though, about Viadana's preface is so basic that it has not been a focus of scholarly discussion. It is the appearance itself of a text on basso continuo in a written, public forum. The organist's practice of accompanying choral singing in church was a form of trade knowledge, an embodied know-how shared among a closed circle of practitioners and acquired through direct experience and apprenticeship. With Viadana's preface, the craft knowledge of basso continuo playing began a gradual transition to the realm of episteme. The trade knowledge of practitioners began to be formulated as published exposition and, no less, in a forum, the sacred concerto print, where it commingled with the art of counterpoint. It was a defining moment for the history of keyboard playing. But the most significant ramifications for this transformation in the culture of keyboardist knowledge reach well beyond the scope of keyboard history.

Conclusion

The physical dissimilarity between the vocal partbooks and the basso continuo part that comprised the simple concerto as a print object in the early seventeenth century was such that it cannot be attributed simply to quirks of the printing process. Such reasoning discounts altogether the cultural embeddedness of the people and crafts behind the abstract lines of music that the concerto brought together. It also neglects to address the significance of the addition of the basso continuo part to the partbook set in the history of music printing.

One of the major platforms for discourse on basso continuo, the concerto print inherently linked the art of keyboard playing to polyphonic composition. The formulation of the practice of accompanying singers at the organ into written discourse was a crucial step in the gradual convergence of counterpoint and keyboard playing that would define the musical *lingua franca* of Europe for centuries. In becoming a subject of discourse, keyboard playing entered into a medium in which counterpoint was already well established. Within this common arena, the arts could interact on the same plane, influencing each other in new ways. Crucially, the dissemination of this discourse, in the guise of concerto prints, was not confined to an exclusive circle of organists, as earlier published texts on keyboard playing had been. The prints were used by singers and owned by churches, acquired through purchases overseen by church leaders who often were not themselves musicians. In short, through the concerto print, the art of keyboard playing took a big step up into what was then the musical mainstream.

Basso continuo tracts, of course, were not the first writings on keyboard playing. The notes recorded by keyboardists about their craft date back to the fifteenth century and include a small number of printed books on the subject from the sixteenth century.[94] None of the earlier writings, however, had the effect of melding keyboard playing with the art of

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[94] Sixteenth-century printed books devoted to keyboard playing include Schlick, *Spiegel der Orgelmacher und Organisten*; Santa María, *Arte de tañer fantasia*, and G. Diruta, *Il Transilvano*.

counterpoint to the degree that we see in the discourse of basso continuo. The subject of basso continuo itself implied a direct, real-time confrontation with counterpoint in a way that solo keyboard playing and *alternatim* organ playing did not. At first, the burden of adaptation fell largely to the organist, but this quickly turned into a dialogue between composer and organist resulting in revolutionary stylistic developments. We might say that the sacred concerto was "polyphonic" in both the musical sense and the sense in which Mikhail Bahktin used the word to describe Fyodor Dostoevsky's novels – the penchant for bringing together the perspectives of diverse characters in a single narrative:

> What unfolds in [Dostoevsky's] works is not a multitude of characters and fates in a single objective world, illuminated by a single authorial consciousness; rather a *plurality of consciousnesses, with equal rights and each with its own world*, combine but are not merged in the unity of the event.[95]

More broadly, the advent of basso continuo as the subject of a public, written discourse fits into an expansion of the jurisdiction of writing in the late Middle Ages and Renaissance, which saw an increasing variety of mechanical arts being detailed in books. The entry of these arts into the realm of writing – a realm that had traditionally been associated with elite subjects of learning, including theology and the seven liberal arts – coincided within a social uplift of technical arts. The rise of trades such as accounting, mechanical sciences, architecture, and military arts during this period is recognized as a central development in the emergence of the methods of modern science and a foundation of the Scientific Revolution.[96] The uplift of keyboard playing should be understood within the larger frame of the upward mobility of the mechanical arts in the fifteenth and sixteenth century. Strictly speaking, the "learned" art, counterpoint, to which keyboard playing was tethered in the concerto, was likewise a mechanical art, falling within the realm of *musica practica* rather than *musica speculativa*. Nevertheless, counterpoint was already well established in writing and within the study of music as a university subject. In these forms, it

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[95] Mikhail Bahktin, *Problems of Dostoevsky's Poetics*, trans. Caryl Emerson (Minneapolis: University of Minnesota, 1984), 6.

[96] Pamela Long discusses this matter within the context of ancient, medieval, and Renaissance Europe (up to the sixteenth century) in *Openness, Secrecy, Authorship*. Pamela Smith has detailed the role of what she terms "artisanal epistemology" in the Scientific Revolution in *The Body of the Artisan: Art and Experience in the Scientific Revolution* (Chicago University of Chicago Press, 2004). Timothy Reiss has examined the "quadrivializing" of knowledge in early modern Europe, in which the rise of "vernacular" or "artisanal" mathematics played an important role. Timothy Reiss, *Knowledge, Discovery and Imagination in Early Modern Europe: The Rise of Aesthetic Rationalism* (Cambridge: Cambridge University Press, 1997) and idem, "From Trivium to Quadrivium: Ramus, Method, and Mathematical Technology," in *The Renaissance Computer: Knowledge Technology in the First Age of Print*, ed. Neil Rhodes and Jonathan Sawday (London: Routledge, 2000), 45–58.

had become mixed up with the speculative discourse of music. By the mid-sixteenth century, what counted as a learned treatise on music included a mixture of *musica speculativa,* practical theory, and compositional techniques (especially counterpoint), as exemplified by Zarlino's *Le istitutione harmoniche*. Indeed, theory treatises such as this one were trading zones for the study of speculative music and the art of counterpoint and thus crucial to the increase in the prestige of counterpoint as a knowledge tradition. Through its entrenchment in writing, counterpoint prepared the way for the emergence of basso continuo and, by extension, keyboard playing, in written discourse.

Like treatises that combined socially disparate branches of the same subject, the concerto print provided a virtual site where the commingling of the knowledge traditions could occur. What sets the concerto print apart from purely discursive books of this nature in music and other subjects is that it is a "speaking" document. One can *hear* the effect of the convergence of knowledge when the concerto print is used, as it was intended, for performance. When we listen to the early concerto today, what we hear is the enfolding of the musical languages of two overlapping yet distinct traditions of music-making.

CHAPTER 3
MATERIAL FOUNDATIONS FOR THE CONCERTATO STYLE

In 1607, Pietro Lappi, *maestro di cappella* of the Madonna delle Grazie in Brescia, published a workaday volume of music for the Office of Terce.[1] The psalms, litanies, and Te Deum that comprise the collection are set for eight voices, which are divided into two equal-voice choirs. The choirs alternate verses in homophonic antiphony, reminiscent of some of the simpler polychoral settings made by earlier generations of composers from Francesco Santa Croce to Palestrina (Example 3.1). Among the partbooks of the print is an organ continuo part in which the bass for each of the two choirs is transcribed in a two-staff score. Like many printed organ continuo parts from the time, this one was provided for the convenience of the organist, saving him (and sometimes her) from the wearisome task of writing out a part from scratch. The inclusion of the organ part did not preclude *a cappella* singing as a valid option for performance (the representation of the Te Deum excerpt in Example 3.1 reflects this); rather, it augmented the range of performance possibilities available to the *cappella musicale*.

The most obvious option it suggests is for the organist to join the *coro pieno* as is, without modification to the voice parts. Additionally, the participation of the organ opened up a host of variegated alternatives. Lappi himself provides such suggestions for the performance of the two litanies and the Te Deum through rubrics inserted in the organ part. These insertions indicate moments when the full four voices of Choir I could be replaced by smaller forces, either a solo voice or a duet ("Tenore solo," "Canto & Basso," "Alto solo," etc.). The sonic effect of these substitutions – which are contingent on the presence of the organ to fill in the dropped voices – no longer bears an easy resemblance to earlier models (as we have traditionally understood them). Instead, the ever-changing timbral profile of the music (now a solo canto, now a chorus, now a duet, now a chorus, now a solo...) approximates what later came to be known as the concertato style (Example 3.2).

The nimble metamorphosis from *antico* to *moderno* that Lappi's setting of the Te Deum illustrates flies in the face of a received history that has characterized the concertato style as a radical break from the polyphonic idioms of sixteenth-century sacred vocal music.[2]

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[1] Pietro Lappi, *La terza con il Te Deum et litanie della B. Vergine et santi a otto voci* (Venice: Raverius, 1607).

[2] Jerome Roche's classic study *North Italian Church Music in the Age of Monteverdi* (Oxford: Clarendon Press, 1984) adopts this approach; as Roche puts it, "the very concept of singling out one part of the texture to be sung by a soloist was anti-polyphonic" (49). We find a similar opposition set up in more recent synthetic accounts of the period and in textbooks, including Nicholas Anderson, *Baroque Music from Monteverdi to Handel* (London: Thames and Hudson, 1994), 15 and 37-39, George J. Buelow, *A History of Baroque Music* (Bloomington, IN: Indiana University Press, 2004), 41-49, and John Walter Hill, *Baroque Music: Music in Western Europe, 1580-1750* (New York: W.W.

The chameleon-like capacity for style-shifting is by no means unusual for the time. Numerous prints from the late sixteenth and seventeenth century explicitly suggest alternative ways of performing settings that are ostensibly composed in a conservative, *coro pieno* idiom, and some of these have already been discussed in provocative studies.[3]

"Gruff opposition" was how Hugo Riemann conceived the relationship between counterpoint and thoroughbass (signifying the solo voice + continuo texture), and "epoch-making discovery" was his description of the new style. These are expressions of a distinctly textual approach to music history.[4] As a strategy for making sense of the early sacred concerto and the concertato style, this approach has been put to productive ends throughout the twentieth century, in pioneering studies, not the least of which include Jerome Roche's *North Italian Church Music in the Age of Monteverdi*, and equally in revisionist pieces such as

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Norton, 2005), 96-98. The dichotomy between counterpoint and the harmonic texture of thoroughbass was emphasized, much earlier, by Hugo Riemann, who observed that the "new manner of writing [in the seventeenth century] ... opposed to one particular melody the others as subordinate, accompanying, and designed only to strengthen its expression, followed quite suddenly as an epoch-making discovery." Hugo Riemann, *Catechism of Music History* (London: Augener, 1892), 2:56. Elsewhere, he characterized the new style as a "radical resistance to counterpoint" ("dieses radikale Stemmen wider den Kontrapunkt"); see Hugo Riemann, *Handbuch der Musikgeschichte* (Leipzig: Breitkopf & Härtel, 1912), vol. 2, part 2, vi and 77.

[3] Noel O'Regan, "Asprilio Pacelli, Ludovico da Viadana and the Origins of the Roman *Concerto ecclesiastico*," *Journal of Seventeenth-Century Music* 6 (2000), http://www.sscm-jscm.org/v6/no1/oregan.html; Jeffrey Kurtzman, "The Performance of Eight-Voice and Polychoral Psalmody with Instruments in Italy and Its Role in the Development of the Concertato Style in the Sixteenth and Early Seventeenth Centuries," in *"Hands-On" Musicology: Essays in Honor of Jeffrey Kite-Powell*, ed. Allen Scott (Ann Arbor, MI: Steglein, 2012), 169–211. O'Regan details a case in which the composer avails of the organ to replace middle voices in four-part settings, thereby transforming the musical texture. O'Regan connects this practice with that described by Viadana in the preface to his *Cento concerti ecclesiastici* (Venice, 1602). We find a similar, but "grander" example of this transformation in Giovanni Gabrieli's *Sacrae symphoniae* (Venice: Gardano, 1597). A rubric printed with the ten-voice "Canzon per sonar in echo duodecimi toni" describes an alternative realization, which varies the antiphony of the two five-voice choirs by having the lower four voices of each choir drop out for certain sections. As in the case of Pacelli, organ accompaniment is a necessity, even though the print does not include an organ partbook. Kurtzman approaches the question from a different angle, focussing on cases in which rubrics were used to suggest the incorporation of single-line instruments. See also Richard Charteris, "The Performance of Giovanni Gabrieli's Vocal Works: Indications in the Early Sources," *Music & Letters* 71 (1990): 336–51.

[4] For the "schroffe Opposition" of thoroughbass to counterpoint, see Riemann, *Handbuch der Musikgeschichte*, vol. 2, part 2, vi. For the "epoch-making discovery," see idem, *Catechism of Music History*, 56. See also n. 2 above.

Franco Piperno's study of the significance of *concerto* and *concertato* in seventeenth-century Italian instrumental music.[5]

More recently scholars have begun to enrobe the abstract idea of the concerto in materiality. They have approached the issue from a variety of angles. Jeffrey Kurtzman and others have focussed on the unwritten practice of incorporating single-line instruments in the performance of polyphonic music in the sixteenth century.[6] Meanwhile, other scholars, including Noel O'Regan, have worked to illuminate the pre-history of organ continuo.[7] A principal topic is the practice of "cantare sull'organo," on which Arnaldo Morelli in particular has shed much light.[8] This practice, in which a solo singer, usually a boy, would sing during the liturgy to the accompaniment of the organ is documented as early as the late fifteenth century.[9] By the sixteenth century, it was widespread: according to a "working hypothesis" of David Bryant and Elena Quaranta, informed not in the least by their extensive archival research, "the performance of sacred polyphony with one or more solo voices and organ or other instrumental accompaniment was common practice."[10]

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[5] Piperno, "'Concerto' e 'concertato' nella musica strumentale italiana del secolo decimo settimo," *Recercare* 3 (1991): 169–202. Piperno's thesis echoes in some ways that of Jacques Handschin, who cast the idea of concerto as central to the Baroque in *Musikgeschichte im Überblick* (Lucerne: Räber, 1948), 284-88. Handschin's thesis was contested, among other places, in Erich Reimer, "Concerto - Schlüsselbegriff einer musikgeschichtlichen Epoche?," in *Bericht über den internationalen musikwissenschaftlichen Kongress Berlin 1974*, ed. Helmut Kühn and Peter Nitsche (Kassel: Bärenreiter, 1980), 503–6.

[6] Kurtzman, "The Performance of Eight-Voice and Polychoral Psalmody."

[7] O'Regan, "Asprilio Pacelli."

[8] Arnaldo Morelli, "Cantare sull'organo: An Unrecognized Practice," *Recercare* 10 (1998): 183–208 and idem, "The Role of the Organ in Performance Practices of Italian Sacred Polyphony during the Cinquecento," *Musica Disciplina* 50 (1996). The latter study is an expanded version of idem, "Il ruolo dell'organo nella prassi della polifonia sacra italiana del Rinascimento," in *Gli antichi organi lucchesi: problemi d'indagine storica e di conservazione. Atti della giornata di studio, Lucca, 10 giugno 1995*, ed. Gabriella Biagi Ravenni (Lucca: S. Marco litotipo, 1997), 15–30.

[9] The earliest known reference to the use of the organ to accompany the voice dates from 1488 and relates to the practice of "cantare in sul organo" at the Santissima Annunziata in Florence, as reported in Frank A. D'Accone, "The Florentine Fra Mauros: A Dynasty of Musical Friars," *Musica Disciplina* 33 (1979): 77–137 at 101. Thomas D. Culley presents a large compilation of documentary evidence for the practice in Rome in the late sixteenth century in *Jesuits and Music, Vol. 1: A Study of the Musicians Connected with the German College in Rome during the 17th Century and of Their Activities in Northern Europe* (Rome: Jesuit Historical Institute, 1970). Further evidence for the practice in central and northern Italy is presented in John Bettley, "'L'ultima hora canonica del giorno': Music for the Office of Compline in Northern Italy in the Second Half of the Sixteenth Century," *Music & Letters* 74 (1993): 163–213.

[10] David Bryant and Elena Quaranta, "Traditions and Practices in Fifteenth- and Sixteenth-Century Sacred Polyphony: The Use of Solo Voices with Instrumental Accompaniment," in *Music as Social*

Example 3.1. Lappi, Te Deum a 8, excerpt (as performed *a cappella*).

and Cultural Practice: Essays in Honour of Reinhard Strohm, ed. Melania Bucciarelli and Berta Joncus (Rochester, NY: Boydell Press, 2007), 115. See also Gruppo di lavoro "Firenze" dell'Università Ca' Foscari di Venezia, "La mappa della musica da chiesa a Firenze tra cattedrale, laudesi e committenza 'minore,'" in *Produzione, circolazione e consumo: consuetudine e quotidianità della polifonia sacra nelle chiese monastiche e parrocchiali dal tardo Medioevo alla fine degli Antichi Regimi*, ed. David Bryant and Elena Quaranta (Bologna: Il mulino, 2006), 193-226.

Example 3.1. (cont.)

Example 3.2. Lappi, Te Deum a 8, excerpt (as performed according to rubrics).

Example 3.2. (cont.)

Organ historians have approached the same issue, organ-accompanied singing, from a perspective that centers on organological history.[11] These distinct veins of inquiry converge implicitly on the point that the origins of the concertato style lie in sixteenth-century performance practices of works ostensibly written in a traditional polyphonic idiom (such as Lappi's Te Deum setting). In this updated model, composers and performers share responsibility for the emergence of the concertato sound. Their choices are shaped by such case-specific factors as the regulation of the use of instruments (which varied between sects, jurisdictions, and institutions), the norms of the liturgy, and the skill and size of the *cappella musicale*.[12] This renewed perspective on the concertato style has begun to influence the methodologies of musicological research. O'Regan proposes an alternative framework for discussing seventeenth-century sacred music, replacing the traditional ones that center on the stylistic "polarity between the *stile antico* and the *stile moderno*."[13] He identifies four "approaches to the writing of liturgical music" proposing a taxonomy that inherently acknowledges the contingency of the concertato idiom on performance practice.[14]

In exploring the creativity of performers in the genesis of the concertato style, scholars have expanded the frame beyond the type of composerly agency that wrests zeitgeist into musical form. This broader view permits investigation into forms of cultural experimentation that devise solutions to practical problems. In so doing, it brings material environments into the picture and shows that poiesis is enmeshed in it. Thus, given the current state of research, questions such as why composers developed the concertato style and why they used it are no longer well calibrated to the problem of locating the origins of the concertato style. A more pertinent question might be: why *could* composers develop the concertato style? In other words, what were the material preconditions that afforded the emergence of the style?

This question motivates the research presented in this chapter. My answers take cognisance of the organ, which was essential to the emergence of the early concerto, along with human voices. The use of organs dramatically transformed the sound of polyphonic music. The concertato style depended on the harmonic foundation it provided, which

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[11] Oscar Mischiati, "Appunti sul suolo e sulle mansioni dell'organista nell'Italia centro-settentrionale durante il Rinascimento," in *Fiori musicologici. Studi in onore di Luigi Ferdinando Tagliavini nella ricorrenza del suo LXX compleanno*, ed. François Seydoux (Bologna: Pàtron, 2001), 350–78, and Pier Paolo Donati, "Sui 'concerti che si fanno nell'organo' con voci e strumenti, I: Il Cinquecento," *Informazione organistica* 21(new series vol. 22) (2009): 3–31.

