

INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

U·M·I

University Microfilms International
A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
313/761-4700 800/521-0600

Order Number 9130378

**The use of accidental inflections and the musical system in
Josquin's period, ca. 1480–1520**

Stern, David, Ph.D.

City University of New York, 1991

U·M·I
300 N. Zeeb Rd.
Ann Arbor, MI 48106

A

THE USE OF ACCIDENTAL INFLECTIONS AND THE MUSICAL
SYSTEM IN JOSQUIN'S PERIOD, ca. 1480-1520

by
DAVID STERN

A dissertation submitted to the Graduate Faculty in
Music in partial fulfillment of the requirements
for the degree of Doctor of Philosophy,
The City University of New York

1991

This manuscript has been read and accepted for the Graduate Faculty in Music in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

3 May 1991
Date

Raymond Curtis
Chair of Examining Committee

3 May 1991
Date

Am - W. Adams
Executive Officer

Charles Jacobs

Saul Novack

Carl Schachter
Supervisory Committee

The City University of New York

To God, with love and gratitude
and to all great musicians
especially
Josquin, Byrd, Palestrina, Lassus,
Bach, Handel, Mozart, Beethoven,
Sibelius, Barber, Copland,
and Vaughan Williams
to the great visual-musicians
especially
Leonardo, Raphael, Michelangelo,
to the great word-musicians
especially
King David, Isaiah, George Herbert,
and to all peacemakers
especially
St. Francis, Thomas More,
Abraham Lincoln, Martin Luther King,
Mahatma Ghandi and John Lennon

I send love to your souls for all you have given me.

ACKNOWLEDGEMENTS

I wish to thank Saul Novack for his close friendship and kindness towards me over the years, for the opportunity of studying music ranging from Gregorian chant to Chopin with him for a long period of time, and for numerous helpful suggestions which were incorporated into this dissertation. His work in early music greatly influenced my own studies in that area. I also wish to thank Carl Schachter for many years of inspiring musical guidance and close friendship, and for his helpful comments concerning this dissertation. I am grateful to Allan Atlas for taking time to assist me in many areas of the dissertation stage and for his extraordinarily rigorous criticism which enabled me to improve innumerable details of this study. Stanley Boorman generously made his library of microfilms of Petrucci prints available to me, and Deborah Davis kindly assisted in numerous details. I also wish to thank Charles Jacobs and another former teacher and friend, Raymond Erickson, for being on my dissertation committee. Frank Samarotto assisted me with his expertise in computers. Finally, I wish to thank my father for invaluable assistance, particularly with the computer-formatting of this dissertation.

PREFACE

The application of accidentals to early music is well known to be a highly controversial subject among scholars. Considering the extent of disagreement on the subject, one might think that the surviving sources do not provide sufficient evidence to offer firm conclusions on this subject. While it is true that the known evidence gives us little knowledge of how groups of singers at a particular time and place added accidentals, I believe that we can nevertheless achieve stylistically valid solutions on the basis of three types of evidence: accidentals in mensural sources, inflections indicated in tablatures, and theoretical writings.¹

The ultimate project for the study of accidental inflections in early music would be to compile all relevant theoretical texts, and coordinate their testimony with studies of accidentals in practical sources. This would be done with attention to chronological and geographical considerations, so that a picture of the development of performance practice in various places throughout the Middle Ages and Renaissance would emerge. In general, the sources show a greater use of inflections (especially sharps) in the fourteenth and early fifteenth centuries than is found in the time of Ockeghem and Josquin,

¹The term "mensural sources" is used in order to include any manuscripts or prints in mensural notation, and includes both vocal and instrumental compositions.

after which time there is again a greater use of inflected pitches, particularly as chromaticism becomes exploited in the Italian madrigal. Thus, Josquin's period represents a high point in the use of pure diatonicism, a development which may have been related to the growing practice of applying modal theory to polyphony.

The threefold approach of studying theoretical treatises, mensural sources, and lute sources is being followed here, but (for obvious reasons) on a limited scale. I had originally included extensive quotations from theorists, but this was rendered unnecessary by the publication of Karol Berger's excellent study of theories of inflections from Marchettus to Zarlino.² In many ways, Berger and I had reached the same conclusions, sometimes on the basis of the very same passages from the same theorists. He thus preempted a substantial portion of my dissertation. However, since Berger rarely refers to practical sources, his study does not, in many cases, concern the relation between theory and actual practice. As Daniel Leech-Wilkinson points out:

Berger has deliberately set out ... to write a book about theories of accidental inflections; about what happens, or should happen, according to theorists. What he has not done, and has not intended to do, is to derive from that a code of practice for editors and performers ... The danger of this approach is that, in sticking to his principles, the author may be so theory-bound as to miss the significance of 'practical' evidence for a full understanding of

²Karol Berger, *Musica Ficta: Theories of accidental inflections in vocal polyphony from Marchetto da Padova to Gioseffo Zarlino* (Cambridge: Cambridge University Press, 1987).

theory ... What is urgently required, therefore, is a second volume which takes an open-minded view of the musical sources, investigates the extent to which theory adequately explains them, and proposes practical measures for translating their notation into ours. Coupled with that, a major contribution will become a classic.³

Because of the thoroughness with which Berger has investigated the theoretical sources, his efforts surpassed what I had done in my independent study of theorists. On the other hand, since the present study extensively examines the relationship between theory and accidentals in practical sources, a whole new understanding of actual practice emerges that is not found in Berger. As a result, the student of Renaissance music will learn more about theories of accidental inflections from Berger's study, and more about how theory was actually followed or contradicted in practice from the present study. Ultimately, then, the serious student of accidentals in early music will want to study both Berger's book and this dissertation in conjunction with one another, thus fulfilling—at least in regard to Josquin's period—Leech-Wilkinson's call for a companion volume. Interestingly, although my study was undertaken independently of Berger's, the general directions of our conclusions coincided to a great extent. We both found that dissonance treatment was handled more freely than had been previously thought, and that the range of available accidentals was more restricted, with little in the way of far-reaching "chain-reactions" of unnotated flats.

³Daniel Leech-Wilkinson, review of Berger's *Musica ficta* in *Musical Times*, 130 (1989), 213.

Berger's study renders the use of extensive quotations from theorists unnecessary here, and theoretical evidence can, for the most part, be briefly summarized. There are times when theoretical evidence not cited in Berger will be used in this study; this is particularly the case for the discussion of imitative and canonic procedures in Chapter 7. Thus, while Berger's book has provided the theoretical backbone of this study, there is by no means a mechanical dependence on his volume.

The present study is not the first to use the threefold approach of studying accidentals in Renaissance vocal music by examining treatises, mensural sources and lute intabulations; Robert Toft has studied pitch content in Josquin's motets in this manner.⁴ Toft emphasized the importance of studying accidentals in lute intabulations in order to facilitate our understanding of accidentals and pitch content in vocal music for the following reasons:

1) The lute intabulations provide the most complete evidence for accidentals from the Renaissance, since lute tablature specifies precise accidentals, whereas mensural sources notate relatively few accidentals, since singers were expected to supply them extemporaneously according to traditional practices.⁵

⁴Robert Toft, "Pitch Content and Modal Procedure in Selected Works of Josquin Desprez," (Ph.D. diss., Kings College, University of London, 1983). Unfortunately, this study is not readily available; apart from the copy in Kings College, a microfiche copy exists in the music library of Stanford University, California.

⁵*Ibid.*, 75. Howard Mayer Brown also points out the application of rules governing accidentals to both vocal and instrumental music in "Accidentals and Ornamentation in Sixteenth-Century Intabulations of Josquin's Motets," in *Josquin des Prez: Proceedings of the International Josquin Festival-Conference*, ed. Edward Lowinsky (London, Oxford University Press, 1976), 476. Lowinsky supports the use of lute tabulatures to

2) Some theorists stated that the rules governing accidentals applied both to vocal and instrumental music. Furthermore, the pitches on lutes were related to the solmization system in various treatises, and theorists also discussed the modal system in relation to the lute.⁶

I am in agreement with Toft (and the other scholars cited in fn. 5) concerning the validity of studying accidentals in intabulations to further our understanding of vocal performance, for the concordance between the theorists' rules and accidentals found in lute intabulations of vocal music is far too close to be mere coincidence. The intabulations show lutenists grappling with the same musical problems that theorists discuss in connection with vocal music, such as the avoidance of vertical and melodic diminished fifths, the adjustment of imperfect consonances to perfect consonances, and so forth. It is not a difficult matter to distinguish the accidentals that originate from lutenists' instrumental figuration from those that are designed to alter the original vocal counterpoint; it is this latter category that corresponds to the inflections that were used by singers when they followed the con-

investigate Renaissance accidentals in "Secret Chromatic Art *Re-examined*," in *Perspectives in Musicology*, ed. Barry S. Brook, Edward C. D. Downes, and Sherman Van Solkema (New York: Norton, 1972), 128. Jaap van Bentem uses lute intabulations to investigate inflections in vocal music in "Fortuna in Focus: Concerning 'Conflicting' Progressions in Josquin's *Fortuna d'un gran tempo*," *Tijdschrift van de Vereniging voor Muziek Geschiedenis*, 30 (1980), 1-50.

⁶Toft, "Pitch Content and Modal Procedure," 75 and 109-110. An overlap in vocal and instrumental training is seen at the court of Mantua, where, during Josquin's period, musicians played lute, sang and composed; see William Prizer "Lutenists at the Court of Mantua in the Late Fifteenth and Early Sixteenth Centuries," *Journal of the Lute Society of America*, 13 (1980), 5-34.

ventions described by theorists.⁷ To be sure, a particular lutenist might not give us the idiosyncracies of singers' performance at specific courts and chapels, but then again, what will? The evidence from the lutenists remains the most complete that we have from the period, so that it seems appropriate to give it a significant place in our study of Renaissance inflections. Most compelling is the fact that when we apply accidentals from intabulations to their vocal models, the results are almost always stylistic, simple and in agreement with the theoretical rules of the period.

The present study in many ways runs parallel to that by Toft. Both show that there was a considerable degree of freedom in the way in which Renaissance musicians used dissonance, ornamentation, and accidentals. Furthermore, both studies proceed systematically through each of the rules pertaining to accidentals and show that the rules were sometimes fulfilled in one way, sometimes in another, or at other times not applied in actual practice. Thus, because of the close relationship in subject matter, Toft's study will be referred to throughout.

His study differs, however, in various respects from the present one:

1) Most of the lute intabulations of Josquin's motets in Toft's study come from mid-sixteenth century sources, thus, from a later period than ours, which ranges approximately from 1480 to 1520. Thus,

⁷Brown distinguishes between accidentals which are relevant to vocal performance and those which arise purely from instrumental figuration in "Accidentals and Ornamentation," 478-79.

Toft's study gives us a picture of how later generations interpreted Josquin's music, while the present one presents a picture of how Josquin's contemporaries interpreted music of their own time, and also of how they interpreted music of earlier generations, since composers such as Busnois, Hayne, and Ockeghem are well represented in the main sources for this study. We thus have considerable evidence as to how Renaissance musicians interpreted music of earlier generations.

2) Toft's study contains a wealth of information (such as how lute intabulations were made) and transcriptions of lute intabulations of Josquin's motets that are not found in this study. Here, however, will be found the most detailed investigation to date of how Renaissance musicians applied (or withheld) accidentals in specific musical contexts.

Thus, when this study is examined along with those by Berger and Toft, a comprehensive picture of accidental usage in the mainstream, diatonic modal music of the Renaissance emerges; these three studies complement one other and point basically in the same direction. This does not mean that the subject has been exhausted—far from it. Nonetheless, a strong foundation has now been laid for future study into the nature of accidentals in Renaissance music.

A basic premise of this dissertation is that we can find an authentic solution from Josquin's period for any kind of musical problem concerning accidental inflections, and then apply them in our own editorial practice. There is virtually no kind of technical problem in the music of Josquin's era that is not solved somewhere within the collective body of theoretical and practical sources from that period,

even though some types of inflections might not appear within individual sources. Thus, if we find that a passage seems to call for the use of inflected pitches, but none are specified in any source for the work in question, we may find a contemporary solution in an analogous contrapuntal context in a different composition where accidentals are given, or in a theoretical treatise.

One of the overall effects of this approach is that it leads to simpler, more historically justifiable solutions to tricky passages than are found in modern, hypothetical solutions requiring great numbers of unnotated inflections.⁸ As a result, the entire domain of accidentals in early music (traditionally called *musica ficta*) is no longer such a controversial, baffling subject, but becomes relatively accessible. Furthermore, we no longer have to worry so much about a single “right solution,” nor can we demand one, when we see that different musicians of the period found more than one solution for identical passages; we shall see a number of cases in which sources flatly (and sharply!) contradict one another. This is hardly surprising in an age when inflections were often freely added; for, although it is conceivable that composers desired a specific set of accidentals in performing their own works, they undoubtedly knew that other performers would sometimes use different accidentals. Thus, there may not have been a single ideal pitch content for a composition, although the degree of flexibility would have been too slight to have taken away the identity

⁸The most famous example of this is Edward Lowinsky's *Secret Chromatic Art in the Netherlands Motet* (New York: Columbia University, 1946, repr. 1967).

of the composition itself. Finally, the sources indicate that accidentals were not always used in places where they might have been used.

Chapter 1 deals with the components that make up the basic musical system, namely, the gamut, and the hexachordal solmization system, the system without flat signature (*cantus durus*), and that with a B \flat signature (*cantus mollis*). This chapter also offers a new, clearer understanding of what the difference between *musica recta* (or *musica vera*) and *musica ficta* was according to Renaissance musicians. Chapter 2 deals with *musica ficta*, which is the term generally used by Renaissance theorists for inflected notes not belonging to the gamut or music transposed outside the basic gamut musical system (i.e., with key signatures of more than one flat or with sharps). These chapters are in some ways very close to the opening two chapters of Berger's *Musica Ficta*, and were written independently, before Berger's study was published. I have retained them because I felt that a certain introductory groundwork was needed for the rest of the dissertation. Furthermore, there are significant differences in interpretation between Berger's and my account of some of the elements of the basic musical system and *musica ficta*. Berger's account is more intricate, draws on more sources, and contains more information. The discussion offered here is more concise, presents a simpler, clearer picture, and contains important ideas not found in the Berger study. Thus, both of our presentations of *musica vera* and *musica ficta* are valuable in their own right, and will complement each another for anyone interested in fully exploring this subject.

Chapters 3-6 contain an exploration of how the main rules governing accidentals were followed in selected mensural sources and lute intabulations of vocal music. The main sources for this study are listed in the section entitled "Editorial Policy and Sources for this Study" (pp. xviiiiff.). Chapter 7 contains an examination of the use of accidentals in imitation, canon, and other procedures of repetition. Chapter 8 discusses various aspects of the musical system of Josquin's period, and includes a new definition (formulated from study of the sources) of the system's boundaries in terms of how many new flats and sharps could be introduced. The famous motet, *Absalon, fili mi* (traditionally attributed to Josquin, although its authorship is disputed), is discussed in light of the new findings presented in this chapter; the work is usually attributed to Josquin, and will. Finally, there is a brief look at how the musical system of Josquin's period was transformed in the later sixteenth and seventeenth centuries. This not only sheds new light on the historical evolution from the diatonic modal system to the major-minor system, but it also adds to our understanding of musical structure in Josquin's period. Throughout this study, the traditional eight-mode system is assumed, since that was the system used (both for plainchant and polyphony) in Josquin's period; occasionally, the equivalent mode-names from Glarean's twelve-mode system are also referred to.

The study of vocal, instrumental and theoretical sources offered here yields a coherent picture of the musical language of Josquin's age. These three types of evidence confirm each other to such an extent that they clearly demonstrate their origin from the same musical tradition.

It is hoped that the reader will find here a clear understanding of the principles underlying the musical system, and of how the details of interpretation of pitch content may be handled in a historically valid way.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	iv
PREFACE	v
EDITORIAL METHOD AND SOURCES	xviii
CHAPTER 1. THE BASIC ELEMENTS OF THE MUSICAL SYSTEM IN JOSQUIN'S PERIOD	1
CHAPTER 2. RENAISSANCE DEFINITIONS OF <i>MUSICA FICTA</i> ..	15
CHAPTER 3. RULES GOVERNING ACCIDENTALS AND THEIR APPLICATION IN PRACTICAL SOURCES (BEGINNING)	30
<p>Rule 1: On the prohibition of augmented fourths, diminished fifths and imperfect octaves in leaps and in melodic outlining. Further, a discussion of diminished fourths.</p>	
<p>Rule 2: Direct chromatic steps are generally prohibited (and discussion of other melodic dissonances)</p>	
CHAPTER 4. THE PRACTICAL APPLICATION OF THE RULES GOVERNING INFLECTIONS (CONTINUED)	84
<p>Rule 3: <i>Una nota supra la, semper est canendum fa.</i></p>	
<p>Rule 4: The middle note in the neighbor-note figures D-C-D, G-F-G and A-G-A is raised, producing D-C(#)-D, G-F(#)-G, and A-G(#)-A.</p>	
<p>Rule 5: An imperfect consonance progressing to a perfect consonance should be as close to the perfect consonance as possible.</p>	

CHAPTER 5. THE RULES GOVERNING ACCIDENTALS AND THEIR APPLICATION IN PRACTICAL SOURCES (CONTINUED)	139
Rule 6. Diminished or augmented fourths, fifths and octaves are prohibited in counterpoint by the rule forbidding the sounding of <i>mi contra fa</i> .	
CHAPTER 6. THE RULES GOVERNING ACCIDENTALS AND THEIR APPLICATION IN PRACTICAL SOURCES (CONCLUSION)	192
Rule 7: Cross relations are forbidden in music for two voices, allowed between diatonic steps in music for more voices.	
Rule 8. Minor thirds are raised to major at cadences (Picardy thirds).	
CHAPTER 7. TREATMENT OF REPETITIVE MATERIAL	212
Treatment of imitation, canon, ostinato, and other procedures of repetition.	
Partial signatures used for canon, imitation, and other purposes	
CHAPTER 8. FURTHER ASPECTS OF THE USE OF INFLECTIONS AND THE MUSICAL SYSTEM IN JOSQUIN'S PERIOD—AND A LOOK BEYOND	249
APPENDIX	283
Summary of the findings of this study (<i>musica vera</i> , <i>musica ficta</i> , the rules for accidental usage and their practical application, treatment of imitative devices, and the scope of the musical system) in Appendix G	
BIBLIOGRAPHY.	319

EDITORIAL POLICY AND SOURCES FOR THIS STUDY

The main musical sources examined in this study all originated during Josquin's lifetime. These particular sources were chosen because they have been transcribed in modern editions, so that the use of accidentals in them could be studied in their full musical contexts. In all cases, microfilms or facsimile reprints of the actual sources have been checked in conjunction with the modern editions in order to ensure accurate musical texts in the examples for this study.

Explanation of accidental signs in the examples from mensural sources

- 1) Whenever an accidental appears within the source for a particular example, the accidental is placed in front of the note to which it applies.
- 2) All unmarked accidentals above the staff are my editorial suggestions.
- 3) When a passage has the possibility of two alternate uses of accidentals, both versions are sometimes given (e.g., b/h).¹ If more than one voice has such alternate readings at a time, the accidentals on the left of the slash line up together for the first reading, and the accidentals on the right of the slash line up together for the second reading. Occasionally an accidental from a contemporary source is indicated above a note with an initial representing the name of the source, which is identified in the text.

¹Strictly speaking, there is no way to establish a specific number of alternate uses of accidentals, since the whole matter has an element of unpredictability. However, the rules and their usual application sometimes lead to cases in which a particular pair of possibilities seems likely.

In addition to mensural sources (listed below), lute sources by Bossinensis, Capirola, and Spinacino are used throughout this study. The lute-arrangements by Capirola and Spinacino of vocal music present their models in varying degrees of fidelity: some stay relatively close to the vocal original, while others modify it extensively with ornamentation and changes in harmony and voice leading.

The lute is not always capable of reproducing the full polyphonic flow of a composition that was originally intended for an ensemble; the lute can usually perform the succession of note attacks of the vocal model, but it is much harder, and often impossible, for the lute to sustain all the voices as in vocal performance. Modern transcriptions of lute intabulations often present a deceptively complete picture of the voice-leading. The transcriptions tend to treat the lines like vocal lines, and do not show where notes would stop sounding because of a new note played on the same string, or because of the rapid sound decay of the lute. Such transcriptions are combinations of lute arrangements with the rhythmic values of the vocal models. (The Capirola edition by Gombosi follows this approach).

In the present study, I have transcribed the lute examples directly from the lute notation of Spinacino and Capirola in such a way as to show how long each note would actually sound when played on the lute; this gives the examples in this study a more realistic, broken texture than is usually found in modern transcriptions.²

²There remains a certain degree of interpretation in my lute transcriptions, since I attempted to sustain each note as long as I could, while other performers might be able

The intabulations by Bossinensis do not provide the same problems as those by Capirola and Spinacino, since (with very rare exceptions) Bossinensis does not ornament the music, and since he assigns only two voices to the lute, which are easy to handle on that instrument. The main editorial contribution of Bossinensis was to add accidentals that correspond closely to those called for by theorists' rules pertaining to vocal music; thus, he seems to have provided versions of the lower voices that are as close to vocal practice as could be managed on the lute.³ For this study of Bossinensis, then, it was only necessary to check the original sources for pitch content.

Although most of the examples in this study are taken from the main sources listed below, examples from other sources are also cited at times in order to illustrate possibilities not found in the main ones.

to sustain notes more or less than I was able. Nonetheless, the margin for difference in either direction is not very great, and would not in any way significantly modify the findings of this study, particularly in the use of accidentals which are clearly spelled out in the lute tablatures.

³Since lutes cannot sustain long note values, such values were typically divided up into shorter, repeated notes whenever intabulations of vocal models were made. Apart from the addition of accidentals, this is the main difference between Bossinensis' arrangements and their originals.

List of main sources and editions for this study, their short titles,
and repertoire

Mensural sources

1) Brussels, Bibliothèque royale de Belgique, Ms. 228. Copied 1516-23 in Brussels/Mechlin. Short title: Brussels 228.

Modern edition in Martin Picker, *The Chanson Albums of Marguerite of Austria* (Berkeley: U. of California Press, 1965). There is usually no need to distinguish between the manuscript and Picker's edition; thus, references to Brussels 228 can be looked up in either. When needed, specific references to Picker's edition will be cited as follows: Picker, *Chanson Albums*.

Brussels 228 contains chansons, motet-chansons, and seven motets. Most compositions are by composers of Josquin's generation: Josquin, Brumel, Compère, Isaac, la Rue, et. al.

Picker's edition also contains transcriptions of compositions in Brussels, Bibliothèque royale de Belgique, Ms. 11239 (copied ca. 1500 in Savoy); he includes only those pieces that do not already appear in Brussels 229. Occasionally this source has been used with the following short title: Brussels 11239.

2) Florence, Biblioteca Nazionale Centrale, MS Banco Rari 229. Copied 1492-93 in Florence. Short title: Florence 229.

Modern edition in *A Florentine Chansonnier from the Time of Lorenzo the Magnificent: Florence, Biblioteca Nazionale Centrale MS Banco Rari 229*, ed. Howard Mayer Brown, in *Monuments of Renaissance Music*, vol. 7 (with separate text and music transcription volumes). There is usually no need to distinguish between the manuscript and Brown's edition; thus, references to Florence 229 can be looked up in either. When needed, specific references to Brown's edition will be made. References to Brown's commentary will be cited as follows: Brown, *A Florentine Chansonnier*, text volume.

Florence 229 contains mostly chansons, a handful of Latin motets and mass movements by both pre-Josquin- and Josquin-generation composers: Agricola, Busnois, Caron, Hayne, Isaac, Josquin, Obrecht, et al.

3) Florence, Biblioteca Medicea-Laurenzia Ms. Acquisti e doni 666. Copied 1518 in Rome. Short title: Medici Codex.

Modern edition in *The Medici Codex of 1518*, ed. Edward Lowinsky in *Monuments of Renaissance Music*, vols. 3-5 (Chicago: U. of Chicago Press, 1968). Lowinsky's edition includes commentary, facsimile, and transcription volumes. There is no need to distinguish between the original manuscript, the facsimile, or the transcription volume; references using the short title, "Medici Codex" can be looked up in any of these.

The Medici Codex contains primarily sacred repertoire by composers of Josquin's generation and of the younger generation: motets by Josquin, Mouton, Silva, Festa, Willaert, et al.

Lute sources

1) Franciscus Bossinensis, *Tenori e contrabassi intabulati col sopran in canto figurato per cantar a sonar col lauto, libro primo* (Venice: Petrucci, 1509). Bossinensis I.

Facsimile ed. in Franciscus Bossinensis, *Tenori e contrabassi ... libro primo* (Geneva: Minkoff, 1977). Modern edition in *Le Frottole Per Canto e Liuto Intabulate da Franciscus Bossinensis*, ed. Benvenuto Disertori (Milan: Ricordi, 1964). Contains transcriptions of the entire contents of both *Libro primo* and *libro secundo* (1511). *Libro secundo* was examined, and showed basically the same editorial practice as *libro primo*. It is not used as a source for this study.

Examples in this study from Bossinensis are identified with the short title, Bossinensis I, followed by number. In many cases, the order of pieces in the original Petrucci edition differs from the order found in Disertori's edition. In such cases, the number of the original is given, followed by the number in Disertori's edition in parentheses. Thus, Bossinensis I: 14(13) would indicate that a song would be no. 14 in Petrucci's original print, and no. 13 in Disertori's edition. If only a single number is given, then it is the same in both the original and in Disertori.

Bossinensis contains the soprano, tenor and bass parts of *frottole* by Cara, Tromboncino, and lesser known composers; the alto part is omitted. The soprano part is printed in mensural notation, and is intended to be sung, while the tenor and bass parts are intabulated for the lute.

2) *Composizione di Meser Vincenzo Capirola*, Chicago, Newberry Library, Acq. No. 107501. Ca. 1517. Short title: Capirola.

Facsimile edition in *Composizione di Meser Vincenzo Capirola*, ed. Orlando Christoforetti (Florence: Studio per Edizione Scelte, 1981). Modern edition, containing a transcription aligned with the lute tablature in *Composizione di Meser Vincenzo Capirola*, ed. Otto Gombosi (Neuilly-sur-Seine: Société de Musique d'Autrefois, 1955).

Examples in this study from Capirola are identified with the sigla "C" directly above the musical transcription, followed by the location in Gombosi's edition. Since Gombosi uses irregular barring without measure numbers in his edition, the most convenient way to cite passages is to identify the place where the example begins by page, system and measure number of Capirola's tablature (rather than of Gombosi's transcription). Thus, a citation placed above a lute transcription such as "C: p. 1, s. 2, m. 3" means "Capirola, p. 1, system 2, measure three of Capirola's tablature in Gombosi's edition."

The intabulations by Capirola cover a wide range of genre and style: *frottole*, chansons by Hayne, motets and sections from masses by Agricola, Brumel, Ghiselin, Josquin, Obrecht, et al. Predominantly centered in Josquin's generation, with occasional pieces by older composers.

3) Francesco Spinacino, *Intabulatura de lauto, libro primo* and *libro secundo* (Venice: Petrucci, 1507). Short title: Spinacino.

Transcription aligned with the tablature in Henry Louis Schmidt III, "Francesco Spinacino, *Intabulatura de lauto, libro primo* and *libro secundo* (Venice: Petrucci, 1507)" (Ph. D. diss., Chapel Hill, 1969).

Examples in this study taken from Spinacino are identified by the sigla "S" directly above the transcripion of the lute intabulation, followed by book and number. Thus, S I: 2 means Spinacino, *Libro primo*, no. 2.⁴

The repertoire in Spinacino covers a wide range of secular (chansons) and sacred music (motets and sections from masses) from the pre-Josquin generation and from Josquin's generation: works by Caron, Hayne, Isaac, Josquin, Obrecht, et al. Included are a considerable number of concordances with Petrucci's *Odhecaton*.

⁴Spinacino's arrangement's of vocal music for two lutes were omitted from the study since they range so freely from the models as to leave little similarity. In addition, the instrumental Bassadanza I: 16 was omitted, as were II: 1 and II: 31, with unidentified models, and II: 32, whose model I was unable to trace. This leaves a total of 44 intabulations for solo lute which were examined; thus, Spinacino's practice was well examined here. In addition, instrumental compositions by Capirola and Spinacino were not included in this study.

CHAPTER 1
THE BASIC ELEMENTS OF THE MUSICAL SYSTEM
IN JOSQUIN'S PERIOD

The musical system of the Renaissance is made of two components, the basic musical system (i.e., the gamut and its three-hexachord system) and those elements beyond it (extensions of range beyond the gamut and *musica ficta*). Music by composers of Josquin's generation is typically written in the larger system which draws from both of these components. It is appropriate to begin a study of accidental usage in Josquin's period with a discussion of the basic musical system and its relationship to *musica ficta*. In order to present a clear overview of the Renaissance musical system, it is necessary to cover familiar territory. In the process, however, some new interpretations of how the musical system operated will be offered, and the picture of the Renaissance musical system that emerges here will be somewhat different from that found in other modern descriptions.

In the late fifteenth century, the gamut from Guido d'Arezzo's *Micrologus* (ca. 1028-32) was used, with its original range (G to d²) extended by an extra note above (G to e²).¹ This G-e² gamut was attributed to Guido, without mention of the slight extension in range. Example 1-

¹For example, see Franchinus Gafurius, *Practica Musicae* (Milan, 1497), bk. 1, ch. 1, trans. Clement Miller ([Rome:] American Institute of Musicology, 1968), 28. Another term for gamut is *manus* (hand), after the famous pedagogical Guidonian hand. The Guidonian gamut was no doubt extended by a note because of the highest hexachord, which extends to e² (see Example 1-2).

1 shows a simplified version of the gamut given by Johannes Tinctoris in his treatise *Expositio manus*.²

Example 1-1. The traditional gamut given in *Expositio manus* by Tinctoris (simplified version).

e la
d la sol
c sol fa
b fa ♯ mi
a la mi re

G sol re ut
F fa ut
E la mi
D la sol re
C sol fa ut
b fa ♯ mi
A la mi re

G sol re ut
F fa ut
E la mi
D sol re
C fa ut
♯ mi
A re

Γ ut

The gamut from G to e² was used throughout the Renaissance and appears as late as Morley's treatise of 1597.³

²Tinctoris, *Expositio manus* (Naples, before 1475), ed. Albert Seay in *Johannes Tinctoris, Opera Theoretica* vol. 1 (American Institute of Musicology, 1975), ch. 2, 36; trans. Albert Seay, "The *Expositio manus* of Johannes Tinctoris," *Journal of Music Theory* 9 (1965), 195-232. The notes and their names are given in Example 1 just as they are given by Tinctoris; additional terminology, not necessary to this study, has been omitted from this example. In his original gamut, Tinctoris uses Guido's terms *grave*, *acute* and *superacute* for the low, high, and highest octaves respectively.

³Thomas Morley, *A Plaine and Easie Introduction to Practicall Musicke* (London, 1597), ed. R. A. Harmon as *A Plain and Easy Introduction to Practical Music*, (2nd ed., New York: Norton, 1963), 11.

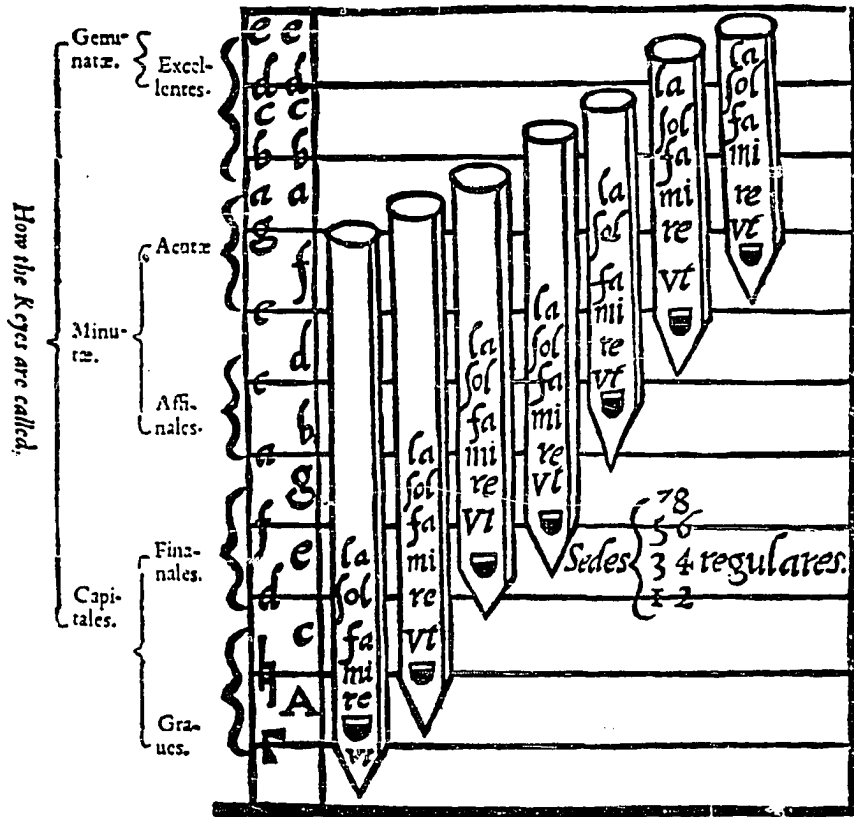
The gamut is based on the diatonic genus, which arranges the tones and semitones in the order found on the white keys of the keyboard. The only inflected pitch considered to be in the gamut is B \flat , which is found in the upper two octaves of the gamut (b fa \sharp mi) but not in the lowest one (B mi).⁴ The gamut does not represent the entire range of tones available in medieval and Renaissance music; rather, it provides the basic musical framework, subject to extensions in range and inflections in pitch.

Choirboys were taught to locate pitches by using the solmization system; the solmization syllables are arranged in the order of hexachords given in Example 1-2.⁵

⁴Although not recognised as part of the basic gamut, the low B \flat occurs frequently in practice from the Middle Ages on.

⁵The example is from Andreas Ornithoparchus, *Musice active micrologus* (Leipzig, 1517), translation in John Dowland, *Andreas Ornithoparchus, his Micrologus* (London, 1609, facsimile edition in Ornithoparchus & Dowland, *A Compendium of Musical Practice*, with an introduction by Gustave Reese and Steven Ledbetter, New York, Dover Publications, 1973), bk. 1, ch. 3 (p. 128 in the Dover reprint). For further reading and bibliography, see Andrew Hughes, "Solmization," in *The New Grove Dictionary of Music and Musicians*, ed. Stanley Sadie (London: Macmillan, 1980), vol. 17, 458-63, and 465-66.

Example 1-2. The traditional gamut and hexachord system as presented by Ornithoparchus.



of

Each hexachord has the arrangement tone-tone-semitone-tone-tone, the semitone occurring between mi and fa. As in Example 1-1, the notes in Example 1-2 are given by letters and solmization syllables; in addition, the positions that the hexachords occupy in the gamut are shown. Since the melodies are rarely confined to a single hexachord, it is often necessary to change from one hexachord to another, a process called "mutation." A glance at Example 1-2 shows that most notes of the gamut contain more than one hexachord syllable (e.g., a la mi re, d la sol re, etc.) and so it is possible to switch (mutate) from one hexachord to another on the same note. A mutation, then, is a change from one hexachord syllable to another, both syllables being on the same pitch.⁶

No mutations are possible between B \flat and B \natural , since mutations involve a change of syllable on the same note.⁷ Direct chromatic progressions in a single voice are not normally found in music of Josquin's period, although chromatic cross relations are, as are shifts between a note and its inflected form within a single voice when sepa-

⁶Tinctoris provides examples which proceed through the gamut in ascending stepwise order, with mutations for each note. See *Expositio manus*, ch. 7; pp. 218-23 in Seay's translation.

⁷Theorists traditionally banned mutations between B and B \flat . Johannes Cochlaeus writes that "The two vocables *b fa ♯ mi* are not a unison, and a mutation cannot occur on them properly, for they are separated by an *apotome*, a larger semitone." *Tetrachordum Musices* (Nuremberg, 1511), trans. Clement Miller ([Rome:] American Institute of Musicology, 1970), 42. Ornithoparchus writes that "The *b moll* Voyces cannot be change into ... square, nor contrarily, because they are discords," Dowland, *Ornithoparchus, his Micrologus*, bk. 1, ch. 1, 17 (p. 137 in the Dover ed.).

rated by as little as one note, or by a larger number of intervening notes.⁸

The availability of both B \sharp and B \flat , and a degree of flexibility between these pitches is one of the special characteristics of the medieval and Renaissance musical system.⁹ Burtius describes this flexibility in the following way:

The sign of soft b is a key or demonstration of a movable small semitone, and it occurs especially when a tritone must be removed ... After this danger has been avoided and its sharpness has been turned into a pleasant sound, natural square must be resumed immediately, that is, by singing according to the aforementioned natural order of letters. For stable semitones ... always fall between b and c, and e and f. Movable semitones always fall between a and round b when a tritone occurs, or in making an imperfect fifth and similar intervals perfect in counterpoint or figural song.¹⁰

B \flat is considered by Burtius to be less fixed or stable than B \sharp ; although he does not explicitly say so, he is speaking of the status of B \flat in music without any flat signature. It is clear from his statements that a singer would assume the use of B \sharp , and only use B \flat secondarily, where called for by notation or by customary performance practice (primarily to avoid harsh intervals in the melody or counterpoint), and then revert to using B \sharp .

⁸The term "permutation" is used for direct chromatic progressions such as B \flat -B; see the discussion of Rule 2 in Chapter 3.

⁹In *The Theory of Hexachords, Soimization and the Modal System* ([Rome:] American Institute of Musicology, 1972), Gaston Allaire refers to "areas of oscillation" between B and B \flat in the untransposed system, between E and E \flat in a system with a B \flat -signature, and so on for other transposed gamuts (see especially pp. 18-21).

¹⁰Nicolaus Burtius, *Musices Opusculum* (Bologna, 1487), bk. 1, ch. 20, trans. Clement Miller (Neuhausen-Stuttgart: American Institute of Musicology, 1983), 56.

Since both B \natural and B \flat were so readily available, most medieval and Renaissance compositions use either no signature or a B \flat -signature. In order to teach the reading of music in these two systems, sixteenth-century theorists taught two scales, one without flat-signature, and the other with a B \flat -signature. The solmization syllables and hexachord mutations for ascending and descending through both scales are shown in Example 1-3a.¹¹

Coclico (Example 1-3b) calls the first scale the *scala b duralis, & naturalis* (i.e., the “scale of the hard B and natural”) and the second scale, the *scala b mollaris, & naturalis* (i.e., the “scale of the soft b and natural”), thus identifying each scale by its constituent hexachords. Accordingly, the first scale consists of notes found in the hard (G-A-B-C-D-E) and natural (C-D-E-F-G-A) hexachords; similarly, the second scale consists of notes found in the soft (F-G-A-B \flat -G-A) and natural (C-D-E-F-G-A) hexachords. Note that the C natural hexachord does not contain either B or B \flat , and thus can be used in either scale. Coclico provides the syllable *re* to show where the mutations occur in the first scale, but does not provide the same information in the second scale.

¹¹Dowland, *Ornithoparchus, his Micrologus*, bk.1, ch. 5, 15 (p. 135 in the Dover ed.), Adrian Petit Coclico, *Compendium Musices* (Nuremberg, 1552), facsimile ed. Manfred F. Bukofzer (Kassel: Bärenreiter, 1954), fol. cij^F-cij^V.

Example 1-3. The *scala duralis* and *scala mollaris* as given by Ornithoparchus/Dowland (a) and by Coclico (b).

a)

Cap. 5. Of Solfaing. 15

The Scale of \sharp dure, and where the Mutations are made. The Scale of \flat Moll, and where the Mutations are made.

b)

Scala b \times ralis, & naturalis.

c #

Scala b mollaris, & naturalis:

This shows that although the hexachord system is based on three hexachords (*durum*, *naturale*, and *molle*), within any given musical system, two hexachords are primary, and the third one subsidiary. Thus, in the “scale of the hard B and natural,” the *naturale* and *durum* hexachords (the latter containing B \sharp) take precedence over the *molle* hexachord (with its B \flat) which would be used to a lesser extent (mainly to avoid imperfect fourths and fifths); in the “scale of the soft b and natural” the *molle*, and *naturale* hexachords take precedence over the hexachord on B \flat .¹² This is in accord with Burtius’ statements showing that b-c forms a stable, fixed semitone, and that a-b \flat forms an unstable, movable semitone (see above).

The relation between flat signatures and the hexachord system has been explored, but not fully clarified, by modern scholarship. One important hypothesis concerning this relationship is that signatures effect transpositions of the basic three-hexachord system.¹³ As we have seen, B is a movable note in the original (untransposed) hexachord system (with hexachords on C, F, and G, making both B \sharp and B \flat available); a transposition of the three-hexachord system down a fifth (with a B \flat -signature) would produce hexachords on F, B \flat , and C, so that

¹²For convenience, the terms *cantus durus* and *cantus mollis* will be used throughout this study to denote the systems without flat signature and with B \flat signature respectively. This terminology, which obviously grew out of the terms for hexachords and scales, was established by the end of the Renaissance; see William Drabkin, “Hexachord,” in *The New Grove Dictionary*, vol. 8, 543. Music with a signature of two flats or more was considered outside of the normal musical system, and thus the corresponding term for it is *cantus fictus*; this is more extensively discussed in Chapter 2. The use of the hexachord on B \flat in *cantus mollis* is explained in the following discussion. Any hexachord on a note other than C, G, or F was called a *coniuncta*; the *coniunctae* were used to introduce new accidentals (see Chapter 2, fn. 6).

¹³Margaret Bent, “Musica Recta and Musica Ficta,” *Musica Disciplina* 26 (1972), 97-99. The term *musica recta* is a medieval term for the notes of the gamut or hand.

both E \sharp and E \flat would be available, the E \flat arising from the new hexachord on B \flat . Similarly, a transposition downwards by two fifths (using a B \flat and E \flat signature) would mean that both A \sharp and A \flat would be available, and so on. An implicit confirmation that flat signatures produce transpositions of the three-hexachord system is found in Lanfranco's references to permutation. In the following passage, Lanfranco refers to permutation between B \sharp and B \flat in the untransposed system:

Permutation, which is the change of the name of one note to the name of another note made on the same line or space on a different sound, is made for \sharp quadro on \sharp , \flat , and $\sharp\sharp$ because here many times mi is changed to fa in order to avoid the harshness of the tritone; the which is nothing else but the combination of three whole tones, unpleasant sounded together and in progression.¹⁴

In a chapter entitled *Hand of the order of b molle and of nature* (i.e., the system with a B \flat signature) Lanfranco writes, "And the stationary tones of this order [of b molle] are the B's [i.e., B \flat 's, since this order contains B \flat , not B \sharp]. Those of permutation are the E's."¹⁵ Similarly, in a chapter entitled *Hand of the order of musica ficta, which is known by the round b placed on the beginning of the music on each of the B's and E's*, Lanfranco writes, "The E's [i.e., the E \flat 's, since this

¹⁴Lanfranco, *Scintille di Musica* (Brescia, 1533), facsimile ed. (Bologna: Forni, 1970), 12, trans. in Barbara Lee, "Giovanni Maria Lanfranco's 'Scintille di Musica' and its Relation to 16th-Century Music Theory" (Ph.D. diss., Cornell Univ., 1961), 85-86. The two subsequent quotations appear on p. 26 and p. 30 of the facsimile ed., and on p. 99 and p. 102 of Lee's translation. By " \sharp , \flat , and $\sharp\sharp$," Lanfranco means the note B \sharp in the various octaves of the gamut.

¹⁵*Ibid.*, 26, trans. Lee, 99.

order contains Eb and not E4] are the stationary sounds of this order; the A's are those of permutation."¹⁶

Now Lanfranco's "tones of permutation" clearly arise from the three-hexachord system and its transpositions into *cantus mollis* and *cantus fictus* with two flats, as can be seen in Example 1-4.

Example 1-4. The three-hexachord systems in *cantus durus*, *cantus mollis*, and *cantus fictus* (with two flats), with tones of permutation.

The image shows three staves of handwritten musical notation. Each staff begins with a treble clef and a common time signature. The notes are represented by circles on the staff lines, with solfège syllables written below them. Above each staff, the key signature is indicated with flats: Bb and B4 for cantus durus, Eb and E4 for cantus mollis, and Ab and A4 for cantus fictus. The notes are arranged in three groups, each corresponding to a hexachord.