[12] The pre-history of the concerto takes an analogous shape when approached from a secular context. See, for example, John Walter Hill, *Roman Monody, Cantata, and Opera from the Circles around Cardinal Montalto* (Oxford: Clarendon Press, 1997), 1:90-95.

[13] Noel O'Regan, "The Church Triumphant: Music in the Liturgy," in *The Cambridge History of Seventeenth-Century Music*, ed. Tim Carter and John Butt (Cambridge: Cambridge University Press, 2005), 292.

[14] Ibid, 293-95.

enabled solos, duets, and trios liberated from the need for the harmonic bass to be supplied vocally. The flexibility of the organ accompaniment unleashed solo voices, allowing the incorporation of *recitativo* and virtuosic lines. In "grand" concertato settings, it provided the glue that cemented choral utterances, solo passages, and instrumental ritornellos into a cohesive whole. Most significantly, the organ brought a musician into the ensemble whose task necessitated an emphatically different approach to polyphony from that of the singers. Like intabulation, organ continuo involved a single musician gathering together the parts of several previously autonomous co-agents and executing them together as an integral whole. And as with intabulation, one of the effects of incorporating the voices in the body of one player is the objectification of harmony. But unlike intabulation, continuo unfolds in tandem with a sung performance of the polyphonic piece: subjective and intersubjective realizations occur simultaneously. Whereas in the case of intabulation, the mechanization of polyphony unfolds at a certain remove from the singers, with continuo, it has an immediate and visceral effect on the singers. They cede control over tuning and surrender themselves tonally to the fixed gamut of the organ. The function of continuo playing also regulates the organist's part. As an accompaniment, the continuo part is supplementary, which permits a more schematic or impressionistic realization of the texture than what is required in intabulation. The result is a part that is more rawly keyboardal than intabulation. In other words, the sound of the part is governed by the sensorimotor experience of keyboard playing.

The marriage of *a cappella* singing and keyboardal intabulation results, thus, in a model of distributed cognition that is greater than the sum of its parts. This model was cultivated intensely in the first decades of the seventeenth century, before the concertato style reached its height in the later works of Monteverdi and younger composers. The fully fledged concertato style, I suggest in this chapter, represents a stylization of the particular model of distributed cognition of the concerto. The meaning of the words *concerto* and *concertato* in the early seventeenth century provide a richly supportive context for this reading of the concertato style. In the first part of this chapter, I recover something of the vivid connotation of these words in the sixteenth and sevententh century, and I assess its relationship to the meanings of *concerto* and *concertato* that we usually invoke today in discussing music of that period. I show that, unlike present-day usage, the seventeenth-century terms *concerto* and *concertato* denoted concepts that were in essence social, ecological, and phenomenological. I also show that the coordination of voices and instruments within an ensemble (which was the primary signification of *concerto* in the early seventeenth century) was a much more conspicuous and fraught problem than it is now.

In the second part of this chapter, I shift attention to the organ. The rise of organ-accompanied singing constituted a landmark reconfiguration of the ensembles that performed polyphonic music during Catholic services. Ultimately, the voices + organ template would replace the *a cappella* template as the standard for the performance of sacred music. Integrating the organ into collective on-the-book singing was not achieved by simply appending an organ partbook to a print of sacred music. I consider the long organological

history behind the melding of ecclesiastical singing and organ playing that we find in the concerto, one that shifted from a relationship that had been primarily contrastive, as partners performing verses *in alternatim*. Though large gallery organs had been used in churches since medieval times, the organ of the sixteenth century was a new machine. The overhaul of the organ's design in the fifteenth century permitted the instrument to be repurposed for accompanying voices. An early development that set this process in motion was the establishment of the modern keyboard as the standard interface for the organ. This was followed by an equally crucial innovation: the addition of stops, or similar mechanisms that permitted isolation of the individual registers of the organ. By the end of the fifteenth century, the gallery organ had reemerged as a diversified instrument capable of doubling polyphonic textures, in addition to solo playing, and this new capacity was already being exploited by *cappelli musicali* circa 1500.

Before the mid-fifteenth century, the keyboard, in its present-day configuration, had become the standard interface for organs in Italy and northern Europe, and by the end of the century, the incorporation of stops had become a virtually universal feature of new organs in Italy. Stops opened up the possibility, a serendipitous one perhaps, for the organ to accompany voices without drowning them out. The organ's relationship to the choir expanded from what had been an exclusively contrastive role, sounding *in alternatim* with chant and polyphonic singing, to a real-time support. The history of the organ, like histories generally, highlights "firsts," as in the first time a new technology is used. It is useful, though, to keep in mind that older technologies remained in use for a while – in some cases into the sixteenth century. Honing the organ to its new role was a long, gradual process – organ-building was not an enterprise that was conducive to risk-taking.

With the appearance of the first printed organ accompaniments in the 1590s, the new function of the redesigned organ – accompaniment – became objectified. Of the eighty-six prints of sacred music with organ parts published between 1594 and 1605 in Appendix C, the vast majority have organ parts that are, from a purely harmonic point of view, non-essential. In the final part of this chapter, I look more closely at the practical implications of adding an organ to the performance of *canto figurato* – the situation illustrated by the Te Deum shown in Examples 3.1 and 3.2. I explore the impact of the organ's presence on the singers and the organist's particular experience of polyphony (shaped by the perception-action of the task of keyboard playing) on the structure of the music. In the process, I foreground the significance of the conflated bass, the so-called "basso seguente" part, which was the most common type of organ continuo part before 1620. This form of continuo, which doubles the voices, gets short-changed in the traditional narrative of music history in favor of independent, "true" continuo parts. Indeed, it is easy to dismiss doubling continuo parts from a purely formal standpoint, as superfluous to the musical structure and incipient versions of "the real thing." In performance, however, a doubling continuo part is not superfluous. "Basso seguente" in particular manifests the radical implications of the organist's integration into the polyphonic ensemble more acutely than does "true" continuo. Cutting from line to line, brazenly

indifferent to the norms of voice leading and the periodicity of phrasing, the basso seguente part facilitates the playing of an agent who was altogether different from singers and single-line instrumentalists – one who approached the polyphonic texture synoptically.

The Signification of *Concerto, Concertare, Concertato*

In scholarship, "concertato style" is a phrase that has come to signify a musical approach that exploits the potential for textural versatility and contrasting effects enabled by heterogeneous instrumentation that combines voices, continuo, and, in some cases, single-line instruments – especially when used for expressive purposes. Twentieth-century definitions of *concertato*, in relation to seveteenth-century music, tend to emphasize formal characteristics and/or composerly poiesis. For instance, the first definition for *concertato* that Anthony Carver provides is, "A style, as in *stile concertato*, implying the interaction of diverse musical forces."[15] Another definition, offered by Graham Dixon, of the "normal use of the term 'concertato' in North and South [Italy]," highlights the presence of "voices [that] blend in and out within a continuously changing texture and constant pulse."[16] (Dixon gives this definition as a comparison to the more specialized usage of "concertato alla romana," which he identifies as "the division of a musical work into non-overlapping sections with contrasting scorings.") Meanwhile, Franco Piperno articulates a different perspective, suggesting that the concerto represented above all "an organizational and executorial attitude" (as opposed to "a genre or form") that is "based fundamentally on the confrontation and collaboration of two heterogeneous and independent elements: voices and instruments."[17]

These definitions accurately describe much (though by no means all) of the music to which the term *concertato* was applied. There is no doubt that this describes a major compositional strategy in the first half of the seventeenth century, and that contemporary composers and theorists were conscious of it. Dixon and O'Regan are among those who have advanced knowledge of the early use of the term *concertato* to signify a stylistic or formal aspect of the music. Dixon has identified some of the earliest instances in which *concertato* is used to refer to a formal aspect of the music in his research on sacred music in Rome.[18] At the

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[15] Anthony F. Carver, "Concertato," *Grove Music Online. Oxford Music Online* (Oxford University Press), accessed June 27, 2015,
http://www.oxfordmusiconline.com/subscriber/article/grove/music/06242.

[16] Graham Dixon, "*Concertato alla romana* and Polychoral Music in Rome," in *La scuola policorale romana del Sei-Settecento: Atti del convegno internazionale di studi in memoria di Laurence Feininger, Trento ... 4-5 ottobre 1996*, ed. Francesco Luisi, Danilo Curti, and Marco Gozzi (Trent: Servizio beni librari e archivistici, 1997), 129.

[17] Piperno, "'Concerto' e 'concertato' nella musica," 200.

[18] Dixon points to Giovanni Francesco Anerio's *Litaniae* (Rome: Zannetti, 1611), which includes a setting designated "motetto concertato" whose structure is punctuated by the alternation of full

same time, these definitions give far more weight to the stylistic aspect than the majority of primary sources do. Indeed, the phrase *stile concertato* seems to post-date the period (though it is routinely discussed in literature on the topic as if it were a contemporary phrase).[19] The gap between current and seventeenth-century connotations of *concertato* has been made all the more apparent by recent studies that have located the origins of some of the raw materials of the sacred concerto, such as the incorporation of a continuo part and the use of single-line instruments to double or substitute for human voices, as performance decisions made by individual *maestri di cappella* to tailor musical settings to the unique needs of their churches and talents of their *cappelle*.[20]

To help recover some of the connotative nuances of *concerto/concertare/concertato*, as used in the late sixteenth and early seventeenth centuries, and to help clarify the distinction between the historical and current *concertato*, I turn attention to the musical usage of the term. Before considering instances of the terms as used in treatises and other expository texts, it is worth surveying the use of the terms *concerto, concertare,* and *concertato* on the titles pages of printed music. A search of RISM A/1 (thus, limited to single-composer prints) for prints published between 1600 and 1650 with titles that include any word with the word stem *concert-* yields 552 unique prints.[21] The vast majority of occurrences relate to music combining voices and instruments. (The terms are used in a minority of cases to describe *a cappella* choral music and, in others, instrumental ensemble music.) Usage is often no more directed than this, but when it is, the most common signification is to indicate the combination of voices and continuo (without additional instruments). For instance, a search for the term *concerto* yields 58 results, of which 49 were for one or more human voices and continuo, without explicit reference to other instruments;

chorus and soloists (all supported by an organ part). The setting is the eight-voice "Jubilemus in arca domini dei." Graham Dixon, "Liturgical Music in Rome (1605-45)" (Ph.D. diss., Durham University, 1981), 1:258.

[19] The earliest use of the phrase *stile concertato* that I have found appears in Giovanni Maria Bononcini's *Musico prattico che brevemente dimostra il modo di giungere alla perfetta cognizione* (Bologna: Monti, 1688) (discussed further below).

[20] See n. 3.

[21] *RISM A/I, Einzeldrucke vor 1800 Datenbank auf CD-ROM = A/I, Individual Prints before 1800 : Database on CD-ROM* (Kassel: Bärenreiter, 2011). This result reflects the combined total of four separate searches and manual correction. For all searches, the "Date of publication" field was set to 1600 to 1650. A search for "concerta*" (with wildcard) produces 358 titles that contain one or more terms beginning *concerta-*, including *concertare, concertato, concertati, concertate, concertano,* etc. In addition to the Italian terms, the results of this search include a small number of Latin titles containing terms such as *concertandum, concertantes,* etc. A second search for "concerta" (no wildcard) gives one result. A third search for "concerti" yields 156 titles. A fourth search for "concerto" produces 58 titles. Added together, the total is 573; however, twenty-one of these are double hits. The total number of unique hits is 552.

a search for *concerti* yielded 156, of which 135 were for this scoring. While this is a crude meter, and examination of each of the individual prints would surely alter the statistics, it is nonetheless useful in providing a rough idea of how music printers used the terms *concerto* and *concertare* on title pages.[22] Important for the current purpose is the close association of organ continuo with the sacred concerto.

The prints labelled *concerto* or *concertato* comprise a wide variety of styles, from pieces featuring a conservative approach to counterpoint and a doubling organ bass to pieces full of progressive harmonies, dramatic changes of texture, an independent continuo line, and obbligato instruments. Genres range from sacred to secular, motets to madrigals, and *canzonette* to canticles. This all-encompassing usage underscores that the use of *concerto* and *concertato* to signify a genre or progressive style was not the norm in the first half of the seventeenth century. The titles of individual prints communicate subtleties of the meaning of the Italian word stem *concert-*. In an early (and famous) instance, Andrea and Giovanni Gabrieli's *Concerti continenti musica…per voci, & stromenti musicali* (Venice: Vincenti, 1587), *concerti* is used as a noun to refer to musical works for voices and instruments in six to sixteen parts. Scaletta intended his *Cetra spirituale a due, tre, e quattro voci per concertar nel organo* (Milan: Tini & Lomazzo, 1606) to be sung in concert with the organ. Giacobbi's *Prima parte dei salmi concertati a due o piu cori…commodi da concertare in diverse maniere* (Venice: Gardano, 1609) consists of "concerted psalms for two or more choirs" that are "convenient to concert in a variety of ways."

The term *concertato* in some instances carries a more specific connotation. In a minority of these, the connotation is clearly stylistic. We find this, for example, in titles that use the phrase *concertato alla moderna* or *concertato alla romana*. These include Grisostomo Rubiconi, *Concerti ecclesiastici alla moderna…con il basso continuo per sonare nell'organo* (Venice: Vincenti, 1611), Antonio Burlini's *Lamentationi per la settima santa, a quattro voci, con un Benedictus a cinque, e due Miserere à due chori, il tutto concertato alla moderna co'l basso continuo per il clavicembalo a spinetta, aggiuntovi una parte per un violino* (Venice Vincenti, 1614), Lazaro Valvasensi's *Brevi concerti ecclesiastici alla romana commodi per cantarsi nel clavicembalo* (Venice: Magni, 1620), Agostino Diruta's *Compieta concertata…e con un Miserere a versetti concertato alla romana a cinque voci, con il basso continuo* (Venice: Vincenti, 1623), and Stefano Cantone's *Motetti concertati alla moderna con il basso continuo* (Venice, Magni 1625). In other cases, the unqualified use of *concertato* refers to an aspect of style: in Alessandro Grandi's *Salmi a otto brevi, con il primo choro concertato* (Venice: Vincenti, 1629), for instance, the voices of the "primo choro concertato" are treated as soloists, which are set in a variety of combinations in juxtaposition to the ripieno of Choir 2. Elsewhere, narrow uses of *concerto* and *concertato* often distinguish a more general category of scoring. In dozens of instances, *concertato, in concerto, da concerto*, and *per*

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[22] The search excludes anthologies and prints not listed in RISM as well as reeditions of prints listed without a title in the catalogue.

concerto are used in opposition to *da cappella, da coro*, and *non concertato* to distinguish between singing accompanied by organ (with or without other instruments) and unaccompanied singing respectively.

General dictionaries from the time provide definitions for the words *concerto* and *concertare* that convey a close relation between the generic meanings and musical meanings of the terms; in both senses, the words signify agreement and joining together (similar to the generic English *concert* [as both noun and verb]). In the first edition of the *Vocabolario degli Accademici della Crusca* (1612), the entries for *concerto* and *concertare* redirect the reader to conserto (a Tuscan variant), which is defined as "joined together, unified" ("congiunto insieme, unito").[23] The second definition provided is the musical sense of the word, to indicate "the consonance of voices, and of the sounds of instruments" ("consonanza di voci, e di suoni di strumenti"). The verb form, *consertare*, is defined as "to make a concert," as in "to make music together" ("far conserto").

Definitions in the first edition of John Florio's Italian-English dictionary, *A Worlde of Wordes, or Most Copious, and Exact Dictionarie in Italian and English* (1598) are similar.[24] Here, the entry for *concerto* redirects to *concento*, which is defined as "a consort, or concordance in musick." The verb form, *concertare,* is translated as, "To agree, or tune together, or proportion or accord together, to sing or play in consort."[25] The interchangeability of *concerto* and *concento* serves to underscore that the Italian *concerto* and *concertare* are cognates of the Latin *concentus* and *concinere* – not *concertare*, which in Latin means "to dispute, debate."[26] In the expanded 1611 edition of the dictionary, Florio gave *concerto* its own entry, which is as follows: "an agreement, an accord, a consort, or concordance."[27] The definition of *concento* is modified thus: "a consort or concordance, a harmony, a tunable accord." Also, the closely related word *conserto* is translated "joined, enterlaced, entermedled, set with, conserted. Also as Concerto."

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[23] *Vocabolario degli Accademici della Crusca* (Venice: Alberti, 1612). Bottrigari referred to the conflation of *concerto* and *conserto* in *Il Desiderio*, 9-10.

[24] John Florio, *A Worlde of Wordes, Or Most Copious, and Exact Dictionarie in Italian and English* (London: Blount, 1598).

[25] Florio defines the related word *conserto* as "a consort or unison in musicke," and the verb *consertare*, "to reduce to order, forme, tune or proportion." See also n. 23.

[26] The notions of contrast, conflict, and competition are central to the traditional view of the "concertato style." This is not entirely without justification, though these ideas have been over-emphasized. Studies that argue for a historical basis for viewing contrast and conflict as part of the essence of the sacred concerto often give undue weight to a comment in Michael Praetorius's *Syntagma musicum III* (discussed further below). See, for example, David D. Boyden, "When Is a Concerto Not a Concerto?" *Musical Quarterly* 43 (1957): 220–32.

[27] John Florio, *Queen Anna's New World of Words, or Dictionarie of the Italian and English Tongues* (London: Blount and Barret, 1611).

Thus, the musical definitions in the dictionaries refer to the sound of the music, as in "the consonance of voices, and the sounds of instruments," as opposed to written-out music or musical form. While this signification does not preclude the use of the words to refer to form, it does suggest that the primary connotation of the words related to ensemble music as a live phenomenon. Similarly, authors of music treatises use the words *concerto, concertare,* and *concertato* to signify ensemble music as an embodied practice. Vicente Lusitano and Nicola Vicentino, writing in the 1550s, used the words in reference to human voices singing together. By the last decade of the century, Giovanni Maria Artusi and Ercoli Bottrigari used the word *concerto* specifically to describe ensembles which combine voices and a diversity of instruments. They approach the subject of the concerto and "far concerti" – the act of a mixed ensemble playing and singing together – as practical problems: the diversity of tuning systems represented by an ensemble which combined keyboard instruments, winds, and fretted instruments was a major obstacle to performing in-tune.

In *Introduttione facilissima et novissima di canto fermo, figurato, contraponto semplice & inconcerto* (Rome: Blado, 1553), Lusitano used the phrase *in concerto* in contrast to the term *semplice* in his discussion of counterpoint, where *contrapunto semplice* denotes counterpoint formed by a single voice discanting against a cantus firmus and *contraponto in concerto* denotes counterpoint formed by two voices discanting simultaneously against a cantus firmus.[28] And, in his manuscript treatise, "Del arte de contrapunto," Lusitano used the Spanish terms *contrapunto suelto* (literally, "detached counterpoint") and *contrapunto concertado.*[29] The theorist's usage of *in concerto* and *concerado* suggests a meaning more subtle than ensemble singing – something more akin to two distinct voices with a similar function singing in coordination with one another. In a study of "Del arte de contrapunto," Philippe Canguilhem notes that "concerted counterpoint is ... differentiated from all other so-called improvisational practices in that it is the result of many decisions, rather than of a single one."[30] Lusitano's rival, Vicentino, also referred to "concerted" *super librum* singing in *L'Antica musica ridotta alla modern prattica* (Rome: Barre, 1555): "Improvised singing upon the cantus firmus in churches sounds well when the fellows are well coordinated ("bene concertati"), and when all parts hold their own."[31]

Bottrigari's treatise *Il Desiderio, overo de' concerti di varii strumenti musicali* (Venice: Amadino, 1594) is centrally concerned with the challenges of concerting instruments of

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[28] Vicente Lusitano, *Introduttione facilissima et novissima di Canto Fermo, Figurato, Contraponto semplice & inconcerto* (Rome: Blado, 1553), f.17ʳ.

[29] The manuscript treatise is discussed in Canguilhem, "Singing upon the Book." Canguilhem discusses *contrapunto concertado* specifically at 80-83.

[30] Ibid, 80.

[31] "Il cantar alla mente sopra il canto fermo nelle chiese, fà buono udire quando i compagni sono bene concertati, & che tutte le parti tengono i suoi termini...." Nicola Vicentino, *L'antica musica ridotta alla moderna prattica* (Rome: Barre, 1555), 83ʳ.

different types ("concertare insieme gli strumenti").[32] Bottrigari used *concerto* primarily to signify a musical ensemble and secondarily a performance by an ensemble. (I can find no instance in the treatise in which *concerto* is used to signify a composition.) Bottrigari frequently used the expression *far concerto* to refer to voices and instruments of different types playing together, reflecting the meaning given in the *Vocabolario della Crusca* for *far conserto*.

Like Bottrigari, Artusi's primary interest in the concerto relates to practical problems of concerting different types of instruments. In *L'arte del contraponto* (Venice: Vincenti, 1598), Artusi wrote:

> these little defects and those offences that many times one hears in *concerti* [i.e., coordinated ensemble playing] can principally proceed from three causes; either: our senses, offended by some intrinsic cause, are not disposed to receive the object; or, the things (that is to say, the instruments and the voices) are not at the proper distances and are not well-proportioned to one another; or, the compositions (made by an artificer who is not well-informed) bring with them some imperfections.[33]

And in *L'Artusi* (Venice: Vincenti, 1600), Artusi wrote:

> We find in this action of concerting [*concertare*], the relationship or, we could say, the action of equalization between [the parts], is such that one does not surpass the other and is not itself surpassed. We arrive [at this equalization] by adding to the weaker part or taking away from the stronger part the difference between them and the mean.[34]

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[32] Bottrigari, *Il Desiderio*, 10.

[33] "Quei diffetucci, & quelle offese, che molte volte ne' Concerti Musicali si sentono da tre cause, parmi che possino principalmente procedere; overo che i nostri sensi da qualche causa intrinseca offesi non sono disposti, à ricevere l'obietto, ò che le cose, cioè gli istromenti, & le voci non sono con le debite distanze, & tra di loro bene proportionate; overo che le compositioni portano con seco dallo artefice non bene avertito qualche imperfettione." Giovanni Maria Artusi, *L'arte del contrapunto* (Venice: Vincenti, 1598), 80. The passage appeared previously in idem, *Seconda parte dell'arte del contraponto* (Venice: Vincenti, 1589).

[34] "Ma si ricerca in questa attione di Concertare, quella proportione, ò vogliamo dire attione d' uguaglianza fra di loro; di maniera che uno non supera, ò non sia dall' altro superato, laqual uguaglianza stà nel mezo posta fra lo eccesso, e lo difetto, et ha natura di congiungere insieme quella soprabondanza, che si ritrova nello eccesso, et quel mancamento che è nel difetto; ilche si fa aggiungendo alla più debile parte, ò levando dalla più gagliarda la differenza che quelle hanno alla uguale." Giovanni Maria Artusi, *L'Artusi, overo delle imperfettioni della moderna musica* (Venice: Vincenti, 1600): f.2ᵛ.

The treatises by Artusi and Bottrigari serve to underline for us today just how vexed the concerto, as a musical ensemble that combined voices and an array of instruments, was at the turn of the seventeenth century, when there existed a plurality of tuning systems and pitch standards. They also highlight for us that before the heterogeneity of the concerto became a stylistic conceit to be exploited by composers, it was a practical headache – a ubiquitous, unresolved problem. Both theorists described in detail some of the challenges involved in harmonizing different types of instruments, and both emphasized the rarity of the concerto that plays harmoniously together. Among the topics that the theorists discussed are the classification of instruments according to tuning properties (Artusi and Bottrigari disagreed on the details here), transposition, instrumental technique, balance (see the quotation from *L'Artusi* above), rehearsal, and tuning and temperament. Bottrigari in particular devoted considerable space to this last topic; the explanation he provided through the voice of the fictional pedagogue Alemanno takes up the majority of the treatise, underlining the extent to which the problem of tuning in the concerto preoccupied contemporary musicians.

The criteria that Artusi and Bottrigari gave for the ideal concerto reinforce the concerto as a decidedly practical entity: a suitable space for performance; careful positioning within that space; multiple rehearsals; an instrumentation that includes only instruments capable of tuning together; and highly skilled, sensitive musicians. The qualities that Artusi and Bottrigari assign to the musicians who form a perfect concerto reveal that the concerto is also a social contract: they should sing and play "more with the ears" than with their voices or instruments, and they should be disciplined and humble enough to place their ego aside and heed the authority of the *maestro*.[35] A passage from Bottrigari encapsulates the effect of a perfect concerto in performance, in which Alemanno recalls hearing a "lieta brigada" of musicians in Bologna who called themselves "Rivaruoli":

> They demonstrated that they were united almost as closely as they could be with their bodies – of which they would indeed have wished to be able to make one body only – likewise they delighted in making as far as they could a true union of their respective voices, from which then came forth, I will say, an almost celestial harmony.[36]

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[35] "Quelle persone che hanno da recitare, sia ò con le voci, ò con Instromenti; più recitino con le orecchie, che con la voce ò con Instromenti." Artusi, *L'Artusi*, f.2ᵛ. For the rest of Artusi's criteria for an ideal concerto, see Ibid., ff. 2ᵛ-3ᵛ. For Bottrigari's discussion of the ideal concerto, see *Il Desiderio*, 46-51.

[36] "Dimostravano, che si come essi stavano quanto piu potevano co' corpi uniti; de quali ne havrebbono certo voluto poter fare un solo; parimente bramavano di far à loro potere una vera unione delle loro voci respettivamente; onde ne havesse à nascere un' armonia, dirò, quasi celeste." Bottrigari, *Il Desiderio*, 46; the translation is from *Il Desiderio; or, Concerning the Playing Together of Various Musical Instruments,* Carol MacClintock, trans. (n.p.: American Institute of Musicology, 1962): 56.

The description of the Rivaruoli throws the conceptual gap surrounding the concerto, then and now, into high relief. A concerto aspires to overcome the division wrought by a plurality of agents in co-performance and blurring the boundaries of their bodies is far removed from the concerto (or concertos) we usually invoke in discussions of seventeenth-century music.

In Michael Praetorius's *Syntagma musicum III* (Wolfenbüttel: Holwein, 1619), good coordination and tuning are still central problems of the concerto; however, they are no longer the vexed issues that they were for Artusi and Bottrigari.[37] Indeed, Praetorius's discussion of *concerto* suggests a more abstract concept – though only slightly. In the context of a discussion of compositions with a continuo part, Praetorius defined *concerto* as "any song in several parts" and noted a tendency among Italians to use *concerto* as a synonym for *motet*.[38] He also noted a second, narrower definition that referred to the situation in which the best singers and players of "all manner" of instruments are selected and perform together "in alternating choirs, vying with one another to see which one can outperform the other."[39]

Whereas Artusi and Bottrigari had placed the responsibility for creating a good concerto squarely on the performing musicians, Praetorius included instructions for composers on how best to arrange music for a concerto and, thus, how to manage the inherent discord between certain types of instruments. The chapter relating "a quick and easy method for the arrangement and distribution of parts in concerts and motets for few or many choirs and all sorts of instruments and voices" is an early modern primer on orchestration, relaying practical information for composers, such as which keys work best with different combinations of instruments. It presents a compositional strategy for the concerto in the sense that it equipped the composer to manage the conundrum of the concerto in performance (as it had been discussed by Artusi and Bottrigari).

The terms *concerto* and *concertato* are ubiquitous in Severo Bonini's manuscript treatise, "Discorsi e regole sovra la musica et il contrappunto" (1649), which discusses, among other topics, the usage of concerted music in the Church. Occurences of *concertato* most frequently refer to the presence of instruments in musical settings, in such phrases as "ariette à una e due voci concertate per le arpicordi, ò simili strumenti" ("little arias for one and voices concerted for harpsichords or similar instruments"), "musica concertata con voci e con suoni" ("music coordinated with voices and instruments") and "si canti concertato con i suoni" ("sung in coordination with the instruments"), and in a list of composers of "madrigali non concertati" which includes Palestrina, Lasso, Rore, and Marenzio, among others.[40] In this

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[37] For Praetorius's discussion of ensemble issues (tuning, balance, etc.) in the context of the concerto, see Praetorius, *Syntagma musicum III*, trans. Jeffrey Kite-Powell, 151-56.

[38] Ibid., 18-23.

[39] Ibid., 19. Praetorius apparently adapted this description from Bottrigari's discussion in *Il Desiderio* of proceedings at the Estense court under the direction of Luzzaschi. Bottrigari had not stressed competition among the musicians to the degree that Praetorius did.

[40] I-Fr Ms. 2218. Severo Bonini, "Discorsi e regole sopra la musica et il contrappunto" (1649), ff. 58ʳ, 66ᵛ, and 101ʳ. For a transcription and English translation of the treatise, see MaryAnn Teresa Bonino,

context, *concertato* refers primarily to the combination of voices and instruments, in the guise of the live phenomenon as well as written-out compositions. The treatise serves to show that musicians continued to use *concertato* at mid-century in the sense of the basic meaning of polyphonic vocal music involving the participation of instruments.

Writing considerably later in the century, Giovanni Maria Bononcini shows a further level of abstraction from Praetorius of the meaning of *concerto* in *Musico prattico* (Bologna, 1688). The author used *concertato* to refer to a compositional idiom: "In [sacred] concerted [compositions], we can at times tolerate some things [not acceptable *a cappella* compositions], especially if there are many voices, as in secular compositions, *sinfonie*, and others intended to move the affections."[41] Unlike the authors from the first half of the century, Bononcini used the phrase *stile concertato*:

> All of this [the inherent characteristics of the authentic and plagal modes] is not observed, however, in the concertato style, in which we cannot observe them, on account of the vagaries that we find in the same; but in the *a cappella* style, we can – and must – observe not only the aforementioned details, but also what Giovanni Nasco, Jacquet de Berchem, Jhan Gero, Palestrina, and other first-rate practitioners have observed.[42]

It is notable that in both of the passages quoted from Bononcini's treatise, the theorist cast "concerted compositions" and the "concerto style" in opposition to "a cappella compositions" and the "a cappella style" – rather than in opposition to the *stile antico* or *prima prattica*. In other words, even in discussing concerted music as a style, Bononcini, writing near the end of the seventeenth century, defined it in terms of its phenomenal traits.

Though this survey is in no way comprehensive, it shows that the meanings of *concerto* and *concertare* as relayed in sixteenth- and seventeenth-century sources are entrenched in the phenomenal aspect of ensemble performance. Meanings included the coordinated performance of a group of musicians, a musical work, a concert (event), a group of musicians, the sonority produced by that group, a way of realizing written music, a scoring technique, and a compositional strategy. Over the course of the seventeenth century, the concept expanded to include formal aspects of music and an aesthetic outlook (as other

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"Don Severo Bonini (1582-1663), His 'Discorsi e regole'" (Ph.D. diss., University of Southern California, 1971).

[41] "Nelle [composizioni] concertate poi si tolera alle volte qualche cosa, massine se sono à molte voci, come ancora nelle Composizioni profane, Sinfonie, & in alcun' altre fatte per mover gli affetti." Bononcini, *Musico prattico*, 115.

[42] "Tutto ciò non viene però osservato nello stile concertato, ne [i.e., né] vi si può osservare, per le bizzarie, che in esso si ricercano; mà nello stile à Capella si può, e si deve osservare non solo le sudette particolarità; mà eziandio quanto hà osservato Giovanni Nasco; Giachetto Berchem, Ihan Gero, Palestina, & altri simili ottimi Prattici." Ibid., 118.

scholars have shown). The concept of "concertato music" as a codified style is best understood as an outgrowth of the affordances of the seventeenth-century heterogeneous ensemble.

Tailoring the Organ to the Voice

While Artusi and Bottrigari emphasize the diversity of the elements that comprise a concerto—voices and different types of instruments, with tunings that were not always easy to reconcile—the *concerto* that actually dominates printed collections of sacred music in the first half of the seventeenth century is for voices and organ (as discussed above). This is in part due to the pragmatic reason that the organ was usually the only dedicated instrumental part provided in a collection of sacred music. But this in itself speaks to the centrality of the organ within ensembles, where it provided the fixed pitches to which all other musicians tuned. As Praetorius noted in *De organographia* in 1619, the role of the organist was "to keep the entire ensemble together, and especially choirs of singers, so that the singers maintain the right key."[43] Voices moved through tonal space along the grooves provided by the organ's temperament. Valerio Bona advised singers to be aware of this regulating function of the organ in the preface to the organ part of *Li dilettevoli introiti* (1611), writing that

> since the organ is the principal part for these pieces, one must take special account of it, as all the voices depend on it. He who does not respect the instrument will very often be confused by the discord that ensues and the discrepancy between the organ and the tone sung.[44]

The concerto-related anxieties discussed by Bottrigari and Artusi come to life in real situations in archival documents related to the upkeep of organs in the sixteenth century. They reveal that the problems churches faced in calibrating an organ to fit the choir (and, sometimes, wind instruments) could be political as well as practical. They also show the care with which some churches approached this endeavor. The case of the cathedral at Cremona offers a vivid illustration of the mundane challenge of regulating the organ to make it optimal for singing. Oscar Mischiati has reconstructed a fascinating history of the instrument from

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[43] Praetorius, *Syntagma musicum II: De organographia* (Wolfenbüttel: Holwein, 1619), 88. The translation by Quentin Faulkner in *Syntagma Musicum II: De Organographia, Parts III – V with Index* (Lincoln, NE: Zea Book, 2014) http://digitalcommons.unl.edu/zeabook/24, 88.

[44] "Essendo l'Organo nelle Musiche in principale, di esso si deve far capitale, come quello, dal quale dipendono tutte le voci; & chi non fa stima dell'istromento ben spesso resta confuso, per il disordine che nasce, per la differenza che è tra l'Organo, & l'Intonante, restando in voce semitonante." Valerio Bona, *Li dilettevoli introiti della messa a doi chori brevi, facili, & ariosi con il partito delli bassi modernamente composti, per cantare, & sonare in concerto* (Venice: Vincenti, 1611).

archival documents.[45] In 1542, the renowned organ builder Giovanni Battista Facchetti was contracted to produce a new organ for the cathedral.[46] The contract stipulates that the pitch and tuning of the organ should be amenable to singing – a standard clause in sixteenth-century Italian organ contracts.[47] Evidently, the vestry (*fabbriceria*) of the cathedral invested considerably in exploring how best to tailor the organ to the voices of the choir. Their efforts included consulting with music theorist Giovanni Maria Lanfranco about the possibility of adding split chromatic keys in order to expand the instrument's tonal range beyond the normal bounds of meantone.[48] A lengthy missive sent by Lanfranco to the vestry on October 19, 1544 makes it clear that the two parties had met in person about the matter and had since been corresponding about it.[49] Lanfranco advocated strongly in favor of the extra chromatic notes, proposing a keyboard designed with seven extra keys: four D♭s and three A♭s. These additional chromatic notes would allow the organ to accommodate "human voices" better than any organ not equipped with them, according to Lanfranco, who noted that "today's music is expansive; the division of regular organs is restrictive."[50] Evidently, the vestry decided to follow Lanfranco's recommendation and pay for the extra chromatic keys.

The issue of tailoring the cathedral organ's pitch and temperament to the choir – as well as to other instruments – surfaces again in the cathedral's archival documents four decades later. In January 1582, the cathedral organist Camillo Mainieri, with the support of *maestro di cappella* Marc'Antonio Ingegneri, recommended that the organ pitch (*corista*) be lowered by a semitone "so that its tone corresponds to the choir and to *concerti* that we make and will make with all sorts of musical instruments."[51] The vestry reacted coolly to this recommendation. From the vestry's perspective, the organ "is of such quality that all who hear it commend it as an exceptional instrument," and they felt that lowering the pitch would

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[45] Mischiati's research on the organ at the Cathedral of Cremona was published posthumously as Oscar Mischiati, *L'organo della cattedrale di Cremona. Vicende storiche e documenti dal XV al XX secolo*, ed. Marco Ruggeri (Bologna: Patron, 2007).

[46] Mischiati discusses the 1542 contract and the mixed reaction to Facchetti's organ in Ibid., 13-18. A transcription of the contract between Facchetti and the vestry appears in Ibid., 527-31.

[47] "item che sia obligato ad fare lo organo chorista et sequente de voci...." Ibid., 529.

[48] Ibid., 15. This rethinking of the organ's scale followed the vestry's decision in 1544 to expand the organ's design from a 12' to a 24' instrument, in accordance with Facchetti's recommendation.

[49] Lanfranco's letter, sent from Parma, is transcribed in Ibid., 184-87.

[50] "... rispondendo a chi dice che l'organo è chorista, non vale il dire che l' organo sia chorista; tutti gli organi sono choristi; ma pochi se ne trovano, anzi niuno, che soddisfaccia alla musica di voci humani senza questi diesis et cio è perche la lor divisione non puo dar questa commodita al cantante. La musica di hoggidi è larga et la divisione delli organi consueti è stretta et questo potrebbe bastare alle S.V. in quanto alla mia oppenione." Ibid., 185.