This confirms Bent's hypothesis concerning the transposition of the three-hexachord system, and the availability of one flat beyond the signature. Lanfranco's discussion of the hand, however, contradicts an important aspect of Bent's theory. Bent suggests that flat signatures determine the boundary between *musica recta* and *musica ficta*. According to her theory, all flats found in a signature plus one flat beyond are

¹⁶Ibid., 30, trans. Lee, 102.

considered *musica recta* (e.g., in a B \flat -signature, both B \flat and E \flat are *recta* notes, and all other inflected notes are considered *musica ficta*).

However, since Lanfranco calls music with a signature of two flats "*musica ficta*," it is clear that the equation of *musica recta* with any note included in a key signature plus one flat beyond is not correct.¹⁷

In other words, the only note found in a flat signature that is included within the category of *musica vera* or *recta* is B \flat . Any inflections that stand beyond the confines of the traditional gamut are considered *musica ficta*. Thus E \flat is a *ficta* note, whether it appears as an accidental or in a signature; the same holds true for all sharps.¹⁸

Furthermore, although the hexachord relationships of *naturalis*, *molle*, and *durum* are transposed by signatures, the terminology is not correspondingly transposed. Thus in the B \flat system (*cantus mollis*), the relation between the hexachords on F, B \flat , and C is the same as is found between the natural, soft, and hard hexachords on C, F, and G in the untransposed system (*cantus durus*), but the hexachords on F and C are not called *naturale* and *durum* when they appear in *cantus mollis*. Rather, they retain their original names, *molle* and *naturale*.¹⁹ Thus, when Coclico gives the *duralis* and *mollaris* scales (see Example 1-3b),

¹⁷Lanfranco's use of the term "*musica ficta*" for a "hand" or gamut with a signature of two flats is not an isolated phenomenon, but is part of an extensive theoretical tradition in which signatures of two flats or more or with sharps are considered *musica ficta*, as will be seen in Chapter 2. Berger also challenges Bent's concept of *musica recta* and *musica ficta* in *Musica Ficta*, 83-84.

¹⁸This does not refer to sharps found on B and E (in *cantus durus*), which signify that these notes are to be sung as *mi*, hence, as B \sharp or E \sharp .

¹⁹Nicholas Routely transfers the terms "hard," "natural," and "soft" to the hexachords on C, F, and B \flat respectively in *cantus mollis* in "A Practical Guide to Musica Ficta," *Early Music* (13) 1985, 62.

he does not apply the terms *naturale* and *durum* to the F and C hexachords in the latter scale. Rather, the former scale is called *Scala b duralis, & naturalis* (i.e., the scale of hard b and natural, with hexachords on G and C), and the latter is called *Scala b mollaris, & naturalis* (i.e., the scale of soft b and natural, with hexachords on F and C).

Thus, contrary to modern theories, the term *musica recta* and the hexachord names *naturale*, *molle*, and *durum* were not applied to different sets of notes depending on the level of transposition by flat signatures; rather, they were associated with specific (notated) pitch levels and names. Thus, the hexachord names *naturale*, *molle*, and *durum* can apply only to the hexachords on C, F, and G respectively.²⁰ The basic systems of *cantus durus* and *cantus mollis* both fall within the realm of *musica vera* or *recta*, since both B and B \flat are in the gamut. Any further transposition of the system, however, would be considered *musica ficta*.

The purpose of this discussion is not merely to clarify the use of terminology, but also to show that Renaissance musicians viewed their basic musical system as occupying a relatively fixed and (by later standards) narrow frame. Indeed, when Renaissance musicians overstepped the boundaries of their system, they were well aware of it. An obvious instance of this is Tinctoris' *Missa trium vocum secundi toni irregularis cum contratenore extra manum in diapenthe sub ut*; the title announces the fact that the contratenor descends to C a fifth below

²⁰Note, however, that an individual hexachord might appear in more than one system; for, example, we have already seen that the C *naturale* hexachord appears in both *cantus durus* and *cantus mollis* (see Examples 1-3 and 1-4).

G, the lowest note of the gamut.²¹ The modes were also viewed as occupying fixed places within the system, so that when one was placed out of its original position, it was thought of as transposed or irregular. This is the case with the Tinctoris mass, its low range, two-flat signature and final on C placing it, as the title states, in the irregular second mode. Another example is the *Missa sexti toni irregularis* by Gafurius, called irregular because of the final on C rather than the usual F.²²

To conclude this discussion, then, we may restate that the systems of *cantus durus* and *cantus mollis*, the hexachords *naturale*, *molle*, and *durum* and the modal system occupy specific places within the musical and notational system.²³ The concept of “fixed” positions and the relatively narrow framework of the musical system of Josquin’s time forms a basic premise of this study. It is this relatively fixed framework—extended in a limited way by inflections—that convincingly emerges from a coordinated study of Renaissance theory and accidentals in vocal and instrumental sources from Josquin’s era.

²¹The mass appears in the discontinued *Opera Omnia* of Johannes Tinctoris, ed. Fritz Feldman ([Rome]: American Institute of Musicology, 1960), vol. 1, and in the later (complete) edition by William Mellin ([Rome]: American Institute of Musicology, 1976), 1-32. The full title is given only in the earlier edition.

²²Gafurius, *Collected Musical Works*, ed. Ludwig Finscher ([Rome]: American Institute of Musicology, 1955–), vol. 1, 17-33, and vol. 2, 1-5.

²³The fact that pitch was not standardized does not affect the picture of the musical system being offered here; we are concerned with the internal framework of relative pitches.

CHAPTER 2
RENAISSANCE DEFINITIONS OF *MUSICA FICTA*

In the preceding chapter we began to explore some of the elements lying beyond the basic musical system. The extensions beyond the basic system can be categorized as follows:

1. Extensions in range beyond that of the gamut.
2. Music in signatures of more than one flat.
3. The introduction of inflections foreign to the gamut.

The first two of these have been discussed in Chapter 1. The second and third categories are called *musica ficta* in Renaissance treatises. In this chapter, we shall discuss theorists' definitions of *musica ficta*. This will form a starting-point for the subsequent exploration of accidental usage in Josquin's period. The numerous definitions of *musica ficta* in medieval and Renaissance treatises may be said to fall into four main categories.

1. The placement of notes where they are not, or where they do not belong. According to Prosdocimus,

Musica ficta is the feigning of syllables or the placement of syllables in any location on the musical hand where they are in no way to be found—to apply *mi* where there is no *mi* and *fa* where there is no *fa*, and thus for the other syllables.¹

¹Prosdocimus de' Belmandi, *Contrapunctus* (Montagnana, 1412), bk. 5, trans. Jan Herlinger (Lincoln: University of Nebraska Press, 1984), 71.

This formulation is also found in Burtius, Cochlaeus, Ornithoparchus and Listenius.²

2. *Musica ficta* consists of notes outside the regular Guidonian hand or gamut. According to Tinctoris, "Ficta musica is a melody brought forth outside the regular tradition of the hand."³ The definition by Ornithoparchus is very similar: "Fained Musicke is ... a song made beyond the compass of the Scales."⁴

3. *Musica ficta* involves the turning of a whole tone into a semitone, and vice versa: "Musica ficta is found most particularly between *mi* and *fa*, for if *mi* is sung in place of *fa* a whole tone is formed from a semitone, and vice versa."⁵ The same definition is often applied to the term *coniuncta*: "Others call it [i.e., *musica ficta*] *coniuncta*, that is, to make a whole tone from a semitone and a semitone from a whole tone."⁶

²Burtius, *Musices Opusculum*, bk. 2, ch. 4, trans. Miller, 83; Cochlaeus, *Tetrachordum Musices*, bk. 2, ch. 10, trans. Miller, 46; Nicolaus Listenius, *Musica* (Nuremberg, 1549), bk. 1, ch. 6, trans. Albert Seay (Colorado Springs: Colorado College Music Press, 1975), 14. Here, Listenius connects this definition (the placement of syllables in unusual locations) with transposition: "Its mutation and avoidance (of the proper syllable) is in many melodies a transposition."

³Tinctoris, *Terminorum Musicae Diffinitorium* (Treviso, 1475), trans. Lowinsky in "Renaissance Writings on Music Theory," *Renaissance News* 18 [1965], 361-62. This well-known treatise is translated by Carl Parrish in *Dictionary of Musical Terms* (Glencoe: Free Press, 1963). Lowinsky emends the word *propter* to *praeter* by his correction gives the present translation; Parrish's version (pp. 32-33), which uses the word *propter* ("Musica ficta is melody brought about by reason of the tradition of the [Guidonian] hand"), is less convincing.

⁴Dowland, *Ornithoparchus, his Micrologus*, bk. 1, ch. 10 (p. 145 in the Dover ed.).

⁵Cochlaeus, *Tetrachordum Musices*, bk. 2, ch. 10, trans. Miller, 46.

⁶Burtius, *Musices Opusculum*, bk. 2, ch. 4, trans. Miller, 83. In the definition given by Burtius, the *coniuncta* is a process of changing the usual location of a semitone and tone; in other words, a *coniuncta* alters a note by a chromatic half step. Ramos gives a

4. The term *musica ficta* may be used for transpositions beyond the systems of *cantus durus* and *cantus mollis*, thus for music involving flats beyond B \flat or any sharps. Cochlaeus writes:

If either *mi* or *fa* occurs on a key on which it does not naturally belong, or on its octave, it forms a *coniuncta*; but if it occurs on a key on which it belongs in the natural series, or at least on its octave, it does not form a *coniuncta*. Thus the same song transposed [*transpositus*] a fifth produces *musica ficta*, as here:⁷



In a chapter entitled "Transposition of Modes" (*Della Trasportatione delli Modi*), Zarlino gives an example of two chants (shown in Example 2-1) with the following explanation:

The first transposition is done with the help of notes marked by a flat, and the second with the help of notes marked by a sharp. The moderns call these transpositions "modes transposed by false music," (*modi trasposti per Musica finta*) which they claim to be a transposition of a species from its proper place to another,

similar definition of *coniunctae*, and says that *coniunctae* are the signs used to raise and lower notes by a semitone (see p. 27 below). The term *coniuncta* is also used for hexachords built on notes other than C, G, and F; *coniunctae* are used to provide inflected pitches. Thus a *coniuncta* on D yields the following hexachord: D ut, E re, F \sharp mi, G sol, A la, B sol. Its purpose is to produce F \sharp by means of the Guidonian hexachord. For an extensive presentation of *coniunctae* in medieval theory, see *The Berkeley Manuscript* (Paris?, ca. 1375), trans. Oliver Ellsworth (Lincoln: University of Nebraska Press, 1984).

⁷Cochlaeus, *Tetrachordum Musices*, bk. 2, ch. 10, trans. Miller, 46. Cochlaeus uses the term *transpositus*; see the facsimile reprint of *Tetrachordum Musices* (Hildesheim: Georg Olm, 1971), fol. Ci^v.

meaning by this a transposition of the whole order found in each mode.⁸

Example 2-1. Melodies transposed into *musica ficta*, given by Zarlino.

IN san cti ta te ser ui a mus Do mi no, & li be ra bis nos ab ini mi cis nos tris.

IN san cti ta te ser ui a mus Do mi no, & li be ra bis nos ab ini mi cis nos tris.

Another reference to the relationship between modal transposition and *musica ficta* occurs in Schlick's treatise on organ playing. Schlick discusses the pitch levels at which the various church modes may be placed on the organ in order to accommodate the ranges of choirs, and states that the third mode on E may be played "in *musica ficta*, beginning on d."⁹

Further musical examples which relate *musica ficta* and transposition are found in the treatise on the modes by Tinctoris, who writes:

⁸Gioseffo Zarlino, *Le Istitutioni harmoniche* (Venice, 1558 and 1573), bk. 4, ch. 17, trans. Vered Cohen as *On the Modes* (New Haven: Yale University Press, 1983), 53. Example 2-1 is taken from the facsimile of the 1558 edition of *Le Istitutioni harmoniche* (New York: Broude Brothers, 1965). Zarlino states that his examples will instruct organists who need to "transpose a composition while playing in a church service in which various choral compositions are sung" (*On the Modes*, 53-54).

⁹Arnolt Schlick, *Spiegel der Orgelmacher und Organisten* (Mainz, 1511), partial facsimile and translation in Arthur Mendel, "Pitch in the 16th and Early 17th Centuries—Part I," *The Musical Quarterly* 34 (1948), 29-45, reprinted in Alexander Ellis & Arthur Mendel, *Studies in the History of Musical Pitch* (New York: Da Capo Press, 1968), 88-105 (see p. 95).

Although four places, mentioned earlier, are regularly attributed to our four tones [i.e., the modal finals d, e, f, and g], hence, when they finish on these they are called regular. However, these tones can finish in all places by other rules, coming about through true or *ficta* music, either within or without the hand, and then they have been called irregular.¹⁰

In the preceding chapter (44), Tinctoris gives examples of the eight modes in regular position (without flat signature); in the following chapters (46-49), Tinctoris gives the same chants transposed by signatures of one and two flats. Thus, the ideas of irregular modes, transposition and *music ficta* are linked together by Tinctoris.

Tinctoris' threefold presentation of the modes may be considered a forerunner of the threefold system presented by many sixteenth-century theorists. The treatises proceed in logical order from the scales of the *durus* and *mollis* systems to the *scala ficta*, either directly or with intervening material between the two main gamuts or scales and the third (see Example 2-2).

¹⁰Tinctoris, *De Natura et Proprietate Tonorum* (Naples, 1476), ch. 45, trans. Albert Seay as *Concerning the Nature and Propriety of Tones* (Colorado Springs: Colorado College Music Press, second ed., 1976), 41.

Example 2-2.

- a. Gamut with hard, soft, and *ficta* scales by Wollick.
- b. *Ficta* scale by Ornithoparchus.

a)

ela			
odlaſol.	dd	dd	dd b
ccſolfa			
bbfa ſmi		b	
aalamire			
gſolreut	g	g	g b
ffaut			
clami			
dlafolre			
cfolſaut	c	c b	c
bfa ſmi		b	
alamire			
ſolreut			
ffaut	f	f	f b
clami			
dlafolre			
cfaut			
bmi		b	
bre			
lut			b

♣ Claviſ coordinatio Scala borealis mollis. ficta Scala borealis mollis. ficta

b)

Cap. 10. Of Musica Ficta. 25

The diagram shows a scale on a five-line staff. The notes are labeled with letters and accidentals: *la*, *sol*, *fa*, *mi*, *re*, *ut*, *ut*, *re*, *mi*, *fa*, *sol*, *la*. There are various accidentals (sharps, flats, naturals) placed above and below the notes. A section of the scale is labeled "The scale of ficta descends" and "Mutations in the scale of ficta".

The Scale of ficta or Spontaneum, and how the Mutations are made.

Example 2a shows Wollick's presentation, which aligns the scales of the hard B and soft b with a *ficta* scale containing flats on A and E.¹¹ The *scala ficta* from Ornithoparchus also has flats on E and A (see Example 2-2b); this scale completes the threefold presentation whose first two parts appeared earlier in the treatise (i.e., the two scales given above in Example 1-3a).¹² The solmization syllables in Ornithoparchus' *scala ficta* make it clear that B \flat is intended. There is a flat on A, and the syllables fa-sol between A \flat and B call for a whole step, thus producing A \flat -B \flat . Accordingly, a flat signature of E \flat and A \flat suffices to represent a system with B \flat , E \flat and A \flat . This explains the A \flat -E \flat signature that is used in the tenor of Josquin's *Absalon fili mi* in Ms. British Museum, Royal 8, G VII (fol. 56v-58r); on similar grounds, the bassus signature of E \flat , A \flat , and D \flat is easily explainable as a four-flat signature with an implied B \flat . Thus, these tenor and bass signatures in Royal 8 (labeled "sic" in Smijers' edition) are not scribal errors, but are

¹¹Nicolas Wollick, *Enchiridion Musices* (Paris, 1512), facsimile ed. (Geneva: Minkoff Reprint, 1972), fol. [a.vii]. A similar threefold presentation of scales is found in Cochlaeus, *Tetrachordum Musices*, bk. 2, ch. 9, trans. Miller, 44.

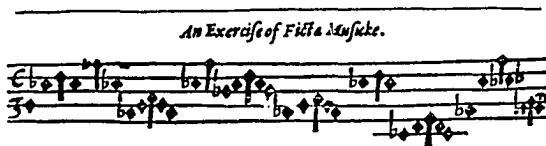
¹²Dowland, *Ornithoparchus, his Micrologus*, bk. 1, ch. 10, (p. 145 in the Dover ed.). Various other theorists present the threefold order; two more will be mentioned here. Lanfranco presents a *Hand of the order of 4 quadro and nature*, a *Hand of the order of b molle and nature*, and a *Hand of the order of musica ficta* with B \flat and E \flat (these last two are discussed in Chapter 1); see Barabara Lee, "Giovanni Maria Lanfranco's 'Scintille di Musica' and its Relation to 16th-Century Music Theory," 84, 99, and 102. In *Regola Rubertino* (Venice, 1542), Silvestro Ganassi presents tables for fingering the tenor viol in each of the three orders, the last being the *order of musica ficta*, also with B \flat and E \flat ; see Howard Mayer Brown, "Notes (and Transposing Notes) on the Viol in the early Sixteenth Century," in Iain Fenlon, ed., *Music in Medieval and Early Modern Europe* (Cambridge: Cambridge University Press, 1981), 71-72. In these presentations, the precise terminology often varies from one theorist to the next, but the underlying principle remains the same. One possible variation was in the number of flats that theorists gave in their *ficta* scales; we have seen some theorists give scales with E \flat and A \flat (and implied B \flat), others with B \flat and E \flat .

clarified by the *scala ficta* as given by Cochlaeus, Ornithoparchus and Wollick.¹³

We have already seen monophonic examples of *musica ficta* by Zarlino and Cochlaeus. The inclusion of melodic fragments with unusual sharps or flats is one characteristic way in which Renaissance theorists illustrate *musica ficta*. Monophonic examples of *musica ficta* by Ornithoparchus and Listenius are given in Example 2-3.¹⁴

Example 2-3. *Musica ficta* melodies by Ornithoparchus (a) and Listenius (b).

a)



b)



¹³See *Absalon, fili mi* in Josquin des Prez, *Werken*, ed. A. Smijers (Amsterdam: Alsbach; Leipzig: Kistner and Siegel, 1925-), *Supplement*, no. 5. Toft also feels that the signature of the bass is erroneous; see "Pitch Content and Modal Procedure in Josquin's *Absalon, fili mi*," *Tijdschrift van de Vereniging voor Nederlandse Muziekgeschiedenis*, 33 (1983), 7ff. For further discussion of this motet, see Chapter 8.

¹⁴Dowland, *Ornithoparchus, his Micrologus*, bk. 1, ch. 10 (p. 145 in the Dover ed.); Listenius, *Musica*, ch. 6, trans. Seay, 14.

Theorists also illustrate *musica ficta* by giving polyphonic examples which feature unusual sharps and flats. Examples by Cochlaeus and Agricola are given in Example 2-4.¹⁵ The example by Cochlaeus steps beyond the gamut by the use of E \flat and A \flat . Agricola's example has an E \flat -A \flat signature, which, as we have seen, implies B \flat in the scale; A \flat and D \flat are used as accidentals. Agricola's example, then, moves one flat (D \flat) further from the realm of *musica vera* than does the one by Cochlaeus.

The Agricola example shows another instance of the use of a three-flat signature in which the first flat, B \flat , is not notated, but understood. This is confirmed by Agricola's instruction preceding the example, which says to sing re on F in "fictional song" (i.e., *cantus fictus*). This would place ut on E \flat , and the resulting hexachord would be E \flat (ut), F(re), G(mi), A \flat (fa), B \flat (sol), C(la), containing all three flats implied by the signature. Concerning the exceptional G \sharp signature, Howlett (p. 93) explains that, "in the tenor, the use of \sharp on the beginning note, G, designates mi [cf. the E \flat hexachord spelled out in the preceding sentence] and indicates a hexachord on E-flat, with A-flat and B-flat." This G \sharp signature, then, accomplishes the same result as the E \flat -A \flat signature in the other voices.

¹⁵Cochlaeus, *Tetrachordum Musices*, bk. 2, ch. 9, trans. Seay, 45. Martin Agricola, *Musica Choralis Deudsch* (Wittenberg, 1533), ch. 5, trans. Derq Howlett in "A Translation of Three Treatises by Martin Agricola," (Ph.D. diss., Ohio State University, 1979), 93.

Example 2-4. Polyphonic illustrations of *musica ficta*.

a. Example by Cochlaeus.

b. Example by Agricola, mm. 1-5.

a)

Mutation of vocables in *cantus fictus*

The musical score for Example a) consists of two systems of three staves each. The top staff of each system is labeled 'Discantus', the middle 'Tenor', and the bottom 'Bassus'. The notation includes various note values, rests, and accidentals (sharps and flats) across the staves.

b)

The musical score for Example b) consists of four staves of music. The notation is complex, featuring many beamed notes and accidentals. The score is organized into measures, with some measures containing multiple notes on a single staff, indicating a polyphonic texture.

Although Renaissance theorists seem to be fairly consistent in viewing any inflection not belonging to the gamut as *musica ficta*, Gafurius includes B \flat among the notes of *musica ficta*:

In Guido's diatonic *Introductorium*, *musica ficta* is shown by one interval, that is, where the soft *b* hexachord makes the fourth string *fa* by dividing the whole tone between *A la mi re* and $\sharp mi$, or between *mese* and *paramese* in the conjunct tetrachord. So these pitches dividing a whole tone are usually notated with a round *b* and are given the syllable *fa*.¹⁶

Gafurius thus appears to consider any inflected note as being *musica ficta*. This shows that the boundary between *musica vera* and *musica ficta* was not always drawn with unanimous agreement. While one does find occasional discrepancies among theorists as to what constitutes *musica vera* and *musica ficta*, their writings overwhelmingly support the idea that the relatively fixed boundaries of *musica vera* and *musica ficta* (as outlined above) formed a virtually universal basis for the way in which Renaissance musicians understood their musical system. Their occasional discrepancies have no significant effect on the scope and nature of the musical system or on the use of accidentals as presented in this study.

Another problem arises in trying to make a hard and fast distinction between *musica vera* or *recta* and *musica ficta*. It is easy to understand that compositions in *cantus durus* and *cantus mollis* are written in a musical system based primarily on *musica vera*, with a secondary use of inflections that are classified under *musica ficta*. However, the

¹⁶Gafurius, *Practica Musicae*, bk. 3, ch. 13, trans. Miller, 145.

use of the term *musica ficta* for transposition may seem to involve a contradiction since transpositions usually use more notes belonging to *musica vera* than those foreign to it. This apparent contradiction becomes understandable when considered in the light of the fixed nature of the musical and notational system, as discussed in Chapter 1. Just as the term *musica ficta* signifies an alteration of the usual order of tones and semitones, so does the use of the term for transposition signify that the usual ordering of the tones and semitones of the gamut as a whole has been changed. As a result, the mode appears in an irregular position. While a transposed mode often uses inflections foreign to the gamut, Coclico gives an unusual example of the fifth mode transposed to G in which no signature or accidentals are used, and calls it "fictive or irregular" ("*ficti sive irregularis*").¹⁷ Thus the very act of moving music from its normal location is considered fictive or irregular.

Let us now consider some of the implications that may be drawn from the foregoing examples of *musica ficta* for the application of accidentals in music written within the mainstream polyphonic modal system (i.e., outside of the chromatic madrigal style). Apart from their transposition level, all of these examples operate within the traditional musical system of the Renaissance. For example, if Ornithoparchus' melody (in Example 2-3a) is transposed up a step to *cantus mollis* using a B \flat signature, it does not contain any accidentals at all, and it becomes a regular mode 5 melody with a final on F. Thus, the musical system is the same as that used for compositions in *cantus durus* and *mollis*; the

¹⁷Coclico, *Compendium musices*, fol. Eiiij. The piece appears in Coclico, *Musical Compendium*, trans. Seay, example vol., 11-12.

main difference is in the transposition level, which gives rise to the unusual inflections. These examples, then, do not introduce any extension of the internal relationships available to music in *cantus durus* or *mollis*, nor are they given in the context of a discussion of how to avoid melodic or contrapuntal dissonances; rather, they are given in order to introduce transpositions beyond the confines of the gamut.¹⁸ Transpositions were used for two main reasons: first, to facilitate performance (e.g., for accommodating the pitch levels of organs and choirs to one another, as discussed by Schlick and Zarlino) and second, for symbolic reasons, as when low transpositions were used to portray mourning. The Royal 8 version of *Absalon fili mi* is a well-known example of this symbolic use of a transposed gamut.

The third definition of *musica ficta* given above, i.e., the making of a tone into a semitone, and vice versa, has implications for the use of inflections. This definition shows that *musica ficta* was thought of as producing a local, temporary departure from the prevailing order of tones and semitones, affecting a single interval rather than any extensive departure from the original diatonic order. An examination of practical sources from Josquin's period shows that this was indeed the case, and that it is rare for more than one note to be inflected at any particular time.

While *musica ficta* often brings about the use of inflections, the theorists' definitions of *musica ficta* given above do not mention raised

¹⁸Polyphonic examples of *musica ficta* do not provide evidence for "secret chromatic art." Lowinsky uses polyphonic examples by Georg Rhau for this purpose in "Secret Chromatic Art Re-examined," 99-100. Rhau's examples, however, are of a nature similar to those in Example 2-4: they lie within the normal diatonic system, and only contain unusual accidentals because they are at irregular transposition levels.

or lowered notes. Yet there are theoretical references to raised and lowered tones:

... it must be noted that every *coniuncta* is a sign by \flat or by \sharp , placed in an unusual location. Also, wherever the sign \flat is placed, the true sound of that joint ought to be lowered by a major semitone and called *fa*. And where the sign \sharp is placed, the sound of that joint ought to be raised by a major semitone and called *mi*.¹⁹

Ramos also refers to raised and lowered notes in his *Musica*

Practica:

*Coniunctae autem, quae per semitonium vocem a loco proprio deprimunt, appellantur ... coniunctae b mollis; sed quae eodem elevantur semitono, ♮ quadrati.*²⁰

Moreover, *coniunctae* that lower a voice by a semitone from its proper place are called ... *coniunctae* of *b mollis*; but those which raise it by a semitone, square \flat [*b-natural*].

Aaron is another theorist to mention raised and lowered tones:

Composers must consider not only the natural conjunction of musical discourses but also the accidental, that is, when the sounds should be reintegrated or diminished according to the disposition of the compositions. Thus it is necessary to establish a figure or sign by which the singer may be shown which note should be raised or lowered. The sign in general use is called *diesis*, and is shown in this way, \sharp .²¹

¹⁹*The Berkeley Manuscript*, bk. 1, ch. 4, trans. Ellsworth, 53.

²⁰Bartolomei Rami de Pareia, *Musica Practica* (Bologna, 1482), bk. 2, ch. 3, ed. Johannes Wolf (Leipzig: Breitkopf & Härtel, 1901), 30; translation mine.

²¹Pietro Aaron, *Toscanello in Musica* (Venice, 1529), bk. 2, ch. 5, trans. Peter Bergquist (Colorado Springs: Colorado College Music Press, 1970), vol. 3, 33.

In the following passage, Aaron discusses the avoidance of a melodic tritone between B \flat and E by flattening the E; the term “accidental location” refers to the fact that the tritone occurs as the result of adding an accidental, i.e., B \flat :

The first accidental location [of the tritone] comes from the note hypate hypaton, which is \sharp mi, to hypate meson, which is E la mi grave, when there is in this hypate hypaton the sign of b *molle*, in which the syllable or note mi will be changed to the syllable fa, and consequently the note mi of E la mi or hypate meson will be changed into the note fa ... ²²

While Aaron has no convenient term for E \flat , it is clear that he understands that a normal E is being changed to another kind of E through the change in solmization syllable; obviously, the E solmized as fa will be lower than that solmized as mi.

Another factor suggests that Renaissance musicians were aware of a relationship between inflected notes and their natural form, namely, the use of inflections without changing the normal solmization—as described in the following passage from Gafurius:

Very often many sing *sol* as a semitone below *la*, especially in the progression *la sol la*, beginning and ending on *A la mi re* ... The same happens with *sol* and *fa* in the progression *sol fa sol*, beginning and ending on *G sol re ut* ... ²³

²²Aaron, *Toscanello in Musica*, bk. 2, ch. 5, trans. Bergquist, vol. 2, 6.

²³Gafurius, *Practica musicae*, bk. 3, ch. 13, trans. Miller, 46. This practice is also described in Cochlaeus, *Tetrachordum Musices*, bk. 2, ch. 10, trans. Miller, 46.

The second of these progressions (sol fa sol), sung to a semitone instead of a whole step, is shown in the last three notes of the following example by Morley (see Example 2-5):²⁴

Example 2-5. Solmization example by Morley.



Since the solmization syllable and the written note remain the same, it would hardly be possible for musicians to avoid relating the altered note to the original; they would be well aware of the fact that they were singing fa at a higher pitch than is normal for this syllable.

Thus, although raised and lowered notes are not mentioned in the standard contemporary definitions of *musica ficta*, this concept appears in treatises, and is further suggested by the practice of altering notes without changing the solmization.

²⁴Morley, *A Plain and Easy Introduction*, 18.

CHAPTER 3
 RULES GOVERNING ACCIDENTALS AND THEIR
 APPLICATION IN
 PRACTICAL SOURCES (BEGINNING)

The theoretical rules that give rise to inflections are well known, although their practical application remains controversial. The purpose of Chapters 3-6 is to examine how these rules are put into practice in the main sources for this study. First, a listing of the rules is given, and then each individual rule is examined in depth. The discussion of each rule begins with an overview of Renaissance theorists' views, and the main areas of agreement or disagreement between them.¹ This is followed by an examination of how the rule is carried out or contradicted in the main sources for this study. Occasionally examples from other sources from Josquin's period are used in order to illustrate musical possibilities not found among the main sources.

In the following discussion, we shall draw on three types of sources: theoretical treatises, vocal sources, and lute intabulations of vocal compositions. It will be seen that the rules governing accidentals (many of which are often taken for granted in modern studies of inflections in Renaissance music), while very influential, are not uniformly adhered to in these sources. First, the treatises are not always identical in their approach to the rules given above, and second, the practical

¹There is no need for extensive quotations from medieval and Renaissance theorists since Karol Berger has provided an exhaustive presentation and discussion of their rules in *Musica Ficta*.

sources show a high degree of flexibility in the application of accidentals. This is hardly surprising, since in any practice where freedom of choice is given—in this case, in the application of inflections—a variety of solutions are apt to be found. If the sources do not lead to “universal” solutions, they can nevertheless show us a stylistically valid range of options.

The rules are as follows:²

- 1) Augmented fourths, diminished fifths and imperfect octaves are not permitted in direct melodic leaps; they are frequently avoided when outlined melodically, though they are permitted in some cases.
- 2) Direct chromatic progressions are generally prohibited.
- 3) *Una nota supra la semper est canendum fa.* A note above the solmization syllable *la* is sung as *fa*. Thus, *A* is *la* in the hexachord on *C* in *cantus durus*, and when the melody rises a single note above it (as in the neighbor note figure *A-B-A*), the high note receives the syllable *fa*, producing *A-Bb-A*. Similarly, in *cantus mollis*, *D* is *la* in the hexachord on *F*, and a single note above that would be sung *fa*, hence *Eb*, and so forth for other transpositions.
- 4) In lower neighbor note figures involving whole steps (such as *G-F-G*), the middle note is raised, so that a half-step is sung (*G-F#-G*).
- 5) An imperfect interval progressing to a perfect interval should be as close to the perfect interval as possible: a sixth going to an octave should be major, a third going to a unison should be minor, and a third going to a fifth should be major. Thus, a *m6-8* progression will be adjusted to *M6-8*, and so forth.
- 6) Diminished or augmented fourths, fifths and octaves are prohibited in counterpoint by the rule forbidding the singing of *mi contra fa*.

²Since there is no standard format for giving these rules in Renaissance theory, I have arranged them as follows: 1-4 deal with melodic concerns, 5-8 with concerns of vertical sonority, counterpoint, and cadences.

7) Cross relations of the diminished or augmented intervals (either diatonic or chromatic) are prohibited in two voices; they are allowed in music for more voices.

8) Minor thirds are raised to major at cadences (Picardy thirds).

Rule 1: On the prohibition of augmented fourths, diminished fifths and imperfect octaves in leaps and in melodic outlining. Further, a discussion of diminished fourths.

The discussion of this rule is organized according to the following outline:

I: Theorists' views on melodic augmented fourths and diminished fifths

II: Areas of correspondence between theory and practice

1. Avoidance of the melodic augmented fourth and diminished fifth using flats

2. Avoidance of the melodic augmented fourth and diminished fifth using F \sharp in *cantus durus* or B \flat in *cantus mollis*

3. Melodic diminished fifths and the tritone used according to rule

III. Divergences between theory and practice in the use of dissonant intervals in melodic outlining or leaps—the melodic diminished fourth, fifth and octave and the augmented fourth used in ways not specified or allowed by theorists

1. Melodic diminished fifths with cadential sharps

2. Melodic diminished fifths with other types of sharps

3. Melodic diminished fifths with flats

4. Melodic diminished fifths followed by rest or by leap

5. Melodic diminished fifths and augmented fourths in sequences

6. Direct leaps of diminished fifths and tritones in instrumental music
7. Direct leaps of diminished fifths in vocal music
8. Unusual cases of melodic augmented fourths
9. The diminished octave
10. The diminished fourth

I: Theorists' views on melodic augmented fourths and diminished fifths

Berger shows that many theorists banned the use of imperfect fourths, fifths and octaves in melodic writing, and that, given the choice between B \flat and F \sharp (in *cantus durus*), it was the former that was normally used to avoid them; this is based on the evidence of numerous theorists who suggest the use of B \flat in these situations, without even mentioning the possibility of F \sharp .³ Berger has found only three theorists who mention the possibility of correcting the tritone or diminished fifth with either B \flat or F \sharp : Hothby, Bonaventura da Brescia, and Lanfranco.⁴ In addition, Gonzalo Martínez de Bizcargui (*Arte de canto llano*, 1508, with various reprints through 1550) points out that F \sharp is used for cadences in modes 7 and 8, and that it is not necessary to use B \flat when a cadential progression such as B-A-G-F \sharp -G occurs; Aaron (in *Toscanello in musica*) provides a similar doctrine concerning this

³Berger, 70ff. and 80.

⁴Hothby, *La Calliopea legale*, ed. E. de Coussemaker, *Histoire de l'harmonie au moyen âge* (Paris: Victor Didron, 1852), 342ff. Hothby is described by Berger (p. 21) as "... an English theorist active in Lucca between 1467 and 1486." Bonaventura da Brescia, *Breviloquium musicale* (Brescia, 1497) ch. 17. Lanfranco, *Scintille di musica*, 126. These citations are discussed in Berger, 81. The term tritone literally means "three tones," and applies only to the augmented fourth, and not to the diminished fifth, both in early music theory and in this study.

melodic progression.⁵ Berger states that B \flat is less disruptive of the various modes than F \sharp , and that only in modes 7 and 8 does the use of F \sharp as a cadential leading tone not change the mode. Berger suggests that the desire to preserve the modes explains why the theorists preferred to use B \flat in most cases, and why they discussed the use of F \sharp specifically in relation to modes 7 and 8.⁶

There are, however, exceptions to the prohibition against melodic augmented fourths and diminished fifths. Some theorists permit the tritone (augmented fourth) both in direct leaps and with various configurations of intervening notes.⁷ The usual rule is that the tritone may be used when it continues on to a consonance by step (e.g., F-B-C, B-F-E, etc.; the tritone may be direct or filled in partially or completely).⁸ The diminished fifth was also allowed in melodic outline in configurations such as F-E-D-C-B-C or B-C-D-E-F-E, according to Ramos (1482) and Zarlino (1558).⁹

⁵Gonzalo Martínez de Bizcargui, *Arte de canto llano et de contrapunto et canto de organo con proporciones et modes*, ed. A. Seay, Critical Texts 9 (Colorado Springs: Colorado College Music Press, 1979), 74ff. Aaron, *Toscanello in musica*, Aggiunta (supplement), trans. Bergquist, vol. 3, 14. These references from Bizcargui and Aaron are also cited in Berger, 74.

⁶Berger, 82-83.

⁷Berger, 72ff, presents a detailed account of discussions by various theorists (including Tinctoris, Aaron, and Franciscus de Bruges) that describe ways in which tritone melodic outlines may be used.

⁸Berger, 76.

⁹Ramos de Pareia, *Musica practica*, 50. Zarlino, *Le Istitutioni harmoniche*, bk. 3, ch. 57, trans. Marco and Palisca in *Art of Counterpoint*, 173ff. Both citations given in Berger, 79-80.

Zarlino forbids the use of this configuration when a pitch altered by an accidental is involved (e.g., C-B-A-G-F#-G).¹⁰

II: Areas of correspondence between theory and practice

1. Avoidance of the melodic augmented fourth and diminished fifth using flats

The practical sources examined show considerable agreement with the theoretical precepts given above. Both direct leaps and the melodic outlining of the tritone and diminished fifth are typically avoided by the use of B \flat (see Example 3-1).¹¹ These are among the most common uses of the flat sign in the Renaissance; indeed, they rank among the most important categories of melodic inflection in pre-Baroque music. All sources used in this study are filled with such accidentals, and their use is so well known that it is not necessary to provide a list of further examples. It is not unusual for a leap of an augmented fourth or diminished fifth to be notated with a flat, even though the need to sing

¹⁰For further details on the allowance of direct and indirect melodic diminished fifths and fourths, see Berger, 72ff.

¹¹Anon., textless composition, in Florence 229, no. 22. Anon., *Cueurs desolez/Dies illa*, in Brussels 228, no. 36. Josquin, *Inviolata, Integra et Casta es Maria*, in Medici Codex, no. 35. Caron, *Vous n'aves point le cuer certain*, in Florence 229, no. 48. B \flat is used to avoid melodic imperfect fourths and fifths primarily in *cantus durus*; the corresponding note for this purpose in *cantus mollis* is E \flat . Appendix A gives further examples (from the main sources) of many of the practices discussed in this chapter in order to give a picture of the extent to which they might have been used in Josquin's period.

- Example 3-1. B \flat used to correct imperfect consonances to perfect.
- Anon., textless composition, m. 17.
 - Anon., *Cueurs desolez/Dies illa*, final cadence.
 - Josquin, *Inviolata, Integra et Casta es Maria*, pt. 3, mm. 1-4.
 - Caron, *Vous n'aves point le cuer certain*, mm. 14-15.

a)

Example a) shows a three-staff system. The top staff contains two notes, G4 and B4, with a bracket above them labeled 'P4'. The middle and bottom staves contain other notes and rests, with the bottom staff having a bass clef.

b)

Example b) shows a four-staff system. The top staff contains two notes, G4 and D5, with a bracket above them labeled 'P5'. The middle and bottom staves contain other notes and rests, with the bottom staff having a bass clef.

c)

Example c) shows a five-staff system. The top staff contains two notes, G4 and B4, with a bracket above them labeled 'P4'. The middle and bottom staves contain other notes and rests, with the bottom staff having a bass clef.

d)

Example d) shows a four-staff system. The top staff contains two notes, G4 and D5, with a bracket above them labeled 'P5'. The middle and bottom staves contain other notes and rests, with the bottom staff having a bass clef.

the flat would be readily recognizable to a singer, and was considered unnecessary by various theorists.¹² This occasionally happens even in cases where the flat is already in the signature (see Example 3-1c) although not so frequently as when the flat is not in the signature. Further, one occasionally finds a flat notated when it appears in an octave other than that specified by the signature (see Example 3-1d). This suggests that a flat in a signature applies only to its own register, a conclusion which is supported by the fact that a single letter name is often notated with signature flats in both upper and lower registers of a staff.

2. *Avoidance of the melodic augmented fourth and diminished fifth using F# in cantus durus or Bb in cantus mollis*

The other method of adjusting the F-B tritone to a perfect fourth, namely, by using F#, is less common (see Example 3-2).¹³ As stated above, theorists mention this practice in connection with cadences in modes 7 and 8; whenever the soprano descends from B to the cadential F-G, we can assume that the augmented fourth may be adjusted to the perfect fourth, as in Example 3-2a, taken from a composition in mode 7.¹⁴ Notated examples are most readily found in lute sources, since sharps are much rarer in vocal sources. It is easy to see, however, that leading tones of this type would normally have been added by singers

¹²As is well known, Tinctoris even goes so far as to call the notation of the flat sign to avoid the melodic tritone "asinine." See the discussion of theorists' views on the use of accidentals in Berger, 162ff.

¹³Tromboncino, *Cade ogne mio penser*, in Bossinensis I: 12(20). Tromboncino, *Chi in pregon crede tornarmi*, in Bossinensis I: 14(13). Caron, *Madame qui tant*, in Florence 229, no. 163. Obrecht, *Christe* from *Missa Si dederò*, in *Werken* (Amsterdam: Johannes Müller; Leipzig: Breitkopf & Härtel, 1908-21; repr. Farnborough: Gregg, 1968), Missen, no. 9 and in Capirola, p. 61, s. 4, m. 5.

¹⁴For another example, see the final cadence in Capirola no. 20 (in mode 8).

- Example 3-2. Melodic tritone avoided by the use of F#.
- a. Tromboncino, *Cade ogne mio penser*, mm. 11-12.
 - b. Tromboncino, *Chi in pregon crede tornarmi*, mm. 9-10.

a)

Musical score for Tromboncino, Example 3-2a. The score is written for two staves: a single treble clef staff and a grand staff (treble and bass clefs). The key signature has one sharp (F#). The time signature is 4/4. The score is marked with a double bar line and the number 11 at the beginning. The melody in the single staff consists of quarter notes: G4, A4, B4, C5, B4, A4, G4. The grand staff accompaniment features a bass line with quarter notes: G3, F3, E3, D3, C3, B2, A2, G2. The right hand of the grand staff has a melodic line with a slur over the first two measures, marked with a dynamic of *p4*. The notes in the right hand are: G4, A4, B4, C5, B4, A4, G4, F#4. The F#4 note is specifically highlighted to show it avoids the tritone with the G4 note in the melody.

b)

Musical score for Tromboncino, Example 3-2b. The score is written for two staves: a single treble clef staff and a grand staff (treble and bass clefs). The key signature has one sharp (F#). The time signature is 4/4. The score is marked with a double bar line and the number 9 at the beginning. The melody in the single staff consists of quarter notes: G4, A4, B4, C5, B4, A4, G4. The grand staff accompaniment features a bass line with quarter notes: G3, F3, E3, D3, C3, B2, A2, G2. The right hand of the grand staff has a melodic line with a slur over the first two measures, marked with a dynamic of *p4*. The notes in the right hand are: G4, A4, B4, C5, B4, A4, G4, F#4. The F#4 note is specifically highlighted to show it avoids the tritone with the G4 note in the melody.

Example 3-2 continued.

c. Caron, *Madame qui tant*, mm. 27-30.

d. Obrecht, *Christe* from *Missa Si dedero*, mm. 62-64, with accidentals after Capirola.

c)

Musical score for Example 3-2c, measures 27-30. The score is written for four staves (treble and bass clefs). Measure 27 is marked with a sharp sign (#) above the staff. Measure 28 has a sharp sign (#) above the staff and a dynamic marking 'p4' below the staff. Measure 29 has a sharp sign (#) above the staff. Measure 30 has a sharp sign (#) above the staff. The music consists of eighth and sixteenth notes with various accidentals and dynamics.

d)

Musical score for Example 3-2d, measures 62-64. The score is written for three staves (treble and bass clefs). Measure 62 has a sharp sign (#) above the staff. Measure 63 has a sharp sign (#) above the staff. Measure 64 has a sharp sign (#) above the staff. The music consists of eighth and sixteenth notes with various accidentals and dynamics.

at the sight of the standard melodic formulae for cadences. The avoidance of the tritone between B and F using the cadential leading tone is not restricted to modes 7 and 8, but may also occur at cadences on G in compositions in other modes. The F-B tritone may also be avoided by the use of a non-cadential leading tone F \sharp (see Example 3-2b).¹⁵ A rare example of the avoidance of the F-B tritone with an F \sharp in a vocal source is given in Example 3-2c, appearing in a non-cadential situation.¹⁶ Occasionally one finds the perfect fourth F \sharp -B occurring in instrumental figuration.¹⁷ Capirola uses F \sharp to avoid a melodic tritone in m. 63 of the *Christe* to Obrecht's *Missa Si dederō*.¹⁸ This is the only F \sharp -B perfect fourth leap applicable to vocal performance that was found in this study (see Example 3-2d). We may thus conclude that the F \sharp -B perfect fourth-leap is within the language of the period, but not commonly used.

¹⁵The F \sharp in Example 2b is considered a non-cadential leading tone because it occurs in the middle of a melodic phrase. For another example, see Bossinensis I: 15(14), mm. 14-15. It is also possible to lower the B to B \flat in this situation (following the *una nota supra la* rule), thus forming a diminished fourth B \flat -A-G-F \sharp -G (see Bossinensis I: 58, mm. 6-7). This configuration is far more characteristic of modes 1 and 2 on G than of modes 7 and 8, which normally have the major third rather than the minor third above the final.