[51] "In modo che il suo tuono corrisponda al choro della musica et concerti che in essa si fanno e faranno e con tutte le sorti d'istromenti musicali che in detta musica et concerti concorrono." Ibid., 20-21.

amount to needlessly tampering with its "perfection."[52] The vestry consulted with many experts on the matter, among them the renowned Cremonese organist Giovanni Battista Morsolino (later the organist to Duke Albert V of Bavaria) and the organ builder Graziadio Antegnati (father of Costanzo). These two were divided on the matter. Morsolino disagreed with lowering the pitch for the sake of accommodating *concerti* (with instruments), suggesting that such a purpose could be achieved even with an organ pitched a tone higher than the cathedral's, provided the organist was capable of transposing "down a tone to accommodate the choir."[53] Antegnati agreed with lowering the pitch, adding that doing so would make the extra chromatic keys moot; several of these keys could then be removed and their channels repurposed to extend the compass of the organ upwards.[54] Upon further consultations and much deliberation, the vestry finally decided on April 20, 1583 – over a year after Mainieri's initial proposal – not to risk lowering the pitch of the organ. The seriousness with which the vestry approached this issue is revealed in the extensive correspondence that relates to it.[55]

By the beginning of the seventeenth century, accompanying had become one of the major functions of the gallery organ. But its capacity for accompaniment was, at this time, a relatively recent development. Memory of the medieval *Blockwerk* organ was still vivid. With inseparable registers which produced an incessant *organo pieno*, the *Blockwerk* was not suited to the task of accompanying voices and instruments. Tailoring the organ to accompany voices and instruments was a centuries-long process that was still ongoing in the seventeenth century. While it is impossible to pinpoint when this process began – there is no reason to assume that changes in the organ's design were motivated from the start by the desire to

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[52] This response is recorded in a letter sent by the vestry to organist Giovanni Battista Morsolino, then in Brescia, soliciting advice on the matter. "Nella nostra chiesa maggiore di Cremona habbiamo, come dovete sapere, un organo di tale bontà, che da tutti che l'odono, è comendato per instromento raro.... Siamo alquanto soprapresi da timore d alterare la bontà e perfettione d'esso instromento." Ibid., 210. For Mischiati's discussion of the controversy, see Ibid., 20-25.

[53] Of Morsolino's response, Mischiati writes: "negando la opportunità dell'abbassamento in funzione dei 'concerti' poiché questi stessi vengono ugualmente eseguiti anche con organi addirittura più alti di un tono rispetto a quello di Cremona a condizione che vi siano coinvolti organisti 'di qualche vallare,' capaci anche di 'suonare fuor di tuon più basso per accomodar li cantori.'" Ibid., 21.

[54] "L'organaro bresciano [Antegnati] si dimostra in sostanza favorevole all'abbassamento ed espone in dettaglio - registro per registro - come allungare o scalare le canne.... Poco più di un mese più tardi (gennaio 1583) Antegnati osserva che abbassando il 'corista' i 'semitoni scavezzi' non sono più indispensabili e consiglia di utilizzare tre dei rispettivi canali del somiere per allargare in acuto la tastiera di altrettanti tasti" [the F♯, G, and A in the fifth octave above the lowest note, C, of the organ]. Ibid., 22.

[55] Mischiati includes transcriptions of twenty-eight communications on the matter. Ibid., 209-31.

create an accompanimental instrument – the adoption of the modern keyboard as the standard interface for gallery organs in the first half of the fifteenth century marks a significant early milestone in the process. There followed a separation of the registers beginning in the second quarter of the fifteenth century. As the case of Cathedral of Cremona organ illustrates, tailoring the organ to the choir had become a major preoccupation of organ-builders, church musicians, and administrators.

A strong sense of the organ's history and development is palpable in writings from the time. No doubt this awareness of novelty was heightened by the abundant contrasting depictions of medieval and early Renaissance *organetti* and positive organs in contemporary altarpieces (images of large gallery organs are rarer). The exotic instruments, with interfaces that consisted at times of buttons, sliders, or large levers, continue to serve as ubiquitous reminders, to those who notice them, of the dramatic differences between modern organs and their forebears. As Francesco Sansovino's *Venetia città nobilissima et singolare* illustrates, the awareness of the organ's history was not confined to musicians and music theorists. Sansovino narrates a fanciful history of the organ featuring such precursors as the "rigabello" and "torsello," which were directly inspired by images of medieval organs in buildings in Venice.[56] Centuries later, Giovanni Battista Martini wrote a letter on the ancient history of the organ in which he included his thoughts on a depiction of a medieval positive organ at S. Benedetto in Mantua.[57] In the image, the organist plays the instrument (with the help of the calcant) in an ensemble with bells, psaltery, vielle, and shawm (Figure 3 reproduces Martini's sketch of the image). Martini noted in particular the foreignness of the manner in which the organist played the instrument, "as if by raising or lowering, or pushing inward or pulling outward two rulers or registers."[58]

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[56] "Vi è anco di notabile la forma di uno stromento musico, ch'era detto Rigabello, il quale s'usava in Chiesa innanzi l'inventione dell'Organo, & un'altro simile era nella Celestia sopra la sepoltura del Celsi. & dopo il Rigabello s'introdusse il Torsello, che si sonava con mazze, condotto a' Venetia da un Tedesco.... Ma estinto anco il Torsello, si ritrovarono i Ninfali, che si cignevano a traverso di colui che gli sonava con le dita, & erano co tasti come gli organi, ma si toccavano solamente con la sinistra.... Ultimamente furono ritrovati gli Organi che sono in uso." Francesco Sansovino, *Venetia città nobilissima et singolare* (Venice: Jacomo Sansovino, 1581), f.88r. It is not clear exactly what Sansovino meant by "rigabello" and "torsello." For discussion, see Capo III, § XIV, "Del Rigabello, Torsello, e Ninfali," in the Secondo Libro of Giovanni Battista Gallicciolli, *Delle memorie venete antiche, profane ed ecclesiastiche*, vol. 3 (Venice: Fracasso, 1795).
[57] I-Bl Ms. H 75. The letter is partially transcribed in Oscar Mischiati, "Notizie di storia organaria e cembalaria nelle carte di Padre Giambattista Martini," *L'organo: Rivista di cultura organaria e organistica* 32 (1998-99): 129-35.
[58] "Non mi reca maraviglia, però, che segga quell giovine che suona in un modo non più veduto l'organo; quasi alzando o abbassando o spingendo indentro o tirando a sé in fuori due regoli o siano registri." Ibid., 131.

Figure 3.1. G.B. Martini's sketch of a medieval organ with other instruments.
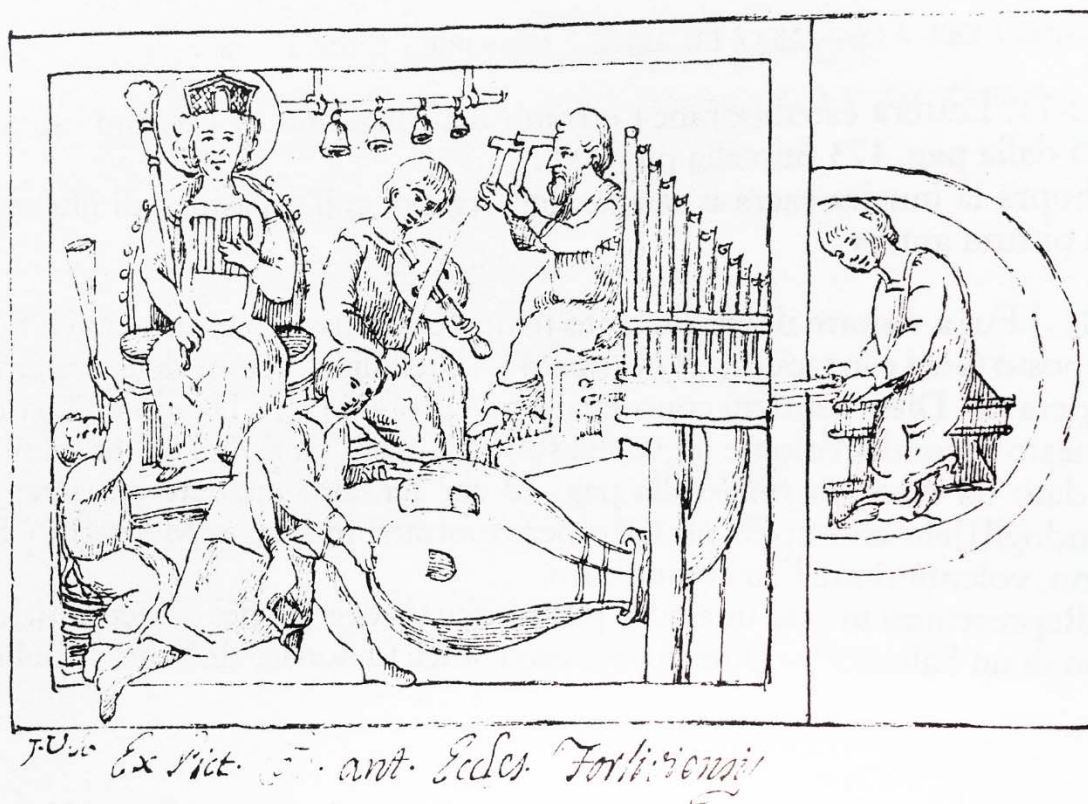
Sensibility to the modernized design of the organ comes through in music treatises from the sixteenth and seventeenth century. Gioseffo Zarlino's writings also reveal the music theorist's deep interest in the forebears of the modern organ. In *Sopplimenti musicali*, he claimed to own the windchest of a medieval organ that had belonged to a convent in Grado, some seventy miles east of Venice (Figure 3.2).[59] Zarlino described the organ as having fifteen keys, which operated thirty pipes, and no stops (a description which accords with the illustration).[60] The theorist also described a medieval *Blockwerk* organ that had been at Il Santo in Padua.[61] Zarlino's pupil Vincenzo Galilei also discussed the history of the organ and mentioned an extant archaic specimen known to him at the Cathedral of Munich. Galilei

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[59] Zarlino, *Sopplimenti musicali* (Venice: Francesco dei Franceschi Senese, 1588), Book Eight, 291.
[60] Ibid, 290-91.
[61] Ibid. Erice Rigoni speculates that this *Blockwerk* may have been the instrument built by Georgius de Vienna (also called Georgius de Alemanea) in the 1440s. Erice Rigoni, "Organari italiani e tedeschi a Padova nel Quattrocento," *Note d'archivio per la storia musicale* 13 (1936): 7.

claimed that this organ was "the oldest of its type and size in Germany ... and for this reason it is venerated by those people."[62]

Michael Praetorius's *De organographia*, the second part of his monumental treatise *Syntagma musicum*, which famously includes an extensive discussion of old organs, provides the richest documentation of the material form of the medieval organ in early modern Europe. Praetorius had first-hand knowledge of several organs with pre-modern keyboards, including those at the Cathedrals of Minden (whose keys he describes as "fully the width of three fingers"), Halberstadt (Figure 3.3), and Magdeburg (Figure 3.4).[63]

Figure 3.2. Zarlino, *Sopplimenti musicali*, woodcut of a medieval organ windchest.

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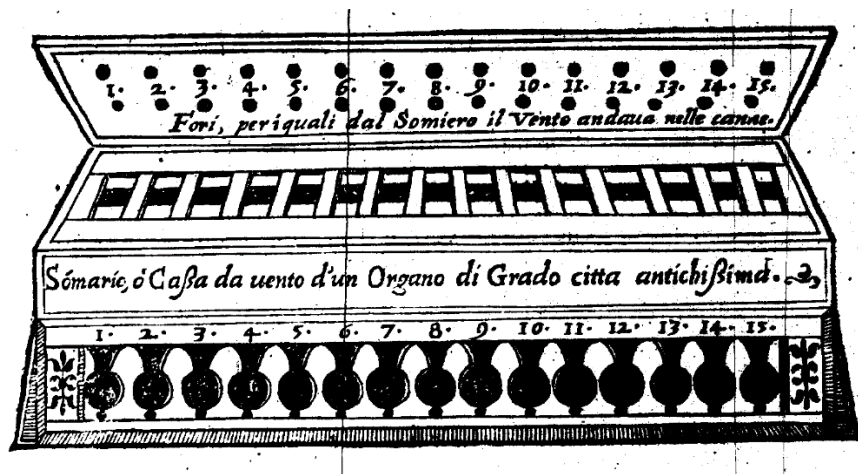
[62] "Ciò dico per haverne veduto uno tra li altri nella Chiesa Cattedrale di Monaco ... con canne di bossolo tutte d'un pezzo, grande e tonde all'ordinario delle nostre fatte di metallo; il quale nel suo genere & di quella grandezza è il piu antico d'alcun' altro che si trovi non solo in tutta Germania, ma forse in qual si voglia altra parte del mondo, & perciò tenuto in veneratione da quei populi." Vincenzo Galilei, *Dialogo della musica antica et della moderna* (Florence: Marescotti, 1581), 144.
[63] Praetorius, *De organographia*, 97-113.

Figure 3.3. Praetorius, *De organographia,* woodcut of the manual and pedal keyboards of the Halberstadt organ.

Das I. vnd II. Difcant-clavier.
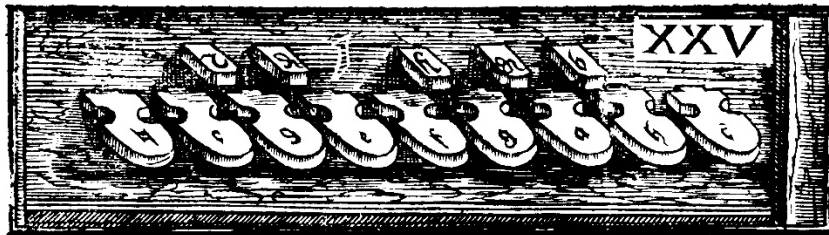
Das III. Clavier.
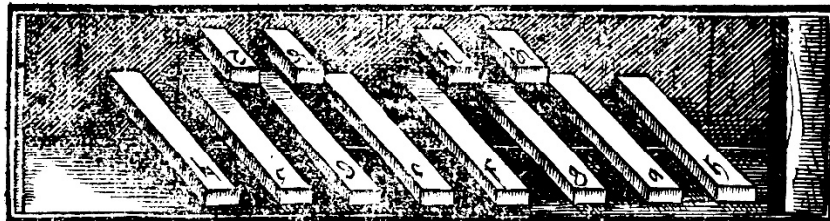
Das IV. Pedal-Clavier,
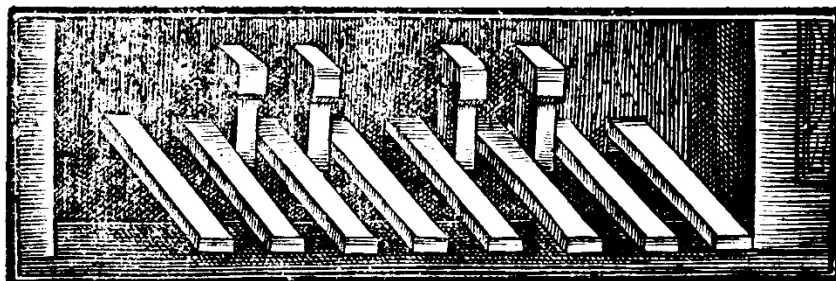
Diß find die Manual-vnnd Pedal-Clavier, wie die in der gar groſſen Orgel im
Thumb zu Halberſtadt vber einander liegen.
D   I.

Figure 3.4. Praetorius, *De organographia*, woodcut of a key of the Magdeburg organ.
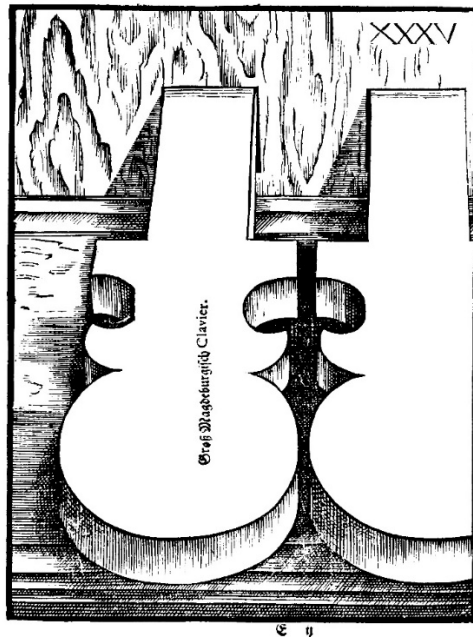
It would seem, then, that these authors lived during a time when the modern organ was young, having recently reemerged as a device for choral accompaniment. By the mid-fifteenth century, the modern keyboard had become the standard interface for new organs in Europe. This model, which remains the standard for keyboard instruments today, was characterized by a fully chromatic compass (with the exception of the very lowest range), interlocking diatonic and chromatic keys, a keybed, and a nimble key mechanism. It was the result of a conglomeration of technical developments in organ building during the fourteenth and fifteenth century.[64] As an interface, it allowed increased independence of the fingers, which made it more amenable to playing polyphonic and homophonic textures with four or more parts. In older models, chromatic keys were located in a discrete row positioned above the diatonic keys, making them more difficult for the organist to access than they are in the modern design. One of the earliest depictions of a keyboard with the modern configuration of interlocking diatonic and chromatic keys on a gallery organ is a drawing by the organ

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[64] Key studies on the development of the modern keyboard include Friedrich Jakob, "Zur Genesis des neuzeitlichen Klaviaturbildes," in *Max Lütolf aum 60. Geburtstag. Festschrift*, ed. Bernhard Hangartner and Urs Fischer (Basel: Wiese, 1994), 221–34; Kimberly Marshall, "Die Entwicklung der Orgelklaviatur," *Österreichisches Orgelforum* 1–3 (1991): 173–94; eadem, "The Development of the Organ Keyboard," in *Music and Its Questions: Essays in Honor of Peter Williams*, ed. Thomas Donahue (Richmond, VA: OHS Press, 2007), 1–21; and Edwin Ripin, "The Norrlanda Organ and the Ghent Altarpiece," in *Emsheimer Festschrift*, ed. Gustaf Hilleström (Stockholm: Nordiska Musikförlaget, 1974), 193–96, 286–88.

builder Matteo d'Allemagna, dated 1441, attached to a contract for a new instrument at S. Antonio in Cremona (Figure 3.5).[65] Note that in Figure 3.5 the organ appears to be without stops.

Figure 3.5. Matteo d'Allemagna, sketch of the proposed organ for S. Antonio, Cremona.