¹⁶The sharp in Example 2c notated with a "V" is given in Brown's edition but is not from Florence 229; rather, it is taken from Verona DCLVII (ca. 1500). Brown also adds editorial sharps to the other Fs in the passage.

¹⁷For a direct leap of a perfect fourth (F \sharp -B) in instrumental figuration, see Spinacino II: 4, m. 6 (for vocal pitch, transpose up a major third).

¹⁸Obrecht, *Missa Si dederō* in *Werken*, Missen, no. 9, and Capirola, p. 61, s. 4, m. 5. Spinacino (II: 3, m. 61) eliminates the tritone altogether by altering the superius melody.

In comparison to the use of flats to avoid the melodic diminished fifth, the use of raised notes is infrequent (see Example 3-3).¹⁹

Example 3-3. Raised notes used to avoid melodic diminished fifths.

a. Ghiselin, *O florens rosa*, mm. 44-45, with Capirola's interpretation.

b. Busnois, *Seule à par moy*, m. 49.

a)

b)

¹⁹Ghiselin, *O florens rosa*, in Johannes Ghiselin-Verbonnet *Opera Omnia*, ed. Clytus Gottwald (n. p.): American Institute of Musicology, 1961-8), vol. 1, no. 2. Busnois, *Seule à par moy*, in Florence 229, no. 60. Josquin, *Missa Fortuna desperata*, in *Werken*, Missen, no. 4

Example 3-3 continued.

c. Josquin, *Sanctus* from *Missa Fortuna desperata*, mm. 130-34.

c)

Only one example of $F\sharp$ used to adjust a diminished fifth to a perfect fifth was found (see Example 3-3a). In this case, Capirola may have used the $F\sharp$ more to avoid the vertical augmented fourth than the melodic diminished fifth. In the main sources for this study, a parallel situation in a voice written in *cantus mollis* in which $B\flat$ is most likely called for is given in Example 3-3b ($B-F\sharp$ in *cantus durus* = $E-B\flat$ in *cantus mollis*). No accidentals are given in Florence 229 for this passage, however, it is clear that the easiest way to avoid any melodic and contrapuntal dissonances is to use $B\flat$ in the lowest voice. There are no examples of an explicitly notated $B\flat$ for the E-B melodic perfect fifth in *cantus mollis* in the main sources for this study. This

possibility, from another source from Josquin's period, is demonstrated in Example 3-3c.²⁰

An interesting case in which the same tritone is adjusted with a B \flat in one source and an F \sharp in another source is shown in Example 3-4.²¹

Example 3-4. Alternative ways of avoiding the melodic tritone outline in Ghiselin, *O florens rosa*, mm. 38-40.

The image shows two systems of musical notation. The top system consists of three staves: a vocal line (treble clef), a lute line (treble clef), and a bass line (bass clef). The vocal line starts at measure 38 with a melodic tritone interval from B \flat to F. The lute line has a similar melodic contour. The bottom system also consists of three staves: a lute line (treble clef), a vocal line (treble clef), and a bass line (bass clef). The lute line starts at measure 38 with a melodic tritone interval from B \flat to F \sharp . The vocal line has a similar melodic contour. The lute line includes a tempo marking 'C: P100, sl, M3' and a dynamic marking 'A4'.

²⁰*Liber primus Missarum Josquin* (Fossombrone: Petrucci, 1516). For the modern edition, see fn. 19.

²¹For the edition of Ghiselin, *O florens rosa*, see fn. 19. Note the tritone melodic outline in Capirola's instrumental figuration.

3. *Melodic diminished fifths and the tritone used according to rule*

Another area of correspondence between theory and practice is in the use of the stepwise motion of a diminished fifth followed by change of direction, again by step (see Example 3-5a and 3-5b).²² The theorists also allow this when the diminished fifth is not completely filled in (Example 3-5c).²³ A further area of agreement between theory and practice is in the use of the tritone (normally filled in, at least partially), which occurs naturally as a part of the musical system and which is commonly used within a stepwise progression of a fifth or of a larger interval (Example 3-6a, soprano).²⁴

²² Anon., textless composition, in Florence 229, no. 35. Anon., *Vrai dieu d'amours*, in Florence 229, no. 92. In Example 3-5a, m. 14, the B̄ in the bassus could either be flatted to avoid the vertical diminished fifth or could be left natural, since the progression of the diminished fifth resolving in stepwise to a third was allowed by theorists (see Chapter 5, esp. Exs. 5-8 and 5-9).

²³ Tromboncino, *Crudel como mai potesti*, in Bossinensis I: 40.

²⁴ Busnois, *Bon me larim bom bom*, in Florence 229, no. 182.

Example 3-5. Diatonic diminished fifth outlines, as allowed by theorists.

a. Anon., textless composition, mm. 13-15.

b. Anon., *Vrai dieu d'amours*, mm. 11-14.

c. Tromboncino, *Crudel como mai potesti*, mm. 19-22.

a)

b)

c)

Here, the tritone is not actually outlined. It was possible to outline the tritone in stepwise descending direction. This is seen in the following quotation, in which Barbara Lee explains Lanfranco's discussion of the treatment of the tritone:

... when ascending from F to B, you must use *b molle* [i.e., B \flat] if you go no higher than B; descending by leap from B to F, you must again use *b molle*, but not necessarily if you descend stepwise.²⁵

According to Lanfranco's theory, then, Example 3-6b may be sung with the tritone between B and F.²⁶ It is also possible, however, that some musicians might have used B \flat or F \sharp to avoid the tritone.

Theorists thus recognized the use of the outlined tritone and diminished fifth. Of these, however, it was the outline of the diminished fifth that was more readily allowable to the Renaissance musician. This is confirmed by a passage from the supplement to the *Toscanello in musica*, in which Aaron indicates that it is better to sing a melodic diminished fifth than a tritone.²⁷

²⁵Barbara Lee, "Giovanni Maria Lanfranco's 'Scintille di Musica'," 90.

²⁶Anon., *Se je souspire/Ecce iteram*, in Brussels 228, no. 50.

²⁷Aaron, *Toscanello in musica*, *Aggiunta* (supplement), trans. Bergquist, vol. 3, 15. Cited in Berger, 89.

Example 3-6. Use of the augmented fourth in scalar passages.

a. Busnois, *Bon me larim bom bom*, mm. 31-33.

b. Anon., *Se je souspire/Ecce iteram*, mm. 95-96.

a)

Musical score for Example 3-6a, showing a scalar passage in the upper voice. The score is in G major and 3/4 time. The upper voice begins at measure 31 with a G4 quarter note, followed by A4, B4, C5, D5, E5, F5, G5, and A5. An augmented fourth interval (A4 to D5) is explicitly marked with a bracket and labeled 'A4'. The lower voices provide harmonic support with sustained notes and moving lines.

b)

Musical score for Example 3-6b, showing a scalar passage in the upper voice. The score is in G major and 3/4 time. The upper voice begins at measure 95 with a G4 quarter note, followed by A4, B4, C5, D5, E5, F5, G5, and A5. An augmented fourth interval (A4 to D5) is explicitly marked with a bracket and labeled 'A4'. The lower voices provide harmonic support with sustained notes and moving lines.

III. Divergences between theory and practice in the use of dissonant intervals in melodic outlining or leaps—the melodic diminished fourth, fifth and octave and the augmented fourth used in ways not specified or allowed by theorists

The sources show a freer attitude towards the use of imperfect melodic fourths, fifths and octaves than is indicated by the theorists. Among these, the diminished fourth and fifth occur most frequently, the augmented fourth occurs less often, and the imperfect octave is found relatively infrequently in vocal sources (although it is not quite so rare in figuration found in instrumental sources). The most common of these, the diminished fifth, is used more in the descending than ascending direction, probably because it is less obtrusive than if used in an ascending line.

1. Melodic diminished fifths with cadential sharps

The configuration of a diminished fifth (usually completely stepwise) followed by a stepwise change in direction does not just occur on unaltered pitches, as Zarlino would have it, but also quite commonly in situations with leading-tone accidentals (see Example 3-7).²⁸

²⁸Ockeghem, *Ma bouche rit*, in Petrucci's *Harmoniche Musices Odhecaton A*, ed. Helen Hewitt, (Cambridge, Mass. : Mediaeval Acad., 1942; 2nd ed. rev., 1946; repr. New York: Da Capo, 1978), no. 54. This particular example involves a cadence imperfected at the third below; such cadences receive the same kind of leading tone as regular cadences (see the discussion of cadential leading tones below). For the passage in which Zarlino forbids the diminished fifth outline involving inflected pitches, see fn. 9 above (to this chapter).

Example 3-7. Melodic outline of a diminished fifth involving a leading-tone accidental. Ockeghem, *Ma bouche rit*, mm. 34-36, with Spinacino's interpretation.

The image displays a musical score for Example 3-7, consisting of five staves. The top two staves represent the original notation by Ockeghem, and the bottom three staves represent Spinacino's interpretation. The score is set in 3/4 time and begins at measure 34. The key signature is one sharp (F#). The melodic line in the upper staves shows a sequence of notes: G4, A4, B4, C5, D5, E5, F#5, G5. A sharp sign (#) is placed above the final note (G5) in the first staff. The lower staves show the piano accompaniment, with a chord labeled 'Si:17' (Si being the leading tone of the dominant) and a fingering of '7' indicated for the right hand. A slur with the number '15' is placed over a sequence of notes in the right hand of the piano part, indicating a 15-finger exercise or a specific fingering technique.

While the cadential or non-cadential leading tone may have the effect of correcting an augmented fourth to a perfect fourth (as in Examples 3-2a and 3-2b), it may also alter the perfect fifth to a diminished fifth: in Example 3-7, D-C-B-A-G-A becomes D-C-B-A-G \sharp -A! Thus the leading tone may sometimes eliminate the less desirable tritone and in other cases may produce the more permissible diminished fifth.

2. *Melodic diminished fifths with other types of sharps*

Various other types of diminished fifths (mostly stepwise, occasionally only partially filled in) followed by stepwise change of direction are given in Example 3-8.²⁹ In Example 3-8a, the diminished fifth occurs within diatonic scale degrees, but the following note is raised to form a cadential leading tone. Example 3-8b shows a diminished fifth formed by a non-cadential leading tone in mm. 1-2 (as well as other types of diminished fifth which will be mentioned below). In Example 3-8c, the final note of the diminished fifth in m. 7 is a lower neighbor to a leading tone.

²⁹Tromboncino, *S'il dissì mai ch'io venga*, in *Bossinensis I*: 7(8). Anon., *Mia benigna fortuna e'l viver lieto*, in *Bossinensis I*: 30. Cara, *Non peccando altri ch'el core*, in *Bossinensis I*: 11.

Example 3-8. Diminished fifths outlined in ways contrary to theorists' rules.

a. Tromboncino, *S'il dissi mai ch'io venga*, mm. 1-5.

b. Anon., *Mia benigna fortuna e'l viver lieto*, mm. 1-4.

c. Cara, *Non peccando altri ch'el core*, mm. 7-8.

a)

Example 3-8a shows a musical score for Tromboncino, measures 1-5. The score is written in C major, common time. The upper staff (Tromboncino) contains a melodic line with a diminished fifth interval (d5) between the notes G4 and C5. The lower staff (Piano) contains a harmonic accompaniment with a diminished fifth interval (d5) between the notes G4 and C5. The interval is explicitly labeled 'd5' with a bracket.

b)

Example 3-8b shows a musical score for Anon., measures 1-4. The score is written in C major, common time. The upper staff (Tromboncino) contains a melodic line with a diminished fifth interval (d5) between the notes G4 and C5. The lower staff (Piano) contains a harmonic accompaniment with a diminished fifth interval (d5) between the notes G4 and C5. The interval is explicitly labeled 'd5' with a bracket.

c)

Example 3-8c shows a musical score for Cara, measures 7-8. The score is written in C major, common time. The upper staff (Tromboncino) contains a melodic line with a diminished fifth interval (d5) between the notes G4 and C5. The lower staff (Piano) contains a harmonic accompaniment with a diminished fifth interval (d5) between the notes G4 and C5. The interval is explicitly labeled 'd5' with a bracket.

3. Melodic diminished fifths with flats

A diminished fifth outline may also occur by lowering the upper note, as in Example 3-9.³⁰

Example 3-9. Diminished fifths outlined with the uppermost notes lowered.

- a. Busnois or Hayne, *Je suis venue vers mon amy*, mm. 46-51.
- b. Franciscus Strus, *Sancta Maria succure nobis*, mm. 43-46.

a)

Example 3-9a shows a musical score for three staves (treble, alto, and bass clefs). The score is in a key with one flat (B-flat major or D minor). The first staff (treble clef) has a melodic line starting at measure 46, with a bracketed interval of a diminished fifth (d5) between measures 46 and 47. The second staff (alto clef) has a melodic line starting at measure 46, with a bracketed interval of a diminished fifth (d5) between measures 46 and 47. The third staff (bass clef) has a melodic line starting at measure 46, with a bracketed interval of a diminished fifth (d5) between measures 46 and 47. The score continues to measure 51.

b)

Example 3-9b shows a musical score for three staves (treble, alto, and bass clefs). The score is in a key with one flat (B-flat major or D minor). The first staff (treble clef) has a melodic line starting at measure 43, with a bracketed interval of a diminished fifth (d5) between measures 43 and 44. The second staff (alto clef) has a melodic line starting at measure 43, with a bracketed interval of a diminished fifth (d5) between measures 43 and 44. The third staff (bass clef) has a melodic line starting at measure 43, with a bracketed interval of a diminished fifth (d5) between measures 43 and 44. An annotation "AMT" is present in the bass staff, indicating that the Eb "avoids the melodic tritone" with Bb. The score continues to measure 46.

³⁰Busnois or Hayne, *Je suis venue vers mon amy*, in Florence 229, no. 29. Franciscus Strus, *Sancta Maria succure nobis*, in Brussels 228, no. 23. Anon., *Venus Juno Pallas*, in Florence 229, no. 256. For further examples, see Bossinensis I: 8(9), mm. 5-6, and mm. 15-16; I: 42, mm. 9-10 (E-F♯[!]-G-A-B♭-A); Brussels 228, no. 42, mm. 30-32; Fl. 229, no. 24, mm. 44-45. In Example 3-9b, AMT indicates that the Eb "avoids the melodic tritone" with Bb. In this example, the notation of the Bb in the bassus might signify a melodic chromatic semitone-step (permutation), B♭-Bb. In Josquin's period, however, a single accidental could govern not just the note following it, but also previous and subsequent appearances of the same pitch (see the discussion of duration of accidentals on pp. 254ff.).

Example 3-9, continued.

c. Strus, *Sancta Maria succure nobis*, mm. 68-71.

d. Anon., *Venus Juno Pallas*, mm. 36-38.

c)

Musical score for Example 3-9c, measures 68-71. The score is written for four staves. The first staff is the vocal line, starting with a treble clef and a key signature of one flat. The second staff is the right-hand piano accompaniment, starting with a treble clef and a key signature of one flat. The third staff is the left-hand piano accompaniment, starting with a bass clef and a key signature of one flat. The fourth staff is the basso continuo line, starting with a bass clef and a key signature of one flat. A bracket labeled 'd5' spans the first two staves, indicating a dyad. The music consists of four measures, with a repeat sign at the end of the first measure.

d)

Musical score for Example 3-9d, measures 36-38. The score is written for three staves. The first staff is the vocal line, starting with a treble clef and a key signature of one flat. The second staff is the right-hand piano accompaniment, starting with a treble clef and a key signature of one flat. The third staff is the left-hand piano accompaniment, starting with a bass clef and a key signature of one flat. A bracket labeled 'd5' spans the first two staves, indicating a dyad. The music consists of three measures, with a repeat sign at the end of the first measure.

In Example 9a, the diminished fifth outlines occur in imitation, arising from the application of the *una nota supra la* rule. In Examples 3-9b-d, the diminished fifths cannot be avoided by flattening without causing imperfect fifths or octaves or without causing a series of "chain-reaction" accidentals.³¹ Thus, in Example 3-9b, the use of a bass note A \flat for avoiding the diminished fifth outline would create a need to lower the bass note D to D \flat , as well as every A, D and E in mm. 45-46. There is already a chain reaction in the bass, with B \flat used (m. 43) to avoid the vertical diminished fifth with the tenor's F, and then E \flat (m. 44) to avoid the melodic tritone and form a vertical perfect fifth with B \flat in the upper voices. Having notated B \flat and E \flat , the composer or scribe could have continued adding flats in order to avoid outlining the diminished fifth in the bass. Given that the chain reaction stops at E \flat , and that an occasional diminished fifth outline was acceptable to Renaissance musicians, there is simply no reason (nor any compelling evidence) for a sudden and extensive shift into further flats. In Example 3-9c, the alto's B \flat avoids an augmented octave with the bass, and the E \flat in Example 3-9d follows the *una nota supra la* rule.

4. *Melodic diminished fifths followed by rest or by leap*

The diminished fifth is used in other types of melodic figures as well. In particular, the stepwise motion of the diminished fifth followed by rest is an idiom that occurs with some frequency in this pe-

³¹Berger, 88ff., finds that theorists do not consider chain reactions in contexts which might be construed as implying them. Extensive chain reactions are postulated in studies by Lowinsky, such as his *Secret Chromatic Art*, and by Margaret Bent, "Diatonic Ficta," *Early Music History* 4 (1984), 1-48. Further discussion of the idea of chain reactions of accidentals in Renaissance music will be given below in this chapter, and in Chapters 5 and 8.

riod (see Example 3-10).³² Example 3-10b is from Josquin's *Adieu mes amours*, which is intabulated by Spinacino (I: 18). Spinacino does not alter the diminished fifth in mm. 9-10, and maintains the diminished

Example 3-10. Diminished-fifth outlines followed by rests.

a. Anon., *Ce m'est tout ung*, in Brussels 228, no. 11, mm. 1-5.

b. Josquin, *Adieu mes amours*, mm. 8-11.

a)

Example 3-10a shows a musical score for the first five measures of 'Ce m'est tout ung'. It features four staves: a vocal line (treble clef), a lute line (treble clef), a bass line (treble clef), and a bass line (bass clef). A diminished fifth interval is marked with a bracket and 'd5' between the second and third measures. A rest is indicated by a horizontal line above the vocal staff in the fifth measure. A '5' is written above the fourth measure.

b)

Example 3-10b shows a musical score for measures 8-11 of 'Adieu mes amours'. It features four staves: a vocal line (treble clef), a lute line (treble clef), a bass line (treble clef), and a bass line (bass clef). A diminished fifth interval is marked with a bracket and 'd5' between the eighth and ninth measures. A diminished fourth interval is marked with a bracket and 'd4' between the ninth and tenth measures. A flat sign (b) is placed below the bass line in the eighth measure.

Example 3-10c shows a musical score for measures 9-10 of 'Adieu mes amours'. It features two staves: a vocal line (treble clef) and a bass line (bass clef). A diminished fifth interval is marked with a bracket and 'd5' between the ninth and tenth measures. A flat sign (b) is placed below the bass line in the ninth measure. The text 'S I:18' is written above the first measure.

³²Anon., *Ce m'est tout ung*, in Brussels 228, no. 11. Josquin, *Adieu mes amours*, in Florence 229, no. 158. These examples show diminished fifth outlines on uninflected notes; Examples 9c-d also show diminished fifth outlines followed by rests, but in these, the upper note is inflected (B \flat).

fifth outline in other places where the figure appears (mm. 33-34, mm. 48-49). A few examples of diminished fifths followed by rests were found involving Picardy thirds (as in Example 3-8b, soprano part, mm. 1-3). Another possibility is the diminished fifth outline followed by leap (see Example 3-11).³³

Example 3-11. Diminished fifth followed by leap in Dominus Michael Pesenti, *Aimè ch'io moro*, mm. 1-2.



5. Melodic diminished fifths and augmented fourths in sequences

An important situation in which melodic diminished fifths or (more rarely) augmented fourths arise is in sequences. Sequences involving all voices at once first became common in this period, and they often tend to run at some point into the vertical or melodic diminished fifths or augmented fourths inherent in the diatonic system. Such imperfect vertical or melodic intervals may either be left unaltered or may be adjusted to perfect intervals using accidentals.

³³Dominus Michael Pesenti, *Aimè ch'io moro*, in Bossinensis I: 59.

Let us begin our discussion of sequences with examples that appear both in mensural and in lute sources, since the intabulations provide confirmation of exact pitches (see Examples 3-12a and 3-12b).³⁴

Example 3-12. Imperfect fourths and fifths melodically outlined in sequences.

a. Agricola, *Si dederò*, mm. 66-69, with interpretations by Capirola and Spinacino.

a)

The image displays three systems of musical notation for Example 3-12a. The first system shows a vocal line (treble clef) and a lute line (bass clef) for measures 66-69. The second system is a lute intabulation (C: P105, S3, M5) for measures 66-69. The third system is a lute intabulation (S II: 23) for measures 66-69. The score includes various musical notations such as notes, rests, and accidentals, along with specific annotations like '4/b' and '7'.

³⁴Agricola's *Si dederò* appears in Capirola, no. 35, Spinacino II: 23, Florence 229, no. 68, and Brussels 11239, no. 23 (in Picker, *Chanson Albums*). Isaac's *Benedictus* from *Missa Quant j'ay au cor* appears in Florence 229, no. 10, and Spinacino I: 2.

Example 3-12, continued.

b. Isaac, *Benedictus* from *Missa Quant j'ay au cor*, mm. 44-52.

b)

45 50

A4 d5 P5

S, I:2 45 50

3

No accidentals for the passage from Agricola's *Si dedero* (Example 3-12a) appear in Capirola, Spinacino, Florence 229 or Brussels 11239. Capirola slightly ornaments the augmented fourth so that it is not directly outlined; Spinacino's version corresponds closely to the vocal original, and maintains the augmented fourth outline.³⁵ Thus, there is no reason to doubt that the unaltered version was acceptable to Renaissance musicians, although it would be possible to eliminate the dissonant intervals using E \flat and B \flat in m. 68.³⁶ In the Isaac piece (Example 3-12b), Spinacino maintains the augmented fourth found in mm. 44-45 and the diminished fifth in mm. 47-48.

An attempt to eliminate the diminished fifth outline using B \flat in m. 37 of Example 3-13a would create a tritone leap (B \flat -E). Furthermore, an attempt to eliminate all diminished fifth outlines and augmented fourth leaps from this example would result in a chain reaction of accidentals (B \flat -E \flat -A \flat -D \flat -G \flat -C \flat -F \flat -B $\flat\flat$ -E $\flat\flat$ -A $\flat\flat$ in the inner voice). It is easy to see how this throws the composition out of the musical system, and creates difficulties in adjusting the other voices to one another with such an array of unnotated inflections. By now we have seen that the melodic outline of the diminished fifth was used with some freedom in this period, and so it is clear that the diminished fifth outline of m. 37, although unusual, would be acceptable to Renaissance musicians and that chain-reaction accidentals would be unnecessary. It would

³⁵For further discussion and examples of the use of the melodic outline of the augmented fourth, see the section on the *una nota supra la* rule in the first part of Chapter 4.

³⁶The symbols showing both naturals and flats in m. 68 of Example 12a show the possibilities of having either all naturals or of using B \flat and E \flat in that measure.

Example 3-13. Further sequences with melodic diminished fifths.

a. Textless composition by Martini, mm. 36-43.

b. Textless composition by Isaac, mm. 43-47.

a)

Musical score for Example 3-13a, measures 36-43. The score is written in three staves (treble, alto, and bass clefs). Measure 36 is marked at the beginning. Measure 40 is marked in the middle. A melodic line in the alto staff is annotated with a bracket and the label "d5" (diminished fifth) between measures 36 and 40. A 6/4 time signature appears in the bass staff at measure 41, and a 4/4 time signature appears in the bass staff at measure 42.

b)

Musical score for Example 3-13b, measures 43-47. The score is written in three staves (treble, alto, and bass clefs). Measure 43 is marked at the beginning. Measure 44 is marked in the middle. A melodic line in the treble staff is annotated with a bracket and the label "°5" (diminished fifth) between measures 44 and 47. The bass staff contains two 4/b time signatures at measures 44 and 45, and a flat symbol (b) at measure 46. The annotation "°5 possible" is written below the bass staff at measure 45.

also be unnecessary to demand that an $A\flat$ be used in m. 47 of Example 3-13b, particularly when it would create more problems than it would solve (beginning with a diminished fifth against the bass in m. 47).

Chain-reaction accidentals, in which one flat gives rise to another in order to avoid augmented or diminished melodic or vertical intervals (as in $B\flat-E\flat-A\flat-D\flat-G\flat$, etc.), are conspicuously lacking in tricky passages in practical sources time after time; nor, as was previously mentioned, is there any extensive tradition for them to be found in Medieval and Renaissance theory.³⁷ Sometimes sequential passages run into difficult situations, and the solution is left up to the performers. The following examples illustrate this (see Example 3-14).³⁸ All of these cases can be solved either with few accidentals or with none at all by allowing an augmented fourth leap in the superius.³⁹

³⁷See fn. 31 above.

³⁸F. Rubinet, *Je voy*, in Florence 229, no. 106. Textless composition by F. Rubinet, in Florence 229, no. 262. Obrecht or Virgilius, *Nec mihi, nec tibi*, in Florence 229, no. 267. On the passage by Piero de Justinus, see fn. 40 below.

³⁹This is not out of the question. The rare use of tritone leaps is discussed below in section III. 8. (See also section III. 6).

Example 3-14. Sequences causing difficulties in dissonance and the use of accidentals.

a. F. Rubinet, *Je voy*, mm. 33-36.

b. Textless composition by F. Rubinet, mm. 31-34.

a)

Musical score for Example 3-14a, measures 33-36. The score is written for three staves (treble, alto, and bass clefs) in a key signature of one flat (B-flat major or D minor). The tempo is marked '33'. The notation includes various rhythmic values and accidentals. A specific interval is highlighted with a bracket and labeled '(A4)' with a flat sign below it, indicating a dissonance. The score shows a sequence of notes that create a dissonant effect.

b)

Musical score for Example 3-14b, measures 21-34. The score is written for three staves (treble, alto, and bass clefs) in a key signature of one flat (B-flat major or D minor). The tempo is marked '21'. The notation includes various rhythmic values and accidentals. A specific interval is highlighted with a bracket and labeled '(A4)' with a flat sign below it, indicating a dissonance. Another interval is labeled 'd5'. The score shows a sequence of notes that create a dissonant effect.

Example 3-14, continued.

c. Obrecht or Virgilius, *Nec mihi, nec tibi*, 76-80.

d. Passage by Piero de Justinus with and augmented fourth leap.

c)

Musical score for Example 3-14c, measures 76-80. The score is written for three staves (treble, alto, and bass clefs). Measure 76 is marked with the number '76'. A bracket above the staff in measure 79 is labeled '(A4)', indicating an augmented fourth interval. The notation includes various note values, rests, and accidentals.

d)

Musical score for Example 3-14d, a single measure. The notation shows a sequence of notes on a staff, including a sharp sign (♯) and a double bar line at the end.

In a passage from *Je voy* by F. Rubinet (Example 3-14a), the adjustment from A to A \flat in the superius, m. 36, is not notated in Florence 229, but has been suggested as an editorial accidental in order to avoid the augmented octave with the contratenor (i.e., the bass voice). This gives rise to a melodic tritone; I do not support avoiding this with D \flat because D \flat is remote from the system of *cantus mollis*, and its use would create difficulties with the Gs in m. 36. I believe it was for such reasons that this passage was not given the remote accidentals of D \flat or G \flat . In fact, this augmented fourth, coming as it does within a sequence, sounds quite good. In his edition of Florence 229, Howard Mayer Brown uses A \flat as an editorial accidental in the contratenor, mm. 35-36, but he leaves A in the superius, m. 36, unaltered. In Brown's solution, then, the superius has a leap of a perfect fourth up to D, however, it also forms a harsh-sounding augmented octave with the contratenor in m. 36. In my solution, contrapuntal factors take precedence over melodic ones, whereas in Brown's solution, it is the other way around.

In another (untitled) composition by Rubinet, the use of sequence again leads into a situation which calls for an augmented fourth (see Example 3-14b, m. 24). Both Brown and I agree on using E \flat in the superius, m. 24, and permit the leap of a tritone to A rather than avoiding the tritone leap by flattening the A and having to deal with a whole new set of problems arising from A \flat . A more elaborate method of avoiding imperfect fifths and fourths occurring in *Nec mihi, nec tibi* by Obrecht or Virgilius is found in Brown's solution for mm. 79-80, which is given on the extra system below Example 3-14c. This follows "chain-reaction

thinking" for two flats beyond the signature, which does not go further than the norm for Renaissance music.

Example 3-14d shows a passage from a motet by Piero de Justinis.⁴⁰ Berger writes the following concerning this example:

In a letter of June 3, 1538 addressed to Piero de Justinis, Giovanni del Lago discussed a passage from a motet by Piero. In the example, the alto would normally flatten e in order to correct the melodic tritone. This would produce a diminished octave with the bass which might conceivably be corrected by a flat at E, but E \flat would produce a tritone with the following a, unless this were flattened as well, and so on. Now, del Lago criticizes the passage for reasons which do not have to detain us here, but he fully accepts Piero's solution of the problem, which is to avoid the 'chain reaction' just described and to opt for the lesser of the two evils, that is, for the toleration of the melodic tritone which enables him to preserve the perfect octave.⁴¹

This passage is of interest in regard to Examples 3-14a-c, since it demonstrates the use of the tritone leap for the sake of preserving a vertical perfect octave. That is precisely what is being suggested for examples 3-14a-c, and Example 3-14d provides evidence from close to Josquin's period supporting this type of solution.

Theorists give remarkably little guidance for tricky passages such as seen in Example 3-14, and often the accidentals marked are only those most obvious, such as the B \flat in m. 80 of Example 3-14c. Such passages go beyond what the rules for accidentals were originally equipped to handle, and, as del Lago's letter and Example 3-14d indicate, it is quite

⁴⁰Example from a letter by Giovanni del Lago in Ms. Vatican, lat. 5318, fol. 102v. Cited in Berger, 120.

⁴¹Berger, 120-21.

likely that musicians of the period did not always iron out every rough spot.⁴² Modern attempts to do so create situations where so many implied inflections are needed that the music gets thrown far beyond the normal system; so many simultaneous unnotated inflections are called for in such solutions that it is hard to imagine entire ensembles successfully managing them.⁴³ At the very least, one would expect more inflections to be written in, and more discussion by theorists of such possibilities, if they were actually used. The theorists' rules allow a greater tolerance for vertical and horizontal imperfect fourths and fifths than is allowed in these modern studies, and the examples in this study show even a greater tolerance for such intervals. Thus there really is no need for extravagant applications of editorial inflections.

6. Direct leaps of diminished fifths and tritones in instrumental music

Lute tablatures contain some examples of direct leaps of diminished fifths and tritones that qualify as exceptions. Some of these arise from instrumental figurations that do not stem directly from the original vocal composition (see Example 3-15).⁴⁴

⁴²Evidence for the Renaissance musicians' use of melodic dissonance appears throughout this chapter; evidence for their use of dissonant vertical sonorities and cross relations is given in Chapters 5 and 6.

⁴³The reference is to studies such as those cited in fn. 31 above.

⁴⁴Agricola, *Oublier veul* in *Opera Omnia*, ed. Edward Lerner ([n. p.]: American Institute of Musicology, 1961-70), vol. 5, no. 41; Brumel, *Una maistresse*, in *Opera Omnia*, ed. Barton Hudson ([n. p.]: American Institute of Musicology, 1969-72), vol. 6, no. 13.

Example 3-15. Imperfect intervals arising from instrumental figuration.

a. Agricola, *Oublier veuil*, mm. 24-25, with Capirola's interpretation.

b. Brumel, *Una maistresse*, m. 18, with Spinacino's interpretation.

a)

25

4/b 4/b

C: P 6, 54, m. 6

LAV LAV

b)

18

S: I, 9

45

Example 3-15a, m. 24, exhibits a “Lydian sound,” approaching B \flat from E \sharp . It would be possible to avoid this by using E \flat ; Capirola, however, does not, and van Benthem has demonstrated that this “Lydian sound” was part of Josquin’s style, although it became rarer as Josquin’s period progressed.⁴⁵ The augmented fourth leap in Capirola, mm. 25-26 does not appear in the vocal original. Example 3-15b shows a diminished fifth leap arising from instrumental figuration by Spinacino. In Example 3-16, taken from Ghiselin’s *O florens rosa*, Capirola uses the leap of an augmented fourth in order to avoid a vertical diminished fifth; here, B \flat in the bass would be more likely in vocal performance.⁴⁶

Example 3-16. Augmented fourth leap in Capirola’s intabulation of Ghiselin, *O florens rosa*, mm. 17-18.

⁴⁵Jaap van Benthem, “Fortuna in Focus,” 16ff.

⁴⁶Ghiselin, *O florens rosa*, in *Opera Omnia*, vol. 1, no. 2.

Similarly, in Example 3-17, from Isaac's *La morra*, Petrucci's *Odhecaton* adjusts the leap from B \flat to E to a perfect fourth using E \flat , while Spinacino has a tritone leap; again, the perfect fourth seems to be the more likely solution for the average Renaissance musician.⁴⁷

Example 3-17. Alternate versions of Isaac's *La morra*, mm. 53-54. Version in *Odhecaton*, with perfect-fourth leap, and Spinacino's version, with augmented fourth leap.

The image displays two systems of musical notation for Isaac's *La morra*, measures 53-54. The top system, labeled '53', shows a version from *Odhecaton* with a perfect-fourth leap. The bottom system, labeled 'SI:13', shows Spinacino's version with an augmented fourth leap. Both systems are in 6/8 time and feature a treble and bass clef.

A leap of a diminished fifth occurs in Agricola's instrumental composition *Tandernaken*, and is preserved in Spinacino.⁴⁸

⁴⁷Isaac, *La morra*, in *Odhecaton*, no. 44.

⁴⁸*Tandernaken* by Agricola in *Opera Omnia*, vol. 5, no. 67. The diminished fifth leap is found in Spinacino II: 5, m. 73.

7. Direct leaps of diminished fifths in vocal music

Diminished fifth leaps occur less in vocal music than in instrumental music. A rare diminished fifth leap in a voice part occurs in *Arma del mio valore* by Marco Cara, both in the Petrucci's original version and in Bossinensis's arrangement (see Example 3-18).⁴⁹

Example 3-18. An unusual diminished fifth leap in the middle of a phrase in Cara, *Arma del mio valore*, mm. 3-6, as arranged by Bossinensis.

This interval stems from the use of a non-cadential leading tone. A leap of the diminished fifth, with an intervening rest, is found in *Poi che per fede manca* by Antonius Capreolus Brixienis (see Example 3-19).⁵⁰

⁴⁹For Petrucci's original version of Cara's *Arma del mio valore* see *Frottole, libro nono* (Venice: Petrucci, 1508), fol. 16'. Bossinensis' arrangement in I: 22.

⁵⁰Brixienis, *Poi che per fede manca*, in Bossinensis I: 58. A similar example is found in Bossinensis I: 69(70).

Example 3-19. Diminished fifth leap with intervening rest in Brixienensis, *Poi che per fede manca*, mm. 1-3.



8. Unusual cases of melodic augmented fourths

We conclude the present investigation of melodic diminished fifths and augmented fourths with some unusual cases of tritones.⁵¹ An example of an explicitly notated leap of a tritone (from Bb up to E) in vocal music has been given above in Example 3-14d. In this case, it is the vertical consideration that outweighs the melodic one. The conflict between melodic and contrapuntal elements is also seen in mm. 26-27 of the anonymous *Marguerite* (Example 3-20), in which the vertical diminished fifth is left unadjusted in the *Odhecaton*, while Spinacino adjusts this with an Eb, but produces an augmented fourth leap with an intervening rest.⁵²

⁵¹The melodic tritone is given further consideration in the section on *una nota supra la*.

⁵²Anon., *Marguerite*, in *Odhecaton*, no. 85.

Example 3-20. Alternate approaches to the same passage from Anon., *Marguerite*, mm. 25-27, as interpreted in the *Odhecaton* and by Spinacino.

The image displays a musical score for Example 3-20, consisting of five staves. The first staff is labeled with the number '25' at the beginning. The score is written in a system with five staves. The first three staves are for a vocal line, and the last two are for a lute accompaniment. The music is in a key with one flat (B-flat) and a common time signature. The first staff contains a melodic line with notes on the first, second, and third lines. The second staff contains a line with a whole rest followed by notes on the second and third lines. The third staff contains a line with a flat sign (b) and notes on the first, second, and third lines. The fourth and fifth staves are grouped by a brace on the left and contain a lute accompaniment with notes on the first, second, and third lines. Handwritten annotations include 'SII:21' on the fourth staff, a bracket labeled 'd5' spanning the second and third staves, and a bracket labeled 'A4' under the fifth staff.

Finally, the Medici Codex contains an example of a related phenomenon, namely, the occurrence of a tritone interval between the lowest voices (see Example 3-21).⁵³

Example 3-21. Augmented fourth cross relation between tenor and bass in *Festa, Deduc me, Domine*, mm. 57-58.



All of these examples are somewhat exceptional, and yet furnish clear evidence that the tritone outline or leap was to some extent used and tolerated by musicians of Josquin's generation, and that it was not avoided at all costs.

9. The diminished octave

Berger finds that the direct imperfect octave, in contrast to the tri-

⁵³*Festa, Deduc me, Domine*, in Medici Codex, no. 6. For another example, see Florence 229, no. 155, mm. 43-44.

tone and diminished fifth, is banned absolutely.⁵⁴ In the main sources for this study, there is only one example of a notated diminished octave leap in a voice part (see Example 3-22a); such melodic leaps

Example 3-22. The use of the melodic diminished octave.

a. Possible diminished octave leap in Francesco Veroter, *Nasce l'aspro mio tormento*, mm. 5-7.

b. Diminished octave outline in Spinacino's interpretation of Josquin, *La Bernardina*, mm. 29-32.

a)

b)

⁵⁴Berger, 85, cites Glarean's prohibition of the imperfect octave in *Dodecachordon* (Basel, 1547), trans. Clement Miller (n. p.]: American Institute of Musicology, 1965), 61.

are not a normal part of the musical language of the Renaissance.⁵⁵ The example is not fully conclusive, since it is possible (although improbable) that the C in the upper octave could have been adjusted to C#. This diminished octave would be softened by the fact that it occurs between the end of one phrase and the beginning of another; however, a singer would still be compelled to mentally calculate the interval of a diminished octave. A rare example of a diminished octave outlined occurs in Spinacino's intabulation of Josquin's *La Bernardina* (Example 3-22b).⁵⁶

10. The diminished fourth

The diminished fourth is little discussed in medieval and Renaissance theory. Aaron recommended avoiding it where possible; according to him, B was not lowered to Bb when it progressed to a cadential leading tone F(♯) since it would not create a perfect fourth. However, in *cantus durus*, a B descending to a cadential F(♯) might be preceded by an F, in which case it would be lowered to avoid the tritone, thus producing a diminished fourth: F-G-A-Bb-A-G-F(♯)-G.⁵⁷

The sources, however, show that Aaron's contemporaries used the diminished fourth more freely than he allowed. The melodic outline of the diminished fourth is commonplace, occurring most frequently

⁵⁵Going back before Josquin, a direct leap of an augmented octave occurs in Dufay's *Reveillez vous*.

⁵⁶Josquin des Prez, *Wereldlijke Werken* ii, no. 53. An example of a diminished octave arising from instrumental figuration is found in Spinacino I: 20, mm. 53-54.

⁵⁷Aaron, *Toscanello in Musica*, *Agiunta* (supplement), trans. Bergquist, vol. 3, 15-16.

in modes 1 and 2 between the third above the final and the raised leading tone, as in Example 3-23, taken from a composition in mode 2.⁵⁸

Example 3-23. Diminished fourth leap in Anon., *Combien le joyeux que je fasse*, mm. 2-4.

The image shows a musical score for three staves. The top staff is in treble clef with a key signature of one sharp (F#) and a 2/4 time signature. The melody starts on G4, moves to A4, then to C#5, and finally to D5. A bracket labeled 'd4' spans the interval between C#5 and D5. The middle staff is in treble clef with a key signature of one flat (Bb) and contains a simple accompaniment. The bottom staff is in bass clef with a key signature of one flat (Bb) and contains a simple accompaniment. The notation includes various note values and rests.

N.B. m. 2, Contratenor amended after Paris 15123.

The melodic outline of the diminished fourth (Example 3-24) is more common than that of the tritone or of the diminished fifth.⁵⁹

⁵⁸Anon., *Combien le joyeux que je fasse*, in Florence 299, no. 223.

⁵⁹Anon., *Faulx envieulx et megre face*, in Florence 299, no. 190.

Example 3-24. Diminished fourth outlined in Anon., *Faulx envieulx et megre face*, mm. 1-5.

The image shows a musical score for three staves. The top staff is in treble clef, the middle in alto clef, and the bottom in bass clef. The key signature has one flat (B-flat). The time signature is common time (C). The score consists of five measures. In the second measure, a bracket in the middle staff highlights a diminished fourth interval between two notes. A '5' is written above the first note of this interval, and a '4' is written below the second note. The notes are G4 and C#4.

Somewhat surprisingly, there are nine direct leaps of a diminished fourth in Bossinensis I; examples are also found in Capirola's lute-book and the Medici Codex. The evidence suggests that the diminished fourth played a greater role in the musical language of the Renaissance than has been previously observed in modern scholarship.

Rule 2: Direct chromatic steps are generally prohibited (and discussion of other melodic dissonances)

Direct chromaticism, cross relations and chromatic shifts with intervening notes.

Concerning the use of direct chromatic steps ("permutation"), Berger points out that "Between Marchetto and Zarlino, several theorists mention the possibility of an occasional use of the chromatic half step, always stressing its rarity."⁶⁰ The sources examined yield corresponding results; there are occasional chromatic semitone progressions in the lute intabulations of Bossinensis, Capirola and

⁶⁰Berger, 87.

Spinacino (see Example 3-25).⁶¹ In 3-25a, a permutation, applicable to vocal music, occurs with an intervening rest. The raised note acts as a non-cadential leading tone.⁶² Example 3-25b shows a permutation that would not be applicable to the vocal original.

⁶¹Johannes Vincenet, *Fortuna per te crudele*, in *Odhecaton*, no. 6. Josquin, *Fortuna d'un gran tempo*, in *Odhecaton*, no. 60.

⁶²For a similar example, see Spinacino II: 15, mm. 8-9.

Example 3-25. The use of permutation (direct chromaticism).

a. Vincenet, *Fortuna per te crudele*, mm. 5-7.

b. Josquin, *Fortuna d'un gran tempo*, m. 13, with chromaticism in instrumental figuration by Spinacino.

a)

b)

Although such inflections occur in the lute sources occasionally, it is unlikely that they have any great significance for vocal music. Another possibility for a permutation is in moving from an uninflected note to a Picardy third, or vice versa, as in the possible diminished octave leap of Example 3-22, although this does not seem to have been common in Josquin's period, as the study of Picardy thirds in Chapter 6 shows.

While direct chromaticism is not typical of vocal music of Josquin's era, it is common for an uninflected note and an inflected version of the same note to occur nearby, either as cross-relations (to be discussed in Chapter 6), or within a single voice, separated by only a single note (see Example 3-8a, mm. 3-4, F-E-F#).

The diminished third

For the sake of convenience, some other dissonant melodic intervals will be discussed here. The first is the diminished third. It is conceivable that in certain situations this melodic interval might arise at cadences; Lowinsky named this phenomenon the "chromatic clausula."⁶³ A possible "chromatic clausula" may be found in Example 3-26a, in which the high E would almost certainly be flatted in order to avoid the augmented fifth with the A \flat in the bass.⁶⁴ If C were raised as a leading tone in m. 21, the progression E \flat -D-C \sharp would arise. This sound is so foreign to this style that I believe that most musicians would have avoided raising the C, although the possibility cannot be ruled out. No examples of an explicitly notated "chromatic clausula" from Josquin's time have been found in this study. The passage in Example 3-26b (with accidentals from Capirola) presents an opportunity for a diminished third progression.⁶⁵ The B could have been flatted, since, B was often flatted when it was the highest note of a melodic curve, as it is here, and the G could have been treated as a cadential leading tone; this would have produced the succession B \flat -A-G \sharp -A.⁶⁶ Capirola, however, does not flat the B.⁶⁷ Incidentally, the

⁶³Lowinsky, *Secret Chromatic Art*, 11ff.

⁶⁴Anon., textless composition, in Florence 229, no. 246.

⁶⁵Agricola, *Si dederò*, in Brussels 11239, no. 23 (in Picker, *Chanson Albums*).

⁶⁶On the flattening of B when it appears uppermost in a melodic contour, see the discussion of the *una nota supra la* rule in Chapter 4. Example 4-6 shows such a situation in which the note corresponding to the *cantus durus*-B in *cantus mollis*, namely, E, is lowered to E \flat because it is the highest note in the melodic contour.

⁶⁷Spinacino also avoids the melodic diminished third in a similar situation in I: 13, mm. 33-35.

Example 3-26. Passages illustrating the possibility of a diminished third.

a. Anon., textless composition, mm. 20-22.

b. Agricola, *Si dederò*, mm. 71-73, with Capirola's interpretation.

a)

Musical score for Example 3-26a, measures 20-22. The score is written for three staves (treble, alto, and bass clefs) in a key signature of one flat (B-flat) and a 4/4 time signature. The first staff begins with a tempo marking of 20. A handwritten 'b' is above the first measure. A handwritten '#/4' is above the second measure. A bracket below the first two measures is labeled 'A4'.

b)

Musical score for Example 3-26b, measures 71-73. The score is written for three staves (treble, alto, and bass clefs). The first staff begins with a tempo marking of 71. A handwritten 'C#' is above the first measure. A handwritten 'C#' is above the second measure. The second system of staves begins with a tempo marking of 54. The score shows a melodic line in the upper staves and a bass line in the lower staff.

augmented fourth outline in Example 3-26a and the use of F \sharp for a melodic perfect fourth in Example 3-26b are noteworthy.

The avoidance of the augmented second

The final interval to be discussed here is the augmented second. This simply does not seem to have been part of the melodic language of the time; lute intabulations are very consistent in raising more than one scale degree if needed to avoid an augmented second (see Example 3-8c, m. 8). Often the sixth and seventh scale degrees are raised at cadences, with a “melodic minor” effect.

CHAPTER 4
THE PRACTICAL APPLICATION OF THE RULES GOVERNING
INFLECTIONS (CONTINUED)

Rule 3: *Una nota supra la, semper est canendum fa.*

This rule may be translated as “one note above la is always sung as fa.” Example 4-1 shows the two hexachords in each of three systems—*cantus durus*, *mollis*, and *fictus*—and where the fa above la would occur in each of them.¹

Example 4-1. The position of *una nota supra la* above the main hexachords of *cantus durus*, *cantus mollis*, and *cantus fictus* (with two flats).

The image shows three systems of musical notation, each representing a different type of hexachord. Each system consists of a main hexachord and a 'supra la' hexachord. The notes are written on a five-line staff in a treble clef. The notes are: ut (C), re (D), mi (E), fa (F), sol (G), la (A), and a second 'fa' (B) above the 'la' (A). The supra la hexachord is indicated by a bracket above the notes. The systems are labeled as follows:

- cantus durus**: The main hexachord is labeled 'naturale hexachord'. The supra la hexachord is labeled 'naturale hexachord'.
- cantus mollis**: The main hexachord is labeled 'molle hexachord'. The supra la hexachord is labeled 'molle hexachord'.
- cantus fictus**: The main hexachord is labeled 'Bb(fictus) hexachord'. The supra la hexachord is labeled 'Bb(fictus) hexachord'.

The notes 'ut re mi fa sol la fa la' are written below the notes, with the 'fa' above 'la' in the supra la hexachord.

¹See the explanation of the hexachord system in Chapter 1.

Thus, in *cantus durus*, the notes in first stave of Example 4-1 rise to *fa* one note above the *naturale* hexachord on C, and similarly above the *molle* hexachord on F in *cantus mollis* (second stave of Example 4-1), etc. The note used for *una nota supra la* is always the next flat beyond the signature (i.e., B \flat in *cantus durus*, E \flat in *cantus mollis*, A \flat in *cantus fictus* in two flats, etc.). We may refer to this note as the “flexible note” in the system, since the gamut contains the special feature of B/B \flat .²

Theorists show two different attitudes concerning this rule. Some theorists state that this rule applies when a tritone would result, but does not apply when no tritone threatens. Prosdocimus, Rhau, Agricola, Aaron, and Angelo da Picitono present the use of B \flat above A *la* in connection with avoiding the tritone.³ Other theorists (Cochlaeus, Vanneo, Bourgeois, Faber, Listenius, Coclico, and Finck) give or apply the rule independently of any tritone considerations.⁴

The sources examined show an even more flexible approach towards the *una nota supra la* rule than shown by the theorists. The actual practice, as reflected in the sources, can be summarized in four main categories. First, there are many cases in which the note above *la* is notated as *fa*, with the result that a tritone leap or melodic outline is avoided. Second, the rule is frequently applied in cases where there is no tritone to be concerned about. Third, there are a number of cases in

²See the explanation of the gamut in Chapter 1. The “flexible note” in the system is what Lanfranco calls the “tone of permutation” (see p. 10).

³See Berger, *Musica ficta*, 77ff.

⁴*Ibid.*, 77ff.

which the note above *la* is not lowered by the use of *fa*, and in which there is no tritone. The fourth category is made up of a small number of cases in which the note above *la* is not written as *fa*, and the tritone is given prominence as a result.

The first category is illustrated in Example 4-2, in which E^b -*fa* avoids the tritone that would otherwise be outlined between E and B^b .⁵

Example 4-2. The use of *una nota supra la* in avoiding the augmented fourth. Jannes Martini, *Martinella*, mm. 31-34.

The image shows a musical score for three staves. The top staff is a treble clef with a key signature of one flat (B-flat major or D minor). The middle staff is a vocal line with lyrics: "ut fa mi fa sol la fa la fa sol fa". The bottom staff is a bass clef with a key signature of one flat. The score is numbered "31" at the beginning. A bracket labeled "P4" is placed above the notes "fa la" in the vocal line, indicating a perfect fourth interval between the notes.

The second category, in which *una nota supra la* is applied although there is no tritone to be concerned about, is illustrated in Example 4-3.⁶

⁵Johannes Martini, *Martinella*, in Florence 229, no. 13.

⁶Anon., *Je ne sais plus*, and Anon., textless, in Florence 229, nos. 232 and 91.

Example 4-3. *Una nota supra la* rule applied in situations without tritones.

a. Anon., *Je ne sais plus*, mm. 56-59.

b. Anon., textless, mm. 32-35.

a)

56

#

re la fa la sol fa mi re

5
3

b)

32

35

mi fa sol la fa sol

d5

5-6 5-6 5-6 5-6

Example 4-3a shows a particularly characteristic figure for mode 1. Indeed, the figure of a rising fifth with a neighbor note so typically receives a flat in mode 1 that it does so here despite the fact that it forms a vertical diminished fifth. This is unusual, for in the application of *una nota supra la*, it is far more common for the flatted note to avoid than to form a diminished fifth. In Example 4-3b, the B \flat -fa avoids a vertical diminished fifth between B and F. In cases such as this, musicians might have been primarily concerned with avoiding the diminished fifth, and the resulting *una nota supra la* may have been a coincidental byproduct. Note that the use of B \flat creates a diminished fifth melodic outline.⁷

The third category (in which no tritone is involved and in which the *una nota supra la* rule is not applied) is illustrated in Example 4-4.⁸

⁷This example also shows an ascending 5-6 sequence, a type of voice leading that will be discussed further below.

⁸Agricola, *Je n'ay dueil que de vous*, in Brussels 228, no. 19.

Example 4-4. *Una nota supra la rule* not applied. Agricola, *Je n'ay dueil que de vous*, mm. 38-41. (N. B.—accidentals showing version of pitch content in Florence 178 are included in parentheses.)

Here, B \sharp is explicitly notated in order to prevent singers from singing B \flat , which they very well might have done, given the melodic ascent up to B and immediate descent from there. B \sharp is needed here to form a vertical perfect fifth with E. The B \sharp would most likely be accompanied by G \sharp -F \sharp -G \sharp in the soprano. However, Florence 178 (ca. 1490s) has B \flat here, so that a diminished fifth would appear above the bass.⁹ This reading (with B \flat) would be accompanied by G-F-G in the superius (see the natural signs and B \flat in parentheses in the superius and tenor parts of Example 4-4). It would thus be possible to perform this measure with either an “E major” or “E diminished” sonority.

The fourth category—not applying the *una nota supra la* rule even though a tritone results—appears in Example 3-12a, m. 68. An-

⁹This vertical diminished fifth is acceptable according to Renaissance theorists because both voices resolve in by step to a third. See the discussion of vertical diminished and perfect fifths in Chapter 5.

other example of the fourth category appears in Example 4-5, a passage from Isaac's *Benedictus* (from *Missa Quant j'ay au cor*) which is given as it appears in Florence 229.¹⁰

Example 4-5. Optional use or avoidance of the tritone depending on whether the *una nota supra la* rule is applied. Isaac, *Benedictus* of *Missa Quant j'ay au cor*, mm. 25-28.

Spinacino's intabulation (I: 2) has virtually identical pitch content, and the E \sharp s are left unaltered, forming augmented fourth outlines. On the other hand, London 31922 (probably compiled in the 1510s) uses E \flat in both places to avoid the augmented fourth outlines. Once again we have an illustration of the flexibility to be found among Renaissance sources. We also have here further evidence that the tritone, although little used, was sometimes tolerated and was not simply avoided at all costs. It may be pointed out that most of the examples of tritones come from Spinacino, who perhaps accepted this interval more readily than most of his contemporaries.

We have seen that the lowering of a note in *una nota supra la* position may occur in conjunction with two other rules: first, the

¹⁰Isaac, *Benedictus* of *Missa Quant j'ay au cor*, in Florence 229, no. 10.

avoidance of the melodic tritone, and second, the adjustment of the vertical imperfect fifth or octave to a perfect fifth or octave. Of these two rules, the *una nota supra la* rule is mentioned by theorists only in connection with the first (melodic) rule, not with the second (contrapuntal) rule.¹¹ In cases where the *una nota supra la* rule is carried out in conjunction with the avoidance of the imperfect vertical fifth or octave, it appears that the need to avoid the contrapuntal dissonance is more urgent than the use of *fa supra la*. After all, the *una nota supra la* rule was often, but not always, followed.

The theoretical information and examples given above on the *una nota supra la* rule demonstrate that this rule was treated flexibly both in theory and in practice.¹² The practice found in the sources agrees mostly with the version of the *una nota supra la* rule given by the second group of theorists listed near the beginning of this chapter: the rule was applied whether or not there was a tritone. However, the tritone was avoided in most cases, so that the concern of the first group of theorists (who connected the *una nota supra la* rule with tritone avoidance) was certainly of general validity. The sources also show that the *una nota supra la* rule was not automatically applied in all cases, even when there was a tritone involved.

¹¹This is logical since the *una nota supra la* rule is a melodic one, and is discussed by theorists in chapters on melody and solmization rather than in chapters on counterpoint.

¹²Toft found that the later sixteenth-century lutenists were also inconsistent in their application of the *una nota supra la* rule: "as with most of the other practices discussed in this dissertation, the instrumentalists treated certain passages in various ways. In fact, the 'fa supra la' convention was not applied by all the performers every time the opportunity arose ..." He goes on to cite an example in which four out of six lute arrangers chose not to apply the rule. See "Pitch Content and Modal Procedure," 150.

Theorists often single out the application of this rule in relation to compositions in modes 1 and 2.¹³ A consistent use of B \flat would transform the characteristic Dorian natural sixth scale-degree into the b6 scale-degree of the Aeolian mode, and eliminate the characteristic Dorian character. The sources show, however, that the Dorian sixth scale-degree (B \natural , a major sixth above the final) was extensively used in Josquin's period, and that the Dorian mode on D was not merely a transposed Aeolian mode on D in practice owing to a uniform use of B \flat . To be sure, the use of B \flat is characteristic of the Dorian mode, but so is the use of B \natural . The fact that the *una nota supra la* rule is used inconsistently in the sources demonstrates the use of both B \natural and B \flat that is characteristic in modes 1 and 2.

In the examples for this section (and in the *una nota supra la* table in Appendix B), accidentals were picked in which it is clear that they could represent fa above la, as the solmization syllables given in the examples show. In all of these cases, the melody was seen to rise to la above the appropriate hexachord (i.e., the hexachord on C in *cantus durus*, F in *cantus mollis*, etc., as in Example 4-1). We have also seen that the *una nota supra la* inflections occur on what I have called the "flexible note" in the system. Now the "flexible note" need not have the hexachord arrangement seen in the previous examples of *una nota*

¹³Berger mentions this in *Musica ficta*, p. 78, and cites a passage that specifically mentions the use of the *una nota supra la* rule in modes 1 and 2 from Georg Rhau, *Enchiridion utriusque musicae practicae* (Wittenberg, 1538) sig. Ciiijv.

supra la in order to be inflected, as in Example 4-6, in which Eb is preceded by re (in the C hexachord) rather than la (in the F hexachord).¹⁴

Example 4-6. A situation analogous to the application of *una nota supra la*. Hayne or Busnois, *J'ay bien chosir à mon valoir*, mm. 78-80.

C hexachord: sol re

This example has two factors in common with the *una nota supra la* rule: one, it occurs on the “flexible note,” and two, the “flexible note” is the highest note in its melodic outline. It is possible that singers sang “la fa la” for this example (as in the *una nota supra la* formula), but this is not a clear case of *una nota supra la*. We may thus see the *una nota supra la* accidentals as being part of a larger general practice of inflecting the “flexible note” in the system. In particular, whenever the “flexible note” appears as an upper neighbor, it is often,

¹⁴Hayne or Busnois, *J'ay bien chosir à mon valoir*, in Florence 229, no. 109. In order for D in the bass to be solmized as la, it would have to be approached from below (so that notes in the F hexachord would be used—cf. the hexachord arrangement in *cantus mollis* shown in Example 4-1), or there would have to be a mutation to the F hexachord right on the note D, which seems unlikely.

although not always, flatted, whether or not it clearly belongs in the *una nota supra la* class.

Rule 4: The middle note in the neighbor-note figures D-C-D, G-F-G and A-G-A is raised, producing D-C(♯)-D, G-F(♯)-G, and A-G(♯)-A.

In his *Practica musicae*, Gafurius writes:

Very often many sing *sol* as a semitone below *la*, especially in the progression *la sol la* beginning and ending on *A-la-mi-re*, as in *Salve Regina*. The same happens with *sol* and *fa* in the progression *sol fa sol*, beginning and ending on *G-sol-re-ut*, which Ambrosians are frequently accustomed to sing.¹⁵

Similarly, there is the following passage from the anonymous *Quod sunt concordationes* (probably third quarter 15th c.):

Whenever there is *la-sol-la* in simple song, this *sol* should be sharpened and sung as *fa-mi-fa* ... Whenever there is *sol-fa-sol* in simple song, this *fa* should be sharpened and sung as *fa-mi-fa* ... Whenever there is *re-ut-re* in simple song, this *ut* should be sharpened and sung as *fa-mi-fa* ... Note that in counterpoint no other notes are sharpened but these three, namely *sol*, *fa* and *ut*.¹⁶

This rule produces the following figures in *cantus durus*: A-G(♯)-A, G-F(♯)-G, and D-C(♯)-D.¹⁷ In this melodic figure, the middle note is raised without mutation into another hexachord. This practice

¹⁵*Practica musicae*, trans. Miller, 146, cited in Berger, 144.

¹⁶Anon., *Quod sunt concordationes* in Coussemaeker, *Scriptorum de musica medii aevi nova series a gerbertina altera* (Paris: A. Durand, 1869), vol. 3, 73, trans. in Berger, 144.

¹⁷In *cantus mollis*, the corresponding pitches would be D-C(♯)-D, C-B-(natural)-C, and G-F(♯)-G.

continued to the end of the Renaissance, as is shown in an example from Morley's treatise of 1597, which uses the solmization syllables sol-fa-sol for the notes G-F \sharp -G.¹⁸ In a case such as this, singers undoubtedly found that raising a note without mutation was more convenient than following a procedure of mutating to a *ficta* hexachord containing a raised note and then mutating back to the previous three-hexachord system in use.

It should be emphasized that this rule is given without mention of cadences, and concerns lower neighbors which have the effect of non-cadential leading tones; these are not to be confused with cadential leading tones, which typically occur within similar lower neighbor note figures (G-F \sharp)-G, etc.).¹⁹ Furthermore, Gafurius mentions the progression "la-sol-la" beginning and ending on A in *Salve Regina*; this certainly refers to a non-cadential melodic figure, namely the first three notes of the chant, A-G-A (which could be sung A-G \sharp)-A).²⁰ Berger misleadingly places his discussion of this rule within the context of a discussion of cadences, whereas Toft correctly separates his discussion of this rule from that of cadential leading tones.²¹

¹⁸Morley's example given in Example 2-5.

¹⁹The main difference between the cadential and non-cadential leading tones is that the former occurs at a structural articulation involving more than one voice whereas the latter occurs as a primarily linear phenomenon within a melodic phrase. Furthermore, the lower neighbor note of a cadential leading tone is normally preceded by a syncopated note; non-cadential leading tones are sometimes preceded by a syncopated note, but are frequently not.

²⁰See *Salve Regina* in the *Liber Usualis* (Tournai: Desclée, 1961), 276.

²¹See Berger, 144, and Toft, "Pitch Content and Modal Procedure," 111ff., on cadential leading tones, and see pp. 132ff. for Toft's separate discussion of the rule under discussion, which he categorizes under the heading of "non-cadential leading tones."

Both theorists quoted above mention the raising of certain lower neighbors in plainchant, while the anonymous author of *Quod sunt concordationes* also mentions the raising of the same notes in polyphony.²² The question arises, however, as to what extent the rule was followed in practice. Gafurius states that it is followed “very often,” while the anonymous author states that the rule is applied whenever the appropriate melodic figure is found. For an answer on the actual practical application of this rule, we need to turn to lute sources, since sharps are used too rarely in mensural sources to give sufficient indication. In his study of sixteenth century lute sources, Toft finds that “the intabulations tend to confirm statements made by theorists that progressions solmized ‘la sol la’, ‘sol fa sol’ and ‘re ut re’ were regularly sung with a semitone.”²³ The lute sources for the present study show a practice corresponding to that observed by Toft; at times they raise the lower neighbor, at times they did not.

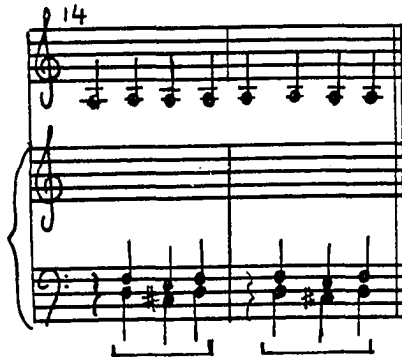
As the table in Appendix C shows, Bossinensis follows the rule more consistently than either Capirola or Spinacino, using the raised lower neighbor seventy times, while leaving the lower neighbor un-

²²Other melodic figures which were sung with unnotated sharps (such as A-C[#]-D ascending) were occasionally mentioned by theorists; see Bruce Ray Carvell, “A Practical Guide to “Musica Ficta”: Based on an Analysis of Sharps Found in the Music Prints of Ottaviano Petrucci (1491-1519)” (Ph.D. diss., Washington University, 1982), 29ff. These melodic figures were not discussed by most theorists and were not seen to be of significance in the present study.

²³Toft, “Pitch Content and Modal Procedure,” 132.

raised thirty-five times.²⁴ A passage containing a typical application of the rule is given in Example 4-7.²⁵

Example 4-7. Typical raised lower neighbors (or non-cadential leading tones). Tromboncino, *Si è debile il filo*, mm. 14-15.



The unpredictability in the application of this rule is vividly illustrated by Example 4-8, which shows two nearly identical situations within a single composition, one with a raised lower neighbor, one without.²⁶

²⁴As explained in Appendix C, this count of unraised neighbor notes does not include the cases in which the neighbor was left unaltered in order to preserve a perfect fifth or octave with another voice.

²⁵Tromboncino, *Si è debile il filo*, in Bossinensis I: 5.

²⁶Anon., *Haimè per che m'ai privo*, in Bossinensis I: 9(7).

Example 4-8. Inconsistent application of the lower-neighbor semitone rule in near-identical passages within a single composition. Anon., *Haimè per che m'ai privo*, mm. 1-2 and mm. 4-5, as interpreted by Bossinensis.

Even an imitative passage shows an inconsistent application of the rule (see Example 4-9).²⁷ There is no apparent rationale for these inconsistencies other than the intabulator's taste.²⁸

²⁷Nicholas Craen, *Tota pulchra es* in Petrucci, *Motetti C*, 1504, fol. 6.

²⁸Toft writes that "... the consistent application of this semitone principle was not always the prime concern. [The lutenist] Miguel de Fuenllana, for instance, treats certain figures differently on each repetition." "Pitch Content and Modal Procedure," 134. The flexibility in the application of accidentals by Renaissance lutenists has been extensively discussed in Toft, *ibid.*, and Brown, "Accidentals and Ornamentation in Intabulations."

Example 4-9. Inconsistent application of lower-neighbor semitone rule in an imitative passage. Nicholas Craen, *Tota pulchra es*, mm. 32-34, with Capirola's interpretation.

In one case we can be certain about the result: when whole-step lower neighbors form a vertical perfect interval with another voice, they are left uninflected (see Example 4-10).²⁹ This type of whole-step lower neighbor occurs fairly often in Bossinensis.

²⁹Francesco Veroter, *Nasce l'aspro mio tormento*, in Bossinensis I: 24(25).

Example 4-10. Whole-step lower neighbor used to preserve vertical perfect octave in Francesco Veroter, *Nasce l'aspro mio tormento*, mm. 7-9.

The image shows a musical score for three staves. The top staff is a single treble clef staff. The middle and bottom staves are a grand staff with a treble clef on top and a bass clef on the bottom. The music is in a key with one sharp (F#) and a 3/4 time signature. The score is numbered '7' at the beginning. The melody in the top staff consists of eighth and quarter notes. The accompaniment in the grand staff features chords and moving lines in both hands, with a specific interval highlighted by a bracket in the right hand of the grand staff.

Whereas Bossinensis favors the semitone lower neighbor, Capirola and Spinacino use it less frequently.³⁰ Capirola raises the lower neighbor thirteen times and leaves it unraised twenty-three times, while Spinacino raises it fifteen times and leaves it unraised sixty-one times (see Appendix C).

When the lower neighbor is preceded by a syncopation or suspension, a melodic figure similar to the typical upper-voice cadence formula arises. Indeed, cadential and non-cadential melodic neighbor-note figures often resemble one another, and it is sometimes difficult to determine whether or not a particular passage is cadential. As Berger writes, "while some progressions are certainly cadences and others certainly not, there is a grey area in between."³¹ In such cases,

³⁰It may be that the *frottole* repertoire of Bossinensis encourages the use of sharps more than the predominantly motet, mass and chanson repertoire of Capirola and Spinacino; the *frottole* prints of Petrucci have a relatively high number of sharps in them.

³¹Berger, 138.

Berger concludes, it is up to the composer, editor, or performer to determine whether they will be inflected.³² Such ambiguous melodic figures often attract the same treatment as actual cadences, that is, with the raising of the lower neighbor. In Example 4-11, the voice-leading of mm. 25-26 resembles that of an imperfected cadence on A (the F in the bass imperfecting the cadence), but it occurs within a phrase heading to the 6-8 Phrygian cadence on E in m. 28.³³

Example 4-11. Cadence-like melodic figure with raised lower neighbor. Ockeghem, *Malor me bat*, in *Odhecaton*, mm. 25-28, with Spinacino's interpretation.

The image displays a musical score for three systems. The first system, labeled '25', shows a vocal line with a melodic figure that includes a raised lower neighbor (marked with a sharp sign #) and a piano accompaniment. The second system, labeled '26', continues the vocal line and piano accompaniment. The third system, labeled '27-28', shows the vocal line and piano accompaniment. The piano accompaniment in the third system includes a marking '5 II:13'. The score is written in a style typical of early 20th-century musicology, with a treble clef for the vocal line and a bass clef for the piano accompaniment.

³²According to Berger, the relevant note is inflected if the progression is cadential, and uninflected if it is non-cadential. However, since there is a class of non-cadential leading tones, the choice of whether or not to inflect a note does not entirely depend on a cadential versus non-cadential interpretation of a passage.

³³For an explanation of imperfected cadences, see the discussion of Rule 5 given below in this chapter. Ockeghem, *Malor me bat*, in *Odhecaton*, no. 63.

Example 4-11 is only one of many instances of this kind, for indeed, a high proportion of the raised lower neighbors found in the lute sources for this study occur in melodic contexts that Renaissance musicians would have readily associated with cadential raised notes (i.e., those in which the lower neighbor is preceded by a suspension). Of the seventy examples of raised neighbor-note figures in Bossinensis I, twenty-two are preceded by suspensions; of the thirteen examples of raised neighbor-note figures in Capirola, six are preceded by suspensions; of the fifteen examples in Spinacino, ten are preceded by suspensions. There is no guarantee, however, that the performer would automatically raise a lower neighbor preceded by a suspension or syncopated note. Of the thirty-five unraised lower neighbors in Bossinensis I listed in Appendix C, one is preceded by a suspension, and of the sixty-one examples in Spinacino, eight are preceded by suspensions or syncopated notes.³⁴ The tendency, then, is for the intabulators to raise the non-cadential lower neighbor when it is preceded by a suspension or syncopation, although there are instances when they leave it unraised.

To summarize our results concerning non-cadential raised lower neighbors, we may state that the rule is not automatically applied, and that two of our intabulators (Capirola and Spinacino) use the raised lower neighbor less frequently than the unraised lower neighbor, while the remaining one (Bossinensis) prefers a “sharp-oriented” treatment of the lower neighbor, raising it more often than not. The modern interpreter may thus choose between two approaches; the

³⁴Bossinensis I: 54, m. 20 and Spinacino I: 3, m. 54; II: 2, m. 5, m. 37; II: 11, m. 5, m. 9, m. 15; II: 16, m. 31.

repertoire of the intabulators suggests that the first approach be applied to motets, masses and chansons and that the second ("sharp-oriented") approach be applied to *frottole*. The decision as to whether or not to raise a non-cadential lower neighbor is regulated not by predictable standards, but by musical taste. The lower neighbor is more likely to be raised when preceded by a suspension or syncopation, and is not raised when it forms a vertical perfect interval with another voice.

Rule 5: An imperfect consonance progressing to a perfect consonance should be as close to the perfect consonance as possible.

This is an old rule, one which goes back to the Middle Ages and which was maintained by theorists throughout the Renaissance. By Josquin's period, however, the rule was only generally used in regard to the sixth-to-octave (or third-to-unison) progression at cadences. We shall begin our examination of this rule by considering some theoretical writings on it, and we shall then see what information the practical sources for this study give concerning the actual application of this rule in Josquin's period.

In his *Lucidarium in arte musicae planae* (1317-18), Marchettus of Padua puts the rule in the following way:

When two voices form a dissonance [that is, an imperfect consonance], they must move in contrary motion toward the consonance they seek, and the dissonance must lie as close as possible to the consonance they approach.³⁵

³⁵Trans. in Marchetto da Padova, *Lucidarium in arte musicae planae* in Jan W. Herlinger, *The Lucidarium of Marchetto of Padua. A Critical Edition, Translation and Commentary*, Ph.D. diss., Univ. of Chicago, 1978, 335ff.; cited in Berger, 122. See also the more recent version of Herlinger's dissertation published under the same title

According to Marchettus, any imperfect consonance should proceed in contrary motion to the nearest perfect interval. This rule is stated in more absolute terms than is musically viable. It gives a general and widely used principle, one in which a unison is approached by a minor third, a perfect fifth by a major third, and a perfect octave by a major sixth or minor tenth.³⁶ However, it would be overly restrictive to adhere rigidly to this rule, both for composers and performers. The problem of excessive application of this rule was summarized by Ghiselin Danckerts, who, writing in the 1550s, says:

Those people want to use too inconsiderately almost always these raisings and lowerings of notes beyond their proper and natural intonations in their compositions (as I have said), binding themselves with certain empty obligations and rules of theirs, prescribing that one should go to a perfect consonance only from the closest imperfect one. This might be believed, if they used it rarely and accidentally. But should this rule be observed ordinarily throughout and always in every place, as the said novel composers do, it would excessively damage the said modes.³⁷

Danckerts expresses the desire to avoid using the rule at all times, but to apply it only occasionally. Indeed, this rule was not a universal one from the beginning. Some medieval theorists give what Berger calls a “relaxed” version of the rule in which “imperfect inter-

(Chicago: Chicago University Press, 1985), 197-223, for a detailed discussion of the closest approach rule.

³⁶Thus, according to this rule, a major third moving to a unison would be inflected to produce a minor third to unison progression, a minor third moving to a perfect fifth would be inflected to produce a major third to perfect fifth progression, and a minor sixth moving to an octave would be inflected to produce a major sixth to octave progression.

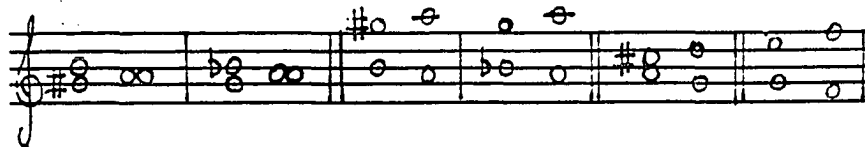
³⁷Ghiselin Danckerts, *Trattato sopra una differentia musicale*, Ms. Rome, Biblioteca Vallicelliana, R.56, fol. 408r (1550s), trans. in Berger, 128.

vals move to perfect ones with one voice moving a semitone, but neither the contrary motion nor the requirement that the other voice should move a whole tone is preserved."³⁸ Strict versions, corresponding to Marchettus's rule, and "relaxed versions," corresponding to Berger's description, are given in Example 4-12.³⁹

Example 4-12. Imperfect intervals progressing to perfect intervals.

- a. Perfect consonances approached by nearest imperfect consonances.
- b. "Relaxed" versions, with only one voice moving by step.

a)



b)



Example 4-12a illustrates the strict version, and shows the use of inflections to bring imperfect consonances as close as possible to the following perfect interval, as well as one example requiring no adjustment; all examples use contrary motion. Example 4-12b illustrates the

³⁸Berger, 123.

³⁹The examples in Example 4-12b are taken from Petrus frater dictus Palma oiosa, *Compendium de discantu mensurabili* (France, 1336), in Johannes Wolf, "Ein Beitrag zur Diskantlehre des 14. Jahrhunderts," *Sammelbände der Internationalen Musikgesellschaft*, XV (1913-14), 513f., given in Berger, 123.

“relaxed” version, and shows the approach to perfect consonance by oblique or contrary motion, with one voice proceeding by semitone.

In addition to the relaxed version of the rule, and Danckert’s complaint against excessive alterations of imperfect intervals proceeding to perfect intervals, there are statements by theorists that the octave may be approached by a minor sixth.⁴⁰ For example, Cochlaeus writes that:

When tenor and discant are a major sixth apart, both move in contrary motion to an octave which is next to the sixth. But a minor sixth more frequently moves in oblique motion to a fifth, so that one voice part of the song is stationary ... The interval can also move in contrary motion to an octave.⁴¹

Zarlino, in his *Le Istitutione harmoniche*, forbids the minor sixth to octave progression, but allows it as an exception when the minor sixth appears on the weak beat in a short (semiminim) note value.⁴²

Given that the rule was not to be applied in all progressions from imperfect to perfect consonance, the question arises, to what extent was the rule applied, and in what contexts? Some indication is given in the following quotation from Gafurius’s *Practica musicae*, which associates the strict form of the rule (as found in Marchettus) with cadences:

⁴⁰For further theoretical testimony on this subject, including a statement attributed to Willaert that the rule is arbitrary and not binding, see Berger, 128.

⁴¹Cochlaeus, *Tetrachordum musices*, trans. Miller, 79.

⁴²Zarlino, *Le Istitutioni harmoniche*, bk. 3, chs. 38 and 57, trans. in Marco and Palisca, *The Art of Counterpoint*, 82 and 172, cited in Berger, 127-28.

The seventh rule [of counterpoint] states that when we approach a perfect consonance from an imperfect consonance, as at a final cadence or any other cadence, it is necessary to progress to the perfect interval by contrary motion of the closest imperfect consonance.⁴³

The most complete record of how this rule was applied in performance, however, comes not from the theorists, but from practical sources, and among these, the lute sources in particular (since mensural sources scarcely indicate cadential sharps at all). Lute intabulations and arrangements strongly confirm that in Josquin's period, and throughout the sixteenth century, the rule was consistently applied only at cadences, and rarely applied in other contexts. Typical interval progressions for cadences are shown in Example 4-13.

Example 4-13. Cadential interval progressions.

- a. Contrary motion from major sixth to octave.
- b. Contrary motion from minor third to unison.

a)



b)



Example 4-13 consists of two musical staves, labeled a) and b). Both staves are in G major (one sharp) and use a lute-style notation with a treble clef and a single bass line. Staff a) shows a progression of four measures: the first measure has a G4 and a D5 (major sixth); the second measure has a G4 and an E5 (major sixth); the third measure has a G4 and a G5 (octave); the fourth measure has a G4 and a G5 (octave). Staff b) shows a progression of four measures: the first measure has a G4 and a B4 (minor third); the second measure has a G4 and a B4 (minor third); the third measure has a G4 and a B4 (minor third); the fourth measure has a G4 and a G4 (unison).

⁴³Gafurius, *Practica musicae*, trans. Miller, 128, cited in Berger, 127.

Example 4-13 continued.

c. Typical cadence figures with suspensions and ornaments in soprano.

c)



The primary cadential progression in the music of Josquin's period is that of a major sixth expanding outward by step to a perfect octave (see Example 4-13a). This progression typically occurs at main cadences between the superius and tenor. Less common, but still frequently used, is the inversion, namely, a minor third to unison (Example 4-13b). The cadential progressions are typically, though not always, accompanied by a suspension, with or without additional ornamentation (see Example 4-13c). The cadential progression features a whole step in one voice moving against a half step in another; the progression could occur with either step in the upper voice. The possibilities for Josquin's period in *cantus durus* are shown in Example 4-13a; in *cantus durus*, the inflections used in the intabulation are C \sharp for cadences on D, F \sharp for cadences on G, G \sharp or B \flat for cadences on A.⁴⁴ Cadences in which the semitone step is in the lower voice (i.e., cadences in *cantus durus* on A approached by B \flat or on E approached by F) will be referred to here as "Phrygian cadences." The sharp inflections have a leading tone quality, and will be referred to as cadential leading tones.

A comparison of cadences in mensural sources with cadences in lute sources reveals a striking contrast—cadential sharps are almost

⁴⁴In *cantus mollis*, the corresponding raised notes are G \sharp , B \flat , and C \sharp for cadences on A, C, and D respectively; the corresponding lowered note is E \flat for cadences on D. The same relationships are further transposed in systems with more flats.

never indicated in the former, while they are used very frequently in the latter. This contrast is illustrated in the arrangements by Bossinensis, in which cadential melodic figures are normally left uninflected in the voice part while the same figures receive inflections in the lute parts. Bossinensis is not indicating two different performance practices, but is merely following the practice of his day by leaving cadential sharps to the singer, while the use of tablature notation necessitates the indication of raised steps in the lute part. Clearly, singers were expected to recognize the standard melodic cadential formulae and add appropriate inflections. This is an interesting point, for while the rule governing raised tones is given in terms of a contrapuntal progression of sixth to octave, the singer was not working from a score in which he could see the contrapuntal progression, but had only his own part. Thus he necessarily had to recognize where to put leading tones on the basis of melodic figures (such as those seen in the upper voice of Example 4-13c). This was not difficult to do, and thus this performance convention had a long and widespread use. The reader may easily learn typical melodic cadence figures which give rise to inflections by studying the examples in this section.

In his study of inflections in sixteenth-century lute intabulations of Josquin's motets, most of which date from after Josquin's death (1530s-1570s), Toft tabulates the lutenists' use of accidentals at cadences

and comes up with interesting results. Cadential inflections on the Dorian and Mixolydian modal finals are treated as follows:⁴⁵

Mode	Raised LT for cadence on final	No LT
Dorian on D	60%	40%
Dorian on G (<i>cantus mollis</i>)	89%	11%
Mixolydian on G	100%	—

The cadential leading tone is customarily used (where applicable), but, particularly in Dorian on D, a surprisingly high percentage of cadences are left uninflected. Toft's findings lead him to conclude that "Clearly, many theorists overstate their case when they maintain that all perfect intervals must be approached by the closest perfect interval."⁴⁶ Once again, the Renaissance musicians' flexible approach to applying theoretical rules is demonstrated. We shall further explore the issue of inflected versus uninflected cadential progressions below.

In the lute sources for the present study, the raised cadential leading tones are regularly used where applicable. There is only one example in Bossinensis I where a raised leading tone was not used, and

⁴⁵Toft, "Pitch Content and Modal Procedure," 112-13. Cadences on Phrygian and Lydian finals have been left out here because the octaves on their modal finals are preceded by a major sixth naturally, and do not need accidentals. Toft does not distinguish between authentic and plagal modes in his chart. The term "raised leading tone" refers to leading tones formed by the use of inflections to raise a pitch, in contrast to those leading tones that occur naturally within the diatonic gamut (e.g., as with E to F).

⁴⁶Toft, 113.

three examples in Capirola.⁴⁷ Spinacino usually employs cadential sharps, but is less consistent than the other two lutenists, leaving seventeen cadences with potential leading tones uninflected.⁴⁸ The evidence of the lutenists confirms the modern editorial policy, which normally stipulates raised cadential leading tones wherever applicable, but the intabulations also justify the use of occasional uninflected cadences. (Indeed, this can create a beautiful effect.)

Some typical cadences are given in Example 4-14.⁴⁹ Example 4-14a shows the leading tone inflection being prepared by appearing twice in the measure preceding the cadence. Examples 4-14b and 4-14c show other typical cadential figures, again with the leading tone being prepared in advance. When the note a whole step below a cadence tone appears more than once in close proximity to a cadence, it is typical for Bossinensis and Capirola to raise each appearance of that note, as in the preceding examples. This avoids a rapid chromatic shift between an unraised and raised note.

Spinacino also prepares leading tones in advance of the cadence, but he does this less consistently, frequently waiting for the actual cadential leading tone (i.e., the penultimate note of the cadence) before introducing a raised note.

⁴⁷Bossinensis I: 20(19), m. 12. Capirola, p. 58, s. 4, m. 8; p. 63, s. 1, m. 4 and s. 4, m. 5.

⁴⁸Spinacino I: 5, m. 12, m. 20, m. 32, m. 41; I: 13, m. 16, m. 31; II: 3, m. 5, m. 9, m. 60; II: 11, m. 25; II: 14, m. 37, m. 39; II: 17, m. 26; II: 19, m. 24; II: 27, m. 31, m. 52 and m. 54.

⁴⁹Tromboncino, *Affliti spirti mei*, in Bossinensis I: 1. Tromboncino, *S'il dissi mai ch'io venga*, in Bossinensis I: 7(8).

Example 4-14. Typical cadence-figures with leading tones added in advance of the cadential 6-8 or 3-1 progression.

- Tromboncino, *Afflitti spirti mei*, mm. 10-13.
- Tromboncino, *S'il dissì mei ch'io vengà*, mm. 23-25.
- Tromboncino, *S'il dissì mei ch'io vengà*, mm. 1-5.

a)

b)

c)

Example 4-15 compares Capirola's interpretation of a passage from the *Christe* of Obrecht's *Missa Si dedero* with Spinacino's.⁵⁰ Capirola characteristically raises both G's in m. 39, while Spinacino, in the manner mentioned above, waits for the penultimate note before introducing G#, and thus creates a rather noticeable chromatic contrast between G and G#. On the whole, sixteenth-century lute sources show Capirola's policy to be the norm; the lute intabulations of Spinacino are (so far as I know) the only ones currently extant that frequently juxtapose the unraised and raised subtone in cadential figures (as in Example 4-15).

Example 4-15. Treatment of cadential leading tone in Obrecht, *Christe* from *Missa Si dedero*, mm. 38-40, as interpreted by Spinacino and Capirola.

The image displays three staves of musical notation for measures 38-40. The top staff, labeled '38', shows a vocal or instrumental line with a sharp sign above the second measure. The middle staff, labeled '5 II: 3', shows a lute intabulation with a sharp sign above the second measure. The bottom staff, labeled 'C: P60, 53, m1', shows another lute intabulation with a sharp sign above the second measure. The music is in G major and 3/4 time.

⁵⁰Obrecht, *Missa Si dedero* in *Werken, Missen*, no. 9. Examples 4-17, 4-18b, 4-19, and 4-22 are also taken from this source.

A cadence containing a chromatic contrast similar to that found in Spinacino occurs in Bossinensis's arrangement of Marco Cara's *Chi l'harebbe mai creduto* (see Example 4-16a).⁵¹ The chromatic contrast, however, does not arise simply as a matter of taste, but rather because the first C needs to remain uninflected in order to form a perfect fifth with the bass. Thus, the chromatic contrast occurs out of contrapuntal necessity; had the bass had an A on the first beat, it is reasonable to expect that Bossinensis would have raised both Cs in the measure. The progression in Example 4-16a bears some resemblance to one found in Aaron's *Lucidario in Musica* (1545), shown in Example 4-16b.⁵² Aaron says that Ramos disapproved of the progression because of the chromatic semitone. Chromatic progressions such as this are found in medieval treatises (such as the *Lucidarium* of Marchettus); while they are at home in the relatively dissonant and more chromatic music of the fourteenth and early fifteenth centuries, they have little place in the music of Josquin's era. In the Bossinensis example, the chromaticism is softened by the intervening tone.

⁵¹Cara, *Chi l'harebbe mai creduto*, in Bossinensis I: 21. For a similar example, see Bossinensis I: 23, mm. 8-9.

⁵²Aaron *Lucidario in Musica* (Venice, 1545), II, 9, cited in Peter Bergquist, "The Theoretical Writings of Pietro Aaron" (Ph.D. diss., Columbia University, 1964), 424.

Example 4-16. Cadences involving an unraised subtone that forms a vertical perfect fifth and leading tone in close succession.

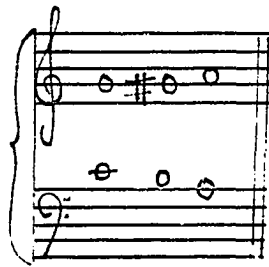
a. *Cara, Chi l'harebbe mai creduto*, mm. 7-8.

b. Interval progression from Aaron's *Lucidario in Musica*.

a)



b)



As we have seen, the raised leading tone was not always used at cadences; this is illustrated in Example 4-17. Interestingly, both Capirola and Spinacino choose not to raise the penultimate cadence note.⁵³ The way that Capirola first raises C (as if a normal cadential subsemitone were to follow) and then uses C-natural is not typical of Renaissance practice as seen in the lute sources.

⁵³As Toft has observed, the reasons for omitting the *subsemitonium* at some cadences remains elusive. "Pitch Content and Modal Procedure," 117.

Example 4-17. Cadence without leading tone: Obrecht, *Christe*
from *Missa Si dederò*, mm. 6-9, as interpreted by Spinacino and
Capirola.

The image displays three systems of musical notation. The first system consists of three staves: a vocal line (soprano clef), a treble clef staff, and a bass clef staff. The second system is a piano accompaniment for the first system, with a treble clef staff and a bass clef staff. The third system is a piano accompaniment for the second system, also with a treble clef staff and a bass clef staff. The notation includes various musical symbols such as notes, rests, and accidentals. Handwritten annotations are present: '6' above the first system, 'S II:3' above the second system, and 'C: P58, S4, M3' above the third system. Fingering numbers (7, 8) and dynamic markings (m6) are also visible.

Concerning the extent to which penultimate cadence notes are expected to be a half step below the cadence tone, Lowinsky wrote:

The rule of the *subsemitonium modi* applies to all cadential formulas, whether they occur on the finalis of the mode or on any other tone, whether the ending comes in a perfect or a deceptive cadence, and whether it coincides with the completion of a sentence or not.⁵⁴

Lowinsky cites no theoretical or musical evidence for his statement, but the lute intabulations confirm his claim. The raised cadential leading tone is not only used at perfect cadences, but also at imperfect and interrupted cadences.⁵⁵ In Josquin's period, the most common way of imperfecting a cadence was to place a third or fifth below the cadence note; these two possibilities are illustrated in Examples 4-18a and 4-18b respectively.⁵⁶

⁵⁴Lowinsky, "Foreword," H. Colin Slim, ed., *Musica Nova*, Monuments of Renaissance Music, vol. 1 (Chicago: University of Chicago, 1964), ix.