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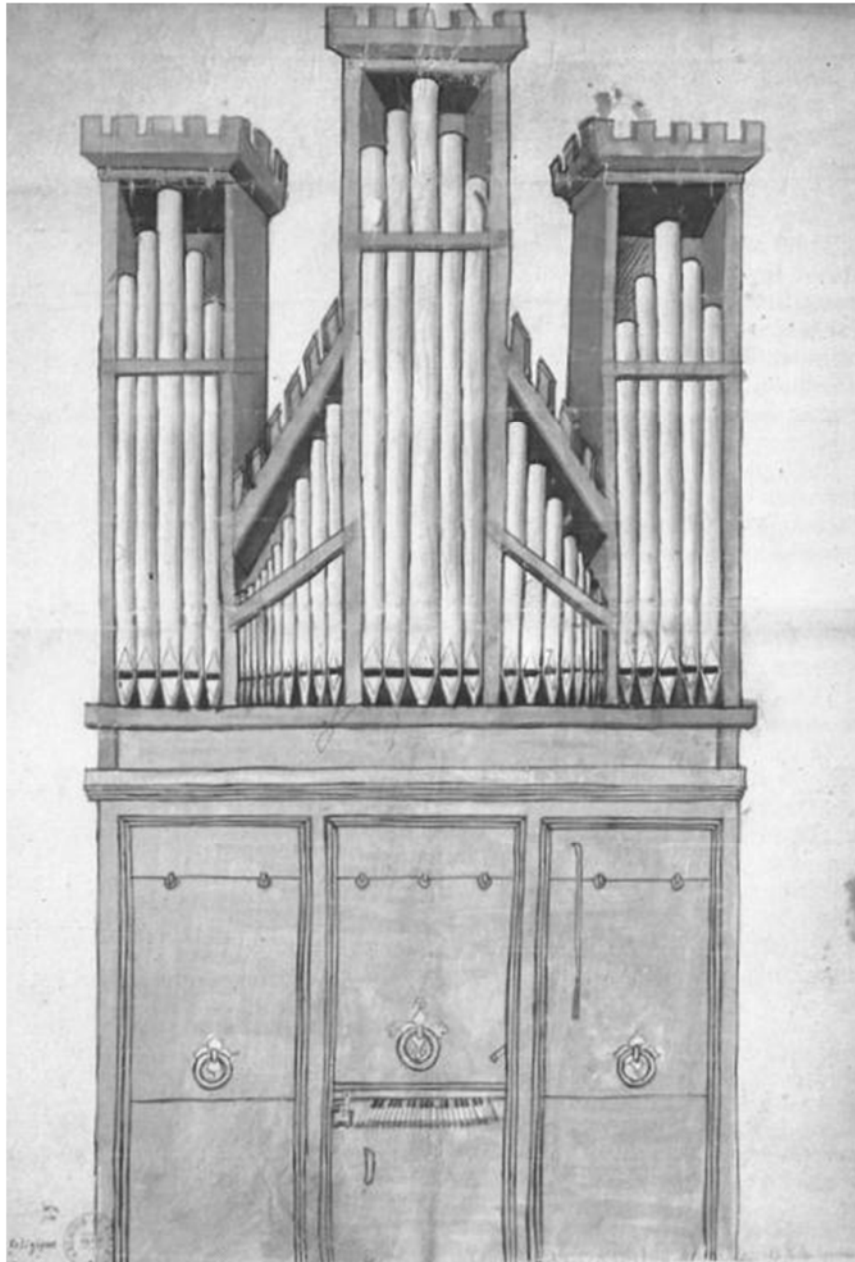
[65] The contract is transcribed and the drawing reproduced in E. Motta, "Un organo a Cremona nel 1441," *Archivio storico lombardo*, 3rd ser., 13 (1900): 413–17.

The keys (both diatonic and chromatic) of earlier organs were often significantly larger than their modern counterparts, and could be contiguous or non-contiguous.[66] The keys protruded directly from the organ case (without the undergirding of a keybed), as they appear to do in Matteo's drawing (Figure 3.5).

Given the time gap between the widespread adoption of the modern keyboard as the interface for gallery organs in the mid-fifteenth century and the use of the organ for vocal accompaniment in the sixteenth century, their connection may seem remote. We should keep in mind, however, that organs operated by means of pre-modern keyboards remained in use until they were updated or replaced. Organ contracts from the late fifteenth and early sixteenth centuries show that a keyboard with interlocked diatonic and chromatic keys was not taken as a given. In 1496-97, Nicola di ser Andrea da Verona built a new organ in Pieve di Gemona "with a double keyboard" ("cum tastadura dupla").[67] A document relating to the renovation of the organ at the Cathedral in Palermo in 1501 suggests that the instrument had three discrete rows of keys, one diatonic and two chromatic. The builder, Joannes de Messana, was asked to make these rows into a single keyboard ("reducchiri li tri tastaturi ad una tastatura").[68] Mischiati notes one document that refers to a request in 1518 to an organ builder named Marc'Antonio Bizzarri by a church in Bormio to update the organ with "a keyboard in the modern manner; that is, with all of the keys locked in together."[69] It is not clear whether this instruction refers to a keyboard "locked together" by a keybed, or one with chromatic keys "locked together" with the diatonic keys, or both. In any case, it implies that a pre-modern keyboard had been in use at the church until 1518. While there is much research still to do on the use of organs with pre-modern keyboards in sixteenth-century Europe, for the moment, the evidence points to the continued presence of these vestigial interfaces alongside modern keyboards.

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[66] Praetorius noted that the keys of an organ at Minden were "fully the width of three fingers" – "twice as large as today's." Praetorius, *De organographia*, 109, translated in *De organographia,* trans. Q. Faulkner.

[67] Renato Lunelli notes that "lo strumento era di sette registri ... 'cum tastadura dupla incipiente in fa et finiente in fa, que tastadura erit numero tasti quadraginta septem.'" Renato Lunelli, *Studi e documenti di storia organaria veneta* (Florence: Leo S. Olschki, 1973), 211. It is clear from the description (of an organ with seven stops and a keyboard that begins and ends on F with 47 keys) that "tastadura dupla" does not refer to two separate manuals.

[68] Giuseppe Dispensa Zaccaria, *Organi e organari in Sicilia dal' 400 al '900* (Palermo: Accademia nazionale di scienze, lettere e arti di Palermo, 1988), 127.

[69] "...una tastiera fatta alla moderna cioè serrata tutta da l'un canto al altro." Oscar Mischiati, "L'organo," in *La Chiesa della Madonna di Campagna* (Ponte in Valtellina: Parrocchia di San Maurizio, 1993): 130, cited in Pier Paolo Donati, "L'arte degli organi nell'Italia del Quattrocento, III: Le caratteristiche degli strumenti," *Informazione organistica* 18 (new series vol. 15) (2006): 240n220.

The use of the organ to accompany voices was also contingent upon a technology that allowed the registers of the *Blockwerk* to be isolated. Among the recommendations that Viadana set out for the performance of his concertos was an instruction to organists

> to refrain from pulling additional stops, as the delicate and soft tones of the singers would otherwise be completely overwhelmed by the considerable sound of the many organ stops, which would cause it to be heard more prominently than the singers.

Stop technology – sliders that restricted the flow of wind to specific channels of the organ – was fitted to gallery organs in Italy from the 1430s. It is estimated that by about 1500, makers regularly equipped new organs with fully stoppable registers. Stops expanded the timbral scope of the organ dramatically, effectively allowing the fundamental tone and lower partials of the *Blockwerk* to be drawn while the upper partials remained tacit, producing the sort of registration advocated by Viadana and other early proponents of the *basso continuo*.

Italian organ builders embraced stop technology. Stops appear to have been added to large organs in northern and central Italy over an extended period, between 1430 and 1500.[70] Organ builders in northern Europe, by contrast, employed stops conservatively, owing to the design of organs which, unlike Italian organs, were divided among multiple chests (each controlled by a different keyboard). The first registers to be fully isolated, in Italy and elsewhere, were those at the low end of the overtone series: the fundamental, the octave, and perhaps the double octave. That is, precisely the registers used to accompany singing. The motivation behind the move to separate the registers of the gallery organ is not known. It is possible builders aspired to transform the organ into an accompanying instrument or expand its timbral variety. It seems more likely, however, that stops originated as a solution to a mechanical problem, such as an overtaxed wind supply, and that the new capacity of the

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[70] It should be noted that during this period some new organs continued to be built as *Blockwerke*, as was the case of the 1441 organ built for the cathedral at Cremona by Matteo de Allemagna (depicted in Figure 3.5). Fifteenth-century references to organs with stops have been compiled in a number of studies, including Rudolf Quoika, *Vom Blockwerk zur Registerorgel* (Kassel: Bärenreiter, 1966). Pier Paolo Donati, "L'arte degli organi nell'Italia del quattrocento, II: La comparsa dei registri," *Informazione organistica* 18 (new series vol. 14) (2006): 99–128, is concerned specifically with Italian organs. Some of the earliest references to stops have been found in documents relating to organs built by the da Prato family, including the instrument played by Squarcialupi at the Duomo in Florence (1448), S Maria della Scala in Siena (1460), San Petronio in Bologna (1474), and Pistoia (1476). By 1490, the organ at S Marco, Venice was equipped with fully separable ranks, but in 1508 the organ at Milan was only partially stopped. Barbara Owen and Peter Williams, "Organ," *Grove Music Online*. *Oxford Music Online*. Oxford University Press, accessed July 15, 2014, http://www.oxfordmusiconline.com/subscriber/article/grove/music/44010pg5.

organ as an accompanying instrument was a serendipitous outgrowth of this development. [71] Another possible objective for adding stops to gallery organs was to incorporate the sound and some of the functions of smaller organs – portatives and positives. Builders had been fitting these smaller models with stops before applying the technology to large gallery organs. Archival documents suggest that they were a common presence in many Italian churches in the fifteenth and sixteenth centuries. Whatever the motivation for adding stops to the gallery organ, the technology opened up the possibility for accompaniment, expanding the function of the organ within the liturgy. In effect, stops provide a *terminus post quem* for the performance of sacred polyphony with one or more voices and organ.

The new function of the organ could be behind some of the problems and concerns that crop up consistently in sixteenth-century archival documents related to organs. One such concern was keeping the organ at a pitch suitable for singing (as we saw in the case of the Cathedral of Cremona) and, in some cases, other instruments. The pitch of organs had long been calibrated to the choir. Even before the organ became an accompaniment instrument, intoning the ton (*tuono*) for the choir had been a central function of the organ (though it appears that, not infrequently, smaller positive or portative organs – not gallery organs – fulfilled this role). Using the organ to accompany the choir meant that the instrument's pitch was even more intimately linked to the choir. Lowering the pitch of an organ whose pitch had been gradually raised over the years – a side effect of many tunings – was a routine aspect of organ maintenance. When the organ's pitch became too high, and the organist was unable to transpose down (whether due to the idiocyncracies of meantone temperaments or the skill level of the organist), the singers suffered physically. Additionally, organs were not infrequently fitted with extra chromatic keys (like the organ at Cremona) to enable more transpositions to better accommodate the choir. [72]

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[71] Peter Williams offers the overtaxed wind hypothesis in *A New History of the Organ From the Greeks to the Present Day* (Bloomington, IN: Indiana University Press, 1980), 65. This would explain the discrepancy in the exploitation of stops by Italian builders and their northern European counterparts. Italian organs were built upon a single windchest, whereas northern organs were spread over multiple divisions, each with its own wind supply. This meant that the wind supply of an Italian organ bore a greater burden than a northern organ of comparable size and was, thus, more easily overtaxed. By isolating not only the lower ranks of the *Blockwerk* but also all of the upper ranks, Italian organ builders provided organists with a mechanism to avoid draining the wind (and the resultant wavering of pitch), allowing them to shut off certain upper ranks of the *ripieno* at their discretion while retaining a timbral quality similar to the full *ripieno*, or according to their desire.

[72] A list and discussion of Italian organs with split keys is provided in Denzil Wraight and Christopher Stembridge, "Italian split-keyboard instruments with fewer than nineteen divisions to the octave," *Performance Practice Review* 7 (1994): 162-67. Gian Paolo Cima stressed the importance of transposition in organ playing in the preface to *Partito de ricercari, & canzoni alla francese* (Milan: Tini & Lomazzo, 1606). See Christopher Stembridge, "Music for the *cimbalo cromatico* and the Split-Keyed Instruments in Seventeenth-Century Italy," *Performance Practice Review* 5 (1992): 8-9.

Another recurring concern voiced in sixteenth-century documents regarding the organ's performance was responsiveness. Accompaniment depended upon a reliable, even action and quick, clear pipe speech. The Venetian builder Vincenzo Colombo, for instance, noted upon testing an organ in 1538 that its pipes "are neither in tune nor speak as they should."[73] Requests for new organs to be built by Marco Tinto (1517) and Facchetti (1538), and a request for repairs to an existing organ to be fixed by Tommaso de Verdellis (1569) make explicit stipulations for quick or clean pipe speech.[74] Related to this, organ builders continued to experiment with the scaling and widths of pipes in the sixteenth and seventeenth centuries – perhaps to optimize pipe speech for accompaniment. While this topic would benefit from further research, at least two organologists, Pier Paolo Donati and Loris Stella, have linked the evolution of pipe sizing in Italian organs to the use of the organ in *concerti.*[75]

Polyphonic Vocal Music, Incorporated

It is not clear when, where, or why *cappelli musicali* first harnessed the newfound potential of the organ for vocal accompaniment. Perhaps it originated as a makeshift solution for a missing singer or a weak section in the performance of a polyphonic setting, in which the organ was summoned to replace or reinforce. Or, perhaps it began from a desire to add voices to the organ verses in *alternatim* performance so that sacred texts could be sung and heard in their entirety.[76] Early documented forms of organ accompaniment, first in the guise

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[73] Pier Paolo Donati, "Nota sugli ideali sonori nel Veneto e in Toscana nel XVI secolo: Confronto tra un organo Colombi 1555 e un Luca di Cortona 1536," *Informazione organistica* 22 (new series vol. 27) (2009): 203.

[74] "Tinto was to make an organ that was 'ben intonato, che dispichi netto;" Facchetti was to ensure responsive pipe speech (as soon as 'tochato lo atasto che la canna habia facto la su voce senza riposo'); Tommaso was to improve the speech of some of the pipes so that some of them 'spiccassero un puoco piu presto.'" Ibid.

[75] Donati writes: "Come si vedrà, la rivoluzione innescata dalla monodia accompagnata esercita qualche influenza anche sulla proporzione dei corpi sonori. A questo, si aggiunga la pratica sempre piu diffusa dei 'concerti che si fanno nell'organo' con voci e strumenti, che certamente avra influenzato la scelta delle misure delle canne." Donati, "Sui 'concerti che si fanno nell'organo,'" 207n12. Stella writes, in conclusion of an analysis of the pipe dimensions of northern Italian organs from the second quarter of the sixteenth century that "è evidente, in generale, il diverso trattamento costruttivo tra Principale e Ottava (e file di Ripieno), atto ad accordare al primo registro particolare autonomia e rilievo nel suo impiego solistico" (noting the different treatment that the builders give to the Principale and Ottava stops – those used for accompaniment). Loris Stella and Valerio Formentini, *L'organo di Valvasone nell'arte veneziana del Cinquecento* (Udine: Ribis, 1980), 62.

[76] Arnaldo Morelli puts this forth as one possible origin for the practice of "cantare sull'organo." See Morelli, "Cantare sull' organo: An Unrecognized Practice," 191-94.

of "cantare sull'organo" and later in early prints of sacred music containing a basso continuo, suggest purposes triangulated by pragmatic, aesthetic, and doctrinal concerns.

Beginning in 1594, the practice took shape in print, in the form of organ parts to accompany collections of sacred polyphonic vocal music (as discussed in Chapter 2). Early commentators on organ continuo voice different opinions on the purpose of organ accompaniment, variably emphasizing its utilitarian advantage – a glue which solidified weaknesses and filled gaps in the choir – or its aesthetic advantage – opening up new possibilities for text-setting. The printed organ parts themselves took a variety of forms. Some were full transcriptions of the vocal parts in open score or keyboard score; some were short scores that represented only the outer voices of the texture; others consisted of the vocal bass part for each of the choirs within a polychoral texture; others were simply a single, linear bass line (Figure 2.1). Some were harmonically essential (so-called "true" continuo parts), but the vast majority of organ parts published before 1610 were harmonically inessential (including polyphonic transcriptions as well as single-line parts we now identify as "basso seguente"). While the variety of their notational forms and the complexity of the motivations behind their use are fascinating, for the present purpose I am most interested in the effect that all organ parts precipitated (regardless of nuaced distinctions): the introduction of a harmonic platform for the voices in a polyphonic texture.

We see the impact of the organ's participation in a comparison of the two performance possibilities of Lappi's Te Deum suggested in Examples 3.1 and 3.2. While the realization represented in Example 3.2 is hardly a paragon of the mature concertato idiom – it features neither virtuosity nor obbligato instruments – it represents a basic template for the concertato style, with its perpetual alternation between larger and smaller forces, all accompanied by a basso continuo. As we see in Figure 3.6, the excerpt transcribed in Example 3.2 moves from a full, four-part chorus to solo tenor to full chorus to solo cantus, and so on.

Figure 3.6. Alternating forces in Lappi, *Te Deum,* mm. 45-103.

CHOIR 2– T1 – CHOIR 2 – C1 – CHOIR 2 – A1 – CHOIR 2 – CHOIR 1 – CHOIR 2 – C1 & B1

This ebb and flow of texture is made possible by the participation of the organ. A facile observation, perhaps, but it raises an important question: how does the organ enable this concertato texture?

For the moment, we can think of the sacred concerto in its most "conservative" form – several voices doubled by an organ – as a work of polyphonic vocal music and a keyboard arrangement of the same unfolding in synchrony. Cases in which the organist doubles the vocal parts exactly illustrate this idea of the sacred concerto very neatly. Reality, though, is messier. Realizing the vocal parts exactly as written – in other words, generating a literal intabulation of the piece – fell at the extreme end of a spectrum of performance possibilities available to the organist. It was also likely to have been a relatively uncommon mode of

accompaniment in the seventeenth century, especially as bass-line-only parts became the standard notational format for the organ continuo in prints of polyphonic music. Unless a full score of the motet (say) was commerically available, or the organist had already made her own intabulation of it or knew it extremely well, it would have been unlikely for her to invest copious time and effort preparing a keyboard score and/or learning the precise voice leading of the parts by ear and from studying the partbooks. The organist could spend days on such a task, all for the sake of doubling a single motet that would last a few minutes. It was much more efficient to realize chords from the bass line, consulting the other parts or listening to the singers as needed to clarify harmonies in passages that were ambiguous from reading the bass line alone. This approach was much more in proportion to the organist's role in the concerto, which was to provide inconspicuous support for the voices (which entailed playing the right chords, playing in registers appropriate to the voices, being tactful about parallel fifths and octaves, etc.) and to fill in any holes in the harmony (which could be due to the unexpected absence of a singer or to the predetermined plan of the *maestro di cappella*).

  This more strategic approach to accompanying is represented in so-called "basso seguente" organ parts, which we might alternatively call conflated basses. As I note in Chapter 2, this category of continuo tends to be neglected in favor of "true" (non-doubling) continuo. Yet conflated bass parts encapsulate, more acutely than independent organ basses, the unique capacities that the organist brought to the concerto – capacities that enabled the development of the mature "concertato style."