⁵⁵The terminology is taken from Putnam Aldrich, "An Approach to the Analysis of Renaissance Music," *Music Review*, vol. 30 (1969), no. 1, 8-9. Aldrich calls the weakening of a cadence by placing a third voice as an upper sixth or lower third to the cadence tone an imperfect cadence. The weakening of a cadence by delaying one of the notes of the cadential octave with a rest is called an interrupted cadence. Thomas Morley writes that "passing closes" or "false closes" are "devised to shun an end and go on with some other purpose ..."; see *A Plain and Easy Introduction*, 223. In his *Le Istitutione harmoniche*, bk. 3, ch. 54, Zarlino writes that "A cadence is evaded ... when the voices give the impression of leading to a perfect cadence, and turns instead in a different direction." Trans. by Marco and Palisca in *The Art of Counterpoint*, 151, and cited in Berger, 134. The imperfect cadence is the precursor to the tonal deceptive cadence.

⁵⁶Josquin, *Fortuna d'un gran tempo*, in *Odhecaton*, no. 74.

Example 4-18. Leading tones used at imperfected cadences.

a. Imperfected cadence at the third below in Josquin, *Fortuna d'un gran tempo*, mm. 21-23.

b. Imperfected cadence at the fifth below in Obrecht, *Christe of Missa Si dederò*, mm. 34-36.

a)

21 5#

6—8

S:I:5

(6—)6—8

b)

34 C:# C:#

C:P60,S2,M5

6—8

An example of a cadence that is both imperfected at the third below and interrupted is shown in Example 4-19, in which both Capirola and Spinacino apply the raised cadential leading tone.

Example 4-19. Capirola and Spinacino use a leading tone for an imperfected and interrupted cadence in Obrecht, *Christe* of *Missa Si dederò*, mm. 23-26.

The image displays three systems of musical notation for a cadence. Each system includes a vocal line and a piano accompaniment. The first system is marked with the number '23' and a key signature of one sharp (F#). The second system is marked with 'S II:3' and a key signature of one sharp (F#). The third system is marked with 'C: P60, 52, m5' and a key signature of one sharp (F#). The piano accompaniment features figured bass notation (6-8, 6-8, 7, 7) and various musical notations such as slurs, ties, and accidentals.

It is probable that the lutenists' treatment of imperfected and interrupted cadences as though they were regular cadences in regard to leading tones reflects the vocal practice of their time. From the singer's point of view, the melodic figures that customarily invoke leading tones are the same. In the discussion of lower neighbors (Rule 4), we have already seen that cadence-like melodic figures may invoke raised notes even in non-cadential situations.

Cadential lower-neighbor figures were so frequently raised that Spinacino seems to apply the leading tone out of habit in Example 4-20 despite the resulting augmented octave at a cadence imperfected at the fifth below.⁵⁷

Example 4-20. Augmented octave caused by cadential leading tone in Anon., *Mo mari ma defame*, mm. 12-14.

The image displays a musical score for three staves. The top staff is a vocal line starting at measure 12, marked with a fermata. The middle staff is a lute line, and the bottom staff is a keyboard line. The keyboard line includes a measure with a sharp sign and the annotation 'Aug8', indicating an augmented octave. The score is labeled '5II:18' at the beginning of the keyboard part.

⁵⁷Anon., *Mo mari ma defame*, in Schmidt, "The First Printed Lute Books," vol. 1, 36ff.

Example 4-20 illustrates that clashes could arise from the automatic application of a rule without regard for what was happening in the other voices. It is unlikely, however, that most sixteenth-century musicians would have followed Spinacino in this case. In general, the doubling of a whole step below the cadence tone probably tended to preclude the raising of that tone, as in mm. 37-38 of Josquin's *Comment peult avoir joye*, also intabulated by Spinacino (see Example 4-21).⁵⁸

Example 4-21 shows the only example of this kind found in the lute sources for this study. With regard to cadences with doubled subtone, Toft has found that,

One circumstance does exist, however, in which the intabulators regularly excluded the subsemitone. Cadential part-writing containing doubled subtone prevented most of the instrumentalists from creating *sostenido* cadences [i.e., cadences with raised notes]. Nevertheless, if the performer wished to include a subsemitone at one of these cadences, he could do one of two things—omit the restrictive voice or produce a *punto intenso contra remisso* [raised note against unraised note] ... Thus, the inclusion of the subsemitone at cadences where its application was precluded appears to have been governed by the level of dissonance that particular musicians desired in their arrangements.⁵⁹

⁵⁸Josquin, *Comment peult avoir joye*, in *Wereldlijke Werken*, Bundel 5, no. 56. Spinacino does not raise the leading tone in m. 39 either, where there is no doubled whole step below the cadence tone. That this preserves intervallic exactness in the imitation between the superius and tenor does not explain why Spinacino did not raise C in m. 39, since lutenists do not always inflect different statements of an imitative melody the same way. The apparent direct chromatic line in mm. 37-38 of Spinacino's intabulation arises from notes belonging to different voices in the original composition. If Spinacino's accidentals were applied to the original, the result would be a chromatic cross relation, not a direct chromatic line.

⁵⁹Toft, "Pitch Content and Modal Procedure," 121 and 123. The reader is reminded that Toft's statement is based on sixteenth-century lute sources that are mostly later than Josquin's period.

Example 4-21. Doubled third preventing the raised leading tone in Josquin, *Comment peult avoir joye*, mm. 34-40.

From the foregoing, we may conclude that singers of Josquin's period probably avoided raising the cadential subtone in most cases when it was doubled, and that simultaneous chromatic cross relations probably did occur from time to time, as they certainly did in the lute repertoire. At any rate, the occurrence of doubled subtones is less frequent in the music of Josquin's generation than in the later sixteenth century. The reason for this is that writing in five or more voices became more common after Josquin's period, and the subtone was more

likely to be doubled when more voices were present. The chromatic clash of the simultaneous raised and unraised note is stylistic in the music of Tallis and Byrd, who use it artistically, often with poignant effect; it is not characteristic, however, of Palestrina.⁶⁰

Cadences with 6-8 or 3-1 interval progressions and suspensions most predictably use raised leading tones in cases where the leading tone is not present naturally, without the need of inflection. When one of these two features, the interval progression or the suspension, is not present, the result is less predictable. In a passage from the *Christe* of Obrecht's *Missa Si dederò*, there is no suspension, and the cadence ends on the interval of a third rather than a unison (see Example 4-22).

⁶⁰The occurrence of this type of clash in sixteenth-century keyboard music is studied by Willi Apel in "Punto intenso contra punto remisso," in *Music East and West: Essays in Honor of Walter Kaufmann*, ed. Thomas Noblitt (New York: Pendragon, 1981), 175-82.

Example 4-22. Different interpretations of an irregular cadence in the *Christe* of Obrecht's *Missa Si dederò*, mm. 45-47, by Capirola and Spinacino.

The image displays three staves of musical notation. The top staff is a vocal line, labeled '45' at the beginning. It shows a melodic line with a triplet of eighth notes. The middle staff is a lute or guitar accompaniment, labeled '5 II:3' at the beginning. It shows a rhythmic pattern with a triplet of eighth notes. The bottom staff is a keyboard accompaniment, labeled 'C:P60, S.4, M.5' at the beginning. It shows a rhythmic pattern with a triplet of eighth notes. All three staves show different interpretations of an irregular cadence.

In this example, Spinacino leaves the subtone C uninflected, whereas Capirola raises it to C \sharp . The next example involves a common device in Josquin's period, the use of short duets which are repeated at the octave (Example 4-23a) or fifth (Example 4-23b).⁶¹

⁶¹Févin, *Sancta trinitas*, in *Treize Motets et un Prélude pour Orgue*, ed. Yvonne Rokseth (Paris: E. Droz, 1930), no. 8. Josquin, *Missa Pange lingua*, in *Werken*, Missen, no. 18.

Example 4-23. Treatment of cadences in short duets.
a. Févin, *Sancta trinitas*, mm. 60-66.

a)

The image displays two systems of musical notation. The first system, labeled 'a)', consists of four staves representing vocal parts: Soprano, Alto, Tenor, and Bass. The first measure is marked '60' and the second measure is marked '65'. The Soprano part has a melodic line with a cadence in measure 65, indicated by a fermata and the label '(M6-8)'. The Alto and Tenor parts have similar melodic lines. The Bass part has a more rhythmic accompaniment. The second system is a piano accompaniment, consisting of two staves (Right and Left Hand). It is marked with a tempo of 'C.P. 36, 54, M6'. The piano accompaniment features a steady rhythmic pattern in the right hand and a more active bass line in the left hand. The piano part also includes cadences in measures 65 and 66, with labels 'm6-8' and 'M6-8' respectively.

Example 4-23 continued.

b. Josquin, *Missa Pange lingua, Gloria*, mm. 82-86.

b)

The musical score is presented in two systems. The first system contains four staves: three vocal staves (Soprano, Alto, Tenor) and one bass staff. The second system contains two staves: a vocal staff and a piano accompaniment staff. The score includes various musical notations such as notes, rests, and accidentals. Handwritten annotations include 'C#' above the first vocal staff, '(M6-8)' below the first vocal staff, 'C#' above the second vocal staff, and '(M6-8)' below the second vocal staff. The piano accompaniment staff has handwritten annotations 'C:P 117, S4, M5', 'M6-8', and 'M6-8'.

All of the repeated duets in Example 4-23 end with a 6-8 progression, but proceed in note against note counterpoint, without suspension. Capirola's treatment of the passage from Févin's *Sancta trinitas* (Example 4-23a) is quite sensitive. Measures 60-66 is a musical unit made up of three duets. The first two duets (mm. 60-63) are not intended to end with a strong cadential effect; rather, each duet flows on to the following one. Thus, Capirola leaves these uninflected, and saves the leading tone for the stronger cadential progression, which contains a suspension, in mm. 65-66.⁶² In Example 4-23b, Capirola uses the leading tone for the short duets.

In summary, we find that in cadential situations where the two main features of a cadence—the standard interval progressions and the suspension—are not both present (as in Examples 4-22 and 4-23), the use of the leading tone is optional. Cadences of this type are generally internal, and usually do not represent major structural articulations. Their weakened character is appropriate for maintaining forward flow within the course of a larger musical section.

Up to this point, we have concentrated on cadences that raise the upper note of a minor sixth to produce a progression of major sixth to perfect octave. The other method of adjusting a progression of minor sixth to major, namely, by flattening the lower voice, requires discussion. It was stated above that the lutenists regularly use G#, C# and F# to adjust the minor sixth to major in *cantus durus*. There also remains, however, the possibility of using a Phrygian cadence on A, with the oc-

⁶²The beautiful way in which Févin extends the short duets of mm. 60-63 into a longer statement (mm. 63-66) containing a stronger cadence is worthy of note.

tave A being approach by G in the upper voice and B \flat in the lower voice (see Example 4-24).⁶³

Example 4-24. Phrygian cadence in Philippus de Luprano, *Se mè grato il tuo tornare*, mm. 24-26.

The option of using either G \sharp (with B \flat) or B \flat (with G \sharp) for cadences on A raises the question as to which choice was preferred by Renaissance musicians. Berger discusses at length the theoretical writings that are relevant to this issue, and finds that the theorists from the fourteenth to the sixteenth centuries overwhelmingly point to the use of G \sharp rather than B \flat .⁶⁴ He does find, however, that some early fifteenth-century theorists mention the possibility of using B \flat , and that sixteenth-century lute intabulations make use of both possibilities. This leads Berger to recommend that cadences on A be handled flexi-

⁶³Philippus de Luprano, *Se mè grato il tuo tornare*, in *Bossinensis I*: 49(50).

⁶⁴Berger, 139ff. As will be seen, the sources largely support Berger's conclusion, although an approach that uses both leading-tone and Phrygian cadences equally is also found.

bly, and he suggests that the choice between G \sharp and B \flat be made on the basis of the modal implication of a particular passage.⁶⁵

The sources confirm that the raised leading-tone cadence is preferred to the Phrygian cadence. The cadence on A in *cantus durus* (or its transposed equivalent, D in *cantus mollis*) only appears commonly in modes 1-4, and so the treatment of A (or D in *cantus mollis*) cadences in these modes was explored, and the results listed in Appendix D. In compositions in modes 1-4, Capirola consistently chooses the leading-tone cadence on A in *cantus durus* (and D in *cantus mollis*), and Bossinensis uses it six out of eight times, while Spinacino again proves somewhat different from the other two, choosing both solutions an equal number of times—five leading-tone cadences and five Phrygian cadences. These results suggest that the leading-tone version would be a reliable choice for most (if not all) cadences on A, although one could, if one wanted, choose to use Phrygian cadences as often as leading-tone cadences. This is a matter of interpretation for the performer to decide upon in each case.

Toft's exploration of cadences in sixteenth-century lute intabulations yielded the following results with regard to cadences on A in *cantus durus* (or D in *cantus mollis*) in Dorian and Phrygian modes.⁶⁶

⁶⁵Berger's complex discussion of the different modal implications of G \sharp and B \flat (pp. 147ff.) need not concern us here. It is unlikely that modal criteria can be used by modern editors to convincingly prove that a particular decision between G \sharp and B \flat is the best choice.

⁶⁶Toft, "Pitch Content and Modal Procedure," 112. Toft does not distinguish between authentic and plagal modes in his table.

Mode and Cadence Note	Raised LT	Phrygian Cadence	No LT
D-Dorian (<i>cantus durus</i>) Cadences on A	50%	15%	35%
G-Dorian (<i>cantus mollis</i>) Cadences on D	48%	26%	26%
E-Phrygian (<i>cantus durus</i>) Cadences on A	63%	—	37%

Again, the sources are in agreement with the theorists on choosing the leading-tone cadence more often than the Phrygian cadence; however, there is still a high percentage of cadences that either use the Phrygian cadence or no inflection at all. In this last case, the progression remains a minor sixth to octave.

The flexibility in choice between leading-tone and Phrygian cadences is illustrated in Example 4-25.⁶⁷

⁶⁷ Agricola, *Oublier veuil*, in *Opera Omnia*, vol. 5, no. 41. Josquin, *Ave Maria*, in *Werken, Motetten*, Bundel 1, no. 2.

Example 4-25. Flexible treatment of leading tone and Phrygian cadences.

a. Agricola, *Oublier veuil*, mm. 15-16, as interpreted by Capirola.

b. Josquin, *Ave Maria*, mm. 24-25, as interpreted by Petrucci and by Spinacino.

a)

15

C: P6, S1, M9

Dorian cadence

Phrygian cadence

b)

24

S I: I

Capirola's interpretation of a passage from Agricola's *Oublier veuil* is quite interesting (see Example 4-25a). Capirola overrides the E^b in the bass signature in m. 15 with E^{\natural} , and uses a leading-tone cadence on D. Measure 16 is a transposition of m. 15 up a fifth, but here Capirola ends with a Phrygian cadence on A. Thus, the same material is treated differently in each case. The evidence found in lute intabulations frequently speaks for a varied treatment of repeated material rather than showing a strict concern for maintaining intervallic exactness.⁶⁸ In Example 4-25b, different musicians approach the same passage in different ways: Petrucci has a Phrygian cadence, Spinacino, a leading-tone cadence.⁶⁹ There often does not seem to be any rationale to explain the different ways in which various musicians interpreted the pitch content of a particular composition other than individual taste.

Very often the presence of a bass voice a fifth below the lower voice of a 6-8 cadence suggests the use of a raised leading tone and precludes the Phrygian cadence. In Example 4-26, B^b is excluded since it would form an undesirable diminished fifth with the bass.

⁶⁸The issues concerning exact versus inexact repetition of material are taken up in Chapter 7.

⁶⁹*Ave Maria* in Josquin, *Werken: Motetten*, Bundel 1, no. 2, and Spinacino I: 1. The Phrygian cadence occurs in the Josquin *Werken* which follows the Petrucci print in *Motetti C* (Venice: Petrucci, 1504).

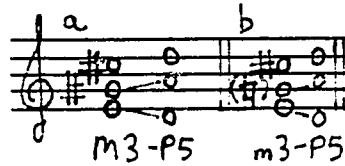
Example 4-26. Fifth below the tenor precludes the use of the Phrygian cadence in Luprano, *Se m'è grato il tuo tornare*, mm. 4-6.

This contrapuntal situation is so common at cadences that it could very well have been one of the reasons why the raised leading-tone cadence was preferred to the Phrygian cadence. Perhaps there was also a desire for the leading tone's stronger "tonal" orientation towards the goal tone than is given by the Phrygian cadence.⁷⁰

The other main imperfect to perfect interval progression relevant to cadences is that of a third moving to a fifth. If the closest approach rule is followed, the result is what is known as a Burgundian or double leading-tone cadence (see Example 4-27a).

⁷⁰The Dorian and Hypodorian modes were more frequently used than the Phrygian and Hypophrygian modes, perhaps also because of a desire for the clearer tonal orientation (or sense of tonal center) found in the former pair of modes in comparison to the latter pair.

- Example 4-27. Evolution of the leading tone cadence.
 a. Burgundian or double leading-tone cadence.
 b. Leading-tone cadence in Josquin's period.



This medieval cadence is found in music as late as Dufay's generation, and then seems to have fallen rapidly out of use. There is no comparable announcement of this development to be found in theoretical treatises, and Berger, who usually does not take his data from practical sources, is forced to draw his conclusions on this shift in practice on the basis of lute intabulations.⁷¹ This shift may be seen as part of a trend towards a more tonal style in which the diminished six-three leading-tone sonority was preferred to the pungent sound of the tritone cross relation with the cadence pitch (compare Example 4-27a with Examples 4-27b and 4-14b). In other words, the vertical consonance of the minor six-three sonority found in double leading-tone cadences gave way to a diminished six-three sonority that, although in itself more dissonant, is tonally more consonant, since the third above its bass is a fourth above the cadence tone instead of a tritone away.⁷² This change takes place at a time when dissonance treatment was becoming more refined, modal thinking was being applied to polyphony on a broader scale than ever before, and the composition of all the voices

⁷¹Berger, 152.

⁷²The terms "minor" and "diminished six-three sonority" are used here for convenience as descriptive labels.

together (rather than successively) was becoming standard practice, as seen in the growing use of imitation in all voices. Surely, then, the move away from double leading-tone cadences is part of a general development towards a more refined treatment of tonal elements in general.

A rare example of a raised pitch that results in a major third to fifth progression occurs in *Bossinensis I* (see Example 4-28).⁷³

Example 4-28. Non-cadential major third-to-fifth progression in *Cara, Arma del mio valore*, mm. 5-10.

The image shows a musical score for three staves. The top staff is a vocal line with a treble clef, starting at measure 5 and ending at measure 10. The middle and bottom staves are piano accompaniment with treble and bass clefs respectively. The key signature has one flat (B-flat). In measure 8, there is a chord with a flat sign and the annotation 'm3-5' below it, indicating a major third-to-fifth progression. The music concludes with a cadence in measures 9-10.

The raised tone may well have come about more for melodic than contrapuntal reasons, because of the cadence-like melodic figure in mm. 6-7. This occurs in a non-cadential context, on the way to the cadence in mm. 9-10.

Throughout this discussion, the term "cadential leading tone," which has melodic implications, has been used to refer to a rule that is

⁷³*Cara, Arma del mio valore*, in *Bossinensis I*: 22.

contrapuntal; this is a point worth discussing. Some of the stages in the evolution from the original rule (as found in Marchettus) to the Renaissance practice of cadential leading tones have already been discussed. The process may be summarized as follows:

- 1) There was a weeding-out process, in which the rule, although continually stated by theorists, increasingly fell out of use except at cadences.
- 2) This rule then fell out of use with respect to the third-to-fifth progression at cadences, and was used only with the cadential sixth-to-octave (or third-to-unison) progression.

Thus, from a rule that mandates that all imperfect intervals progressing to perfect intervals be altered (if necessary) for the closest approach to the latter, we end up with only a consistent use of major sixths progressing to octaves (or minor thirds to unisons), and that only at cadences.

So extensive and selective a weeding-out process must have far-reaching implications for the way Renaissance musicians both heard and organized their music. That the rule ended up being applied almost nowhere except at sixth-to-octave cadential progressions shows that they were aware of the fact that the raised tone increases the sense of tonal focus and arrival on a specific goal—in other words, that they were sensitive to the leading-tone quality of raised notes. By placing these raised notes primarily at cadences, they avoided disrupting the mode of the composition with constant inflections, and they saved the strong articulating and goal-establishing effect of the leading tone for

cadences.⁷⁴ Thus, Renaissance musicians in fact ended up converting the old medieval rule into a genuine cadential leading-tone practice, and the use of the term “cadential leading tone” in this study is appropriate to their practice, even if the theorists of the time did not use the term.

Furthermore, in addition to the contrapuntal element of the sixth moving to the octave, there is a strong rhythmic and melodic element to cadences. We have seen that the use of cadential leading tones is usually signalled by stereotypical melodic figures. We have also seen that lutenists not only raise the actual cadential subtone, but also raise the subtone when it appears shortly in advance of the cadence, that is, before the arrival of the major sixth-to-octave progression (see Example 4-14 above). Clearly these “preparatory leading tones” come not from the rule of Marchettus, but rather from melodic reasons, in which the leading tone quality is anticipated and enhanced, and the rapid chromatic shift between raised and unraised subtones is avoided.

During the Renaissance, the leading-tone principle remained associated with the sixth-to-octave progression, but, occasionally in Josquin’s period, and more frequently after, it also became widely used independently of the contrapuntal progression. For example, the leading tone appears explicitly notated at a primary structural cadence in Byrd’s *Mass for Five Voices*—the final cadence of the *Gloria*—at which

⁷⁴The quotation given above from Danckerts (on p. 105) suggests that one of the ways in which the new sixteenth-century Italian madrigal chromaticism arose was by applying this rule wherever possible. In this same passage, Danckerts complained that the frequent observance of this rule did damage to the modes.

there is no sixth-to-octave progression. The sixth-to-octave (or third-to-unison) progression continued to be used at cadences throughout the sixteenth century, but as the century progressed, cadences that did not use these contrapuntal formulas and that used a descending fifth or ascending fourth bass leap (as in the V-I progression) became common.⁷⁵

Edward Lowinsky has written that "The rules of *musica ficta* operate with particular force in the cadence, which is the place in which the inroads of tonal thinking upon modal practice can be most conveniently studied."⁷⁶ The findings of the present study supports Lowinsky's belief in the importance of cadential inflections to the history of tonality.

⁷⁵During Josquin's period, cadences with the descending fifth or ascending fourth bass-leap usually, but not always, occurred with the 6-8 or 3-1 progressions above.

⁷⁶Lowinsky, *Tonality and Atonality in Sixteenth-Century Music* (Berkeley: University of California Press, 1961), 3.

CHAPTER 5
THE RULES GOVERNING ACCIDENTALS AND
THEIR APPLICATION
IN PRACTICAL SOURCES (CONTINUED)

Rule 6. Diminished or augmented fourths, fifths and octaves are prohibited in counterpoint by the rule forbidding the sounding of *mi contra fa*.

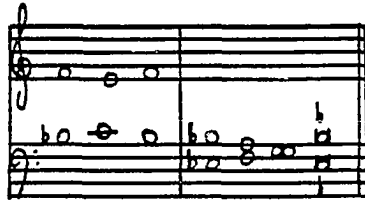
1. *The ban on vertical imperfect fourths, fifths, and octaves, and the means of avoiding them.*

The avoidance of imperfect fourths, fifths, and octaves is normally stated in terms of avoiding the placement of *mi* against *fa*. According to this rule, F (*fa*) would not be allowed to sound against B (*mi*); F (*fa*) would not sound against F \sharp (*mi*); B \natural (*mi*) would not sound against B \flat (*mi*) and so forth. A typical example of this rule is found in Burtius' *Musices Opusculum*:

When an imperfect fifth, falling naturally between \natural mi and \flat fa, occurs in counterpoint or mensural song, it must be perfected. For mi against fa on a fifth or octave never has a concordant sound ... if you are on high \flat [*fa*] and you want to compose a fifth below the \flat , it is necessary to sing fa [B \flat] and not mi [B \natural] on the \natural by using the sign of soft b. Again, if the tenor is on round b [B \flat], on which fa is sung, and you want to compose a fifth under this fa, it is necessary to sing fa [E \flat] and not mi [E \natural] (see Example 5-1).¹

¹The quotation and Example 5-1 are taken from Burtius, *Musices Opusculum*, bk. 2, ch. 4, trans. Miller, 82-83.

Example 5-1. The avoidance of *mi contra fa*: examples of diminished fifths corrected to perfect fifths by Burtius.



In both cases, Burtius shows how to avoid the diminished fifth by lowering the bottom note. The use of B \flat in *cantus durus* and E \flat in *cantus mollis* for adjusting diminished fifths to perfect fifths is well known. This use of flats—to correct diminished fifths—is probably the most common type of accidental to be found in mensural sources.

Berger raises the question as to whether it was the practice to correct vertical imperfect consonances by altering a particular voice, but has found that there was no theoretical tradition for preferring the alteration of one voice over another.² Thus, for example, theorists did not generally express a preference for altering the soprano rather than the tenor. Indeed, the practical sources show that this was the case; any voice was subject to inflection, whether it was a soprano, alto, tenor, or bass part, and sometimes one musician altered one voice, while another musician altered another voice in the same passage.

Since the decision on how to correct a non-harmonic interval did not depend on the automatic alteration of a particular voice, Berger

²The information for this discussion is from Berger, 115ff. Berger (pp. 117-18) found only one theorist (Prosdocius) who explicitly discussed this issue; Prosdocius's criteria apply to music with voices composed only in relation to the tenor, and thus have no relevance to music of Josquin's period. There does not seem to have been any voice that was exempt from accidentals; for example, Spinacino II: 20, m. 5 contains a B \flat (incorrectly transcribed by Schmidt as B \sharp) which alters a B(4) in a tenor cantus firmus.

concludes that “correcting a vertical non-harmonic relation must have involved ... the decision as to whether to use a flat or a sharp.”³ He finds, as one would expect, that B \flat was preferred over F \sharp . As we have already seen, Berger suggests that late fifteenth- and sixteenth-century musicians favored B \flat over F \sharp for correcting melodic imperfect fourths, fifths, and octaves because B \flat disrupts modes to a lesser extent than F \sharp , and he thinks that this hypothesis is equally valid for explaining why they favored B \flat over F \sharp for correcting vertical imperfect fourths, fifths, and octaves.⁴ He goes on to state that most theorists from the 1470s on choose the flat rather than the sharp to form perfect intervals, and that only a handful of ambiguous passages from theorists after 1470 *might* point to the possibility of using F \sharp for correcting vertical imperfect intervals. Berger thus concludes that the Renaissance musicians preferred using the flat rather than the sharp to avoid vertical *mi contra fa* dissonances. It will come as no surprise to anyone familiar with Renaissance sources that the main sources for this study strongly confirm the preference for flats over sharps in correcting imperfect fourths, fifths and octaves. In other words, the usual way to avoid *mi contra fa* was to lower the bottom note (as in Example 5-1) rather than raise the upper note. There are a small number of cases, however, in which the

³Berger, 115.

⁴See p. 34 of this study, and Berger, 116. This is in contrast to the practice shown in fourteenth and fifteenth-century theory, in which either B \flat or F \sharp was commonly used to correct *mi contra fa* dissonances.

upper note was raised for this purpose. Example 5-2 illustrates the use of F# to avoid a diminished fifth.⁵

Example 5-2. Capriola's use of F# to form a vertical perfect fifth in *cantus durus* in Ghiselin, *O florens rosa*, mm. 46-48.

The image displays two systems of musical notation. The first system consists of three staves: a soprano staff with a treble clef, an alto staff with a C-clef, and a bass staff with a bass clef. The music is in common time (C). The second system consists of two staves: a treble clef staff and a bass clef staff. Above the treble staff is the tempo marking 'C: P100, 52. M 9'. The notation includes various note values, rests, and accidentals, with a specific F# note highlighted in the treble staff of the second system.

In *cantus mollis*, there are also rare cases in which the upper note (B \flat) is raised to B \natural in preference to the more usual lowering of the

⁵Ghiselin, *O Florens Rosa*, in *Opera Omnia*, vol. 1, no. 2. For an other example of F# used to form a vertical perfect fifth in *cantus durus*, see Example 3-16. F#s are also used in keyboard sources to form vertical perfect fifths; for an example from the Kleber tablature, (1515-24), see *Keyboard Intabulations of Music by Josquin des Pres*, ed. Thomas Warburton (Madison: A-R Editions, 1980), 32.

bottom note (E \flat); this is directly analogous to using F \sharp instead of B \flat in *cantus durus*. One such instance is shown in Example 5-3.⁶

Example 5-3: B \natural used to avoid a diminished fifth in *cantus molis*. Josquin, *Et resurrexit* from *Missa L'homme armé sexti toni*, Credo, mm. 126-29, with Capirola's interpretation.

Example 3-3c also shows the use of an explicitly notated B \natural in *cantus durus* to form both melodic and perfect vertical fifths; here, the B \natural occurs in a vocal source rather than in an instrumental one. Examples

⁶Josquin, *Missa L'homme armé sexti toni* in *Werken*, Missen, no. 5.

such as these disprove Carl Dahlhaus's contention that the practice of raising the upper note to form a perfect fifth was outside the musical system of Josquin's period.⁷

The sources indicate, then, that *mi contra fa* can be avoided either by lowering the bottom note, or by raising the upper note, but that the former method was the usual one. In the lute and keyboard intabulations, the B-F vertical diminished fifth is avoided either by B \flat or by F \sharp . Whether singers of the period also used F \sharp for this purpose remains open to question; I have seen no explicitly notated examples in vocal sources. However, the analogous use of B \natural in *cantus mollis* to avoid the vertical diminished fifth is found in both instrumental and vocal sources of the period.

Another place in which the issue of adjusting vertical diminished fifths to perfect fifths arises is in compositions with partial signatures. Hoppin was the first to suggest that partial signatures may have been used because "... it made diminished fifths impossible."⁸ Berger writes that "... the only theoretical discussions relevant to the problem of 'conflicting' signatures which I have been able to find suggest that function of such signatures was to assist in avoiding mi-against-fa discords ..."⁹

⁷See Dahlhaus, "Zur Akzidentiensetzung in den Motetten Josquins des Prez," in R. Baum and W. Rhems, eds., *Musik und Verlag. Karl Vötterle zum 65. Geburtstag am 12. April, 1968* (Kassel: Bärenreiter, 1968), 206-19.

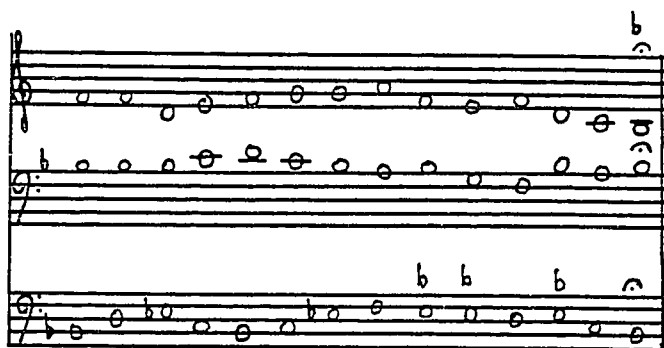
⁸Richard Hoppin, "Partial Signatures Reviewed," *Journal of the American Musicological Society*, 9 (1956), 98. Another commonly used term for partial signatures is "conflicting signatures."

⁹Berger, 66.

Example 5-4 is taken from Hothby's *Spetie tenore del contrapunto prima*, and shows an upper and a lower counterpoint to a melody.¹⁰ Hothby provides the following explanation:

In the second counterpoint [i.e., upper voice], one should put no soft *b*, since there occurs no fifth or octave or either *mi* against *fa* or *fa* against *mi*. But in the first low counterpoint, the soft *b* is placed several times to regulate such counterpoint, so that one does not hear either *fa* against *mi* or *mi* against *fa*.¹¹

Example 5-4. Counterpoints by Hothby demonstrating that no signature is needed to maintain perfect fifths above a given voice in *cantus mollis*, and that a signature is needed to maintain perfect fifths below the same voice.



¹⁰We are dealing with two-part counterpoint here, for the middle voice is intended to be performed with either the upper or the lower voice, but not as part of a three-voice complex.

¹¹*Spetie tenore del contrapunto prima* in John Hothby, *De arte contrapuncti*, ed. Gilbert Reaney (n.p.: American Institute of Musicology, 1977), 86. Cited in Berger, 67.

Aaron did not like partial signatures, but in his complaint about his contemporaries' use of them, he makes it clear that they used them specifically to avoid diminished fifths:

The carelessness of other composers should be objected to when they inconsiderately use the signature of *b molle* in one part only of their song, especially in the low part. I say that such a practice is denied and not allowed, nor to be considered by a true musician. When they wish to hold to this ill-conceived notion, they believe themselves excused precisely by the progressions which happen frequently from the note *b-mi* grave, which makes an imperfect fifth with the tenor.¹²

Here, Aaron specifically mentions the tendency of the lower voices to be more "flat-oriented" than the upper voices in compositions with partial signatures.

Example 5-5a demonstrates the use of partial signatures to eliminate diminished fifths without need for accidentals: here, the B \flat -F (mm. 84-85) perfect fifth (is followed shortly after by the perfect fifth E-B (mm. 87-88)).¹³ One may find similar examples in other works with partial signatures from Josquin's period. Example 5-5b is a transposition of Example 5-a, and illustrates what would happen if the lowest voice had been written in *cantus durus*: at this pitch level, an F \sharp is needed in the upper voice in order to avoid the diminished fifth in m.

¹²Aaron, *Toscanello in musica*, trans. Bergquist, 23. Cited in Berger, 67. In the same passage, Aaron objects to partial signatures on the grounds that they prevent all of the voices from having the same interval-species, and they give rise to imperfect vertical octaves. Aaron suggests avoiding these difficulties by using B \flat signatures in every part.

¹³Obrecht or Virgilius, *Nec mihi, nec tibi*, in Florence 229, no. 267.

87. This transposition, with its use of F \sharp , seems rather strange, since an F \sharp signature is an anomaly in the Renaissance.

The use of partial signatures with B \flat in the lower voice or voices (as in Example 5-5a) allows the composer to work within a system that would have required F \sharp in the upper voice if the lower voices were in *cantus durus* (as in our hypothetical version in Example 5-5b), but without having to use sharps. Thus, this practice was probably followed in order to form a musical system that is broader (since it includes both B \natural and B \flat) than is normally found in a system with a uniform signature, while at the same time keeping notated music close to the boundaries of the traditional gamut (as described in Chapter 1). The system formed by partial signatures does not increase the overall vocabulary available to the composer, since both B \natural and B \flat are readily available in both *cantus durus* and *mollis*. The use of partial signatures does, however, broaden the system in the sense that the fluctuation between B \natural and B \flat becomes more an essential component of a composition than it otherwise would be. Furthermore, the use of a signature such as $\natural, \flat, \flat, \flat$ increases the availability of B \natural to form vertical perfect fifths as compared to a uniform *cantus mollis* signature ($\flat, \flat, \flat, \flat$), in which E \flat would be much more readily used than B \natural for that purpose.¹⁴

¹⁴Fiat signatures are given here in order of top to bottom.

Example 5-5: The use of partial signatures to avoid vertical diminished fifths without the use of accidentals.

a. Obrecht or Virgilius, *Nec mihi, nec tibi*, mm. 83-88 (Florence 229 version).

b. Example 5-5a, transposed up a fifth.

a)

Example 5-6 shows the introduction of two flats beyond the signature (B \flat and E \flat) to avoid vertical imperfect fourths, fifths, and octaves.¹⁵

¹⁵Agricola, *Je n'ay dueil* in Brussels 228, no. 19. Anon., *Laor vous n'estes* in Florence 229, no. 76.

- Example 5-6. The introduction of two flats beyond the signature.
- a. Flats used to avoid vertical imperfect fourths, fifths and octaves in Agricola, *Je n'ay dueil*, mm. 29-31.
- b. Sudden shift from no flats to two flats to form perfect fifth in Anon., *Laor vous n'estes*, mm. 35-37.

a)

Musical score for Example 5-6a, measures 29-31. The score is written for four staves (Soprano, Alto, Tenor, Bass) in a system. The key signature is one flat (B-flat). The time signature is 4/4. The music features a mix of quarter and eighth notes, with some rests. A flat sign is placed above the second staff in measure 30, and another flat sign is placed above the second staff in measure 31. The number '29' is written above the first staff in measure 29.

b)

Musical score for Example 5-6b, measures 35-37. The score is written for four staves (Soprano, Alto, Tenor, Bass) in a system. The key signature is one flat (B-flat). The time signature is 4/4. The music features a mix of quarter and eighth notes, with some rests. A flat sign is placed above the second staff in measure 36, and another flat sign is placed above the second staff in measure 37. The number '35' is written above the first staff in measure 35.

I would like to suggest a possible genesis for the accidentals in Example 5-6a. This passage could have worked easily without using B \flat and E \flat altogether, but this would have left the melodic outline of an augmented fourth from B to F in the tenor, mm. 29-30. It would have been possible to correct this augmented fourth with F \sharp , or even simply to leave it intact.¹⁶ The rationale for the flats in this passage may well have been as follows: the composer (or editor) decided to avoid the melodic augmented fourth outline by the usual means, using B \flat in the tenor, which in turn gave rise to the E \flat in the bass in order to avoid the diminished fifth with the tenor's B \flat , and then E \flat was added in the alto to avoid the diminished octave with the bass (and incidentally transformed the augmented fourth between the inner voices, mm. 29-30, to a perfect fourth). This represents a kind of "chain reaction" procedure, one, however, that is less radical than the chain reactions involving many new, remote flats that are found in Lowinsky's interpretations (as presented in *Secret Chromatic Art*), for in the present example, the upper voices introduce only two flats beyond the signature. A direct shift from no flats to two beyond the signature (B \flat and E \flat) is relatively rare in *cantus durus*, although the presence of the B \flat signature in the lowest voice of Example 5-6a makes the transition less radical than it would have been if all voices had been written in *cantus durus*, as in Example 5-6b. In this last example, B \flat and E \flat are introduced simultaneously to form a perfect fifth, even though there would have been a perfect fifth if both voices had been left uninflected.

¹⁶This use of F \sharp would have caused an augmented unison clash with the bass. As Examples 5-22, 5-23, and 8-5 show, this would have been possible.

The presence of B \flat and E \flat in a composition in *cantus durus* as seen in Example 5-6b disproves Berger's conclusion that "... pieces in which all parts had no flats in the signature would require at most the use of B \flat , pieces in which at least one part had a B \flat -signature would require at most the use of B \flat and E \flat ..." and so on for other flat signatures.¹⁷ The sources clearly show that not just one, but two flats beyond the signature were used in Josquin's period, although the use of one flat beyond the signature is certainly more common than the use of two.¹⁸

2. Vertical diminished fifths allowed by theorists.

We have seen that the Renaissance musicians approached dissonant fourths, fifths, and octaves with some degree of flexibility: the flat was the preferred method of adjusting these intervals, but it was also possible to use sharps. In addition to this flexibility, there was also a further freedom in treatment of the *mi contra fa* dissonances. Theoretical sources show that Renaissance musicians were more tolerant of these intervals than was generally acknowledged in modern scholarship prior to Berger's study. The practical sources lead to the same conclusion: Toft observes that "the intabulations provide numerous examples of passages in which *mi contra fa* was both eliminated and retained."¹⁹

¹⁷Berger, 121.

¹⁸For more on "chain reactions" and on introducing new flats beyond the signature, see Chapter 8.

¹⁹Toft, "Pitch Content and Modal Procedure," 136.

In his *Liber de arte contrapuncti*, Tinctoris banned the use of “false concords” (i.e., augmented or diminished fourths, fifths, and octaves), but admitted that even the foremost composers of his day did not always follow this rule; he goes on to cite passages from their works containing diatonic diminished fifths (i.e., ones occurring naturally, without inflections) without ever suggesting that these intervals be corrected.²⁰ The superius and contratenor from Example 5-7 are cited by Tinctoris in the *Liber de arte contrapuncti* as an example of a famous composer breaking the prohibition against diminished fifths.²¹

²⁰Tinctoris, *Liber de arte contrapuncti*, in *Opera theoretica*, ed. Albert Seay (n.p.: American Institute of Musicology, 1975), 143f.; trans. by Seay as *The Art of Counterpoint* (n. p.: American Institute of Musicology, 1961), 130. See Berger, 95ff.

²¹Busnois, *Je ne demande* in Florence 229, no. 147. For the citation for the example as given by Tinctoris, see fn. 20.

Example 5-7. Diminished fifths in Busnois, *Je ne demande*, mm. 21-23, with Spinacino's interpretation.

The image displays two systems of musical notation. The first system consists of three staves: the top staff is labeled 'Superius', the middle staff is labeled 'Contratenor', and the bottom staff is unlabeled. The second system is a piano accompaniment with two staves, labeled '5:II,6' at the beginning and '[sic]' below the bottom staff. The notation includes various rhythmic values, accidentals, and dynamic markings.

Tinctoris mentions that most composers use diminished fifths with altered notes (inflections) in music for three or more voices in a specific placement within the mensuration pattern of a work: "... above all or half or a larger part of the note defining the measure [a semibreve in his example] and immediately preceding a perfection."²² Berger interprets the word "perfection" here to mean a cadence, and this is certainly where most such diminished fifths are found, as in Example 4-14b, mm. 23-24. This type of diminished fifth, brought about by the use

²²Tinctoris, *Liber de arte contrapuncti*, trans. Seay, 130. Cited in Berger, 99.

of a cadential leading tone, is probably the most widespread and currently well-known use of the diminished fifth in Renaissance music. However, the term "perfection" (as used here by Tinctoris) probably refers to the beginnings of mensural units rather than to cadences, and while most inflected diminished fifths immediately preceding a mensural perfection would be cadential, there would also be a possibility of using similar diminished fifths in non-cadential contexts, as in Example 3-5, mm. 21-22.

Berger states that the examples given by Tinctoris show that "... far from being totally unacceptable or acceptable only in diminished counterpoint when used as dissonances, mi-against-fa discords may be tolerated even in simple counterpoint."²³ He derives the following rule from studying the examples cited by Tinctoris:

"... a mi-against-fa discord will be tolerated even in simple counterpoint, provided it is followed by a consonance with at least one, and preferably both, of the dissonant notes properly resolved (that is, with the mi-step going a diatonic semitone up and/or the fa-step down). The resolution may be delayed by notes belonging to diminished counterpoint or by a rest."²⁴

In other words, the diminished fifth normally resolves with both voices moving in by step to a third, but sometimes the resolution is ornamented, or occurs only in one voice. The rule permitting the progression of the diminished fifth resolving inward by step to a third

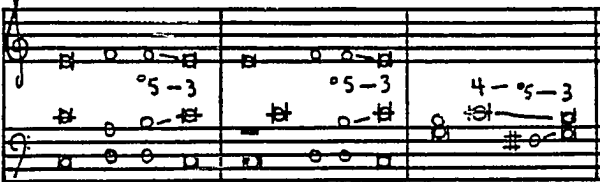
²³Berger, 96.

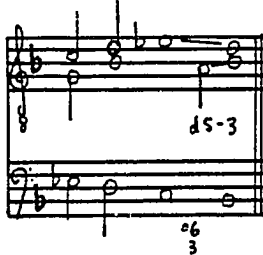
²⁴Berger, 97.

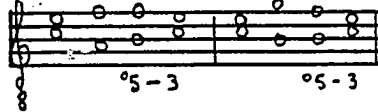
is in fact widespread in Renaissance theory, as the following examples from Aaron, Dentice, Zarlino, and an anonymous theorist illustrate.²⁵

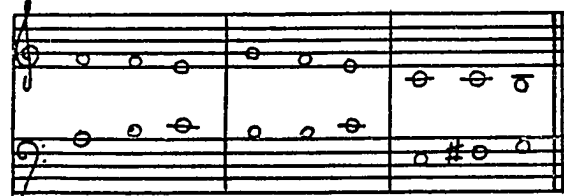
Example 5-8. Theorists' examples showing the accepted progression of a diminished fifth to a third.

- a. Example by Aaron.
- b. Example by Dentice.
- c. Example by Zarlino.
- d. Example by an anonymous theorist.

a) 

b) 

c) 

d) 

²⁵Aaron, *Lucidario in musica*, fol. 7r, cited in Berger, 104; Luigi Dentice, *Duo dialoghi della musica* (Rome, 1553), fol. [39r], cited in Berger, 106; Zarlino, *Le Istitutioni harmoniche*, bk. 3, ch. 30, trans. Marco and Palisca in *Art of Counterpoint*, 67, and cited in Berger, 107; and Anon., *Traicté de musique contenant une théorique* (Paris: Ballard, 1602), apparently (according to Allaire) a reprint of Adrian LeRoy's treatise of the same title, 1583, cited in Allaire, *The Theory of Hexachords and the Modal System*, 57.

The anonymous author of Example 5-8d mentions that the use of the diminished fifth approached in oblique motion by step is found in the music of both "ancients" and "moderns," including that of Josquin, Willaert, and Mouton.²⁶ The sources for this study are in agreement with the theorists, and show an abundant use of the diminished fifth-to-third progression (see Example 5-9).²⁷

Example 5-9a shows the use of a specifically notated B \sharp in order to avoid the otherwise possible use of B \flat . The diminished fifth is held for an unusually long duration here, and its treatment here speaks strongly against the formerly widespread view that the vertical diminished fifth was considered intolerable by Renaissance musicians. Example 5-9b is related to examples by Aaron (Example 5-8a, second and third examples) and Dentice (Example 5-8b), in that the lower voice of the diminished fifth is approached by a longer, syncopated note that moves downward by step into the diminished fifth.

Example 5-9c shows the diminished fifth-to-third progression in *cantus fictus* (i.e., a system beyond the traditional gamut, here with a two-flat signature). The diminished fifth could be avoided here by flattening the D in the bass; however, in one source for this piece, Basel F.X. 1-4, a sharp (mi) sign is placed before the D, signifying that D-natural is

²⁶See Allaire, *The Theory of Hexachords and the Modal System*, 57.

²⁷Anon., *Pendecose*, in Florence 229, no. 207; Anon., *Je n'en puis plus*, Florence 229, no. 95; la Rue, *Porquoy non*, in Brussels 228, no. 10; Dufay, *Du tout m'estoie abandoné*, in Florence 229, no. 26.

to be used, thus ensuring that performers working from that source would use a diminished fifth.²⁸

In the last example (5-9d), the lower voice of the diminished fifth has its normal resolution immediately, while resolution of the upper voice is delayed by a rest. It is possible to avoid the diminished

Example 5-9. Passages containing diminished fifth-to-third progressions.

a. Anon., *Pendecose*, mm. 31-34.

b. Anon., *Je ne'en puis plus*, mm. 18-19.

a)

b)

²⁸Basel F.X. 1-4 is a set of partbooks containing the dates 1522-24. Lothar Hoffman-Erbrecht dates it ca. 1540. See Brown, *A Florentine Chansonnier*, text volume, 182.

Example 5-9 continued.

c. Pierre de la Rue, *Porquoy non*, mm. 54-56.

d. Dufay, *Du tout m'estoie abandoné*, mm. 36-39.

c)

Musical score for Example 5-9c, measures 54-56. The score is in G minor (one flat) and 3/4 time. It consists of four staves. The first staff is the vocal line, starting with a fermata on a half note G4 in measure 54. The second staff is the soprano line, the third is the alto line, and the fourth is the bass line. A figured bass '5-3' is written below the bass line in measure 56.

d)

Musical score for Example 5-9d, measures 36-39. The score is in G minor (one flat) and 3/4 time. It consists of three staves. The first staff is the vocal line, the second is the soprano line, and the third is the bass line. The music features a diminished fifth interval in measure 36, which is resolved in subsequent measures.

fifth altogether by raising the B \flat to B \natural , a solution proposed by Brown in his edition of Florence 229. However, since Tinctoris presents examples of diminished fifths in which only one voice resolves

normally and the other voice proceeds more freely, it is also possible to accept the diminished fifth in Example 5-9d. It fits within the rule (given above) that Berger formulated from Tinctoris's examples.

Thus the progression of the diminished fifth moving inwards by step to a third is well represented in both theory and practice, and is one of the standard ways of using the diminished fifth in the Renaissance. However, the situation is complicated by the fact that at times only one voice of the diminished fifth has its normal resolution inward by step. Furthermore, the sources frequently use the flat to avoid the diminished fifth, even when both voices contract inward to a third (see Example 5-10).²⁹

Example 5-10. Perfect fifth-to-third progression, in Anon., *En effet se ne reprenés*, mm. 24-27.

The image shows a musical score for three staves, likely representing different voices. The top staff is in treble clef and has a '24' written above it. The middle and bottom staves are in bass clef. The notation shows a progression of intervals: a perfect fifth (P5) in the first measure, which resolves to a third (3) in the second measure. The notes are mostly quarter and eighth notes. Below the bottom staff, the interval progression 'P5-3' is written.

²⁹Anon., *En effet se ne reprenés* in Florence 229, no. 77.

In fact, both progressions (P5-3 and dim. 5-3rd) are so common, that once again we have a situation in which a particular passage could be handled either way and be stylistically and historically valid.

Example 5-11 presents examples of fifth-to-third motions for which Renaissance musicians found differing solutions.

Example 5-11. Passages containing fifth-to-third motions with more than one interpretation by Renaissance musicians.

a. Passage from a motet by Piero de Justinus found in a letter by Giovanni del Lago.

b. Hayne, *Allez, regretz*, mm. 17-19, as interpreted in Florence 229 and by Capirola.

a)

Musical notation for example a) showing a fifth-to-third motion. The notation includes a treble clef, a key signature of one flat (B-flat), and a common time signature. The melody consists of a half note G4, a quarter note F4, a quarter note E4, and a quarter note D4. A fingered bass line below the staff shows the sequence 1 6 5 6 5, with an 'x' above the first '6'.

b)

Musical notation for example b) showing two interpretations of a fifth-to-third motion. The top system shows the original notation for measures 17-19, with a treble clef, a key signature of one flat, and a common time signature. The bottom system shows an interpretation by Capirola, with a treble clef, a key signature of one flat, and a common time signature. The notation includes a treble clef, a key signature of one flat, and a common time signature. The melody consists of a half note G4, a quarter note F4, a quarter note E4, and a quarter note D4. A fingered bass line below the staff shows the sequence 1 6 2 5 1, M1. The notation includes a treble clef, a key signature of one flat, and a common time signature. The melody consists of a half note G4, a quarter note F4, a quarter note E4, and a quarter note D4. A fingered bass line below the staff shows the sequence 7 7.

Example 5-11a is a passage from a motet by Piero de Justinus that is discussed in a letter by Giovanni del Lago.³⁰ Piero had used a sharp (mi) sign in front of B, to avoid the possibility that singers might use B \flat and form a diminished fifth above E. Del Lago preferred to use B \flat here:

But I believe that you have signed it only in that in such place one sings mi, in order not to make this fifth diminished. I say that it would have been better to have signed in that place the round b than the cross which represents ... the lying square b. It is proper for the imperfect, or diminished, fifth to go to the third, especially when immediately one part ascends and the other descends.

We have here another example of a written testimony of one Renaissance musician disagreeing with another on a point of accidental usage in regard to a context that involves details of dissonance treatment.³¹ Example 5-11b again shows a B \flat versus a B \natural version, this time in *cantus mollis*, in which the upper note of the fifth is either left unaltered, producing a diminished fifth, or the upper note is raised in order to form the perfect fifth.³² In addition to the B \natural appearing in the lute source, there is also a vocal source (London, MS Add. 31922) which uses B \natural at the same spot.³³

³⁰Ms. Vatican, lat. 5318, fols. 102v-103r, with example, translation, and discussion in Berger, 101.

³¹Of course, there are many purely musical testimonies of differing approaches to the use of accidentals in specific passages, as seen throughout this study, as well as in studies by Toft and Brown.

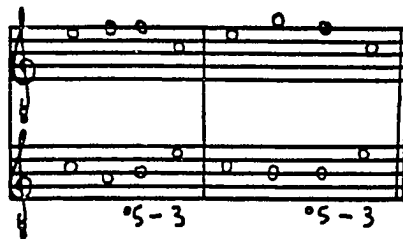
³²Hayne, *Allez, regrets*, in Florence 229, no. 225.

³³For the B \natural in London, British Museum, MS Add. 31922 (ca. 1510-20), see the edition of this manuscript in *Music at the Court of Henry VIII*, ed. John Stevens in *Musica*

The foregoing examples, then, present a variety of ways in which the fifth in the fifth-to-third motion can be treated. The diminished fifth can be used diatonically (Example 5-8a, first two progressions, 5-8c, and 5-11b [Florence 229 version]), with the lower note raised (Example 5-8a, third example) or with the upper note lowered (Example 5-8b, 5-11a in del Lago's version with B \flat). Or, the perfect fifth can appear diatonically (Example 5-11a in Piero de Justino's version with B \sharp), with the lower note flatted (Example 5-10) or with the upper note raised (Example 5-11b [Capirola version]).

Zarlino also gives examples of diminished fifth-to-third progressions in which the voices cross (see Example 5-12).³⁴

Example 5-12. Zarlino's example of diminished fifth-to-third progressions with voice crossing.



Britannica, vol 18 (London: Stainer & Bell, 1962; 2nd, rev. ed., 1973), no. 3, m. 9. In the same measure, a G \sharp leading tone is also stipulated.

³⁴Zarlino, *Le Istitutioni harmoniche*, bk. 3, ch. 30, trans. Marco and Palisca in *Art of Counterpoint*, 68. Cited in Berger, 107.

I have yet to see this voice leading in any Renaissance music. Perhaps an investigation of music from Willaert's generation might reveal instances of this in practice. In this case, however, there is a possibility that Zarlino went off on a theoretical tangent somewhat removed from practice.

Another area in which theorists sometimes allowed diminished fifths was in cases where there were successive fifths in which one of the fifths was perfect and one was diminished. Ramos wrote that:

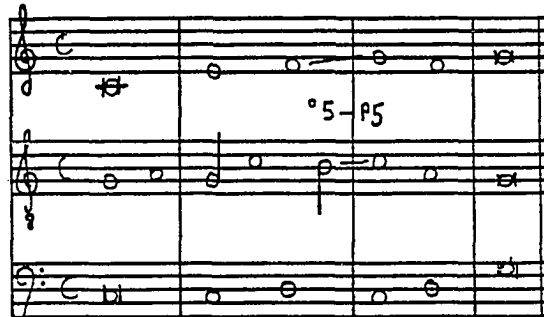
... a fifth may be made after a fifth, as long, however, as one would be a diminished fifth, the other a [perfect] fifth ... But this is not allowed in undiminished [note values], well, however, in broken ones, that is, in the diminution of the notes.³⁵

Aaron follows Ramos in allowing two fifths in succession, provided one is perfect and the other diminished, and cites an example in his *Lucidario in musica* (see Example 5-13).³⁶ Here we find a progression of a diminished fifth to a perfect fifth. The reverse progression, that of a perfect fifth to a diminished fifth, is found above in Example 5-9b, here, with an intervening fourth arising from a suspension. In this example, the diminished fifth has its usual resolution inward by step to a third.

³⁵Ramos de Pareia, *Musica practica*, ed. J. Wolf, p. 65. Cited in Berger, 101.

³⁶Aaron, *Lucidario in musica*, fol. 7v, cited in Berger, 103.

Example 5-13. Passage containing a diminished fifth to perfect fifth progression from Verdelot's *Infirmis nostram*, cited in Aaron's *Lucidario in musica*.



A glance at Examples 5-7 through 5-13 shows that the diminished fifths could appear in simple note-against-note or diminished (florid) two-voice counterpoint, and in music for more voices, in either diminished five-three or six-three sonorities.³⁷

3. *The treatment of the vertical diminished fifth and augmented fourth in sequences and in 5-6 or 6-5 motions.*³⁸

The treatment of melodic diminished fifths and augmented fourths in sequential passages was discussed above in Chapter 3, section III.5. There, the problems relating to the handling of sequential passages that run into the diminished fifth or augmented fourth inherent in the diatonic scale were discussed. It was seen that it was not always

³⁷ Again, the use of the terms "diminished five-three" and "six-three sonorities" are used here for convenience as descriptive labels, without intended implications of tonal chord functions.

³⁸ 5-6 and 6-5 motions tend to be sequential, at least in the voices containing the 5-6's or 6-5's, and so they have been grouped here with sequences in general.

easy to eliminate all melodic augmented fourths or diminished fifths (either in direct leap or in melodic outlining), because these passages contained complexities beyond those dealt with when the rules for melodic tritones and diminished fifths were originally formulated. Because of this, such intervals were sometimes avoided in practice, and, at other times, allowed.

There is a parallel situation here in regard to vertical diminished fifths or augmented fourths in sequences and 5-6 or 6-5 motions, for they are often avoided by the judicious application of accidentals (usually a flat lowering the bottom voice), but there are also a fair number of cases in which the vertical dissonance is used. In the following discussion, almost all of the examples deal with perfect or diminished fifths rather than augmented fourths; as we have already observed, the diminished fifth was generally used more than the tritone.

Sequences containing vertical diminished fifths are found in Example 3-12a, m. 68, and 3-12b, m. 44; they could have been adjusted to perfect fifths, but lute intabulators chose to retain them. Interestingly, these tricky sequences in Examples 3-14a and 3-14b contain melodic difficulties that almost certainly give rise to tritone leaps, but yet manage to stay clear of any vertical diminished fifths by using accidentals. Another sequential passage in which all vertical imperfect intervals are avoided by using flats is given in Example 5-14.³⁹

³⁹Isaac, *Christe* from *Missa Chargé de deul* in Florence 229, no. 16.

Example 5-14. Sequential passage using flats to avoid imperfect consonances. Isaac, *Christe* from *Missa Chargé de deul*, mm. 25-29.

The image shows a musical score for three staves, labeled with the number 25 at the beginning. The top staff is in treble clef, the middle in alto clef, and the bottom in bass clef. The music consists of a series of notes in each staff, with flats used to avoid imperfect consonances. The notes are arranged in a way that creates a sequence of intervals, primarily fifths and sixths, which are staggered to avoid imperfect consonances.

Sequential 5-6 and 6-5 motions (most often in ascending direction) first became common in Josquin's period. There is little theoretical discussion of accidental treatment in a series of alternating fifths and sixths in Renaissance theory. One such mention is found in Juan Bermudo's *Declaración de instrumentos musicales* (Osuna, 1555), which is summarized by Charles Jacobs as follows:

... if there is a series ... of "staggered" parallel fifths in the music and if the alternating interval is a sixth, the latter is to be such as to permit the following fifth to be perfect.⁴⁰

Perhaps performers in Bermudo's circle followed this rule; however, it is certainly a stricter approach than found in Josquin's period.

We have already seen (in Chapter 3) that composers sometimes avoided melodic imperfect fifths, and at other times permitted them in

⁴⁰Charles Jacobs, "Spanish Renaissance Discussion of Musica Ficta," *Proceedings of the American Philosophical Society*, vol. 112, no. 4 (1968), 281.

Interestingly, Example 4-3a contains a diminished fifth melodic outline, and both Examples 5-15a and 15b contain octave cross relations between the outer voices (marked B \flat -B and E \flat -E). It was very hard to smooth everything out and “make the crooked straight” in every vertical and horizontal detail, particularly in this first major flowering of polyphonic sequences and 5-6 or 6-5 motions. Often some kind of “rough edge” remains, in either the vertical or horizontal dimension. Usually, however, these are not overly disruptive to the ear; sometimes they even enhance the music.

There are also cases of ascending 5-6 and 6-5 motions in which the vertical diminished fifth or augmented fourth is not avoided (see Example 5-16).⁴²

Example 5-16. Ascending 5-6 and 6-5 motions with vertical diminished fifths (and an augmented fourth).

a. *Festa, Deduc me, Domine*, mm. 62-64.

a)

⁴²Johannes Martini, textless composition, in *Florence 229*, no. 218.

Example 5-16 continued.

b. Obrecht, *Christe* from *Missa Fortuna desperata*, mm. 41-44.

c. Festa, *Deduc me, Domine*, pt. 2, mm. 17-19.

d. Busnois, *Bon me larim bom bom*, mm. 20-22.

b)

6 5 6 5 6 5 6 5 6 5

c)

5 3 5 6 5

d)

6 5 6 5 6 5

Example 5-16a contains two diminished six-three chords, the second of which occurs within a brief ascending 5-6 motion in three voices. Toft examined a passage from a motet by Josquin that contains a diminished six-three chord arising in the same way and containing the same notes and spacing as that found in m. 62, and found that intabulators did one of three things: out of a total of eight intabulations, three lutenists left the diminished six-three intact, while the remaining five either used B \flat or F \sharp to avoid the augmented fourth.⁴³ Concerning these three possibilities, Toft writes: "All of these solutions were independently adopted by more than one performer and represent standard Renaissance procedure."⁴⁴ While it is difficult to evaluate which solutions would have been used most often by singers, Toft's findings validate the acceptance of the diminished six-three sonority in m. 62, as well as two methods of avoiding it, if desired. The acceptance of the diminished six-three sonority in m. 62 strongly suggests that the diminished six-three in m. 63 can stand without alteration. Here, the use of B \flat to correct the vertical augmented fourth on the third quarter of m. 63 would cause a diminished fifth with E on the fourth quarter unless E \flat is used. As we shall see in section 5 of this chapter, the vertical augmented fourth supported by a third below is sufficiently acceptable in this style to allow us to follow the simpler path of taking the music at face value here. Thus, one might use B \flat

⁴³Toft, "Pitch Content and Modal Procedure," 139 (Example 30d) and 140.

⁴⁴*Ibid.*, 140.

and E \flat to avoid the diminished six-three in m. 63, but it is by no means necessary to avoid the diminished sonority.

Example 5-16b is taken from the *Christe* of Obrecht's *Missa Fortuna desperata*, which is not found in the main sources for this study, but is taken from a contemporary source, the *Misse obrecht* printed by Petrucci in 1503.⁴⁵ The Petrucci edition places a sharp (=mi) in front of E in m. 43, which translates into modern notation as E \sharp , and thus gives rise to a diminished fifth with the tenor's B \flat . It is true that this diminished fifth could be avoided by raising the B \flat in the tenor to B \sharp , but this would cause a diminished fifth with the soprano; at any rate, Petrucci's intention to preserve the E-B \flat diminished fifth seems quite clear, and it is the simplest (and probably the best) solution to sing this passage just as notated.

Example 5-16c shows essentially the same situation as that seen in Example 5-16b, and thus can stand unaltered, with the diminished fifth in m. 18. In Example 5-16d, the ascending 6-5 series is lightly embellished with a descending third-rising fourth motion. The presence of these melodic leaps makes it unlikely that the diminished fifth between the upper voices in m. 22 would be eliminated; this would require the use of E \flat and A \flat in the lower voices, m. 22. Given the extent to which the diminished fifth was actually used, it is more likely that singers would have simply tolerated the diminished fifth rather than opt for the more complicated addition of flats. The fact that the dimin-

⁴⁵Obrecht, *Missa Fortuna desperata*, in *Werken*, Missen, no. 3, and in *New Obrecht Edition* (Amsterdam: Vereniging voor Nederlandse Muziekgeschiedenis, 1983-), vol. 4.

shed fifth occurs within a sequence gives it a “passing” quality that is easily glided through without disturbance to the ear. At any rate, even if the “chain reaction” version was adopted, it would still remain within the scope of two flats beyond the B \flat signature of the inner voices, and thus would not represent an example of “secret chromatic art.”

The flexibility in the use of perfect or diminished fifths in ascending 5-6 and 6-5 motions seen in Examples 5-15 and 5-16 is further corroborated by Example 5-11a, which contains an ascending 6-5 motion. As discussed above, the composer stipulated B \natural , thus leaving the diatonic vertical perfect fifth (E-B) intact, while del Lago preferred the use of B \flat , which would result in a standard diminished fifth-to-third progression.

Two descending 5-6 motions from Isaac’s *La morra* are shown in Example 5-17.⁴⁶

⁴⁶Isaac, *La morra*, in *Odhecaton*, no. 44, and in *Spinacino*, I: 13.

Example 5-17. Descending 5-6 motions containing diminished fifths.

a. Isaac, *La morra*, mm. 28-29.

b. Isaac, *La morra*, mm. 25-26.

a)

5 - 6 5 - 6 5 - 6

b)

6 5 - 6 5 6

Spinacino reproduces the pitch content of these examples in an essentially note-for-note version, and uses vertical diminished fifths in both examples. The diminished fifth in Example 5-17a is avoided in Petrucci's *Odhecaton* by the use of E^b in the bass (m. 28). As is so often the case with dubious or forbidden intervals, one Renaissance musician permits its use while another avoids it. These examples show that both "diminished five-three" and "diminished six-three" sonorities were acceptable in descending 5-6 series.

4. *Vertical diminished fifths and the "una nota supra la" rule.*

Examples showing the use of vertical perfect and diminished fifths in relation to the application of the *una nota supra la* rule (Rule 3) have already been given in Chapter 4. Example 4-3a shows a vertical diminished fifth arising from the application of the *una nota supra la* rule, while Example 4-3b shows the diminished fifth being avoided by the application of the same rule. Example 4-4 shows a situation in which the *una nota supra la* rule could be applied to produce the standard diminished fifth-to-third progression in the lower voices, mm. 40-41, or could be waived in favor of the vertical perfect fifth.

5. *The treatment of vertical tritones.*

Renaissance theorists give examples not only of permissible diminished fifths, but also of tritones. Example 5-18 shows an example of an acceptable augmented fourth given in Aaron's *Lucidario in Musica*, as well as a similar, lightly ornamented example from Bossinensis.⁴⁷

Example 5-18. Augmented fourths between upper voices occurring in conjunction with 7-6 suspensions above the bass.

a. Aaron, example from *Lucidario in musica*.

a)

The musical notation consists of three staves. The top staff (Soprano) has a treble clef and a key signature of one flat. The middle staff (Alto) has a treble clef and a key signature of one flat. The bottom staff (Bass) has a bass clef and a key signature of one flat. The notation shows a sequence of notes and rests across three measures. An augmented fourth interval is marked between the Soprano and Alto voices in the second measure. A 7-6 suspension is indicated above the Bass voice in the second measure. A figured bass '6 3' is shown below the Bass staff in the second measure.

⁴⁷ Aaron, *Lucidario in musica*, fol. 14r, cited in Berger, 104. Tromboncino, *Ben che'l ciel me t'habbi tolto*, in Bossinensis I: 60.

Example 5-18 continued.

b. Tromboncino, *Ben che'l ciel me t'habbi tolto*, mm. 27-29.

In both cases, the augmented fourth occurs between the upper voices of a diminished six-three sonority, and occurs in conjunction with a 7-6 suspension above the bass. Both diminished sonorities progress to a C-sonority with a standard M6-P8 progression. However, the “closest approach to a perfect consonance rule” (Rule 5, discussed in Chapter 4) is not followed in regard to the fifth; in Example 5-18b, mm. 28-29, the fifth is preceded by a minor rather than major third. The voice leading involving the augmented fourth shown in Example 5-18 occurs frequently at three-voice cadences in Renaissance music, and is well-known and accepted.

Another context in which the augmented fourth is allowed is with 5-6 motions above a single bass note. Example 5-19 shows examples from treatises by Dentice and Zarlino, and another example from Capirola’s arrangement of Févin’s *Sancta Trinitas*.⁴⁸ Note that examples 5-19b and 19c are almost identical.

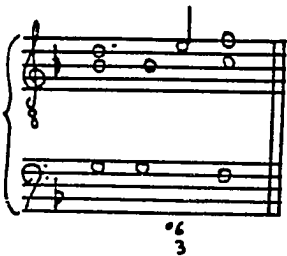
⁴⁸Luigi Dentice, *Duo dialoghi della musica*, fol. 39r, cited in Berger, 107. Zarlino, *Le Istitutioni harmoniche*, bk. 3, ch. 61, trans. Marco and Palisca in *Art of Counterpoint*,

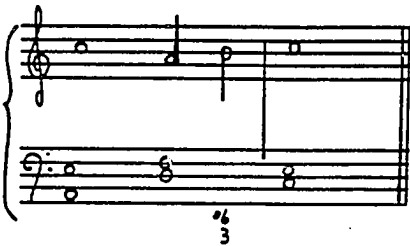
Example 5-19. Augmented fourths arising from 5-6 motions above the bass.


a. Example from Dentice, *Duo dialoghi della musica*.

b. Example from Zarlino, *Le Istitutioni harmoniche*.

c. Févin's *Sancta Trinitas*, mm. 81-82, with Capirola's interpretation.

a) 

b) 

c) 

197. Cited in Berger, 109. Févin, *Sancta Trinitas* in *Treize Motets et un Prelude pour Orgue*, no. 8.

Another way in which the augmented fourth may arise is by means of suspensions (see Example 5-20).

Example 5-20. Augmented fourth suspensions.

a. Example from Zarlino, *Le Istitutioni harmoniche*.

b. Pierre de la Rue, *Doleo super te*, mm. 29-30.

a)

Musical score for Example 5-20a, showing two staves. The top staff is in treble clef and the bottom staff is in bass clef. The music consists of several measures. Two specific instances of augmented fourth suspensions are marked with "[A4]" below the notes in the bass staff.

b)

Musical score for Example 5-20b, showing four staves. The top staff is in treble clef and the bottom three staves are in bass clef. The music consists of two measures. A tritone suspension is marked with "2?" above the first measure and "3" below the second measure.

Zarlino gives an example demonstrating tritone suspensions in the lowest voice (see Example 5-20a) with the following comments:

At times musicians write a tritone between two parts so that it falls on the second part of a syncopated semibreve written in the bass as in the example [see Example 5-20a]. The notes of the tritone, although heard, are not actually sounded [i.e., attacked]

simultaneously, and since the parts are so coordinated as not to depart from the rules, the resulting effect is good.⁴⁹

An upper-voice tritone suspension from Pierre de la Rue's *Doleo super te* is given in Example 5-20b.⁵⁰ The B and E in the lower voices strongly suggest the use of B (rather than B \flat) in the upper voice, m. 29; this in turn gives rise to the diminished six-three sonority in m. 30. It would be possible to avoid the augmented fourth in m. 30 by invoking the raised lower neighbor-note rule (rule 4, discussed in Chapter 4), which would produce F \sharp in the tenor. This is possible but not necessary, since there is no reason not to accept the augmented fourth when treated as a dissonant suspension; furthermore, as we know, this use of the augmented fourth is allowed by Zarlino.⁵¹

The next category of augmented fourth is very specific. It features a stepwise descending upper voice, and forms a diminished six-three sonority with a particular arrangement of intervals, given here in ascending order from bass: octave, minor third, augmented fourth (see Example 5-21).

⁴⁹Zarlino, *Le Istitutioni harmoniche*, bk. 3, ch. 61, trans. Marco and Palisca in *Art of Counterpoint*, 197-98. Cited in Berger, 109-10.

⁵⁰Pierre de la Rue, *Doleo super te*, in Brussels 228, no. 35.

⁵¹For another example of an upper voice augmented fourth suspension, see Brussels 288, no. 34, mm. 43-44.

Example 5-21. A widely used type of vertical augmented fourth within a diminished six-three sonority (a-c), and the means of avoiding it (d).

a. Willaert, *Saluto te sancto virgo*, Pt. 2, mm. 73-75.

b. Textless, anonymous composition from Florence 229, no. 159, mm. 60-64.

a)

b)

Example 5-21 continued.

c. Bakfark, *Fantasie*, mm. 118-122.

d. Bakfark, *Fantasie*, mm. 40-42.

c)

d)

This type of diminished six-three remained in use after Josquin's period: Example 5-21c shows its use in a mid-sixteenth century *Fantasie* for lute by Valentin Bakfark.⁵² Example 5-21d shows a similar situation from another lute *Fantasie* by Bakfark in which the augmented fourth is avoided by raising the lower note of the fourth.⁵³ It

⁵²Bakfark, *Fantasie* (Lyon, 1552), transcr. in Otto Gombosi, *Der Lautenist Valentin Bakfark (1507-1576)* (Budapest: Akadémiai Kiadó, 1967), 102. Toft shows this type of diminished six-three sonority being used in Sebastian Ochsenkun's intabulation of Josquin's motet, *In exitu*, in "Pitch Content and Modal Procedure," 149. Further examples, including one by Cabézon, are found in Jacobs, "Spanish Renaissance Discussion of Musica Ficta," 292, Example 9, m. 6, and 298, Example 36, last part, m. 2. Thus, this particular type of diminished six-three enjoyed widespread use in the sixteenth century.

⁵³Bakfark, *Fantasie*, transcr. in Gombosi, *Der Lautenist Valentin Bakfark*, 103.

seems unlikely that the augmented fourth would be avoided by lowering the upper voice, because I am not aware of any specifically notated example in Renaissance sources.⁵⁴ Furthermore, lowering the upper voice would mean introducing a flat two flats beyond the signature, which rarely happens without the intermediate flat.⁵⁵ Thus the Renaissance musicians' policy regarding this particular type of diminished six-three sonority would seem to be as follows: the diminished six-three was normally left unaltered, though on rare occasions, it was avoided by raising the lower note of the augmented fourth. This appraisal of Renaissance policy is provisional, and may be modified by further source studies. However, it is clear that Renaissance musicians simply permitted this type of diminished six-three to be performed as notated, and the scarcity of accidentals in sources containing this sonority suggests that it was by far the most common practice.

Our final example of a diminished six-three sonority contains an augmented fourth that arises from the application of the *una nota supra la* rule (see Example 5-22).⁵⁶

⁵⁴Of course, this conclusion would have to be modified if explicitly notated examples of upper voices flatted were found.

⁵⁵In other words, it would not be normal to introduce E \flat in *cantus durus* without first introducing the intermediate B \flat first, or A \flat in *cantus mollis* without first introducing E \flat , and so forth for other signatures. This principle of "chain reactions" of successive flats was correctly observed by Lowinsky in *Secret Chromatic Art*, although most of his examples carry the principle to remoter flat regions than is likely to have been practiced by Renaissance musicians. This issue is discussed later in this chapter and in Chapter 8.

⁵⁶Anon., *Le serviteur hault guerdonné*, in Florence 229, no. 258.

Example 5-22. Diminished six-three sonority containing an augmented fourth formed by application of the *una note supra la rule*. Anon., *Le serviteur hault guerdonné*, mm. 73-78.

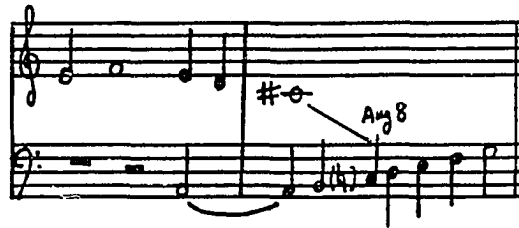
Although it would be possible to avoid the augmented fourth by using D^b in the upper voice, this seems unlikely, since it would cause an augmented fifth melodic outline. Furthermore, it would mean directly introducing a flat two fifths beyond the signature, which, as was discussed above, is rare (cf. fn. 52). In fact, diminished six-three sonorities are more a part of the musical language of Josquin's period than the unmediated introduction of a flat located two flats beyond the signature.

The examples from this section demonstrate that the vertical augmented fourth occurring within a diminished six-three sonority is a normal part of the Renaissance musical vocabulary. It is usually introduced and continued by stepwise motion. Example 5-22 illustrates that this might happen in a somewhat unpredictable way; thus, there is an element of freedom in the use of the vertical augmented fourth within the diminished six-three sonority in Josquin's period.

6. *The use of vertical imperfect unisons and octaves.*

Aaron and Spataro had a disagreement over a brief passage containing an augmented octave: Aaron criticised the use of this interval, while Spataro thought it was acceptable because it occurred on a weak beat (see Example 5-23). Once again, we find Renaissance musicians having different views on “prohibited” intervals.⁵⁷

Example 5-23. Example of an augmented octave discussed by Aaron and Spataro.



In addition to Spataro’s acceptance of the augmented octave, a number of practical sources show the use of augmented unisons or octaves. Studies by Apel and Jacobs show examples of vertical augmented or diminished octaves in sixteenth-century keyboard music.⁵⁸ Toft points out their presence in lutenists’ embellishments of vocal music and imperfect octaves arising from instrumental embellishments also occur in the lute sources for this study.⁵⁹ Noblitt has found

⁵⁷The example and Aaron and Spataro’s views are given in Knud Jeppesen, “Eine musiktheoretische Korrespondenz des früheren Cinquecento,” *Acta Musicologica* 13 (1941), 33-34.

⁵⁸Apel, “*Punto intonso contra remisso*” and Jacobs, “Spanish Renaissance Discussion of *Musica Ficta*.”

⁵⁹Toft, “Pitch Content and Modal Procedure,” 144-45.

some convincing examples of augmented unisons in Obrecht masses.⁶⁰ A handful of imperfect octaves and unisons directly applicable to vocal practice are found in the main sources for this study; some of these are given in Example 5-24.⁶¹

⁶⁰Thomas Noblitt, "Chromatic Cross-Relations and Editorial *Musica Ficta* in Masses of Obrecht," *Tijdschrift van de Vereniging voor Nederlandse Muziekgeschiedenis* 32 (1982), 36-37.

⁶¹Marco Cara, *O mia, chieca e dura* in *Ottaviano Petrucci, Frottole, Buch I und IV*, ed. Rudolf Schwartz (Leipzig: Breitkopf & Härtel, 1935), no. 6. Cara, *Se ben el fin* in *Bossinensis I*: 68. Josquin, *Comment peult avoir joye* in *Wereldlijke Werken, Bundel 5*, no. 56. Obrecht, *Missa Je ne demande, Agnus Dei*, in *Werken, Missen*, no. 1, and in *New Obrecht Edition*, vol. 5.

Example 5-24. Vertical augmented unisons and octaves.

a. Marco Cara, *O mia, chieca e dura*, mm. 23-25, with Capirola's interpretation.

b. Cara, *Se ben el fin*, mm. 13-16.

a)

23

C: P11, 52, m5

bd Aug. 1

b)

13

Al

Example 5-24 continued.

c. Josquin, *Comment peult avoir joye*, mm. 51-53, with Spina-
cino's interpretation.

d. Obrecht, *Missa Je ne demande*, *Agnus Dei*, mm. 87-89.

c)

Handwritten musical score for Josquin's *Comment peult avoir joye*, measures 51-53. The score is written for four staves: two vocal staves (Soprano and Alto) and two piano accompaniment staves (Right and Left Hand). The key signature is one flat (B-flat major/D minor). The time signature is 4/4. The score includes various musical notations such as notes, rests, beams, and slurs. A handwritten annotation '51' is at the top left. A handwritten annotation '52:14' is above the piano part. A handwritten annotation 'Aug. 8' is near a note in the piano part. A handwritten annotation '53' is above a note in the piano part.

d)

Handwritten musical score for Obrecht's *Missa Je ne demande*, *Agnus Dei*, measures 87-89. The score is written for four staves: two vocal staves (Soprano and Alto) and two piano accompaniment staves (Right and Left Hand). The key signature is one flat (B-flat major/D minor). The time signature is 4/4. The score includes various musical notations such as notes, rests, beams, and slurs. A handwritten annotation '87' is at the top left. A handwritten annotation 'Al' is above a note in the piano part.

The first two examples (5-24a and b) illustrate what may be the most common way in which simultaneous chromatic clashes arise in vocal music of Josquin's period: a lower voice has a $b6-5$ motion while the upper voice uses raised 6 and 7 for a cadence. Notice that the upper voice in both examples contains a typical cadence-figure that was habitually given sharps.

Example 5-24c does not fall into any readily explainable category; as sometimes happens in intabulations, the lutenist-arranger seems not to have been concerned with keeping the inflections of a given pitch-letter the same in different registers. Example 5-24d is not from one of the main sources for this study, but rather is taken from Noblitt's study of cross relations in Obrecht's masses. Noblitt says that most vertical cross relations in the masses are to be edited out, but gives a few examples in which they are retained for melodic reasons, in this case, to avoid the augmented fourth outline (A-E b , mm. 87-88) and direct leap (E b -A, m. 88) in the superius.⁶² I am in agreement with Noblitt that the version using E \sharp (as notated) is more likely than the version with E b in the superius, with its resulting tritone leap. Noblitt points out that Apel made the following observation concerning the use of an imperfect octave in a seventeenth-century keyboard intabulation of a passage attributed to Josquin: "the *punto intenso* [raised note] ... occurs shortly after the *punto remisso* and on a weak beat," and Noblitt also points out Apel's subsequent assertion that Josquin would not allow the raised and unraised note to be introduced

⁶²Thomas Noblitt, "Chromatic Cross-Relations and Editorial *Musica Ficta* in Masses of Obrecht," 35-36.

simultaneously.⁶³ Interestingly, Examples 5-24a-c conform to all of the requirements set forth by Apel, while, as Noblitt has observed, the examples from the Obrecht Masses break the requirement that the raised note appear on a weak beat, as Example 5-24d demonstrates.⁶⁴ The augmented octave in Josquin's period, then, was introduced by oblique motion, and may occur on either a weak or strong beat.

Examples 5-24a-b further confirm the tendency (discussed in Chapter 4) for cadence-like melodic figures to be given raised notes regardless of what the other voices are doing. This is probably related to the fact that singers sang only from their part, without being able to see the entire *concentus*.⁶⁵ The raised notes in cadence-like melodic figures (as in Example 4-13c) may be used then, whether there is a cadence or not, whether a cadence is completed (Example 4-14), imperfected (Example 4-18), or interrupted (Example 4-19), and occasionally even in cases where a direct chromatic clash occurs (Examples 4-20 and 5-24). In this last case, we enter into another one of those "gray" areas where the clash is sometimes allowed, sometimes avoided (as in Example 4-21).

⁶³Ibid., 37. Apel, "*Punto intenso contra remisso*," 177.

⁶⁴Noblitt, "Chromatic Cross-Relations and Editorial *Musica Ficta* in Masses of Obrecht," 37.

⁶⁵Of course, singers must have made adjustments after hearing clashes (when they wished to eliminate them).

The use of the augmented fifth.

Our survey of imperfect fourths, fifths and octaves concludes with a consideration of the augmented fifth (see Example 5-25).⁶⁶

Example 5-25. The use of the augmented fifth.

a. Andreas de Silva, *Omnis pulchritudo*, mm. 5-7.

b. Josquin, *Memor esto verbi tui*, final cadence.

a)

Handwritten musical score for Example 5-25a. It consists of five staves (treble and bass clefs) over three measures. A handwritten '5' is above the first measure. An arrow points from the label 'Aug 5' to an augmented fifth interval between the second and third notes of the second staff in the second measure. A handwritten 'b' is below the first measure of the bass staff.

b)

Handwritten musical score for Example 5-25b. It consists of five staves over three measures. A handwritten '3 2 3' is above the first measure. An arrow points from the label '(Aug 5)' to an augmented fifth interval between the second and third notes of the first staff in the second measure. Another arrow points from the label '(Aug 8)' to an augmented eighth interval between the second and third notes of the first staff in the third measure. A handwritten '# 4 #' is above the second measure. Two arrows point from the label '(A5 A5)' to augmented fifth intervals between the second and third notes of the first staff in the second and third measures. A handwritten 'b' is below the first measure of the bass staff.

⁶⁶Andreas de Silva, *Omnis pulchritudo* in *Medici Codex*, no. 45. Josquin *Memor esto verbi tui* in *Werken, Motetten, Bundel 6*, no. 31.

An example is given in Example 5-25a. The augmented fifth arises from the neighboring 5-6-5 motion introduced obliquely against a Picardy third. While this interval might seem to be an anomaly in the music of Josquin's period, it probably arose from time to time at cadences from the simultaneous use of Picardy thirds with neighboring 5-6-5 (or 6-5) motions (a favorite figure at cadences of that era), as in the preceding example. The final cadence in Josquin's *Memor esto verbi tui* (see Example 5-25b) can be performed with both an augmented octave (comparable to those in Example 5-24) and an augmented fifth appearing within a short space of each other; this use of dissonance is perfectly valid on historical and stylistic grounds. This augmented fifth would again arise from use of a Picardy third and neighboring 5-6-5 motions in a lower voice.⁶⁷ In fact, this motet has been recorded with just such an interpretation in the closing measures, and the dissonances, although striking to the sensitive ear, pass by rapidly without causing great disturbance.⁶⁸

The contents of this chapter demonstrate a broad use of imperfect fourths, fifths, and octaves on the part of Renaissance musicians,

⁶⁷That singers in Josquin's period might have used of the Picardy third at this cadence is confirmed by Aaron's discussion of raised thirds at cadences; for more on this, see Rule 8 in Chapter 6.

⁶⁸Josquin's *Memor esto verbi tui* has been beautifully recorded *a capella* by a group of male soloists called 'A Sei Voci' on *L'Art sacre de Josquin des Pres*, Compact Disc UCD 16552, Forlane, 1985. This CD contains the finest recording of Josquin's great *Missa de Beata Virgine* available at present. Interestingly, they base their use of inflections in the Mass on the intabulation by Diego Pisador in his *Libro de musica de vihuela* (1552). This Mass poses many difficult problems regarding inflections, and I have found this particular version at times surprising, even at times a little awkward. But it is historically and stylistically authentic, quite fascinating, and a valuable lesson for all who want to capture the true sound and flavor of Renaissance musicians' treatment of inflections.

and show the specific musical contexts in which these usually arise. With the evidence accumulated in Berger's book and in this study, it is no longer possible to support modern theories of extreme chromaticism in normal, diatonic Renaissance music on the premise that it was necessary to avoid every melodic or vertical dissonance. In many cases, the dissonances could be tolerated, and in other cases, it was possible, when desired, to avoid the dissonance either by raising the upper voice or by lowering the bottom voice. The combined theoretical and practical evidence from the Renaissance supports the following view concerning music written in the diatonic modal tradition of the Renaissance: there was generally a narrower range of accidentals, but a greater freedom in the use of vertical and melodic dissonance than is portrayed in the *Secret Chromatic Art* and its offspring.

CHAPTER 6

THE RULES GOVERNING ACCIDENTALS AND THEIR
APPLICATION IN PRACTICAL SOURCES (CONCLUSION)

Cross Relations and Picardy Thirds.

Rule 7: Cross relations are forbidden in music for two voices, but allowed between diatonic steps in music for three or more voices.

Zarlino seems to have been the first theorist to have discussed cross relations of imperfect fourths, fifths, and octaves.¹ The following passage from *Le Istitutioni harmoniche* indicates that he found these cross relations offensive in two-part textures, but that composers nonetheless used them. Furthermore, Zarlino writes that it is not always possible to eliminate all cross relations in music for more than two voices, but that they should only occur between natural, unflected notes:

To purge our compositions of every error and to assure their correctness, let us avoid this relation. Especially when we compose for two voices, it is very annoying to sensitive ears ... I am appalled at those who have not avoided having these intervals sung in certain parts of their compositions ... the progression should be avoided, especially if we wish to compose correctly and without error. It is true, however, that in compositions for many voices it is often impossible to avoid such relations and

¹Zarlino, *Le Istitutioni harmoniche*, bk. 3, ch. 30. See Berger, 110ff. For information concerning subsequent theorists who echoed Zarlino's theory of cross relations, see James Haar, "False Relations and Chromaticism in Sixteenth-Century Music," *Journal of the American Musicological Society* 30 (1977), 414. In his discussion of cross relations, Zarlino includes both diatonic and chromatic dissonances.

not to arrive at such an impasse. It sometimes happens that a composer writes on a subject that leads him to offend the precept, and, constrained by necessity, he will let it pass, as when he wishes to write a fugue or consequence ... But even when necessity thus presses him he should at least see that these defects occur in diatonic steps and in those which are proper and natural to the mode and not in those which are accidental ...²

Zarlino's prohibition concerning cross relations seems to have arisen more from an ear keenly attuned to smooth counterpoint and easily offended by "rough edges" in polyphony than from standard Renaissance practice.³ As we have seen, Zarlino regretfully observes that Renaissance musicians used them. Furthermore, in his study of sixteenth-century cross relations, Haar observes that:

... a good deal of chromaticism in this music is the result of what appears to have been a genuine liking for the cross relation—the *mi-fa* clash—not only among avowed chromaticists but also in the work of composers who wrote basically diatonic music, or who were at most ... "intermediate" chromaticists.⁴

This observation led Haar to conclude that Zarlino's restrictions on the use of cross relations (which were echoed by subsequent theorists) were not of overriding importance as far as actual sixteenth-century practice was concerned.⁵

²Zarlino, *Le Istitutioni harmoniche*, bk. 3, ch. 30, trans. Marco and Palisca, *Art of Counterpoint*, 65ff.

³This was the same sensibility that fought against the "poor effect" of chromatic music of Vicentino's school (see *Le Istitutioni harmoniche*, bk. 3, chs. 78-80, trans. Marco and Palisca in *Art of Counterpoint*, 228ff.).

⁴James Haar, "False Relations and Chromaticism in Sixteenth-Century Music," 391-92.

⁵*Ibid.*, 415.

Toft's investigation of sixteenth-century lute sources led him to a conclusion similar to Haar's:

The intabulations substantiate Zarlino's claim that "... it is not so vital to avoid nonharmonic relations [in compositions for many voices] ..." Moreover, the frequency with which the mi-fa clash occurs in the intabulations suggests that these clashes were an important part of the Renaissance 'sound ideal' ... Inevitably, these relations are found even in two-part writing where Zarlino expressly prohibits them.⁶

Documentation of the use of cross relations in Josquin's period is found in studies by van Benthem and Noblitt: van Benthem finds them to be a part of Josquin's musical language while Noblitt finds that they are frequently used in the Masses of Obrecht.⁷ The sources for this study further substantiate a widespread and frequent use of dissonant cross relations in this period. Numerous instances appear in examples already given in this study; therefore, instead of giving a series of new examples, a list of cross relations from examples in Chapters 3, 4, and 5 is provided in Appendix E. Note that the augmented fourth is particularly common, the diminished fifth less so, and the remaining intervals (imperfect unisons and octaves, diminished fourths, augmented fifths) least common. I suspect that this is representative of Josquin's period, though further study might prove otherwise.