  The conflated bass is the Frankenstein's Monster of printed polyphonic music: cobbled together from some or all of the parts, it forms a sequence of the lowest sounding notes from moment to moment. Derived from this simple algorithm, the "basse seguente" *sounds* like machine music. It is an abomination when judged against criteria for good voice-leading (which might be seen as a stylization of the ergonomics of singing). The Basso generale for an eight-part *canzon* on fa sol la re by Giovanni Gabrieli can serve as an illustrative example (Figure 3.7).[77] Forbidden leaps abound: there is a downward leap of a fourteenth, a downward augmented fifth, an upward tenth. The range is inhumanly wide. Any balance of contour is fleeting. Phrasing is moot. The *soggetto* (fa sol la re) is camouflaged visually and aurally as it is assimilated into a harmonic weave with the notes surrounding it.[78]

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[77] Published in the anthology *Canzoni per sonare* (Venice: Raverius, 1608).

[78] An earlier "Frankenstein" part was the solus tenor. Found not uncommonly in motets from the fourteenth and fifteenth centuries, the solus tenor was a conflation (more or less) of the two lowest parts, the tenor and contratenor. Margaret Bent argues that the primary purpose of the solus tenor was as a compositional aid – rather than as a post-compositional conflation used as a performance part (as scholars had previously hypothesized). Margaret Bent, "Some Factors in the Control of Consonance and Sonority: Successive Composition and the *Solus Tenor*," in *Counterpoint*, 241–54. This article originally appeared in *Report of the Twelfth Congress of the International Musicological*

Figure 3.7. Basso generale from G. Gabrieli, Canzon vigesimasettima of *Canzoni per sonare.*

The aberrance of the conflated bass captures the disparity between organ playing and choral singing. While the conflated bass line might frustrate or overtax the singing mechanism, it is well within the biomechanical envelope of keyboard playing. Indeed, Diruta provided exercises for playing leaps of a seventh with both hands, along with instructions for fingering.[79] In short, the conflated bass brings the affordances of keyboard playing to bear on the voice-centered art form of counterpoint.

Conclusion: From *Ars perfecta* to Baroque

To return to the idea of the sacred concerto as a polyphonic vocal piece and a keyboard arrangement of the same unfolding in synchrony, the "keyboard arrangement" generated by an accompanist playing chords over a conflated bass part in fact does not much resemble what we would normally think of as an arrangement. In the guise of the organ part alone, the work is fundamentally incomplete; its bass line is probably intact, but its treble part is likely to have been completely dismantled, along with the inner parts. Unlike a literal keyboard intabulation, it is not a standalone work. It is, however, generated in performance through a sensorimotor experience that is basically identical to that outlined in Chapter 1 in relation to keyboard intabulations of polyphonic vocal works. The difference is that the continuo accompaniment of the work, realized from a conflated bass, exhibits the influence of the organist's sensorimotor program more acutely than a keyboard arrangement of the same work does. The particular model of agency, cognitive strategies, and physiology that distinguish polyphony intabulated for keyboard from its vocal models are more intense in continuo, less

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Society, Berkeley 1977, ed. Daniel Heartz and Bonnie Wade (Kassel: Bärenreiter, 1981), 625-33. See also Bent's discussion of the *solus tenor* in the "Introduction" in Bent, *Counterpoint*, 38-46.
[79] G. Diruta, *Il Transilvano*, 1:16-18. Diruta provides separate exercises for good leaps (salti buoni) and bad leaps (salti cattivi). In each set of exercises the featured leap is a seventh. "Good" and "bad" refer to the type of finger used to play the initial note in the leap.

mitigated by compositional interests that might otherwise tame the "keyboardal" aspect (e.g., making the keyboard version sound like the vocal model; observing the rules of counterpoint rather strictly; creating beautiful form, etc.).

The assimilation of these two disparate experiences of music-making, singing and keyboard playing was the foundation of the "concertato style." It preceded – and later was abetted by – the juxtaposition of the arts of counterpoint and keyboard playing, as subjects of writing, in printed collections of sacred concertos (as discussed in Chapter 2). The cooperation of choir and organist allowed for a redistribution of labor. Aspects of singing that were difficult for middling choirs – keeping in tune and on pitch – were extracted from the task of singing and offloaded to the organist. The participation of the organist also solved practical problems, such as "holes" in the texture that might otherwise have been the result of a missing singer.

While conflated basses infused keyboard playing into polyphonic singing post-composition, the mature "concertato style" brought the affordances of keyboard playing to bear on polyphonic singing before and – for composers who composed at a keyboard – during composition. The phenomenal difference of the organ could be a problem in the sort of *ad hoc* concertos described by Viadana, with the organ's substitution for voices inadvertently resulting in awkward rests, partial cadences, and, perhaps most problematic of all, absent text. In the concertato idiom, composers exploited this difference for aesthetic ends. They replaced voices with the organ to create ritornellos and instrumental interjections that punctuated the text. They used the harmonic platform that the organ provided to make extensive use of solo voices and "bassless" duets and trios, and to alternate different combinations of voices (and instruments) over the continuum of the organ.

As a single musician in control of the entire harmonic texture, the organist brought a naturally flexible approach to timing – a symptom of the organist's comparatively loose sense of script. The organist's degree of flexibility is one that frustrates the affordances of group cognition; only elite choirs can even begin to approach the freedom of a single agent. As an accompanist, the organist's flexibility empowered solo singers with considerably more freedom of their own. (We might say, cheekily, in light of the cliché of "the emancipation of instrumental music," that the organ freed solo voices from the bonds of collectivity.) Composers exploited this capacity by featuring virtuosic solos and duets – passages which featured an approach to script that was looser than that indigeneous to polyphonic singing. Thanks to its phenomenal difference, the stopped organ was an ideal vehicle, in fact, for showcasing solo voices against the understated backdrop of a 8' principal or flute. As I suggested in Chapter 1, the chord, in the sense of an atomic unit (more than a simultaneity of pitches), is indigenous to keyboard playing. The concept of chord does not arise as a self-contained concept, divorced from voice leading, in the context of sixteenth-century *a cappella* polyphonic singing or in the context of the rules of counterpoint. The chord is, essentially, counterpoint extracted from the tortuous tangle of the *concerto* – of group work. It is perpendicular to the grain of the voices.

In keyboard performance, chords are, literally, the hand-holds of a motor program that involves coordinating the intricate movements of two hands. Through this motor program, the performer inevitably perceives individual movements as part of larger classes of movements. This hierarchy of movements – of rhythms – is effectively meter. Chords, in the hands of a keyboardist, are the site where harmony and meter coalesce. Composers writing music in the concertato idiom exploited this dimension of keyboard playing through the use of a harmonic rhythm, grounded in continuo, that was much more emphatic than that characteristic of the sixteenth-century *ars perfecta*.

Thus the fusion of harmony and meter that we hear in the concertato style and, for that matter, in so much music of the later Baroque, is the sound of the cognitive-motor experience of keyboard playing stylized. Just as the assimilation of continuo into the print object of sacred music publicized a knowledge tradition of music that flourished largely in the "mute jurisdiction of practices," the concertato style aestheticized, and hence, publicized the private, embodied experience of keyboard playing.

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APPENDIX A

Transcriptions of 1) Josquin, *Plusieurs regretz* and 2) M. Cavazzoni, *Plus ne regres.*

1)

2)

APPENDIX B

Cipriano de Rore, *Calami sonum ferentes*, transcribed from a) *Le quatoirsiesme livre a quatre parties* (Antwerp: Susato, 1555); b) I-Tn Manuscript Foà 4 (Volume 12, Turin Tablature). Notes values of the latter are halved.

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Printed Collections of Sacred Music with Organ Parts, 1594-1605

The following list is compiled principally from RISM A/I and B/I. The following sources were also consulted: Kurtzman and Schnoebelen, *A Catalogue of Mass, Office, and Holy Week Music Printed in Italy, 1516-1770; Printed Sacred Music in Europe 1500-1800;* Sartori, *Bibliografia della musica strumentale italiana stampata in Italia fino al 1700;* Donà, *La Stampa musicale a Milano fino all'anno 1700;* and Brown, *Instrumental Music Printed before 1600: A Bibliography.*

Publications with lost organ parts from the time period are included. Dates in the left column correspond to the earliest publication date of the organ part. In cases in which the vocal partbooks predated the organ, the earliest publication date of the vocal partbooks is listed in a footnote. The organ part title is taken from the description on the organ partbook. For cases in which the organ part is lost and its title unknown, the description of the organ part in the title of vocal partbooks is listed in square brackets.

Year	Composer	Title (vocal parts)	Title (organ part)	Place/Publisher
1594	Croce, Giovanni	Motetti a 8 ... commodi per le voci, e per cantar con ogni stromento	Basso per sonar nell'organo	Venice: Vincenti
1595	Banchieri, Adriano	Concerti ecclesiastici a 8 ... aggiuntovi nel primo choro la spartitura per sonare nell'organo commodissima	Spartitura per sonare nel organo	Venice: Vincenti
1595	Croce, Giovanni	Motetti a 8, libro secondo	Basso per l'organo	Venice: Vincenti
1596	Croce, Giovanni	Messe a 8	Partidura	Venice: Vincenti
1598	Gallus, Josephus	Sacri operis musici alternis modulis concinendi liber primus. Duplicium concentuum novam inventionem... Cantiones musicis instrumentis pulsandas complectens	Partitio seu quam praestantiss. musici partituram vocant	Milan: Tini
1598	Mortaro, Antonio	Sacrae cantiones tribus vocibus concinendae ... cum sua paritione instrumentis etiam accomodatae	Partitio	Milan: Tini & Besozzi
1598	Quintiani, Lucretio	Missae tres, ac quinque divinae laudes, octonis vocibus decantandae, liber primus	Partitura de bassi	Milan: Tini & Besozzi
1598	Vecchi, Orfeo	Psalmi integri in totius anni solemnitatibus...quinque vocibus[1]	Basso principale da sonare	Milan: Tini & Besozzi
1598	Vecchi, Orfeo	Missarum quinque vocibus liber secundus	Basso principale	Milan: Tini & Besozzi

[1]Vecchi's *Psalmi integri* was first published by Tini in 1596. No organ part for this edition survives (if one ever existed). The earliest organ part for the print dates from 1598.

Year	Composer	Title (vocal parts)	Title (organ part)	Place/Publisher
1599	[anthology]	Motetti e salmi a otto voci ... con la parte de i bassi, per poter sonarli nell'organo	Bassi per sonar l'Organo	Venice: Vincenti
1599	Arnone, Guglielmo	[Secondo libro delli motetti a cinque & otto voci]²	Partitura	Milan: Tini & Besozzi
1599	Bassano, Giovanni	Motetti per concerti ecclesiastici a 5, 6, 7, 8, & 12 voci³	Bassi per l'organo	Venice: Vincenti
1599	Bassano, Giovanni	Concerti ecclesiastici a 5, 6, 7, 8, & 12 voci...libro secondo	Bassi per l'organo	Venice: Vincenti
1599	Cantone, Serafino	Sacrae cantiones &c. octonis vocibus decantandae	Partitio	Milan: Tradate
1599	Mortaro, Antonio	Messa, salmi, motetti et Magnificat a tre chori	Partitura	Milan: Tini & Besozzi
1599	Quintiani, Lucretio	Musica ... quatuor vocum, in introitus missarum super cantu plano, quae in solemnitatibus sanctorum omnium toto anno celebrantur	Partitura de bassi	Milan: Tini & Besozzi
1600	Asola, Giovanni Matteo	Sacro sanctae dei Laudes, octonis vocibus infractis decantandae	Gli Bassi ... stampati per commodita delli organisti	Venice: Amadino
1600	Fattorini, Gabriele	Sacri concerti a due voci facili & commodi da cantare & sonare con l'organo a voci piene & mutata a beneplacito de cantori co'l basso generale per maggior commodità de gl'organisti	Basso generale per l'organo	Venice: Amadino

[2] None of the vocal partbooks survives for this print; only the organ part is extant.
[3] The vocal partbooks for Bassano's *Motetti* were first published by Vincenti in 1598.

Year	Composer	Title (vocal parts)	Title (organ part)	Place/Publisher
1600	Raval, Sebastián	Motecta selecta organo accomodata, quae partim tribus, partim quatuor, partim quinq | unum sex, alteru[m] octo vocibus paribus concinuntur ... quibus est addita operum divisio, pro organo	[Pro organo]	Palermo: Franceschi
1600	Victoria, Tomás Luis de	Missae, Magnificat, motecta, psalmi, & alia quam plurima, quae partim octonis, alia nonis, alia duodenis vocibus concinuntur	...haec omnia sunt in hoc libro ad pulsandum in organis	Madrid: Flandrus
1601	Billi, Luzio	Messa e mottetti a otto voci di D. Lutio Billi da Ravenna, Monaco Camaldolese: con il basso generale per maggior comodità de gl'organisti. Primo libro	Basso generale	Venice: Amadino
1601, 1602, 1603	Conforti, Giovanni Luca	Salmi passaggiati sopra tutti i toni che ordinariamente canta santa chiesa ne i vesperi della domenica, & ne I giorni festivi di tutto l'anno, con il basso sotto per sonare, et cantare con organo, o' con altri stromenti, ne I quali esercitando quei che cantano, non solamente si asuefarano a' cantar sicuri, & con gratia, ma anco in breve acquisteranno la dispositione per sapere ben passaggiare in ogni sorte di note. Li quali, anco possono servire per quelli, che leggiadramente vogliono sonare di viola violino, o' d'altri stromenti da fiato ... libro primo[4]	[n/a][5]	Rome: Muti

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[4] The *Salmi passaggiati* comprises three volumes. The first, for soprano, was published in 1601; the second, for tenor, in 1602; and the third, for bass, in 1603.
[5] The solo voice and organ part are scored up together in a single book for each volume of Conforti's *Salmi passaggiati*.

Year	Composer	Title (vocal parts)	Title (organ part)	Place/Publisher
1601	Croce, Giovanni	Vespertina omnium solemnitatum psalmodia octonis vocibus[6]	Basso per sonare nell'organo	Venice: Vincenti
1601	Fattorini, Gabriele	Il secondo libro de motetti a otto voci con il basso generale per l'organo et nel fine una canzon francese a quattro voci	[Basso generale][7]	Venice: Amadino
[?1601]	Nantermi, Orazio	[Primo libro delli motetti a cinque][8]	Partito	Milan: Tradate
1601	Terriera, Francesco	Messa, salmi per i vesperi, et motetti a otto voci con il basso per sonar ne l'organo	[Basso per sonar nell' organo][9]	Venice: Vincenti
1601	Vecchi, Orfeo	In septem regij prophetæ psalmos vulgo pœnitentiales ... & senis vocibus ... liber quartus	Basso principale	Milan: Tini & Besozzi
1601	Vecchi, Orfeo	Psalmi in totius anni ... Magnificat duo quinque vocibus	Basso principale	Milan: Tini & Besozzi
1602	Asola, Giovanni Matteo	Hymnodia vespertina in maioribus anni solemnitatibus octonis vocibus infractis. Organico etiam modulatui accomodata	Organicus	Venice: Amadino

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[6] This print was first published without an organ part in 1597. The 1601 organ part may have been issued as a standalone volume as no vocal partbooks from a 1601 edition are known.
[7] The organ part is lost.
[8] The vocal partbooks for this publication are lost. Only the Partito for this print is extant. It was published by Tradate in 1606, but the dedication is dated January 3, 1601, and the title includes the phrase "nuovemente ristampato," suggesting that an earlier edition of the Partito was published in that year.
[9] The organ part is lost.

Year	Composer	Title (vocal parts)	Title (organ part)	Place/Publisher
1602	Borsaro, Archangelo	Vespertina psalmodia octonis vocibus . . . duoque cantica . . . addito psalmo 139. Cum suo Bassu Generali ad comodiorem Organistarum, usum, & comoditatem	[Bassus generalis][10]	Venice: Amadino
1602	Cantone, Serafino	Vesperi a versetti, et falsi bordoni a cinque voci	Basso principale da sonare	Milan: Tradate
1602	Lappi, Pietro	Missarum octonis vocibus, liber primus[11]	Spartitura de' bassi	Venice: Gardano
1602	Puliti, Gabriello	Integra omnium solemnitatum vespertina psalmodia quinis vocibus	Basso continuato	Milan: Tini & Besozzi
1602	Signorucci, Pompeo	Concerti ecclesiastici a otto voci ... con il basso continuato per sonar nell'organo, novamente composti, & dati in luce, libro primo	[Basso continuato][12]	Venice: Vincenti
1602	Vecchi, Orfeo	Missarum quinque vocibus liber tertius	Basso principale	Milan: Tradate
1602	Viadana, Ludovico da	Cento concerti ecclesiastici, a una, a due, a tre, & a quattro voci. Con il basso continuo per sonar nell'organo. Nova inventione commoda per ogni sorte de cantori, & per gli organisti ... opera duodecima	Basso per sonar nell'organo	Venice: Vincenti
1602	Zucchini, Gregorio	Harmonia sacra in qua motecta VIII. IX. X. XII. XVI. & XX. Vocibus, missae autem VIII. XII. & XVI.	Sectio gravium partium	Venice: Vincenti

[10] The title page of the organ part is missing. Jeffrey Kurtzman and Anne Schnoebelen, *A Catalogue of Mass, Office, and Holy Week Music Printed in Italy, 1516-1770*, JSCM Instrumenta 2, 2013, http://www.sscm-jscm.org/instrumenta_02/catalogue/.

[11] The vocal partbooks for this print had already been published by Gardano in 1601.

[12] The organ part is lost.