⁶Toft, "Pitch Content and Modal Procedure," 141 and 143.

⁷The title of van Benthem's "Fortuna in Focus: 'conflicting' progressions in Josquin's *Fortuna dun gran tempo*" stems from his observation of "rough edges" such as cross relations in Josquin's musical language (see p. 13 and p. 16ff.). As his title suggests, Noblitt focuses on cross relations of the imperfect octave and unison in "Chromatic Cross-Relations and Editorial *Musica ficta* in Masses of Obrecht."

Many of the examples listed in Appendix E are for three or more voices; Zarlino reluctantly acknowledges that it is not always possible to avoid cross relations in music for more than two voices, and allows them for contrapuntal necessity, but only between diatonic steps. However, as the asterisks indicate, most of the cross relations in Appendix E arise from the use of accidentals. As Noblitt observed, cross relations frequently arise from the use of accidentals that fulfill one of the usual melodic or vertical rules governing inflections. Cross relations of imperfect octaves and unisons most frequently arise in Obrecht masses from accidentals that originate from the *una nota supra la* rule, and from the rules for avoiding imperfect melodic and vertical tritones.⁸ This is also the case with accidentals that give rise to the cross relations listed in Appendix E.

Haar, on the other hand, finds that in the mid-sixteenth century repertory,

... there is often no melodic need—*fa super la* or anything else—satisfied by this chromaticism. It seems clear that such accidentals were regarded as a salutary condiment to the bland diatonic modal framework within which sixteenth century musicians worked.⁹

An examination of Noblitt's and Haar's findings reveals a fundamental difference between the way in which accidentals gave rise to cross relations in Obrecht as compared to how they did so in the mid-sixteenth century. In Obrecht's masses (and, indeed, in Josquin's period

⁸Noblitt, 31ff.

⁹Haar, "False Relations and Chromaticism in Sixteenth-Century Music," 415.

as a whole), such accidentals were normally introduced in order to fulfill one of the standard rules (such as avoiding a tritone leap), and cross relations arose as incidental byproducts. This, however, was only sometimes the case in the music of the following generations, as the examples from Haar's study show. In this repertory, accidentals forming cross relations were often introduced for less rational reasons, probably out of desire for their novel, colorful effect. Cross relations might thus have been more deliberately cultivated for their own sake in the Italian madrigal, rather than arising merely as byproducts as they did in Josquin's era. Text illustration may also have been a motivation, although, as Haar humorously observes,

... a turn of melody or harmony that could effectively underscore the meaning of a word or phrase could elsewhere be used for purely musical reasons. Music as the servant of the text, in other words, had its days off.¹⁰

Not only does Renaissance practice frequently contradict Zarlino's prohibition of cross relations arising from the use of accidentals, but it also frequently disregards his prohibition of cross relations in two-voice writing. A number of examples listed in Appendix E occur in passages with only two voices sounding. Perhaps the most striking examples are found in Examples 5-1 and 5-4, striking because they are by theorists (Burtius and Hothby) and because the cross relations not only occur in music for two voices, but also involve accidentals. These examples are designed to show the avoidance of the vertical diminished fifth, and show no concern whatsoever for the resulting cross re-

¹⁰Ibid., 404-405.

lations, while they manage to violate both of Zarlino's later restrictions. Theorists of Josquin's period did not discuss cross relations.

It may be that the main significance of Zarlino's theory of cross relations was the mere observation of them; this may have set the stage for later rules which are still to be found in modern harmony and counterpoint textbooks. In fairness to Zarlino, it may be that close study of the music by Willaert and his circle will reveal a wider practical application of his prohibitions concerning cross relations. However, being aware of Zarlino's rule, Haar deliberately included examples from Willaert's compositions in his study. Thus, the weight of evidence so far argues against significant practical application of Zarlino's doctrine on cross relations.

Most of the examples in Appendix E are direct cross relations occurring between adjacent beats; as indicated, however, there are also a few examples of cross relations slightly separated by an intervening note. It goes without saying that if cross relations sounding simultaneously or occurring on directly adjacent beats were tolerated, cross relations with one or more intervening harmony would be perfectly acceptable.

In the discussion of permutation (Rule 2) in Chapter 3, we have seen that there was a rare use of chromatic-semitone steps in Josquin's period. The use of different chromatic inflections of a single step (such as B and B \flat or C and C \sharp) between adjacent beats occurs far more characteristically between different voices than it does within a single voice in Josquin's period. In other words, chromatic cross relations are a normal part of the musical language of Josquin's era, while direct

chromatic lines are not. Some examples of chromatic cross relations are listed in Appendix E; another example, from Josquin's famous *Déploration* (lament) on the death of Ockeghem, *Nymphes des bois*, is so wonderful that it merits inclusion here (see Example 6-1).¹¹ Note that both the E \flat and the E \sharp are necessary in order to form vertical perfect fifths. The effect of the E \flat and E \sharp in the same register approaches that of a chromatic succession in a single voice; however, that these notes appear in different voices and fulfill vertical rules shows this passage to be within the "norms for chromaticism" in Josquin's period. It is, though, an exceptionally artistic example, perhaps the most beautiful of all direct cross relations in the period. What in the hands of other composers was sometimes a "rough edge," with awkward charm (or crude effect), was in the hands of Josquin a touch of inspiration.

Example 6-1. Augmented unison cross relation in Josquin, *Nymphes des bois*, *secunda pars*, mm. 118-126.

¹¹Josquin, *Nymphes des bois*, in *Medici Codex*, no. 42, and in *Wereldlijke Werken*, *Bundel 2*, no. 22. The version in the *Medici Codex*, which is more reliable than that in Smijers' edition, is used for Example 6-1.

Our final example for this discussion involves a particularly common type of cross relation with intervening harmony (or harmonies), which Lowinsky calls the transposed “Mixolydian cadence” (see Example 6-2).¹² It features a characteristic contrast between the lowered seventh scale-degree, used to form a vertical perfect fifth, and the natural seventh scale-degree used as a leading tone. This cadence-type is typical of the Lydian and Hypolydian modes (fifth and sixth modes); Example 6-2 is from a composition in mode 5.¹³

Example 6-2. Characteristic cross relation in Lydian-mode cadence. Caron (or Dusart or Philipon), *Rose playsant, adorant comme grant*, mm. 75-77.

¹²*Tonality and Atonality in Sixteenth-Century Music*, 3, 18. Lowinsky explains that “I called this cadence “Mixolydian” because this is the only mode in which it can be realized without altering in the bass a single degree of the mode, whereas in the Lydian mode the seventh degree has to be flattened to achieve it. Yet the cadence appears also transposed to Ionian and, most frequently, to Lydian” (p. 80). The term “Mixolydian” cadence, while perfectly understandable, is something of a curiosity, since it occurs far more frequently in Lydian than Mixolydian—“Lydian” cadence might be more accurate.

¹³Caron (or Dusart or Philipon), *Rose playsant, adorant comme grant* in Florence 229, no. 219.

Rule 8. Minor thirds are raised to major at cadences
(Picardy thirds).¹⁴

The earliest known mention of this rule occurs in Aaron's *Toscanello in musica*, which was first printed in 1523. It is eminently understandable that rules for raising the minor third to major at cadences are only found as far back as the sixteenth century, since the third is found less often in final cadence-harmonies of late fifteenth-century music as compared to those in sixteenth-century music. As Bergquist points out, "Thus only in Aaron's time would the third have been used so often that theorists felt impelled to mention the necessity of raising it."¹⁵ Aaron argues that the minor tenth is unpleasant, and should therefore be adjusted to major by raising the upper note.¹⁶

The sources follow the usual pattern of applying the rule in some cases, and not in others.¹⁷ It is difficult to draw firm conclusions on the use of the Picardy third from the vocal sources, since they are seldom indicated there. A survey of the lute sources yields more concrete results. An examination of Appendix F demonstrates that the rule was generally applied at final cadences containing thirds, and less

¹⁴As far as I know, the term "Picardy third" is not used by Renaissance theorists, but is used by Rousseau in 1768. The term here is used as a convenient label.

¹⁵See Peter Bergquist, "The Theoretical Writings of Pietro Aaron," 412. For more extended accounts of Aaron's theory of the Picardy third, see Bergquist, 412ff., and Berger, 138-39. Berger also provides a list of later sixteenth-century theorists who cited the Picardy third rule.

¹⁶Bergquist, 412-13. Spataro criticized this, saying that the minor third was not unpleasant, but that the major third was more pleasant; see Bergquist, 414.

¹⁷Toft, "Pitch Content and Modal Procedure," 131, finds that "The intabulators exhibit a wide variety of practices in this regard which demonstrates that the theorists' statements on this matter were by no means universally applied."

so at internal cadences or phrase endings.¹⁸ Bossinensis usually (but not always) raises the third at internal cadences, and always raises them at the end. His approach is the most “sharp-oriented” of our three intabulators; this may be related to the fact that Petrucci’s *frottole* books contain a relatively high number of sharps (many of which are Picardy thirds) for that period. Capirola seems ready to go either way on internal cadences, and usually (but not always) raises the third at final cadences. Spinacino is markedly different from the other two, in that he usually does not raise thirds at internal cadences; his intabulations yield no significant data concerning the Picardy third at final cadences, since virtually all of his final cadences do not contain the third.

A typical Picardy third at a phrase ending is found in Example 3-22a. Its use here probably gives rise to the diminished octave leap. This conclusion is supported by Example 6-3, which shows a diminished octave filled in by instrumental figuration.¹⁹ It leads to another

¹⁸In a study of raised thirds at cadences in Festa’s music, Glen Haydon concluded that “... although sharps added to the thirds of final chords may be generally acceptable, those added to the final chord in intermediate cadences should certainly be considered with caution.” See Haydon, “The Case of the Troublesome Accidental,” in *Natalicia musicologica Knud Jeppesens*, eds. Bjørn Hjelmberg and Søren Sørensen (Oslo: Hansen, 1962), 129. The findings of the present study confirm Haydon’s statement. Leeman Perkins argues that the presence of sharps at a number of important internal cadences in the Mellon chansonnier signifies that it was a convention at all such cadences; see *The Mellon Chansonnier*, eds. Leeman Perkins and Howard Garey (New Haven: Yale U. Press, 1979), vol. 2, 136. Allan Atlas argues that the same evidence can be argued the other way, “for, if raised thirds were in fact a convention, why did the scribe feel compelled to sign them as he did?” See Atlas, review of *The Mellon Chansonnier* in *Journal of the American Musicological Society*, vol. 34 (1981), 134. It is difficult on the basis of the present study to draw firm conclusions concerning the Mellon chansonnier, which, dated ca. 1475, belongs to an earlier period in which sharps were notated more often in mensural sources than they were in Josquin’s period. I would, however, caution against assuming that the practice concerning raised thirds was entirely consistent for the repertoire of the Mellon chansonnier; further evidence would be needed to support such a claim.

¹⁹Hayne, *Mon souvenir* in *Odhecaton* no. 83.

conclusion, namely, that the presence of a dissonant leap produced by a Picardy third is acceptable. Indeed, if diminished fourth and fifth leaps are allowed within phrases (as in Examples 3-18 and 3-24), why not allow such leaps between the end of one phrase and the beginning of another?

Example 6-3. Diminished octave formed by Picardy third.
Hayne, *Mon souvenir*, mm. 32-34, with Spinacino's interpretation.

The image displays a musical score for three staves. The top staff is the vocal line, the middle staff is the piano accompaniment, and the bottom staff is the piano accompaniment. The score is in 4/4 time and features a key signature of one sharp (F#). The first measure is marked '032' and the second measure is marked '5: #'. The third measure is marked '4' and 'b'. The fourth measure is marked 'SI:20'. The score shows a diminished octave leap in the vocal line between the end of the first phrase and the beginning of the second phrase.

The possibility of a diminished octave leap raises the question as to whether sharps forming Picardy thirds were cancelled out when the same note appeared in the same voice at the beginning of a new phrase. I believe this to have been the case with our examples of di-

minished octave leaps, but the little remaining evidence I have been able to find regarding this question indicates that, working within a single voice in a single register, the sharp carried over, and the chromatic semitone step was avoided. Only two unambiguously notated examples were found, and both of these show the raised third being continued into the next phrase (see Example 6-4).²⁰

Example 6-4. Cadential raised third continued into a new phrase. Anon., *De che parlerà più la lingua mea*, mm. 3-6.



Further evidence for this comes from an example in Aaron's *Lucidario in musica*; this is given here in Example 6-5. This example shows, according to Aaron, a totally unacceptable progression, one not even justifiable by the fermata on F#; indeed, he says, it would be better

²⁰*De che parlerà più la lingua mea* in Bossinensis I: 70(69). The other example is in Bossinensis I: 46, mm. 9-10.

to change the bass so that the progression F \sharp -F \natural could be avoided.²¹ It is logical to conclude that, if Aaron would not sanction a chromatic half step where necessary according to contrapuntal rule (as in Example 6-5), he also would not approve of using the chromatic half step where there was no contrapuntal necessity, as in Example 6-4.

Example 6-5. Prohibited chromatic semitone progression in Aaron's *Lucidario in musica*.



The situation becomes a little more complicated, however, when we remember, as shown in Chapter 3, that an occasional chromatic semitone was allowed in theory and used in practice. And indeed, what better place for it than in such cases as Aaron's? Thus, I would hesitate to dismiss entirely the possibility that a raised cadential third might be restored to unraised as the new phrase commences. However, since I have found no such examples, we may at this point conclude that, in Josquin's period, it was stylistic to continue a raised third into a new phrase, and we may leave the other possibility in abeyance unless evidence proving its use comes to light. The semitone chro-

²¹Aaron, *Lucidario in musica*, 1545, bk. 2, ch. 9. See Bergquist, "The Theoretical Writings of Pietro Aaron," 424-25. Example 6-5 is taken from these sources.

matic progression would be more likely to occur in later sixteenth-century music.

In our discussion of cross relations we saw that chromatic cross relations are more a part of the musical language of Josquin's era than direct chromatic progressions in a single voice. This is borne out by the passages containing Picardy thirds examined in this study, which contain no expressly notated examples of direct chromatic steps in a single voice, but which do contain a few cases of direct chromatic cross relations, as in Example 6-6.²² Here, the Picardy third C# in the soprano at a phrase-ending is followed by C \natural in the tenor at the beginning of a new phrase. The cross relation appears implicitly in the vocal model; it appears as a direct chromatic step in Capirola, but must have been conceived as a cross relation with respect to the original vocal work.

²²Marco Cara, *O mia, chieca e dura* transcr. in Schwartz, *Ottaviano Petrucci, Frottole, Buch I und IV*, no. 6.

Example 6-6. Picardy third in *Cara, O mia cieca e dura sorte*, mm. 29-33, with interpretations by Bossinensis and Capirola.

The image displays three systems of musical notation. The first system consists of four staves of music, likely representing a vocal line. The second system is a lute interpretation by Bossinensis, marked "Bos. I: 2.5(2+)" and "lute". The third system is a lute interpretation by Capirola, marked "C: P12, s.1, m.11".

Certain contexts either ruled out or simply did not seem to invite the raised third. Example 6-7 contains a third that is doubled at the beginning of m. 105, and tripled on the second and third quarters; such duplications of pitch seem to have steered lutenists (and most likely singers) away from using the raised third, since the appearance of sharps in more than one voice simultaneously was scarcely (if at all) found in music of Josquin's period.²³

Example 6-7. Picardy third avoided in Josquin, *Et resurrexit* from *Missa Sexti toni l'homme armé*, mm. 104-107, with Capirola's interpretation.

The image displays two staves of music. The upper staff is a vocal line in G major, starting at measure 104. It shows a Picardy third (F#) in measure 105, which is avoided. The lower staff is a lute tablature in C major, corresponding to the vocal line. The tablature is written in numbers 1-7 on a six-line staff, with a 'C' time signature and a '5. 1. m. 12' marking. The tablature shows the fretting for the vocal line, including the Picardy third.

Another reason for avoiding the raised third occurs when a note forming an octave or fifth is subsequently introduced below it; in Ex-

²³Josquin, *Missa Sexti toni l'homme armé* in *Werken*, Missen, no. 5.

ample 6-7, the C in the superius first forms a third (m. 105) and then a fifth (m. 106) with the bass.²⁴ Obviously, such passages were integrally conceived with the assumption that the third would not be raised.

This shows that the use of raised thirds at the end of melodic phrases was not automatically expected by musicians of Josquin's era. Another context which did not invite the use of the Picardy third was the falling third figure, a favorite device at cadences in Josquin's music, as well as in music of his contemporaries (see altus, m. 94 of Example 6-8).²⁵ This may be due to the fact that Picardy thirds normally occur on the last note of a melodic idea, while here, the third above the bass is not the last note.

²⁴Thus, this example contains two reasons to avoid the raised third; passages containing either the first or the second reason separately also occur. For another example of an unraised doubled third, see Capirola p. 65, s. 4, mm. 1-4. For another example of an unraised third which subsequently becomes a fifth, see Capirola p. 103, s. 2, m. 78.

²⁵Josquin, *Missa Pange lingua* in *Werken*, Missen no. 18.

Example 6-8. Picardy third avoided in falling third motive in Josquin, *Missa Pange lingua*, Gloria, mm. 93-95, with Capirola's interpretation.

The image displays two staves of musical notation. The top staff is Josquin's original notation, consisting of four staves (Soprano, Alto, Tenor, Bass) in a single system. It is marked with the number '93' at the beginning. The key signature has one sharp (F#). The bottom staff is Capirola's interpretation, consisting of two staves (Right and Left Hand) in a single system. It is marked with 'C: p120, S.2, M.3' at the beginning. Both staves show a falling third motive in the upper voice, with the Picardy third avoided.

The raised third is also not normally used in Phrygian cadences in which the upper voice descends by step to the tenth above the bass. This type of cadence (as seen in Example 4-11) is a common part of the musical language of Josquin's period. These cadences, in their unaltered form, have a beautiful, almost mystical effect which musicians of Josquin's era apparently treasured. But, as always, there are exceptions to the norm; Example 6-9 shows this type of cadence (in *cantus mollis*) with raised third.²⁶

²⁶Philippus de Luprano, *Se m'è grato il tuo tornare* in Bossinensis I: 49(50).

Example 6-9. Phrygian cadence with raised third in soprano.
 Philippus de Luprano, *Se mè grato il tuo tornare*, mm. 24-26.

The musical score for Example 6-9 consists of three staves. The top staff is the soprano line, starting at measure 24. It features a melodic line that descends from a half note G4 to a quarter note F4, then to a quarter note E4, and finally to a half note D4. The final note, D4, is marked with a sharp sign (#) and a fermata. The middle and bottom staves represent the piano accompaniment, with the left hand in the bass clef and the right hand in the treble clef. The piano part provides harmonic support with chords and moving lines in both hands.

As we have already seen with regard to other rules, there is no entirely consistent application of the Picardy third rule. Thus, there are cases in which, for no apparent reason, the raised third is not employed (see Example 6-10).²⁷

Example 6-10. Cadence without raised third: Dominus Michael Pesenti, *Aimè ch'io moro*, mm. 22-24.

The musical score for Example 6-10 consists of three staves. The top staff is the soprano line, starting at measure 22. It features a melodic line that descends from a half note G4 to a quarter note F4, then to a quarter note E4, and finally to a half note D4. The final note, D4, is marked with a fermata. The middle and bottom staves represent the piano accompaniment, with the left hand in the bass clef and the right hand in the treble clef. The piano part provides harmonic support with chords and moving lines in both hands.

²⁷Dominus Michael Pesenti, *Aimè ch'io moro*, Bossinensis I: 59. Since Bossinensis frequently uses the diminished fourth leap, there is no reason to suppose that C# was used in order to avoid the leap from C# to F.

There is another type of cadential third that is not raised; I call it a "continuing third." A "continuing third" is a third occurring in a voice that newly enters at the same time that a cadential arrival occurs in other voices, as in Example 4-15. A "continuing third" may also appear in a voice that enters before the cadential arrival, as in Example 4-17. Such thirds are almost never raised. In both cases, the voice containing the third is not actually a cadential voice, and serves to keep the motion going. Continuing thirds in the lute sources for this study are indicated in Appendix F.

The final example for this section is of interest to the study of harmony in the Renaissance. It is curious to find that lutenists sometimes added thirds to final sonorities in compositions where there originally was none (as in Example 6-11), or omitted thirds where they were originally present.²⁸ This suggests that, for musicians of Josquin's period, five-three and eight-five sonorities built on the same note were to some extent interchangeable.

²⁸Hayne, *De tous biens plaine* in *Opera Omnia*, ed. Barton Hudson (Neuhausen-Stuttgart: American Institute of Musicology, 1977), no. 6a. For another example, see the final cadence of Capirola no. 42: here, Capirola adds a minor(!) third to Craen's *Tota pulchra es*, which, in its original vocal version, has no third in the final harmony. For the reverse procedure, in which a third appearing at the final cadence of the vocal original is omitted in lute intabulation, see Capirola, p. 28, end. In other cases, Capirola omits the third and then includes it (either raised or unraised) in subsequent instrumental figuration. Capirola does this with a raised third on p. 11, s. 2, m. 1, and with an unraised third on p. 11, s. 3, mm. 1-2 and p. 11, s. 4, mm. 1-2.

Example 6-11. Hayne, *De tous biens plaine*, final cadence, with Capirola's interpretation.

The image displays two musical staves. The upper staff is a vocal line in G minor, marked with a '58' and a sharp sign (#). It features a melodic line with a slur over the first two measures and a fermata over the final note. The lower staff is a piano accompaniment in G minor, marked with 'C1933.54.m.7'. It includes a treble and bass clef, with a treble clef also present in the upper left. The piano part features a complex melodic line in the right hand and a more rhythmic accompaniment in the left hand, with various ornaments and slurs.

CHAPTER 7

TREATMENT OF REPETITIVE MATERIAL

1. *Treatment of imitation, canon, ostinato, and other procedures of repetition*

As variety brings pleasure and delight, so excessive repetition generates boredom and annoyance. Let us seek above all to avoid a common error and be certain that our counterpoint is so varied that the same passage or harmonic progression is not repeated exactly, with the same consonances, rhythms, and tones. For while such counterpoints if well written will be free from anything discordant or unpleasant to the ear, nevertheless to repeat them does not produce the pleasure that springs from variety. Besides, the composer would be thought by connoisseurs of the art to have a meagre store of ideas. For it would seem to them that he uses the same passage again because he cannot devise another counterpoint ... I said that one should not repeat the same passage many times, by which I mean a counterpoint that is duplicated exactly in its consonances, rhythms, and pitch.

—Zarlino, *Le Istitutioni harmoniche*.¹

We shall begin our discussion of repeated material with an examination of canon and imitation. Scholarly discussions of these devices in Renaissance music are usually concerned with two issues, first, the intervals at which the following voices enter, and second, the extent to which the intervals of the leading voice should be duplicated in the following voice or voices. Both issues will be discussed here,

¹Bk. 3, ch. 55, trans. Marco and Palisca in *Art of Counterpoint*, 153-54.

especially the second one, which is of particular interest to our study of inflections.

In Josquin's period, the most common intervals for imitation and canon are unison, fourth, fifth, and octave. This tends to emphasize the main pitches of the modal species. However, the practice was at times freer, as is made clear by Imogene Horsley:

At the beginning of the 16th century, fugue [i.e., *fuga*, a Renaissance term applied both to imitation and canon] at the fourth and fifth included much more than our experience with 18th-century fugue would lead us to expect. It implied the possibility of the *comes* starting at both the fourth and fifth above the opening note of the *dux* ... or the *comes* starting in two succeeding fifths ... And the initial notes do not necessarily imply the mode in which a composition was written.²

Example 7-1 illustrates this last-mentioned type of freer use of imitative entries in the opening measures of the anonymous *Ce m'est tout ung*.³ This composition is in mode 2 on A (transposed Hypodorian, or, in Glarean's terminology, Hypoaeolian), with its final cadence on A. The first two entries, beginning on the fifth and the final of the mode, belong to the main mode of the composition, while the third and fourth entries do not. Here each voice enters a fifth apart from its adjacent voice (or voices), and the initial notes occur on four different pitches, E, A, D, and B.

²Imogene Horsley, "Fugue and Mode in 16th-Century Vocal Polyphony," *Aspects of Medieval and Renaissance Music. A Birthday Offering to Gustave Reese*, ed. Jan La Rue (New York: Norton, 1966), 413.

³Anon., *Ce m'est tout ung* in Brussels 228, no. 11.

Example 7-1. Imitative entrances in Anon., *Ce m'est tout ung*, mm. 1-8.

The image displays two systems of musical notation, each consisting of four staves. The first system shows the beginning of the piece, with a fifth interval marked above the first staff. The second system shows a continuation of the piece, with a slur over the first two staves.

This example shows just how freely the opening pitches of imitative entries might be treated in Josquin's period. While similar examples from the period exist, the opening of *Ce m'est tout ung* does represent a somewhat extreme case. Opening imitations with initial notes on three different pitches a fifth apart (such as F, C, and G) are

more common than ones with four pitches, as seen in the present example.

The use of imitation beginning at intervals other than the perfect unison, fourth, fifth, or octave is not common in Josquin's period, and became more widespread in the music of following generations. Imitation at perfect intervals remained important at openings throughout the sixteenth century, and were used to establish the mode. Once the mode was clearly established, the composer might create variety by using imitation at intervals which move into other modes, and then return to the original mode later on. Horsley describes this process and calls the use of internal imitative entries that depart from the main mode a "modal modulation."⁴

The use of imitation at irregular intervals is illustrated in Example 7-2, which is in the same mode as *Ce m'est tout un* (mode 2 on A).⁵

⁴Horsley, "Fugue and Mode," 419-22.

⁵Anon, *Fama malum* in Brussels 228, no. 29.

Example 7-2. Imitative entrances in Anon., *Fama malum*, mm. 1-11.



Here, the transposition levels of the imitative motif (on C, C, E, and F) are highly unusual, particularly for the opening of a composition. Despite this, the opening manages to stay within the main mode, with all initial and final pitches except the bass's F being on A, C, or E. This is facilitated by the answer in the contra (alto), in which the usual descending fifth between the third and fourth notes is altered to a descending fourth.⁶ The preceding two examples illustrate the freedom possible in the use of imitation in Josquin's period. However, as stated before, imitative entrances in this repertoire usually occur at the unison, fourth, fifth, or octave on notes clearly defining the mode.⁷

We turn now to a discussion of whether imitative and canonic voices were expected to reproduce the intervals of the leading voice exactly or whether there was a freer treatment. Lowinsky believed that the steps of imitative or ostinato motives required precise

⁶Altered ("tonal") answers will be discussed below.

⁷The opening of Josquin's famous *Ave Maria* (in *Motetten*, Bundel 1, no. 1) illustrates this type of modally regular imitation.

transposition, and he felt that this requirement for intervallic precision could bring about numerous unnotated inflections in a number of pieces examined by him.⁸ While other scholars have rarely followed this road to chromaticism as far as Lowinsky did, his predilection for exact intervallic correspondence in imitation and canon has sometimes been shared by them. Allaire and Routley cite a passage from Vicentino claiming that it supports intervallic identity:

If I wish to start the imitation, I shall choose such a passage as will permit the other parts to say the same.⁹

Routley states that, "in general, imitative passages are presumed to be solmized similarly (so that they are intervallically the same)," although he admits that this is not always possible.¹⁰

While there is some minor evidence that Renaissance musicians might have made occasional decisions involving inflections for the sake of an exact imitation or repetition (to be discussed below), I do not believe that they were as concerned as modern scholars about this issue. This is particularly evident in the fact that Renaissance theorists did not even discuss the use of accidentals in relation to

⁸See Lowinsky, "The Goddess Fortuna in Music," *The Musical Quarterly*, vol. 29 (Jan., 1943), 45-77 and *Secret Chromatic Art*, esp. 18ff. and elsewhere.

⁹Vicentino, *L'antica musica ridotta alla moderna prattica* (Rome, 1555), fol. 88v. Cited in Allaire, *The Theory of Hexachords, Solmization and the Modal System*, 81, and Routley, "A Practical Guide to Musica Ficta," 67. Whether Vicentino actually is referring to precise duplication of solmization syllables for each voice as claimed by Allaire and Routley seems open to question. At any rate, on the same folio, Vicentino gives the first known written description of "tonal answers," a fact that certainly does not support him as a champion of exact intervallic correspondence in imitative writing.

¹⁰Routley, 67-68.

canon, imitation or ostinato. As we shall see, their discussions, analyses and examples of these artifices were understood by them as occurring within the normal diatonic framework.

The issue of exact and inexact intervallic correspondence between the *dux* and *comes* voices of canon and imitation has been discussed by Haar in his excellent study of Zarlino's theories of imitative procedures.¹¹ Haar gives an example from Aaron which clearly indicates that imitation does not require precise intervallic duplication (see Example 7-3); Aaron gives the solmization syllables "ut re mi fa for the *dux* as and "re mi fa sol" for the *comes*.¹²

Example 7-3. Example from Aaron's *Lucidario in Musica* demonstrating intervallically inexact imitation.



Zarlino forms a terminology for canon and imitation largely on the basis of exact and inexact intervallic correspondence.¹³ His four main classifications are as follows:

¹¹James Haar, "Zarlino's Definition of Fugue and Imitation," *Journal of the American Musicological Society*, vol. 30 (1977), 391-418.

¹²Aaron's *Lucidario in Musica*, II, x, given in Bergquist, "The Theoretical Writings of Pietro Aaron," 283, and Haar, "Zarlino's Definition of Fugue and Imitation," 233.

¹³Zarlino, *Le Istitutioni harmoniche*, bk. 3, chs. 51-52, trans. by Marco and Palisca in *Art of Counterpoint*, 126-151. There is no need here to go into all of the finer points of

1) *Fuga legata*—canon, in which the *comes* follows the *dux* with exact duplication of intervals for the entire composition.

2) *Fuga sciolte*—intervallically exact imitation, in which the following voice imitates the initial entry with strict regard to interval duplication, and then breaks away from imitation.

3) *Imitatione legata*—canon, in which the *comes* follows the *dux* throughout in rhythm and numerical quantity of interval, but not always with exact correspondence in the quality of the interval. Thus, a major second and minor third could be answered by a minor second and major third (as with A-B-D answered by E-F-A).

4) *Imitatione sciolte*—imitation, in which the following voice duplicates the first voice in rhythm and numerical quantity of interval, but not always in interval quality (as with A-B-D answered by E-F-A).

The use of intervallically precise canon or imitation (*fuga*) as opposed to intervallically imprecise canon or imitation (*imitatione*) is not determined by the presence of written or understood inflections, but by the interval at which the canon or imitation takes place. Zarlino enumerates the intervals at which *fuga* (intervallically exact canon or imitation) occurs:

The parts may proceed one after the other at any distance of time, using the same intervals, singing at the unison, the octave, the fifth, or the fourth below or above.¹⁴

Renaissance terminology concerning fugue, canon, and imitation; this is admirably discussed in Haar's study. Suffice it to say that there was no single standardized terminology, and some theorists complained about the composers' relatively loose use of the word *fuga* for both imitation and canon, without concern for intervallic exactness.

¹⁴Zarlino, *Le Istitutioni harmoniche* (1573 edition), bk. 3, ch. 54, trans. in Haar, "Zarlino's Definition of Fugue and Imitation," 228. The corresponding passage from the 1558 edition is translated by Marco and Palisca in *Art of Counterpoint*, 126-27.

The intervals for *imitatione* (inexact canon and imitation) are listed as follows:

Now, as one can write Fugue [*fuga*] at the unison, the fourth, the fifth, the octave, or other intervals, so one can manage Imitation [*imitatione*] at every interval from the unison and the above-named intervals [i.e., fourth, fifth, and octave] on. Thus one will be able to make use of the second, the third, the sixth, the seventh, and other like intervals.¹⁵

The choice of interval of canon or imitation determines whether there will be a *fuga* (exact intervallic correspondence) or an *imitatione* (inexact intervallic correspondence). This shows that, although Zarlino does not explicitly say so, he is thinking purely in terms of the diatonic system or gamut and not in terms of using accidentals in order to form *fugae*.¹⁶ It is only at perfect intervals within the diatonic gamut that *fuga* can be achieved (as in A-C-D being answered at the fifth above by E-G-A), while imperfect intervals (such as A-B-D being answered at the second by B-C-E) inevitably lead to *imitationi*. Indeed, Zarlino is emphatic concerning the requirement that *fuga* should occur only in connection with perfect intervals (i.e., only in places where exact replication of intervals may conveniently occur within the diatonic steps of the gamut):

¹⁵Zarlino, *Le Istitutioni harmoniche* (1573 edition), bk. 3, ch. 55, trans. in Haar, "Zarlino's Definition of Fugue and Imitation," 230. The corresponding passage from the 1558 edition is translated by Marco and Palisca, in *Art of Counterpoint*, 135.

¹⁶This is wholly consistent with Zarlino's well-known conservative "diatonic stance" in relation to the modern chromaticists, whom he rebuffs in the final chapters of *Le Istitutioni harmoniche*, bk. 3 (trans. in *Art of Counterpoint*).

In strict fugues we must make sure that the consequent follows at the unison, fourth, fifth, or octave, starting either above or below.¹⁷

If anything, Zarlino's theory would lead one to expect *imitatione* to prevail over *fuga*, because the former can occur at any diatonic interval, including perfect ones (as with A-B-C-D being answered by E-F-G-A). Often in practice, one finds a certain amount of intervallic precision alongside a certain amount of intervallic freedom:

Since melodies that exceed the range of a hexachord are hard to reproduce exactly, Cerone says that composers "casi siempre" write "mixed" canons showing a combination of fugue and imitation.¹⁸

This confirms the idea that exact replication of intervals in imitation and canon was not a primary consideration, and that, in fact, it was easier and thus more practical to simply let the intervals fall where they would within the diatonic gamut, without concern for intervallic exactitude. If they turned out to be exact, the result could be called *fuga*, if not, it could be called *imitatione*. But, musicians of Josquin's era might not have been concerned with such an analysis, for, as Haar points out,

No theorist before Zarlino seems to have elaborated upon this distinction between fugue and imitation. Nor do his exact contemporaries introduce it.¹⁹

¹⁷Zarlino, *Le Istitutioni harmoniche*, bk. 3, ch. 51, trans. by Marco and Palisca in *Art of Counterpoint*, 129-130.

¹⁸Haar, "Zarlino's Definition of Fugue and Imitation," 234.

¹⁹Haar, 231. Haar gives a detailed account of the relation of Zarlino's theory of *imitationi* and *fuga* to other Renaissance theorists' accounts of imitation and canon.

Indeed, although Zarlino's theory of *fuga* and *imitatione* influenced subsequent theorists, his doctrine was not always reproduced exactly, and there was no uniform tradition in Renaissance discussions of imitative devices. Zarlino's theory of *fuga* and *imitatione* represents more of a refinement than the mainstream view of Renaissance theory and practice: many theorists and composers applied the term *fuga* whether intervallic correspondence was exact or not.²⁰

Although Zarlino makes his primary distinction not between imitation and canon, but between intervallic precision (*fuga*) and imprecision (*imitatione*), he does not state a preference for one over the other. Rather, he merely seems to be concerned with minute examination of detail and classification of the main possibilities. Thus, there is no attempt to change *imitatione* into *fuga* or vice versa, and Zarlino never asks the question so often asked in modern scholarship, "should canon and imitation be exact or not?" He even gives an example called "mixture of fuge and imitation," and, as Haar points out, "Zarlino does not suggest that a Bb be supplied everywhere in the lower voice to make the imitation exact, or fugal."²¹

Further evidence of the primacy of the diatonic system over a desire for intervallic strictness is found in an early treatise by Seybald Heyden, in which various canons are presented. Example 7-4 is a copy

²⁰See Example 7-4 below, a canon with inexact replication of intervals which Heyden calls *fuga*.

²¹Example given in Zarlino, *Le Istitutioni harmoniche*, bk. 3, ch. 52, transcr. in Marco and Palisca, *Art of Counterpoint*, 140; mentioned in Haar, "Zarlino's Definition of Fugue and Imitation," 230.

of the incipits of Heyden's edition of the *Pleni sunt* of Josquin's *Missa Mater patris*, a canon at the second above.²²

Example 7-4. Josquin, opening of the canonic *Pleni sunt* from *Missa Mater patris*, as given with solmization syllables by Seybald Heyden.

What is of particular interest here is that the solmization syllables are written out on the staves before the music begins, thus clearly indicating which steps are to be used. These solmization syllables show that each voice operates at a different location within the same underlying diatonic order. As a result, the rhythm and numerical quantities of intervals are preserved, but not the precise interval qualities. Heyden calls this a *fuga*, while Zarlino would have called it *imitatione legata*.

Glarean also presents the *Pleni sunt* of Josquin's *Missa Mater patris* in his *Dodecachordon*. His commentary makes it clear that he, like Heyden, understood that both voices would be solmized

²²Seybald Heyden, *Musica, id est artis canendi* (Nuremberg, 1537), 26-27. This treatise is the second of two earlier versions of his best-known treatise, *De arte canendi* (Nuremberg, 1540), trans. Clement Miller (n.p.: American Institute of Musicology, 1972). *De arte canendi* also contains the solmization syllables, but in more abbreviated form. I wish to thank Timothy Aarset for informing me of Heyden's use of solmization syllables in connection with canon in his treatise of 1537.

differently according to each one's place within the same diatonic system:

But let us return to Josquin, with whom we began. This composer frequently made two melodies out of one melody in the following manner: Someone began to sing a melody and the next person followed after a wait of one tempus, singing the same melody but indeed higher or lower by a whole tone, so that the one who began the song on *soi* would hear the other one beginning on *la*, or contrariwise, if the first began on *la*, the second would begin on *sol*. In this way the systems of two modes colluded. We decided to subjoin several examples of his concerning this procedure, and with the inscription of the modes. For they are indeed elegant.²³

Glarean not only gives different solmization syllables to the initial notes of each voice, but a different modal analysis for each voice. Thus, he calls the *dux* an "Example of the connection of Ionian and Hypoionian, ending as Phrygian" and the *comes* an "Example of the connection of Dorian and Hypodorian, ending as Phrygian."²⁴ He elaborates on this modal analysis in the following passage:

Even by mediocre singers these two melodies could be sung with only one of them notated. But both here [i.e., in the Josquin *Pleni sunt*] and in the following examples two melodic lines [i.e., the *dux* and its written out *comes*] are shown to the reader, so that he may see more clearly the movement of the two paired

²³Glarean, *Dodecachordon* (Basel, 1547), bk. 3, ch. 26, trans. Clement Miller, 276, transcr. on 526-27. Interestingly, Glarean's opening solmization syllables do not agree with Heyden's, although essentially the same result is intended since neither theorist departs from pure diatonicism. The discrepancy in solmization syllables is explained by the fact that some hexachords overlap. Undoubtedly different singers would have chosen from overlapping hexachords in different ways, while they probably also chose the same syllables at certain points as well. This demonstrates that "there was more than one way to solmize a cat!" Robert Toft mentions the existence of different solmization systems in "Traditions of Pitch Content in the Sources of Two Sixteenth-Century Motets," *Music and Letters*, vol. 69 (1988), 336.

²⁴Glarean, *Dodecachordon*, bk. 3, ch. 26, trans. Miller, 526.

modes. And in this very example [i.e., the Josquin *Pleni sunt*] the ending of the one pair has been turned into the Phrygian, in accordance with the decision of the composer; insasmuch as he was not able to give the two connections their respective endings, he then sought a foreign tonic ...²⁵

Glarean shows absolutely no concern for accidentals in any of his canonic examples. Here, he simply takes Josquin's canon at face value in its diatonic purity and analyzes it in terms of his new twelve-mode system. The evidence presented here confirms the following statement by Haar:

As two equally valid aspects of contrapuntal technique, imitation and fugue [according to Zarlino's definitions] serve to unify compositions and to further the concept of *imitazione della natura*—all the while remaining subservient to an unstated but strongly implied idea of diatonic modal unity.²⁶

The modal unity spoken of by Haar can also be observed in Glarean's analysis of the famous three-note ostinato figure and its transpositions from Josquin's great motet, *Miserere mei, Deus*.²⁷ Glarean presents each statement of Josquin's ostinato in rhythmically

²⁵Ibid., 276.

²⁶Haar, "Zarlino's Definition of Fugue and Imitation," 253-54. The concept of *imitazione della natura*—art imitating nature—is discussed further in Haar, p. 240. A beautiful example of this is seen in the following passage, in which Zarlino relates rhythmic aspects of composition to nature: "... in everything we do, we should follow nature, which always proceeds with regularity. If we take note of movements in nature, we shall observe that they begin slowly and increase speed gradually. When a stone is dropped from a high place, the velocity doubtlessly is greater at the end of its fall than at the start. So let us imitate nature in this regard, and see that the parts of our compositions are not rapid at first ..." *Le Istitutioni harmoniche*, bk. 3, ch. 44, trans. Marco and Palisca as *Art of Counterpoint*, 107. Zarlino goes on to suggest that the parts proceed from their slow beginning to more rapid movement.

²⁷Josquin, *Miserere mei, Deus* in *Werken, Motetten*, Bundel 6, no. 37, and in *The Medici Codex*, no. 41.

simplified form (see Example 7-5), and accompanies it with the commentary given immediately after the example.

Example 7-5. Simplified version of the ostinato from Josquin's *Miserere mei Deus*, as given by Glarean with the inscription: "Formula in the Hypoaeolian of the second tenor in Psalm 50, by Josquin des Prez."

Mi fe re re me i De us. Mi fe re re me i De us.

Miserere mei Deus.

One truly sees here the Hypoaeolian from small *e* to large *E*, indeed divided arithmetically at small *e*, on which it also ends, namely, on the lowest string of the fifth; however, a semitone has been added above, which really refers to the Aeolian, the principal mode of this one, but here its plagal also assumes it.²⁸

Glarean sees the ostinato as forming the Hypoaeolian mode by its arithmetic division of the e - e^1 octave (i.e., with the fourth below the fifth). In addition, there is a semitone above, which would normally suggest Aeolian, but here is used in the plagal mode. Since the very basis of Glarean's theory is predicated on a strict order of whole steps and half steps within each modal octave and species of fourth and fifth, it is clear that Glarean understood absolutely no deviation from the diatonic whole- and half-step pattern of this ostinato. Indeed, an

²⁸Glarean's simplified version of Josquin's ostinato second tenor part from Josquin's *Miserere mei, Deus* and his analytical discussion appears in *Dodecachordon*, bk. 3, ch. 20, trans. Miller, 260.

attempt to consistently maintain the precise intervals of the first three-note statement (which, as Glarean points out, contains a semitone) would give rise to insurmountable difficulties.

By now we have seen that the theoretical evidence of the Renaissance theorists supports the idea that imitation, canon, and ostinato were primarily diatonic phenomena, dwelling comfortably within the normal diatonic gamut. We turn now to a consideration of the lute sources for this study in order to see how imitative devices are handled there. There are no canons in the intabulations chosen for this study in Bossinensis, Capirola, and Spinacino, so we shall confine our investigation here to their treatment of imitation.

In his study of sixteenth-century intabulations of vocal music, Toft found no uniform treatment of passages containing musical repetitions:

The intabulations document the degree to which the various instrumentalists interpreted the pitch content of repeated material consistently. As one would expect, no uniform practice exists. For example, certain instrumentalists treated a mimetic passage in *Qui habitat* [by Josquin] as a *fuga* whereas at least one other performer treated it as an *imitazione*.²⁹

Similarly, the treatment of imitation in Bossinensis, Capirola and Spinacino involves both exact and inexact replication of the intervals of the leading voice.

Exact duplication of intervals (Zarlino's *fuga sciolte*) is common, and occurs almost always in imitation at the unison or octave in

²⁹Toft, "Pitch Content and Modal Procedure," 151.

situations where the intabulator chose not to embellish the music, but to reproduce it literally (see Example 7-6).³⁰

Example 7-6. Passage containing exact imitation: Ghiselin, *O florens rosa*, mm. 7-10, with Capirola's interpretation.

The image displays two staves of musical notation. The upper staff is a vocal line, with measures 7, 8, 9, and 10. The lower staff is a lute line, also with measures 7, 8, 9, and 10. The lute line includes a 'C:P. 98, 94, M5' marking above the first measure and dynamic markings 'p' and 'f' with arrows indicating volume changes.