Year	Composer	Title (vocal parts)	Title (organ part)	Place/Publisher
		Contextae vocibus continentur, una cum sectione gravium partium ad organistarum usum, & commodum		
1603	Agazzari, Agostino	Sacrae Laudes de Jesu, B. Virgine, Angelis, Apostolis, Martyribus, Confessoribus, Virginibus. Quaternis, Quinis, Senis, Septenis, Octonisque vocibus cum Basso ad Organum, & musica instrumenta. Liber Secundus	Bassus ad organum et musica instrumenta	Rome: Zannetti
1603	Agazzari, Agostino	Sacrarum Cantionum quae qninis, senis, septenis, octonisque vocibus concinuntur. Liber tertius.	Bassus ad Organum	Rome: Zannetti
1603	Antegnati, Costanzo	Liber XIIII, in quo habentur Missa Borromea, mottecta cantionesque gallicae tribus choris concinendae	Spartitura de bassi	Venice: Gardano
1603	Belloni, Giuseppe	Missarum quinque vocibus liber primus, quibus earundem bassus principalis organo accommodatus, & missa pro defunctis accesserunt, opus primum	Bassus principalis	Milan: Tini & Lomazzo
1603	Billi, Luzio	Messa e motteti a otto voci . . . con un basso general per maggior commodità delli organisti. Libro secondo	Generale per l'organo	Venice: Amadino
1603	Calestani, Girolamo	Sacrati fiori musicali a otto voci con il Te deum à choro spezzato à quatto voci. Commodissimi per cantare in capella, & concertare nell'organo, con ogni sorte di strumento musico … con il basso continuato, & soprano ove è stato necessario per maggior	Basso generale per sonare nell'organo … co'l soprano, continuato ove è parso necessità con somma diligenza posto	Parma: Viotti

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Year	Composer	Title (vocal parts)	Title (organ part)	Place/Publisher
		commodità de' Sig. Organisti. Novamente composta, & data in luce. Opera seconda.	gl'accidenti del b molle, e semituoni #	
1603	Cantone, Serafino	Officium Hebdomadae Sanctae quinque vocibus decantandum		Milan: Tradate
1603	Molinaro, Simone	Il primo libro delle messe a otto voci con la partitura per sonar l'organo[13]	[Partitura per sonar l'organo][14]	Milan: Tradate
1603	Mortaro, Antonio	Psalmi ad vesperas, triaque cantica Beatae Virginis, octo vocibus[15]	Baritonantium divisio pro organi pulsatore[16]	Venice: Amadino
1603	Serra, Michelangelo	Completorium romanum tribus choris decantandum una cum omnibus antiphonis B. Mariæ	Partitio	Venice: Vincenti
1603	Signorucci, Pompeo	Salmi, falsibordoni, e motetti a tre voci commodissimi per cantare, & concertare nell'organo, con ogni sorte di strumento: con dui Magnificat: uno intiero l'altro a versi spezzati ... e con il basso continuato per maggior commodità de gli organisti, opera sesta	Basso per sonar nell'organo	Venice: Vincenti

[13] This publication is not listed in RISM or NG. A copy of the Canto partbook is preserved at the Hargrove Music Library, University of California, Berkeley.

[14] The organ part is lost.

[15] The vocal partbooks for this print were issued in 1599 without an organ part.

[16] Vocal partbooks from a 1604 issue of the print refer to the organ part as "addita partium grauium sectione pro organi pulsatoris commoditate." See Appendix 2.2.

Year	Composer	Title (vocal parts)	Title (organ part)	Place/Publisher
1603	Signorucci, Pompeo	Messe a otto voci ... con un Magnificat nel fine del ottavo tuono. Libro primo. Con il basso continuato per commodita' degl'organisti. Opera settima	Basso per sonare nel'organo	Venice: Vincenti
1603	Vecchi, Orfeo	Magnificat quinque vocibus liber primus	Basso principale	Milan: Tradate
1603	Vecchi, Orfeo	Motetti... a cinque voci, libro primo in questa terza impressione, aggiontovi un motetto, con diligenza revisti, et corretti	Partitura	Milan: Tini & Lomazzo
1603	Vecchi, Orfeo	Motectorum quae in Communi sanctorum quatuor vocibus concinuntur liber primus	Partitio	Milan: Tradate
1603	Vernizzi, Ottavio	Motectorum specimen, quae quinque, sex, septem, octo, novem, et decem vocibus concinuntur, cum parte organi pro duplicis chori motectis, liber primus	[Partito][17]	Venice: Amadino
1604	Belloni, Giuseppe	Missa, motecta psalmi et litanie B.M.V. Laurentanae. Octo vocibus concinenda. Cum basso principali. Opua tertium	[Bassus principalis][18]	Venice: Vincenti
1604	Binago, Benedetto	Coronae divinarum laudum, liber primus, 3 vv	Partitura	Milan: Tini & Lomazzo

[17] The organ part is transmitted only through a nineteenth-century manuscript, I-Bc ms. N 25, p. 203.
[18] The organ part is lost. Only the second alto partbook of this print is extant. It is not listed in RISM. It is, however, included in Kurtzman and Schnoebelen, *Catalogue of Mass, Office, and Holy Week Music.*

Year	Composer	Title (vocal parts)	Title (organ part)	Place/Publisher
1604	Guaitoli, Francesco Maria	Motecta, quae tum viva voce, tum variis musicis instrumentis concini possunt, octo, novem, decemque vocibus modulata ...liber primus	?[19]	Venice: Vincenti
1604	Gussago, Cesario	Sacrarum cantionum octonis vocibus ... liber primus	Spartitura	Venice: Amadino
1604	Mogavero, Antonio	Missarum cum quinque vocibus et alterius cum octo, in dialogo pro instrumentis & organo cum partitura. Liber primus	Basso per sonar	Venice: Vincenti
1604	Molinaro, Simone	Il primo libro de motetti a cinque voci, con la partitura per sonar l'organo	[Partitura]	Milan: Tradate
1604	Moro, Giacomo da Viadana	Concerti ecclesiastici ... nelli quali si contengono mottetti, Magnificat, & falsi bordoni a una, due, tre, quattro, cinque, sei, & otto voci, alcuni de quali sono con passaggi che servono non solo alle voci, ma ad ogni sorte di stromenti. una Compieta a otto con le sue antiphone della B. Vergine. Messa a otto. Litanie che si cantano nella Santa Casa di Loretto a otto. Canzoni a quattro per suonare con diuersi stromenti. Con il basso continuo per l'organo. Novamente posti in luce. Opera ottava	Basso continuo per l'organo	Venice: Amadino
1604	Radesca di Foggia, Enrico Antonio	[Messe a quattro voci ... libro primo][20]	Per sonare nell'organo	Milan: Tini & Lomazzo

[19] I am not familiar with the organ part of this print. An extant copy of the part is preserved at I-PCd (along with a complete set of vocal partbooks).

[20] The vocal partbooks are lost.

Year	Composer	Title (vocal parts)	Title (organ part)	Place/Publisher
1604	Ripalta, Giovanni Domenico	Missa, psalmi ad vesperas, Magnificat, motecta et psalmorum modulatines qui octonibus vocibus concinuntur	Partidura de bassi	Milan: Tradate
1604	Vecchi, Orfeo	Scielta di madrigali a cinque voci accommodati i motetti da Orfeo Vecchi con la partitura d'essi motetti	Partitura	Milan: Tini & Lomazzo
1604	Vernizzi, Ottavio	Armonia ecclesiasticorum concertuum ... qui duabus, tribus, & quatuor concinuntur vocibus, cum parte generali pro organo, seu quibuslibet alijs musicalibus instrumentis, opus authoris secundum	Bassus generalis pro organo	Venice: Vincenti
1604	Viadana, Ludovico da	Psalmi omnes qui a S. Romana Ecclesia in solemnitatibus ad Vesperas decantari solent, cum duobus Magnificat, tum viva voce, tum omni instrumentorum genere, cantatu commodissimi, cum quinque vocibus ... liber secundus, opera XIII	Bassus pro organo	Venice: Vincenti
1605	Agazzari, Agostino	Sacrarum cantionum quae quinis, senis, septenis octonisque vocibus concinuntur, liber primus[21]	Bassus ad organum	Rome: Zannetti
1605	Balbi, Lodovico	Messe et motetti con il Te deum laudamus, a otto voci ... nuovamente poste in luce	Basso continuo per l'organo	Venice: Gardano
1605	Belli, Giulio	Compieta, mottetti, & letanie della Madonna a otto voci. Falsi bordoni sopra li otto toni a dui chori spezzati, con li Sicut erat intieri. Novamente stampati	Basso generale per l'organo	Venice: Gardano

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[21] The vocal partbooks were first published in l602.

Year	Composer	Title (vocal parts)	Title (organ part)	Place/Publisher
1605	Belloni, Giuseppe	Vespertini omnium solemnitatum psalmi quinque vocibus decantandi … una cum duobus Magnificat … cum basso principali organo accommodato. Opus quartum	Bassus principalis	Milano: Tini & Lomazzo
1605	Biondi, Giovanni Battista (Cesena)	Due messe et motetti a quattro voci parte à voce piena, & parte à voci pari. Con il suo basso generale per l'organo … primo libro	Basso per sonar nel'organo	Venice: Vincenti
1605	Borsaro, Archangelo	Concerti ecclesiastici … alli quali si contengono motetti a una, due, tre, quattro, cinque, sei, sette & otto voci. Domine ad adiuvandum, Dixit dominus, falsi bordoni, Magnificat a cinque voci. Una Compieta a otto voci. Messa a otto. Litanie … a otto voci, con il basso continuo per l'organo. Opera nona	Basso continuo per l'organo	Venice: Amadino
1605	Casali, Lodovico	Mottectorum octonis vocibus, liber primus	?[22]	Venice: Gardano
1605	Lambardi, Girolamo	Psalmodia Vespertina omnium solemnitatum cum Cantico Beatae Mariae Virginis. Octonis vocibus … liber secundus	Armonia ex basibus desumpta organistis deserviens	Venice: Coenobio Sancti Spiritus
1605	Lappi, Pietro	Psalmi ad vesperas novo quinque vocum concertu, ita decantandi, ut hymnus Gloria in fine cuiusque psalmi, novem vocibus ad libitum decantari queat Regiae Virginis Deiparae cantica alternis choris, novem, ac decem vocibus concinenda	[Two organ parts:] Choro 1: Il basso generale per l'organo delli salmi a 5 vv Choro 2: Il basso principale delli salmi a 4 vv	Venice: Gardano

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[22] I am not familiar with this organ partbook. The sole extant copy listed in RISM is preserved at PL-WRu.

Year	Composer	Title (vocal parts)	Title (organ part)	Place/Publisher
1605	Molinaro, Simone	Concerti ecclesiastici a due et a quattro voci, nelli quali si contiene messa, motetti, & Magnificat in tutti li otto toni, con la sua partitura per l'organo	Partitura	Venice: Amadino
1605	Molinaro, Simone	Il primo libro de Magnificat a quattro voci, con il basso continuato	[Basso continuato][23]	Milan: Tini & Lomazzo
1605	Nodari, Giovanni Paolo	Mellifluus concentus in psalmos David, qui in praecipuis anni solemnitatibus ad vesperas quatuor vocibus organo aliisque musicis instrumentis decantandi erunt. Nec non in duo Beatissime Virginis Deipare cantica iisdem instrumentis concinenda	Ad organi comoditatem distributus	Venice: Amadino
1605	Pallavicino, Benedetto	Sacrae dei laudes, otto, et una duodecim, duae vero sexdecim vocibus concinnendae, ac omnium instrumentorum genere accomodate adite etiam infimae partes pro organo continuato	Partes infimae pro organo continuato	Venice: Amadino
1605	Porta, Costanzo	Psalmodia vespertina omnium solemnitatum octo vocibus decantanda . . . cum quattuor Canticis B. Virginis itidem octo vocibus concinnendo	Il basso generale per l'organo	Venice: Gardano
1605	Ratti, Bartolomeo	Li brevi salmi intieri che nelli Vespri di tutte le solenità si cantano secondo il rito del sacro Concilio di Trento. A cinque voci. Con il basso continuo per commodita de gl'Organisti	Basso continuo per l'organo	Venice: Amadino

[23] Only the vocal Basso partbook survives.

Year	Composer	Title (vocal parts)	Title (organ part)	Place/Publisher
1605	Rognoni Taegio, Giovanni Domenico	Canzoni a quattro & otto voci … Libro primo	Partitura	Milan: Tini & Lomazzo
1605	Trabaci, Giovanni Maria	Missarum et motectorum quatuor vocum, cum partimento pro Organista … liber primus	[Partimentum pro organista][24]	Naples: Vitale
1605	Vecchi, Lorenzo	Missarum octonis vocibus liber primus	Bassus generalis	Venice: Gardano
1605	Viadana, Ludovico da	Letanie che si cantano nella Santa Casa di Loreto … ogni sabbato et feste della Madonna A 3, a 4, a 5, a 6, a 7, a 8, e 12 voci … opera XIIII.	Basso per sonare	Venice: Vincenti

[24] The organ partbook is lost.

APPENDIX D

Revised Editions Previously Issued Collections with an Added Continuo Part

The year in the left column refers to the earliest date of publication for the continuo part. Years included in the middle column refer to publication dates of the vocal parts (unless otherwise indicated).

Year	Composer and Title	Place/Printer of New Edition
1601	Croce, *Basso per sonare nell'organo delli vesperi a otto voci* (1597). 1603 ed. issued without an organ part.	Venice: Vincenti
1604	Mortaro, *Psalmi ad vesperas, triaque cantica Beatae Virginis, octo vocibus adita partium gravium sectione pro organi pulsatoris commoditate* (1599).	Venice: Amadino
1605	Agazzari, *Sacrarum cantionum quae quinis, senis, septenis octonisque vocibus concinuntur, liber primus* (1602).	Rome: Zannetti
1606	Gastoldi, *Integra omnium solemnitatum vespertina psalmodia...cum parte organica, editio tertia.* (1600). Org: Basso continuo a commodo de gli Organisti. Later eds.: 1609, 1614, 1616, 1626 (Magni/Gardano), 1673 (*Salmi per tutto l' anno a cinque voci col suo basso continuo*, Bologna: Monti), 1705 (*Salmi per tutto l' anno a cinque voci col suo basso continuo a beneplacito ristampati e ridotti in tuoni più commodi quei salmi che regolarmente e per necessità si sogliono trasportare*. Lucca: Gregori)	Venice: Amadino
1607	Lappi, *Sacra omnium solemnitatum vespertina psalmodia, cum tribus Beatae Virginis Mariae canticis, octonis vocibus concinenda* (Venice: Gardano, 1600). Org: Partitura de bassi. Raverius issued a Partitura in 1608. Venice: Magni, 1617: *...cum basso ad organum, terza impressione*.	Venice: Raverius
1607	Roinci, *Sacra omnium solmenitatum vespertina* (Amadino, Ricciardo, 1604). Org: Partitione principale per l'organo.	Venice: Amadino
1607/8	Belli, *Missarum sacrarumque cantionum octo vocibus, liber primus . . . ac etiam additae partes infimae, ad beneplacitum organum pulsantis* (1595).	Venice: Amadino

Year	Composer and Title	Place/Printer of New Edition
1608	Palestrina, *Motettorum quinque vocibus liber quartus addita parte infima pro pulsatoris organi comoditate* (Rome: Gardano, 1583).	Venice: Raverius
1608	Palestrina, *Organum pro libro quarto motectorum … quinque vocibus* (Rome: Gardano 1583).	Venice: Gardano
1609	Viadana, *Vespertina omnium solemnitatum psalmodia … cum quinque vocibus … Nunc recens in hac septima aeditione additus est bassus continuus pro organo* (Venice: Vincenti 1588). Later eds with an organ part: Frankfurt: Stein, 1610; Vincenti, 1611.	Venice: Vincenti
1610	Palestrina, *Basso prencipale co'l soprano del quarto libro delle messe a quattro e cinque voci … novamente fatto d'Alessandro Nuovoloni, organista* (Venice: Gardano, 1582).	Milan: Tini & Lomazzo
1611	Gastoldi, *Missarum quatuor vocibus, liber primus … cum basso ad organum* (1602). Org: Basso generale.	Venice: Amadino
1612	Viadana, *Missarum cum quatuor vocibus liber primus* (1596). Later eds with an organ part: 1619, 1620, 1625 (Antwerp: Phalese). Later eds without an organ part: 1598, 1601, 1604, 1607	Venice: Vincenti
1612	Asola, *Missae duae decemq. sacrae laudes tribus vocibus concinendae … cum additione partis ad organum … nona impressio* (1588). Later eds: 1620 (Magni), 1624 (Magni), 1634 (Roma: Masotti).	Venice: Amadino
1613	Palestrina, *Cantica Salomonis quinque vocum … liber quartus, bassus ad organum* (Rome: Gardano, 1583).	Venice: Magni
1615	Monteverdi, *Il terzo libro de madrigali a cinque voci … con il basso continuo per il clavicembalo, cittharone od altro simile istromento* (Venice: Amadino, 1592).	Antwerp: Phalèse
1615	Belli, *Missarum quatuor vocibus liber primus & missa pro defunctis, tertia impressione, cum basso continuato* (Venice: Gardano, 1599). Later ed: 1622.	Venice: Magni
1615	Monteverdi, *Il quarto libro de madrigali a cinque voci con il basso continuo per il clavicembalo, cittharone od altro simile istromento* (Venice: Amadino, 1603). Later ed: 1644.	Antwerp: Phalèse
1616	Marenzio, *Sacrae cantiones quinis, senis, ac septenis vocibus modulandae, cum inferna parte pro organo* (1st ed.; posthumous).	Venice: Amadino

Year	Composer and Title	Place/Printer of New Edition
1617	Philips, *Cantiones sacrae, pro praecipuis festis totius anni et Communi sanctorum, quinis vocibus* (1612)	Antwerp: Phalèse
1619	Palestrina, *Messe a quattro voci, le tre prime del Palestina, cioè, Iste confessor, Sine nomine, & di Papa Marcello, ridotta à quattro da Gio. Francesco Anerio, & la Quarta della battaglia, dell' istesso Gio. Francesco Anerio, con il Basso continuo per sonare.* Later eds: 1626, 1635, 1639, 1646, 1662, 1689.	Rome: Soldi
1625	Palestrina, *Hymni totius anni, secundum Sanctae Romanae Ecclesiae consuetudinum, cum basso ad organum, necnon hymni religionum quatuor vocibus concinendi* (Rome: Torniero & Donangelo, 1589)	Rome: Soldi
1625	Lasso, *In magni illius magni Boiariae ducis symphoniarchae Orlandi de Lasso Magnum opus musicum Bassus ad organum nova methodo dispositus. studio et opera Gasparis Vincentii*	Würzburg: Volmar
1632	Marenzio, *Il sesto, settimo, ottavo et nono libro, il suo testamento de madrigali a cinque voci, nuovamente stampati & in un corpo ridotti, cum basso continuo* (Venice: Gardano, respectively 1594, 1595, 1598, 1599)	Antwerp: Phalèse
1667	Viadana, *Missa defunctorum tribus vocibus...primum edita, nunc iterum typis data ab Antonio de Caldanis* (Venice: Amadino 1598)	Bologna: Caldanis
1693	Orfeo Vecchi*, Motetti ... a cinque voci, libro primo in questa terza impressione, aggiontovi un motetto, con diligenza revisti, et corretti* (Milan: Tini, 1597)	Milan: Tini & Lomazzo

APPENDIX E

Anthologies including Older Music with an Added Continuo Part, 1599-1639.

The following list is compiled from RISM B/1. It comprises anthologies whose contents include a substantial proportion of previously published works that had not appeared previously with a printed continuo part. The numbers in superscript following the year refer to the RISM ID of the print. For each print, all of the composers represented are listed in the right column (not just those of newly concerted works).

Year	Title	Place/Publisher	Composers
1599[2]	Motetti e salmi a otto voci composti da otto eccellentiss. autori, con la parte de i bassi, per poter sonarli nell'organo	Venice: Vincenti	F. Anerio, Artusi, Croce, Giovanelli, Marenzio, G.M. Nanino, Palestrina, Schieti
1604[11]	Scielta de madrigali à cinque voci de diversi eccel. musici, accommodati in motetti da Orfeo Vecchi con la partitura a d'essi motetti. Nuovamente data in luce	Milan: Tini & Lomazzo	G. Gabrieli, G. Giovanelli, Ingegneri, Malvezzi, Merulo, de Monte, G.M. Nanino, Palestrina, Roi, Orfeo Vecchi, P. Vinci, Wert, Zoilo
1607[6]	Musarum Sioniar: motectae et psalmi latini, Michaëlis Praetorij C. apud sereniss. principem Henricum Julium ducem Brunsv. & Lunaeb., chori musici magistri, IV. V. VI. VII. VIII. IX. X. XII. XVI vocum, choro et organis accommodatae. I. Pars	Nurnberg: Wagenmann	Aichinger, Handl, Lebon, Palestrina, Porta, Praetorius
1607[20]	Musica tolta da i madrigali di Claudio Monteverde, e d'altri autori, a cinque et a sei voci, e fatta spirituale da Aquilino Coppini accademico inquieto con la partitura, e basso continuo nella sesta parte per i quattro ultimi canti a sei	Milan: Tradate	Banchieri, A. Gabrieli, R. Giovanelli, Marenzio, Monteverdi, G.M. Nanino, Orazio Vecchi
1608[24]	Canzoni per sonare con ogni sorte di stromenti a quattro, cinque, &	Venice: Raverius	Antegnati, Bartolini, Chilese, Frescobaldi, G.

Year	Title	Place/Publisher	Composers
	otto, con il suo basso generale per l'organo, novamente raccolte da diversi eccellentissimi musici, & date in luce. Libro primo		Gabrieli, Grillo, G. Guami, Lappi, Luzaschi, Maschera, Massaino, Merulo
1610[2]	Fatiche spirituali di Simone Molinaro maestro di Capella del Duomo di Genova. Libro primo a sei voci	Venice: Amadino	Bicci, A. Gabrieli, de Macque, Marenzio, del Mel, Molinaro, de Monte, O. Vecchi
1610[3]	Fatiche spirituali di Simone Molinaro maestro di Capella del Duomo di Genova. Libro secondo a sei voci	Venice: Amadino	A. Gabrieli, della Gostena, Levanto, de Macque, Marenzio, de Monte, G.M. Nanino, Striggio, Orazio Vecchi
1610[10]	Nova metamorfosi de diversi autori opera del R.P.F. Geronimo Cavaglieri dell'Ordine di S. Basilio dell'Armeni. Libro terzo a sei voci	Milan: Tradate	Arnone, Belli Borgo, Costa, Ferretti, A. Gabrieli, Marenzio, Merulo, Molinaro, Mosto, Sabino, Striggio, P. Vinci, Anon.
1611[1]	Promptuarii musici, sacras harmonias sive motetas V. VI. VII. & VIII. vocum, e diversis, iisque clarissimis hujus et superioris aetatis autoribus, antehac nunquam in Germania editis, collectas exhibentis, pars prima: quae concentus selectissimos qui tempore hyemali S.S. Ecclesiae usui esse possunt, comprehendit. Collectore Abrahamo Schadaeo senfftebergensi, scholae spirensium senatoriae rectore. Cui basin vulgo generalem dictam, & ad organa musicaque instrumenta accomodatam singulari industria addidit Caspar Vincentius ejusdem civitatis musicus organicus	Strasbourg: Kieffer	Agazzari, Arnone, Balbi, Barotius, Bertholusi, Banciardi, Billi, Borsaro, Buel, Canale, Casali, Croce, Erbach, Franck, G. Gabrieli, Gatto, Giacobbi, Guaitoli, Gussago, Hassler, Leoni, Lipparino, Luyton, Marenzio, Massaino, Molinaro, de Monte, Naldi, Nocetti, Orologio, Osculati, Pallavicino, Soriano, Spontoni, Stabile, Stefanini, Valcampi, Vannini, Orfeo Vecchi, Viadana, Vincent, Walliser, Zangius
1612[2]	Responsoria hebdomadae sanctae, psalmi, Benedictus, et Miserere,	Venice: Vincenti	Appoloni, Argilliano, Beligni, Belloni, Bidelli,

Year	Title	Place/Publisher	Composers
	unà cum Missa, ac Vesperis Sabbati Sancti in octo vocum concentum redacta, simulque basso generali pro organo. A Rogerio Argilliano de Castro Novo Carfigano partim composita, partim collecta		Calestani, Colombi, Croce, Durelli, Guaitoli, D. Guami, G. Guami, V. Guami, Lappi, Leoni, Mazzi, Molinaro, Simonelli, Vernizzi, Viadana, Anon.
1612[3]	Promptuarii musici, sacras harmonias sive motetas V. VI. VII. & VIII. vocum, e diversis, clarissimis huius & superioris aetatis authoribus, in Germania nusquam editis collectas exhibentis. Pars altera: quae estivi temporis festivitatibus dominicisque diebus selectiores concentus S.S. Ecclesiae usui inservientes continet. Collectore Abrahamo Schadaeo, senfftebergensi. Cui basin ad organa musicaque instrumenta accommodatum, vulgò generalem dictam adjecti. Caspar Vincentius, spirensium organicen	Strasbourg: Kieffer	Arnone, Baglioni, Bagni, Balbi, Bertholusi, Bianciardi, Borsaro, Brunetti, Buel, Casali, Catalani, G.P. Cima, Croatti, Croce, Dulcino, Erbach, G. Gabrieli, Giacobbi, della Gostena, Guaitoli, Hassler, d'India, Leoni, Marenzio, Massaino, Molinaro, de Monte, Osculati, Pacelli, Palestrina, Pallavicino, Parma, Perini, Piccioni, Ramella, Rubini, Saladdi, Savetta, Signorucci, Spontoni, Stefanini, Strata, Valcampi, Vannini, Varotto, Orazio Vecchi, Villani, Vincent, Zangius, Anon.
1613[2]	Promptuarii musici, sacras harmonias sive motetas V. VI. VII. & VIII vocum, e diversis, iisque clarissimis hujus et superioris aetatis authoribus collectas comprehendentis, pars tertia: quae exhibet Concentus varios selectioresque, qui solennioribus sc. SS. Trinitatis, ... Collectore Abrahamo Schadaeo senfftebergensi...	Strasbourg: Kieffer	Agazzari, Aichinger, F. Anerio, Asola, Bagni, Balbi, Belli, Bertholusi, Berti, Bianchi, Bianciardi, Bona, Bonomi, Borsaro, Canale, Cartari, Croce, Deiss, Donato, Dulcino, Fabri, Ferrabosco, Franck, A. Gabrieli, G. Gabrieli, Giacobbi, Giovanelli, Gnocchi, Grandi, Ingegneri, Le Febure, Leoni, Lipparino, Merulo, Molinaro, Montesardo, Neander, Osculati, Pacelli, Palestrina,

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			Parma, Porta, H. Praetorius, Ramella, Regio, Saladdi, Savetta, Ufferer, Valcampi, Vannini, Orazio Vecchi, Orfeo Vecchi, Viadana, Vincent, Walliser, Zucchini, Anon.
1614[3]	Selectae cantiones excellentissimorum auctorum octonis vocibus concinendae. A Fabio Constantino romano urbeveteranae cathedralis musicae praefecto in lucem editae. Cum basso ad organum	Rome: Zannetti	F. Anerio, G.F. Anerio, A. Costantini, F. Costantini, Crivello, Giovanelli, Locatello, Marenzio, B. Nanino, G.M. Nanino, Pacelli, Palestrina, Roy, Santini, Soriano, Zoilo
1617[1]	Promptuarii musici, sacras harmonias V. VI. VII. et VIII. vocum, e diversis, clarissimis huius et superioris aetatis authoribus, in Germania nusquam editis, collectas exhibentis. Pars quarta: quae exhibet Concentus varios selectioresque, qui omnibus a SS. Trinitatis Dominicis inclusivè inserviunt: cum spiritualibus Canticis, & sylva harmonica Deiparae Virgini sacra. Collegit vero et basi generali accommodavit Caspar Vincentius S. Andreae wormatiensis organoedus	Strasbourg: Bertram	Agazzari, Arnone, Bagni, Balbi, Bassano, Belli, Bertholusi, Bianciardi, A. Bianchi, P.A. Bianchi, Bona, Croatti, Croce, Dorati, Dulcini, Erbach, Faber, Flaccomio, Franck, A. Gabrieli, G. Gabrieli, Gastoldi, Geisler, Gesius, Gumpeltzhaimer, Guaitoldi, Handl, Hartmann, Hassler, Homo, Jacobus, Knöfel, Marenzio, de Monte, G.B. Nanino, Osculati, Otto, Pacelli, Palestrina, Pallavicino, Parma, Philips, Quagliati, Rondino, Svetta, Strata, Valcampi, Vernizzi, Vincent, Vulpius, Walliser, Zangius, Zeidler, Zucchini, Anon.
1618[1]	Florilegium portense, continens CXV. selectissimas cantiones 4. 5. 6. 7. 8. vocum praestantissimorum aetatis nostrae autorum ...	Leipzig: Lamberg & Closemann	Ammon, Bassano, Berger, F. Bianciardi, Bischoff, Bodenschatz, Boschetti, Calvisius, Cantone,

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	Collectum et editum autore M. Erhardo Bodenschatz lichtenbergense Gymnasii portensis olim cantore. Editio altera ab ipso autore auctior & emendatior reddita		Demantius, Dulichius, Erbach, Eremita, Fabritius, Fattorini, Franck, A. Gabrieli, G. Gabrieli, Giovanelli, Gross, Gumpeltzhaimer, Handl, Hartmann, Hassler, Hausmann, Ingegneri, Lassus, Marenzio, Massaino, Meiland, Merulo, Moritz von Hessen, Neander, Orologio, Pevernage, Phinot, H. Praetorius, M. Praetorius, Roth, Steuccius, Venturi, Viadana, Vincent, Vulpius, Walliser, Weissensee, Zallamella, Zangius, Anon.
1620[1]	Scelta de Salmi à 8, Magnificat, Antifone, cioè, Regina caeli, Ave Regina caelorum, Alma Redemptoris. Et Litaniae della Madonna. De diversi eccellentissimi autori. Post' in luce da Fabio Constantini romano maestro di Cappella dell'illustrissima città d'Orvieto con il basso continuo per l'organo. Libro quinto	Orvieto: Zannetti	F. Anerio, G.F. Anerio, A. Costantini, F. Costantini, Crivello, Giovanelli, F. Martini, Massentio, G.B. Nanini, G.M. Nanini, Palestrina, Zoilo, Zucchelli
1621[1]	Sacrae cantiones excellentissimorum auctorum octonis vocibus collectae a Fabio Constantino urbevetanae cathedralis musicae prefecto. Cum basso continuo ad organum	Antwerp: Phalèse	Felice Anerio, Francesco Anerio, Aless. Costantini, F. Costantini, Crivello, Giovenelli, Locatello, Marenzio, B. Nanino, G.M. Nanino, Pacelli, Palestrina, Roy, Santini, Soriano, Zoilo
1621[2]	Florilegii Musici Portensis, sacras harmonias sive motetas V. VI. VII. VIII. X. vocum. E diversis, iisque	Leipzig: Lamberg	Agazzari, Aichinger, F. Anerio, Baglioni, Bagni, Balbi, Belli, Bertholusi, Berti,

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	praestantissimis aetatis nostrae autoribus collectus comprehendentis. Pars altera. Quae exhibet concentus selectissimas ... Collectore et editore M. Erhardo Bodenschatzio, ...		F. Bianciardi, Bodenschatz, Borsaro, Buel, Calvisius, Capilupi, Casali, Catalani, Croatti, Croce, Demantius, Dulcino, Erbach, Franck, G. Gabrieli, Gabusi, Gatto, Hartmann, Hassler, Leoni, Luyton, Marenzio, de Monte, Moro, Osculati, Pacelli, Pallavicino, Parma, Patarto, Perini, Pinello, Porta, H. Praetorius, Regio, Riccio, Roth, Savetta, Stabile, Stafanini, Steuccius, Tribiolo, Valcampi, Orazio Vecchi, Orfeo Vecchi, Viadana, Vincent, Vulpius, Walliser, Weissensee, Zangius, Zucchini, Anon.
1622[2]	Promptuarii musici concentus ecclesiasticos II. III. et IV. vocum cum basso continuo & generali, organo applicato, e diversis, iisque illustrissimis et musica laude praestantissimis hujus aetatis authoribus, collectos exhibentis. Pars prima ... Collectore Joanne Donfrido scholae Neccaro Rottenburgensium rectore	Strasbourg: Ledertz	Agazzari, Aichinger, Aichmiller, Assandra, Baccinetti, A. Balbi, L. Balbi, A. Banchieri, Bargnani, Batta, Belli, Benigni, Biener, Binago, Borsari, Burlini, Caesare Calvena, Catalano, Cesena, Cifra, Civita, Croce, Donfrid, Fabricius, Fattorini, Finetti, Fontana, Gussaghi, Hassler, Keifferer, Lagkhner, Rud. de Lassus, Leoni, Loth, Marazzo, Marenzio, Mayr, Miserocca, Cl. Monteverdi, Morari, Mortaro, Philips, Piccioni, Porta, Rubini, Scaletta, Spinelli, Stadlmayr, Uffereri, O. Vecchi, B. Viadana, G.M. Viadana, L. Viadana, Victoria, Victorinus, Zindelin, Zucchino

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1623[2]	Promptuarii musici, Concentus ecclesiasticos ducentos et eo amplius, II. III. et IV. vocum. Cum basso continuo & generali, organo applicato, e diversis, iisque clarissimis et musica laude praestantissimis, hujus aetatis authoribus, collectos exhibentis. Pars altera ... Collectore Joanne Donfrido scholae Neccaro Rottenburgensium rectore	Strasbourg: Ledertz	Agazzari, Aichinger, Allegri, G.F. Anerio, Antonelli, Archangeli, Baccinetti, Badius, Balbi, Banchieri, Belli, Benn, St. Bernard, Bollius, Borsari, Brunelli, Brunetti, Burlini, J.F. Capella, de Castro, Cesena, Cifra, Cornali, Croce, Cursi, Fabricio, Fattorini, Finetti, Fontana, Grandi, de Grandis, Gussaghi, Hassler, Klingenstein, Lappi, F. de Lassus, Rud. de Lassus, Leoni, Loth, Marazzo, Marenzio, Masiccio, Mezzogori, Mantesardo, Mortaro, B. Nanini, Pfendner, C. Porta, E. Porta, Puteus, Racholdinger, Scaleta, G.N. Spinelli, Stadlmayr, Tarditi, Uffereri, Orazio Vecchi, Veneri, Vernizzi, B. Viadana, J.M. Viadana, Victorinus, Zucchino Anon.
1625[1a]	Ludovici Viadanae ... Missarum quatuor vocum. Cum basso continuo ad organum, liber primus. Item missa pro Defunctis Clementis non Papae	Antwerp: Phalèse	Clemens non papa, L. Viadana (?), Zucchini
1626[2]	Deliciae sacrae musicae ... Quas ex lectissimo lectissimorum nostri aevi musicorum penu, quaternis vocibus, cum basso ad organum applicato, suavissimè modulandas exprompsit ... ac ...publicè posuit, Ioannes Reininger, ...	Ingolstadt: Haenlin	Agazzari, Aichinger, Aichmüller, G. Allegri, Baccinetti, A. Banchieri, Bendinelli, S. Bernardi, A. Bianchi, Borgi, Borlasca, Borsari, Brunelli, Buccioni, M. Caesare, Capella, T. Cecchini, Cesena, Cifra, Crivelli, Croce, Crotti,

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			Damasceno, Erbach, Fattorini, Finetti, de Fossa, S. Galli, Ghizzolo, Gualtieri, Hassler, Keifferer, Krumper, O. Lassus, R. Lassus, Lemes, Leoni, Levà, Loth, Luccacih, Mezzogori, Mortaro, Naldi, Nodari, Pfendner, Plautzius, Posch, J. Riedel, Sätzl, M.A. Serra, Ursini, B. Viadana, L. Viadana, G. Victorinus, Orazio Vecchi, Widman, Zuchino [sic], Anon.
1627[1]	Promptuarii musici concentus ecclesiasticos CCLXXXVI. selectissimos, II. III. & IV. vocum. Cum basso continuo & generali, organo applicato, e diversis et praestantissimis Germaniae Italia et aliis aliarum terrarum musicis collectos exhibens, pars tertia ... Opera et studio Joannis Donfrid, scholae Neccaro Rottenburgicae, nec non ad D. Martini ibidem musices moderatoris	Strasbourg: Ledertz	Agazzari, Aglione, Aichinger, Aichmiller, Ammon, G.F. Anerio, A. Antonelli, Baccinetti, Balbi, Ballioni, Banchieri, Belli, Benn, S. Bernardi, Binago, Borsari, Burlini, G.M. Caesare, G.F. Capella, Capriccio, Cifra, de Civita, Cocciola, Croce, Erbach, Fattorini, Finetti, Fossa, Gallus, Geisenhof, Grandi, Grani, Hassler, Holzner, Jelich, Krumper, Lagkhner, O. de Lassus, Rud. de Lassus, Leimberger, Leoni, Loth, Lucacih, Mezzogori, Miserocca, Montesardo, Cl. Monteverdi, Mortaro, P. Pace, V. Pace, Pauserus, Pfendner, Racholdinger, Regnard, Satzl, Scaletta, d'India, Spinelli, Stopper, B. Tomasi, Uffereri, Ursini, Orazio Vecchi, Orfeo Vecchi, B. Viadana, G.M. Viadana, L. Viadana, Waidmann, Anon.

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1628[2]	Corolla musica missarum XXXVII, pro vivis ac definctis, iuncto mortuali lesso etc. selectissimarum: I. II. III. IV. Et V. vocibus. Cum basso continuo seu generali, organo applicato: e diversis et excellentissimis Italiae ac Germaniae auctoribus, singulari studio collecta, et in gratiam musicorum nunc primùm edita. Operum musicorum collectorum, volumen V. Studio ac opera. Joannis Donfridi …	Trier: Zetzner	Ammon, G.F. Anerio, Banchieri, Benn, Cesena, Gartnerus, Grueber, Grandi, Hassler, Lappi, O. Lassus, Leim, Mezzogori, à Pflummern, Scaletta, Stopper, Tresti, L. Viadana, Wullinus, Zänggel, Zucchino, Anon.
1639[2]	Salmi, magnificat, e motetti a otto voci con basso continuo di Fabio Costantini romano, e cittadino orvietano uno de' Conservatori dell'illustrissima città d'Orvieto. Libro sesto de Salmi, Opera decima terza.	Orvieto: Ruuli	Agostini, Agazzari, G. Allegri, F. Anerio, Aless. Costantini, Fabio Costantini, Giovanelli, Mazzocchi, G.M. Nanini, Palestrina, Quagliati, Tarditi