Inexact duplication of intervals is also commonplace, and arises most frequently in one of two ways: either an accidental is used in one voice and not another (as in Example 4-9) or the voices are embellished differently, sometimes obscuring the imitation. Example 7-7 shows an extreme situation: not only is there extensive embellishment, but

³⁰Ghiselin, *O florens rosa*, in *Opera Omnia*, vol. 1, no. 2.

there is also an accidental in only one voice, so that the entrances begin on D, G \sharp and G!³¹

Example 7-7. Agricola, *Si dedero*, mm. 1-8, with Capirola's interpretation.

³¹Agricola, *Si dedero* in Picker, *Chanson Albums*, Brussels 11239, no. 23.

In general, the intabulators are inconsistent in the strictness with which they treat imitation, ranging from close adherence to the written music (Example 7-6) to extensive freedom (Example 7-7). Where there is ornamentation, there is no tendency to make it uniform in each voice, rather, there is variety; this is characteristic of Capirola and Spinacino. The extent to which the lute ornamentation of imitative voices reflects contemporary vocal practice is perhaps an insoluble question. That there was a parallel vocal tradition of extemporaneous ornamentation, however, is well documented.³²

Examples of inexact imitation arising from voices occupying different positions within the gamut are rare in the lute sources for this study, and occur more frequently in the mensural sources. Although it could be argued that these could have been adjusted to precise imitation using accidentals, an attempt to do so produces unlikely results. In Example 7-1, it would be easy to make the second entrance an exact replica of the first by using B \flat 's—a likely possibility, since the rules for *una nota supra la* and for avoiding the melodic tritone could be invoked. However, an attempt to bring the third and fourth entrances into intervallic exactitude would bring about untenable results: the third voice would have D-D-B \flat -C-D-E \flat -D-E \flat , and the fourth voice, B \flat -B \flat -G \flat -A \flat -B \flat -C \flat -B \flat -C \flat . This would push the entire composition into a flat region that extends beyond the musical system

³²See Howard Mayer Brown, *Embellishing 16th Century Music* (Oxford: Oxford University Press, 1976). Brown relates a story from 1562 that claims that Josquin did not like singers to ornament his music (p. 75). Despite the lateness of this story, it is believable, since Josquin was undoubtedly aware of his stature and may not have wanted the perfection of his music altered by less accomplished musicians.

of the period (to be discussed in Chapter 8). Since, as we have already seen, there is no inherent expectation for identical intervals in imitation, the only plausible and historically justifiable approach is simply to let the music be, or at most, add an occasional accidental, such as the above-mentioned possibility of using B \flat in the second entrance. Thus, even without the concrete proof of the intabulations, it is sometimes not hard to discern whether an imitation forms a *fuga sciolte* or an *imitationi sciolte*.

We have seen that there was no theoretical or practical tradition from the Renaissance that would demand the use of accidentals in order to make canon, imitation, or ostinato intervallically precise, and a good deal of evidence to the contrary. Not only was the natural diatonic order generally preferred, but *in virtually every case the use of accidentals in lute intabulations makes the imitation less rather than more exact*. If Capirola had *not* used C \sharp in one voice in Example 4-9 or G \sharp in Example 7-7, the intervallic correspondence between voices would have been more exact.

An interesting case which raises the question of whether to use accidentals in order to create exact imitation is found in the opening of the *Kyrie* and *Gloria* from Josquin's glorious *Missa Pange lingua*.³³ Routely argues (on the basis of the quotation from Vicentino given above) that the opening E-F-E of the *Kyrie* should be answered by A-B(b)-A, whereas Haar feels that it causes problems to do so, and prefers

³³Josquin, *Missa Pange lingua* in *Werken, Missen*, no. 18. The openings of the *Kyrie* and *Gloria* are very similar, and thus any solution applicable to one would be applicable to the other as well.

A-B-A.³⁴ An examination of practical sources sheds light on this question.

An examination of five of the sources for this mass shows that none of them were written with B \flat at the opening of the *Kyrie* and *Gloria*.³⁵ Furthermore, Capirola's intabulation of the *Gloria* uses B \natural , thus forming an *imitatione sciolte* rather than *fuga sciolte* (see Example 7-8).

Example 7-8. Josquin, *Missa Pange lingua, Gloria*, mm. 1-3, with Capirola's interpretation.

The image shows a musical score for the beginning of Josquin's Gloria. It consists of five staves. The top four staves represent Josquin's original notation for the vocal parts (Soprano, Alto, Tenor, Bass). The bottom staff represents Capirola's lute intabulation. The intabulation is written in a single system with a treble clef and a 3/4 time signature. A small annotation 'C: P115, beginning' is written above the first few notes of the intabulation. The notation shows the rhythmic and melodic patterns of the first three measures, with the intabulation providing a fretted version of the vocal lines.

³⁴Routley, "A Practical Guide to Musica Ficta," 67, and Haar, "Zarlino's Definition of Fugue and Imitation," 250ff. Thomas Warburton specifically decided against the use of exact imitation, and uses B \natural in his edition of *Josquin des Prez, Missa Pange lingua* (Chapel Hill: University of North Carolina Press, 1977), 11.

³⁵Rome, Biblioteca Vaticana, Capella Sistina, Ms. 16; Rome, Capella Giulia, Ms. XII. 2. C 48; Jena, Universitäts-Bibliothek, Cod. Mus. 21; Vienna, National-Bibliothek, Ms. 4809; and Leipzig, Bibliothek der Thomaskirche, Ms. 49 (III A α 19).

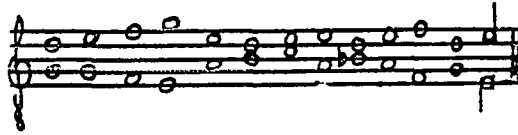
Thus, the version with B \natural is valid, and, judging from the evidence given so far in this chapter, is the more likely solution for the *Kyrie* and *Gloria*. However, the Capella Giulia manuscript has flats that were squeezed in between the initial As and Bs of the *Kyrie* and *Gloria* at a later date. This can be seen by comparing these spots to places where B \flat s were originally included when the manuscript was written—those B \flat s have more room, and are in proper proportion to the note-sizes, whereas the flats inserted later are much smaller, and the spacing is uncomfortably close in comparison with the normal spacing between flats and notes in the manuscript.

The evidence given thus far indicates, then, that both readings, with B \natural or with B \flat , were possible, but that most sources contain B \natural . I find the use of B \natural to be more attractive sounding than the use of B \flat . Judging from the following quotation from his chapter on cross relations, Zarlino would have agreed, since he objects to the use of B \flat in a musical situation very similar to that found in the Josquin *Kyrie*:

In the third mode ... the middle step, B \natural , is often dropped in favor of the accidental B \flat . Between this and the preceding or succeeding note there arises one of the difficulties mentioned [i.e., a cross relation of a diminished fifth; see Example 7-9] ... This is the more unpleasant, since the true step of the third mode, B \natural , is missing from its proper place, and the accidental B \flat is present instead.³⁶

³⁶Zarlino, *Le Istitutioni harmoniche*, bk. 3, ch. 30, trans. Marco and Palisca in *Art of Counterpoint*, 67.

Example 7-9. Tritone cross relation in mode 3 objected to by Zarlino.



If $B\flat$ was applied to Josquin's *Kyrie*, the cross relation that would arise between $B\flat$ and E would be essentially the same as that objected to by Zarlino in the preceding example. Furthermore, since the *Kyrie* is also in mode 3, Zarlino would object that $B\flat$ was present instead of the middle step of the mode, $B\sharp$. However, Zarlino does state that this is done often regardless of the poor effect. Once again, then, we have a situation in which two approaches are historically valid, and the modern performer may choose according to taste.

Another indication that exact imitation was not always expected is found in the Renaissance practice of tonal (sometimes called "modal") answers. This was used only sporadically in Josquin's era, but became commonplace in the music of succeeding generations. The idea was to establish the fourth and fifth species of the mode clearly at the outset. The use of such answers shows that Renaissance musicians were willing to bend the imitation to fit the mode rather than the other way around.³⁷

³⁷The use of tonal answers is one type of evidence that modes did have a precompositional influence on Renaissance music. Harold Powers argues that modes were only cultural, analytical categories rather than compositional tonalities used by composers. While he presents much valuable evidence showing contradictions between modal attributions and actual musical realizations, he does not sufficiently take into account the vast amount of Renaissance music that clearly and simply falls into the modal system. Without the modal system, it is unlikely that compositions could have so clearly stabilized around certain pitches, voice ranges, and voice dispositions. See

As we have seen, the first known mention of tonal answers is found in Vicentino's treatise. His contemporary Zarlino did not mention tonal answers, but he used them in his musical examples in his treatise on modes, Book 4 of *Le Istitutioni harmoniche*. Example 7-10 gives the opening of Zarlino's example for mode 5 (Lydian), which emphasises that mode's fifth and fourth species by answering the opening fifth with a fourth.³⁸

Example 7-10. Tonal (or "modal") answer in Zarlino's example for mode 5 (Lydian), mm. 1-4.



While composers of Josquin's period usually used real answers, imitations with altered intervals are occasionally found (see Examples 7-11a and b).³⁹

Powers, "Tonal Types and Modal Categories in Renaissance Polyphony," *Journal of the American Musicological Society*, vol. 34 (1981), 428-70.

³⁸Zarlino, *Le Istitutioni harmoniche*, bk. 4, ch. 3, transcr. by Coñen in *On the Modes*, 68.

³⁹Mabriano de Orto, *Dulces exuvie*, in Brussels 228, no. 28, and Lhéritier, *Te mantrem dei*, in Medici Codex, no. 10.

Example 7-11. Imitation with altered notes.

a. de Orto, *Dulces exuvie*, mm. 1-11.

b. L'héritier, *Te mantrem dei*, mm. 122-127.

a)

Musical score for Example 7-11a, measures 1-11. The score is written for four staves (Soprano, Alto, Tenor, Bass) in 4/4 time. The key signature has one flat (B-flat). The score shows a complex imitative texture with various rhythmic patterns and melodic lines. Measure numbers 5 and 10 are indicated above the staves.

b)

Musical score for Example 7-11b, measures 122-127. The score is written for four staves (Soprano, Alto, Tenor, Bass) in 4/4 time. The key signature has one flat (B-flat). The score shows a complex imitative texture with various rhythmic patterns and melodic lines. Measure number 122 is indicated above the staves.

In de Orto's *Dulces exuvie*, we see what might be considered an early form of tonal answer, although tonal imitation is not consistently carried out by subsequent voices. In the second example, the third voice is adjusted in order to avoid dissonance with the other voices. Both examples illustrate the use of melodic changes made for the sake of vertical sonority. Thus, they demonstrate that vertical sonorities in music of Josquin's period were not just a byproduct of melodic lines, but also exerted a compositional influence, and could affect the melodic writing.

Another type of repetition that involves changing of intervallic relationships is sequences. Here, as usual, the underlying basis is diatonic, so that exact replication of material is usually not the result (see the sequences in Examples 3-12, 3-13 and 3-14). There are numerous examples of sequences in the sources of this period, and there is no tradition of using accidentals to keep each transposed statement identical to the initial one. Accidentals in sequences are used for the typical reasons: to avoid vertical and melodic imperfect fifths, fourths, and octaves (cf. the use of $E\flat$ and $A\flat$ in Example 3-14a to avoid melodic tritones), and so forth.

Even in literal or near literal repetitions of non-imitative music, each statement might be treated differently with regard to accidentals. Toft gives an example of a brief two-voice passage repeated with different accidentals; we have already seen a similar instance in which

Bossinensis handles near-identical material first without and then with a sharp (see Example 4-8).⁴⁰

One recorded instance of a specifically stated concern for intervallic agreement between a first statement and a repetition comes down to us through the famous dispute over accidentals recorded by Danckerts. The passage that gave rise to the argument is given in Example 7-12.⁴¹

Example 7-12. Juan Escribano, *Aleph* from *Lamentations of Jeremiah*.

Here, a bass singer wanted to sing his part with Bb throughout (for no specifically indicated reason), to which Danckerts objected on the grounds of maintaining diatonic purity and in order to maintain

⁴⁰Toft, "Pitch Content and Modal Procedure," 134.

⁴¹Juan Escribano, *Aleph* from *Lamentations of Jeremiah*, given in Danckerts, *Trattato sopra una differentia musicale*, and transcr. in Lewis Lockwood, "A Dispute on Accidentals in Sixteenth-Century Rome," *Analecta Musicologia*, vol. 2, ed. Helmut Hucke (Cologne: Böhn, 1965), 32.

“an exact imitation of the passage just sung by the Alto.”⁴² Lockwood provides the following comments:

This last reason is doubtless the most interesting of all, for it suggests a criterion of applying accidentals based not only on local and immediate considerations of vertical sonorities or melodic construction, but upon the larger relationship of structural elements in a composition, in this case the paired imitation of Superius-Alto and Tenor-Bass. To be sure, this particular passage presents no problems of transposition or solmization, since the imitation is at the octave; but the passage provides valuable evidence that the device of imitation could be invoked by contemporary musicians as a means of justifying, and rendering consistent, a particular set of accidentals.⁴³

Actually, Lockwood’s conclusion might well be modified to state that (speaking from Danckerts’ point of view) the passage provides evidence that inflections were *not* to be added when they interfered with an obvious repetition (particularly at the unison or octave). Furthermore, the fact that the bass singer suggested a different possibility is clear evidence that Danckerts’ own concern for the preservation of intervallic exactness was *not* a criterion sought by all performers. Thus, we are once again in an area of choice between two possibilities, particularly since there is no record as to which version—the bass’s or Danckerts’—was adopted.⁴⁴ Seen in the context of the evidence concerning the treatment of repeated material given throughout this chapter, Danckerts’ testimony does not lead to a

⁴²Ibid., 38.

⁴³Lockwood, “A Dispute on Accidentals,” 38-39.

⁴⁴Ibid., 40.

fundamentally different view. At most, it suggests that some singers were aware of slight discrepancies in literal repetitions, and preferred to keep them uniform by avoiding accidentals that would depart from the prevailing diatonic framework.

The main findings of this study concerning the Renaissance treatment of repeated material (including canon, imitation, and ostinato) are summarized as follows:

- 1) A normal, diatonic order is the underlying basis.
- 2) Canon and imitation could be either intervallically exact or inexact—no preference is stated by the theorists.
- 3) Renaissance theorists (with the exception of Danckerts) do not even raise the question as to whether a repetition should be intervallically exact. In general, this issue is approached by Renaissance musicians only from an analytical point of view, not as an editorial or performance issue.
- 4) Intervallic identity arises when the material is placed in the locations on the diatonic gamut that will accommodate exact replication without adding accidentals. Examples in which intervallic identity arises from the use of accidentals are rare.⁴⁵
- 5) Accidentals are not normally used to form exact intervallic identity, and frequently have the opposite effect, eliminating the exactness.
- 6) Accidentals in contexts involving repetitive material are generally used for the conventional reasons, such as avoiding melodic tritones, vertical diminished fifths, the *una nota supra la* rule, etc.
- 7) There is more than one fixed way to perform passages with repetitions. Renaissance musicians often sought variety.

⁴⁵The only other case in which exact imitation might be found is with partial signatures. This will be discussed in the next section of this chapter.

8) Some (but not all) singers wanted to keep obvious repetitions at the unison or octave uniform by maintaining diatonic purity and avoiding unnotated inflections.

2. *Partial signatures used for canon, imitation,
and other purposes*⁴⁶

We have already discussed one of the reasons for using partial signatures, namely, to avoid vertical diminished fifths (see Examples 5-4 and 5-5, and their accompanying discussions). Another primary reason for the use of partial signatures was to notate canon or imitation at the fifth or fourth without using accidentals. Aaron wrote the following about this practice:

Some other [compositions] appear with the sign mentioned above [that is, b] in the bass, and some others in the tenor. I say that such order is neither allowed nor convenient in a composition or song, except when it is considered and applied with artifice, as the excellent Josquin has observed in the 'Patrem' of the Mass De Virgine Maria, and similarly the divine Alexander in many of his songs.⁴⁷

The *Credo* from Josquin's *Missa de Beata Virgine* contains a canon with the *comes* following at the fifth below; the musicians singing this part would, according to Aaron's testimony, imagine a B \flat signature.

⁴⁶The well-known debate between Lowinsky and Hoppin on this subject will not be discussed here. Their studies apply to earlier repertoire, and have been summarized in Berger, 67ff. For excellent discussions of partial signatures in Josquin's period, see Berger, 65ff., and Howard Mayer Brown's commentary on Florence 229 in *A Florentine Chansonnier, text volume*, 160ff. These two discussions (when taken together) touch on all of the pertinent issues concerning the use of partial signatures in Josquin's period of which I am aware.

⁴⁷Aaron, *Trattato della natura et cognitione di tutti gli tuoni* (Venice, 1525), ch. 3, trans. in Berger, 68.

The opening of a work by Busnois appearing in Florence 229 with a partial signature for a canon at the fourth below is shown in Example 7-13.⁴⁸

Example 7-13. Partial signature used for canon in Busnois, *Amours nous traitte honnestement/Je m'en voy*, mm. 1-11.

⁴⁸Busnois, *Amours nous traitte honnestement/Je m'en voy* in Florence 229, no. 117.

In this composition, there are places in which accidentals are called for if vertical diminished fifths (of a type not allowed by the usual exceptions) are to be avoided. For this reason, Brown places an editorial E_b above the bass, m. 11. This seems reasonable, and there is no cause to assume that canonic voices were not subject to inflection (in order to fulfill the usual rules) just as with any other voice.⁴⁹ As a byproduct of using this E_b , the otherwise intervallically exact canon would now contain a discrepancy, which, if one may judge from the evidence already presented, would not have disturbed Renaissance musicians.

A particularly famous example in which partial signatures are used in conjunction with imitation at successive fifths is Josquin's *Fortuna dun gran tempo*. Van Benthem has disputed Lowinsky's daring interpretation of this piece on grounds of the very different pitch content in Spinacino's intabulation.⁵⁰ Since this work has been examined so exhaustively, there is no need to discuss it in detail; for present purposes, I shall discuss only some main points concerning Spinacino's treatment of imitation in this work.

Spinacino's intabulation of this work does not always maintain intervallic identity in each statement of an imitative idea. At times he embellishes certain statements of imitative ideas to the point where the imitation is obscured, while elsewhere, he adds accidentals that diminish rather than increase the intervallic correspondence between

⁴⁹Further study of canons in other sources might confirm or contradict this conclusion.

⁵⁰Lowinsky, "The Goddess Fortuna in Music," and van Benthem, "Fortuna in Focus."

different statements of an imitative idea. In Example 7-14, Spinacino uses E_b in the superius, m. 40 in order to create a perfect octave with the bass's E_b which stems from the two-flat signature of that voice.⁵¹

Example 7-14. Inexact imitation in Spinacino's intabulation of Josquin's *Fortuna dun gran tempo*, mm. 39-45.

The image displays two systems of musical notation. The first system, labeled '39', consists of two staves: a vocal line (superius) and a lute line (bass). The second system, labeled '5 1:5', also consists of two staves: a vocal line and a lute line. The notation includes various rhythmic values, accidentals, and articulation marks, illustrating the inexact imitation described in the text.

If Spinacino had been more concerned with intervallic identity for all statements of imitative melodies, he would have altered the E_b in the bass to E_b and left the superius unchanged. We may thus conclude that partial signatures used in connection with imitation at the fourth or fifth assisted in making the interval content of each statement closer, but not necessarily identical throughout an entire piece. There is no reason not to extend this freedom to the treatment

⁵¹This transcription of Josquin's *Fortuna dun gran tempo* aligned with Spinacino's intabulations has been taken from van Benthem, "Fortuna in Focus," 48.

of canon, in fact, the evidence of Example 7-14 strengthens the case for altering the bass in the last measure of Example 7-13 in order to correct a vertical diminished fifth.

Lowinsky has proposed another reason for the use of partial signatures, namely, that the absence of flats in upper voices facilitated the use of cadential leading tones in those voices.⁵² I agree with Berger that Lowinsky's reason can co-exist with the function of partial signatures to help avoid vertical diminished fifths.⁵³ Example 7-15 shows a passage in which the use of a partial signature brings about the correction of a diminished fifth in the outer voices, m. 27, and a cadential leading tone in m. 29 without need for written or implied accidentals.⁵⁴

⁵²Lowinsky, "The Function of Conflicting Signatures in Early Polyphonic Music," *The Musical Quarterly*, 29 (1945), 234.

⁵³Berger, 66.

⁵⁴Anon., *Dulces exuvie*, in Brussels 228, no. 22.

Example 7-15. Partial signature used to correct perfect fifth and form leading tone in Anon., *Dulces exuvie*, mm. 27-30.

The image shows a musical score for four staves, beginning at measure 27. The notation is in a medieval style, featuring various note values (minims, crotchets, quavers) and rests. The key signature is a partial signature, indicated by a single flat (B-flat) in the bottom staff. The music is written in a system of four staves, with the bottom staff likely representing the tenor or bass voice. The notation includes various note values, rests, and accidentals, illustrating the use of a partial signature to correct a perfect fifth and form a leading tone.

Another explanation that has been suggested for the use of partial signatures is that musicians simply wanted a mixture of flat and natural inflections of the same pitch in some of their compositions. In his commentary to his edition of Florence 229, Howard Mayer Brown suggests this possibility:

Some conflicting signatures ... seem to reflect quite simply the composer's desire for a particular combination of accidentals. It may well be that Busnois in *Seule à par moy* (no. 60) and the anonymous composer of *Tarsis* (no. 82) wished to have an unusually large number of B flats in the bottom voice of their compositions in G-Mixolydian ...⁵⁵

⁵⁵Brown, *A Florentine Chansonnier, text volume*, 162. Thomas McGary presents the idea that the use of partial signatures "was related to the composers' seeking an expanded tonal or modal basis that would be implied by the interplay of notes involved in a given partial signature." See "Partial Signature Implications in the Escorial Manuscript V.III.24," *The Music Review*, 40 (1979), 89.

Example 7-16 shows a passage from the anonymous *Tarsis* mentioned by Brown that demonstrates various shifts between $B\sharp$ and $B\flat$ that arises from the use of partial signatures; here, the shifts are not entirely due to the signatures, but also to the editorial accidentals indicated in the example.⁵⁶

Example 7-16. Use of partial signatures giving rise to fluctuations between $B\sharp$ and $B\flat$ in Anon. *Tarsis*, mm. 1-7.



The sources for this study give evidence to show that accidentals were applied to compositions with partial signatures in the same way as with compositions without partial signatures: accidentals could be added to voices with or without signatures, and the flats in the signatures could be overridden. In Example 7-15, $B\flat$ is used in m. 27 of the tenor, a voice without signature, to form a perfect octave with the bass with its $B\flat$ signature, and thus both parts form a perfect fifth with F in the upper voice. In Example 4-25a, Capirola cancels out the $E\flat$ which only appears in the bass signature in order to form a Dorian leading-

⁵⁶Anon., *Tarsis*, in Florence 229, no. 82.

tone cadence on D. As usual, any voice might be inflected, and there is no predictable preference for inflecting one voice as opposed to another.

One last issue concerning compositions with partial signatures will be discussed here, i.e., pieces with signatures varying from one source to another. This issue is beyond the nature and scope of this study since it involves a comprehensive study of all available sources for pieces. One interesting point will be mentioned, though. Sometimes the mode of a composition is in question, when, for example, it appears in some sources in *cantus durus*, and other sources at the same pitch level in *cantus mollis*.⁵⁷ An attempt to determine what the original composer's intention was can only be decided on the basis of an evaluation of sources, possibly with the aid of internal musical evidence. It seems unlikely that such discrepancies signal a willingness on the part of Renaissance musicians, much less the composers, to have a piece readily change from one mode to another. This issue, then, is more a musicological source problem than one based on theoretical principles.

⁵⁷For a discussion of this issue, see Brown, *A Florentine Chansonnier, text volume*, 162.

CHAPTER 8

FURTHER ASPECTS OF THE USE OF INFLECTIONS AND
THE MUSICAL SYSTEM IN JOSQUIN'S PERIOD—
AND A LOOK BEYOND

The farther we go back into the history of music, the fewer are the elements controlled by the composer, and the greater the freedom left to the performer.

—Sarah Jane Williams¹

Comparative study of all the sources, both vocal and instrumental, for a given motet frequently reveals that no one authoritative version of its pitch content existed. What did exist, especially when the motet was a popular one, was a range of versions for each work.

—Robert Toft²

The music of Josquin's period shows a significant development towards simplicity and clarity when compared to that of earlier generations: dissonance treatment was more refined, rhythm less complex, and clear modal organization was increasingly the norm in polyphonic writing. A parallel development took place with the use of written or implied inflections, in which the spiky medieval chromaticism gave way to a blander use of inflections.

¹Williams, "Vocal Scoring in the Chansons of Machaut," *Journal of the American Musicological Society*, vol. 21 (1968), 251.

²Toft, "Traditions of Pitch Content in the Sources of Two Sixteenth-Century Motets," 334.

In a sense, Josquin's period represents the high point for diatonic modality in polyphony. It was only a few years after Josquin's death that the first treatise dealing extensively with mode in polyphony—Aaron's *Trattato della natura et cognitione de tutti gli tuoni di canto figurato* (Venice, 1525)—was published. In the middle and late sixteenth century, two divergent developments took place: on the one hand, theorists such as Glarean and Zarlino refined modal theory as it applied to polyphony, and composers wrote music that was more deliberately shaped according to modal theory (as seen with the increasing use of tonal answers), while on the other hand, the new chromaticism emanating from the Italian madrigal simultaneously brought a disruptive element into the landscape of pure diatonic modality. Thus, although modal practice became more codified and refined after Josquin, it was only during his period that pure modality was fully established as a norm, and it was not long afterwards that diatonic modality became challenged by a new practice of chromaticism.

The role of inflections in Josquin's era was primarily local, with little in the way of long-range implications. The only common exception was in the case of transposition, which did not alter the diatonicism, but merely placed it into a less-used system for practical or symbolic reasons, as discussed in Chapter 2. Thus, inflections were often used and added on the spur of the moment; in many cases, they did not represent an unalterable part of the musical text.³ The same passage

³Berger gives an interesting and original view of the nature of written and implied accidentals in the Renaissance and how to evaluate their importance as part of the musical text of a composition in ch. 8 of his *Musica Ficta*.

could be interpreted in different ways, as we have seen several times in the previous chapters. This is perhaps a difficult proposition for us to accept in light of our modern standards for precise notation of pitch, and yet, the evidence seems quite conclusive.

Lockwood explored the problems that arise from the incomplete notation of inflections in the Renaissance, and made the following observations:

Moreover, the few instances known to me in which contemporary writers tell us about the reactions of sixteenth-century performers to problems of accidentals tend strongly to suggest that the absence of accidentals, or their unequal specification, was more nearly a source of confusion and uncertainty than a stimulus to easy virtuosity in immediately supplying them. Several writers, all both theorists and practitioners, offer remarks that point unmistakably in this direction.⁴

Lockwood continues by citing Aaron, Spataro, and the famous Danckerts dispute. Lockwood's statement adds further weight to the evidence presented by Toft and in this study that clearly shows the Renaissance musicians' flexible approach to applying inflections. This may give pause to anyone wishing to make a case that the pitch content of a particular passage *must* be interpreted in only one particular way.

Not only is there uncertainty as to how one might inflect specific passages, there is even uncertainty with regard to the function and duration of an accidental in mensural sources.⁵ With regard to function,

⁴Lewis Lockwood, "A Sample Problem of *Musica Ficta*: Willaert's *Pater Noster*," *Studies in Music History: Essays for Oliver Strunk*, ed. Harold Powers (Princeton: Princeton University Press, 1968), 165.

⁵Toft discusses the duration of accidentals in "Traditions of Pitch Content in the Sources of Two Sixteenth-Century Motets," 335-36.

Harrán has shown cases where sharps might be construed as cautionary natural signs.⁶ Probably all scholars would agree that the ♯ or #-sign placed on B and E signifies B-mi and E-mi, in other words, B♯ or E♯, and that these are unquestionably cautionary signs. Example 4-4 shows the use of a stipulated B♯ in order to avoid the B♭ that could easily have been used by following the *una nota supra la* rule. Virtually all of the other examples in Harrán's studies, however, could easily be seen as dissonant leaps, vertical dissonances, or cross relations of the kind used by Renaissance musicians, as we have seen in previous chapters.⁷

Concerning the duration of accidentals, Tinctoris states that the sign *b mollis* used as an accidental stays in effect for as long as the *deductio* (hexachord) lasts, while Lanfranco and Gerle, on the other hand, state that an accidental affects only the immediately following note:⁸

⁶See Don Harrán, "New Evidence for Musica Ficta: The Cautionary Sign," *Journal of the American Musicological Society*, vol. 29 (1976), 77-98, and "More Evidence for Cautionary Signs," *Journal of the American Musicological Society*, vol. 31 (1978), 490-94. Irving Godt challenged and Harrán defended this concept of cautionary signs in an exchange of letters in *Journal of the American Musicological Society*, vol. 31 (1978), 385-95.

⁷Haar writes, "Prof. Harrán's view of problematic accidentals in the sixteenth-century madrigal is far enough from mine that I would consider some of the examples in his article—differently interpreted—as instances of the deliberate cross relation," in "False Relations and Chromaticism in Sixteenth-Century Music," 410. There remain a few accidentals in Harrán's study that seem sufficiently uncomfortable (even according to the freer standards of the Renaissance) that raise the question as to whether they are not simply errors in transmission: see "New Evidence for Musica Ficta: The Cautionary Sign," Example 4c, second measure, and Example 7, fifth measure. While I disagree with many of Harrán's conclusions, I have found his studies (cited above) highly interesting for their systematic exposition of difficult cases of accidentals and for the thought-provoking way in which he addresses issues associated with sixteenth-century dissonance treatment and the use of inflections.

⁸Tinctoris, *Liber de natura et proprietate tonorum*, ed. Seay, 74.

... in every place of ♯ quadro where one finds the *b rotundo*, on the note of this b one says *fa* returning immediately to the order of ♯ quadro, since the said *b molle* is inserted in the order of ♯ quadro to make consonance and not to interrupt the principal order.⁹

When these *fa*'s are located within the song, they belong only to the notes which follow immediately after the *fa*'s and not to the other notes. For as soon as the same note has ended, the *fa* no longer affects the other notes on that line or in that space. One would write, then, a *fa* for each note.¹⁰

There would seem to be little that a study of mensural sources alone can do to solve this contradiction between Tinctoris and the other theorists. Intabulations provide closer guidance, and show that the determination of whether an accidental applies only to a single note or to several following it depends on the musical context. Perhaps an extensive study comparing accidentals in mensural sources and instrumental tabulatures may shed more light on this issue, and yield more substantial guidelines for this than we have at present. However, the extreme flexibility of Renaissance accidental usage should be kept in mind, and any rules derived from such a study would best not be too scientific and rigid. Most likely this issue needs to be approached on a case by case basis.

For the present, a few examples will be offered that contribute to our understanding of this issue. At times, a single accidental in a mensural source has apparently been the inspiration for a more extended

⁹Lanfranco, *Scintille di musica*, pt. 1, 18, trans. in Toft, "Traditions of Pitch Content," 336.

¹⁰Hans Gerle, *Musica und Tabulatur* (Nuremberg, 1546), fol. b2^v, trans. in Toft, "Traditions of Pitch Content in the Sources of Two Sixteenth-Century Motets," 336.

use of inflections in a lute realization of the same passage.¹¹ Example 8-1a illustrates this possibility in a passage containing a literal repetition at the unison, in other words, in a situation where the slightest deviation in pitch would be immediately apparent to the performer and listener.¹² Example 8-1b shows a passage in which a single cadential C# appears in the vocal version printed by Petrucci, while in the intabulation by Bossinenis, the sharp appears not only in both subsequent Cs, but also in the preceding one.¹³

¹¹The word "apparently" has been added for caution, since it is conceivable that the lutenist worked from a source fully notated with flats and sharps. This seems unlikely, though, especially in the case of sharps in cadential contexts.

¹²Isaac, *Palle, palle*, in *Heinrich Isaac: Weltliche Werke*, ed. Johannes Wolf, in *Denkmäler der Tonkunst in Österreich*, ed. Guido Adler (Vienna: Osterreichischer Bundesverlag, 1894-1959; repr. Graz: Akademische Druck—U. Verlaganstalt, 1959), vol. 28, no. 32.

¹³Tromboncino, *Aqua aqua aiut'al foco*, in *Bossinensis I*: 32(33). Example 8-1b gives the arrangement by Bossinensis, along with the original position of the sharp in *Frottole, libro nono* (Venice: Petrucci, 1508).

Example 8-1. Single accidentals in mensural sources apparently inspiring a more extended use of accidentals in lute arrangements.

- a. Isaac, *Palle, palle*, mm. 41-42, with Spinacino's interpretation.
 b. Tromboncino, *Aqua aqua aiut'al foco*, mm. 11-12.

a)

The image shows two systems of musical notation. The first system, labeled '41', consists of four staves. The top staff is a vocal line with a treble clef and a key signature of one flat. The second staff is a lute line with a soprano clef and a key signature of one flat, featuring a long slur over two measures. The third and fourth staves are a keyboard accompaniment with treble and bass clefs, respectively, and a key signature of one flat. The second system, labeled 'S II: 11', shows a similar arrangement with a different melodic line in the top staff and a more active keyboard accompaniment.

b)

The image shows two systems of musical notation. The first system, labeled '11', consists of two staves. The top staff is a vocal line with a treble clef and a key signature of one flat. The bottom staff is a lute line with a soprano clef and a key signature of one flat, featuring a sharp sign (#) above a note. The second system, labeled '12', consists of two staves. The top staff is a vocal line with a treble clef and a key signature of one flat. The bottom staff is a lute line with a soprano clef and a key signature of one flat, featuring a sharp sign (#) above a note and an 'x' mark below a note. Below the second system, the text 'Sharp in Petrucci's frustole bk. 9' is written.

Petrucchi's *frottole* prints frequently indicate a single sharp in the proximity of a cadence, and Bossinensis consistently applies the sharp not just to the subtone immediately preceding the cadence-note, but to most or all appearances of the subtone in the approach to the cadence. Thus, there are two situations which seem likely to give rise to an extended use of accidentals:

- 1) An accidental appearing in a passage containing literal repetitions at the unison (and presumably also at the octave) may extend the duration of an accidental to keep each statement uniform.
- 2) A sharp at a cadence seems to affect most or all of the subtones in proximity to the cadence.

The most likely situation in which an accidental only applies to a single note would seem to be where a #7-8 progression is followed by ♯7, as at Example 3-5c. However, such a progression would most likely occur at cadences, and since most mensural sources do not notate accidental sharps, this particular situation of having to cancel out a notated sharp would not arise very often.

The quotation from Lanfranco given above has further-reaching implications than merely specifying the jurisdiction of an accidental. He makes it clear that accidentals are placed to take care of local necessities ("to make consonance") and that it is then necessary to return immediately to the principal order so that this order not be interrupted.¹⁴

¹⁴Lanfranco is not the only theorist who expressed the need to return to the original diatonic order after singing an accidental: Hothby states the same principle in *La Calliopea legale*, ed. Coussemaker, *Histoire de l'harmonie*, 303. A translation of the relevant passage appears in Joseph S. Levitan, "Adrian Willaert's Famous Duo:

On the basis of this, it is possible to suggest that singers were aware of the prevailing diatonic order of a composition, and that when they sang an accidental (whether or not they invoked a solmization syllable in a foreign hexachord), they were conscious of the need to return to that original order. Indeed, this can hardly have been otherwise.

Practical sources show that almost all inflections occur in only one voice at a time, two inflections at a time only occasionally, and three or more simultaneous inflections only briefly and rarely. Thus, when inflections were made, most of the singers normally stayed within the original order. This means that the one or two parts that momentarily departed from the original diatonic order (for the sake of an inflection) would have to return to it in order to make correct counterpoint with the other parts which had never left the original diatonic order. The considerations raised here speak strongly against the idea that, for the sake of avoiding cross relations and imperfect fourths, fifths or octaves, performers might add numerous inflections which would change the original pitch level of a composition by a chromatic semitone.¹⁵

The evidence presented in this study (as well as in Berger's *Musica ficta* and Toff's "Traditions of Pitch Content") clearly speaks against the twentieth-century theories that impose large numbers of accidentals simultaneously in each voice, even to the point of forcing a composition out of its original pitch level. Apart from the obvious practi-

Quidnam ebrietas," Tijdschrift van de Vereniging voor Nederlandse Muziekgeschiedenis, vol. 15 (1939), 193.

¹⁵For example, the ending of Clemens non Papa's *Qui consolabatur me* is notated as ending on G, but in Lowinsky's "chromatic" interpretation, ends on G \flat ; see *Secret Chromatic Art*, Example 39.

cal difficulties of accomplishing such interpretations without adequate notation, we have seen that all the usual reasons given for such an extensive application of unspecified accidentals, namely, the insistence on correcting all vertical and melodic imperfect fourths, fifths, and octaves, and on solmizing all ostinatos and imitative voices, are not supported by Renaissance theory or by the practical sources. To this body of evidence we can now add the necessity of returning to the original diatonic order.

In his *Secret Chromatic Art*, Lowinsky discussed the idea of chain reactions of flats and sharps. As we have seen, Berger argued that these did not exist, and limited the extension of the musical system to one additional flat beyond the signature of a given work.¹⁶ This study has shown, however, that not only one, but also two flats beyond the signature could be added (see Example 5-6b). Thus, the actual practice seems to have been situated within the two extremes suggested by Berger and Lowinsky.

It may be added that, while it appears that Lowinsky carried the idea of chain reactions into flat regions further than subsequent investigations into Renaissance theory and sources have borne out, he nevertheless brought a very important principle of Renaissance accidental usage to light. For it is indeed an important characteristic of this period that one moved normally by successive flats. A typical way in which this might arise is seen in Example 8-2: B \flat is introduced for one of the usual rules (in this case, *una nota supra la* in the superius, followed by

¹⁶Berger, 121.

B \flat in the bass to form a perfect octave with the superius) and then E \flat is introduced to avoid the tritone leap in the bass.¹⁷ Typical also is the rapid return to the original diatonic order (seen here most clearly in the vocal version) following this brief excursion into two flats.

Example 8-2. Two-flat chain reaction in Agricola, *Si dedero*, mm. 32-35, with Capirola's interpretation.

The principle of chain-reaction thinking in the flat direction is brought out by the fact that only rarely is the second flat beyond the signature directly introduced without the immediately preceding entrance of the first flat. Example 8-3a illustrates this unusual possibility, in which E \flat is introduced directly in *cantus durus*, without the prior introduction of B \flat .¹⁸ This example also illustrates the possibility of using

¹⁷Agricola, *Si dedero* in Brussels 11239, no. 23, transcr. in Picker, *Chanson Albums*.

¹⁸Collinet de Lanoy, *Cela sans plus et plus hola*, in Florence 229, no. 98.

an inflection for no conventional reason, but simply according to the composer's or the editor's taste. Most accidentals in mensural sources fall into easily definable categories, but sometimes they simply have no discernible rationale other than taste.

Another possibility is the simultaneous introduction of the first and second flats beyond the signature, as in Examples 5-6b and 8-3b. Example 8-3b shows the use of $A\flat$ in the superius and tenor to avoid leaps of an imperfect fourth and fifth, which in turn gives rise to $D\flat$ in the bass in order to form vertical perfect fifths.

Example 8-3. Introduction of two flats beyond the signature.

a. Unmediated introduction of the second flat beyond the signature in Collinet de Lanoy, *Cela sans plus et plus hola*, mm. 36-38.

b. Simultaneous introduction of two flats beyond the signature in Pierre de la Rue, *Porquoy non*, mm. 31-35.

a)

Musical score for Example 8-3a, measures 36-38. The score is written for three staves (treble, alto, and bass clefs). The key signature is one flat (B-flat). The music shows a melodic line in the treble clef and a bass line in the bass clef. The second flat (F-flat) is introduced in measure 37, which is unmediated.

b)

Musical score for Example 8-3b, measures 31-35. The score is written for four staves (treble, alto, and two bass clefs). The key signature is one flat (B-flat). The music shows a melodic line in the treble clef and a bass line in the bass clef. The second flat (F-flat) is introduced in measure 31, which is simultaneous with the first flat (B-flat).

Example 8-3b illustrates a most important feature of the musical system of Josquin's period: examination of all the main sources for this study clearly shows that the more distant flats (such as $A\flat$ and $D\flat$) appear readily and easily when the music is written in the appropriate flat signatures, that is, in cases in which these flats are only one or two flats beyond the signature.¹⁹ Thus $A\flat$ is used as an accidental in a signature of two flats for the same reasons and with the same freedom as $B\flat$ is used in *cantus durus*. $D\flat$ begins to appear only in signatures of two or three flats. Otherwise, these more distant flats simply do not appear; one does not find $D\flat$ s written in music with fewer than two flats in the signature.

In the main sources for this study, there are a fair number of cases in which two flats beyond the signature are used (usually in chain reaction manner), but none in which the chain reaction takes place in the sharp direction. Perhaps a direct or indirect example of a melodic progression such as $B-F\sharp-C\sharp$ can be found somewhere in the music of Josquin's period, but there is no question that such a chain of fifths occurs relatively often in the flat direction, and virtually never (if at all) in the sharp direction. One simply does not find a comparable ability to move by successive fifths or to form vertical perfect intervals in the sharp direction as one finds with the application of two flats beyond the key signature. This is rather interesting, particularly in light of the fact that the sources show that accidentals in the sharp direction (usually raised lower neighbors or leading tones) may extend not only two but

¹⁹This finding is generally valid not only for the sources for this study, but for Josquin's period as a whole.

as far as three sharps beyond the signature. Thus, more sharps than flats were available in the musical system, but these did not arise in conjunction with vertical or melodic chains of fourths or fifths as flats sometimes did. These sharps arise, then, in a more local and less structural way than flats. The ability to use flats in a more harmonic or structural way than sharps is attested to in the use of signatures, which moved comfortably into flat regions, and only with extreme rarity (e.g., in a few canons) into sharps.

To summarize, then, the sources for this study reveal that the normal musical system of Josquin's period included two flats and three sharps beyond the signature. Thus, the inflections available in the system of *cantus durus* were B \flat , E \flat , F \sharp , C \sharp , and G \sharp , in the system of *cantus mollis*, E \flat , A \flat , B \natural , F \sharp , and C \sharp , in the system of *musica ficta* with two-flat signature, A \flat , D \flat , E \natural , B \natural , and F \sharp , and so forth for further flat signatures. What is most interesting is that these findings pertain not only to accidentals applicable to vocal music but also to the accidentals used in instrumental ornamentation, the exceptions being so rare and inconsequential that they do not produce any significant change.²⁰ Also of great interest is that the findings regarding the scope of the musical sys-

²⁰Thus, for example, Spinacino I: 19 begins with a four-note monophonic instrumental flourish which, when transposed to *cantus durus*, has the notes E-D \sharp -C \sharp -D \sharp -E. This exceeds the usual limit of three sharps beyond the signature by one sharp. This little configuration of notes (which is a favorite device at the beginning of many of Spinacino's arrangements of vocal music) precedes the polyphonic arrangement and has no bearing on the polyphonic model or on the use of accidentals in polyphony.

tem as outlined here coincides with the most important accidentals in the keyboard tuning of Josquin's era: F \sharp , C \sharp , G \sharp , B \flat and E \flat .²¹

It is interesting to examine Josquin's famous *Absalon, fili mi* in light of these findings concerning the scope of the musical system. This composition is transmitted at two different pitch levels in Renaissance vocal sources, the earliest source, Ms. Royal 8, in mode 6 on E \flat in *cantus fictus*, and the later ones, in a more normal mode 6 on F in *cantus mollis*.²² Example 8-4a shows the initial measures and Example 8-4b the final measures of *Absalon, fili mi*, with the Royal 8 version aligned above the later version in *Selectissimae necnon familiarissimae cantiones* (Ausburg, 1540) for comparison.²³

²¹For a detailed discussion of Renaissance keyboard tuning, see Berger, 48-55. It is true that other steps were found in keyboards, particularly those with split keys (such as A \flat /G \sharp). Berger points out that remoter sharps (D \sharp and A \sharp) were not generally found useful enough to include except in a few experimental keyboards (see p. 54). He reports that A \flat was favored in the fifteenth century, and became increasingly replaced by G \sharp from the late fifteenth century on (p. 55). A \flat would have been useful in *cantus mollis* or *cantus fictus* in order to fulfill traditional rules governing inflections and for transposition.

²²Ms. Royal 8 is dated 1513-25, probably 1516-22 in *Census-Catalogue of Manuscript Sources of Polyphonic Music 1400-1550* (Neuhausen-Stuttgart: American Institute of Musicology, 1982), vol. 2, 103. On later sources for *Absalon, fili mi*, see fn. 23. Mode 6 was appropriate for laments; the traditional Gregorian recitation tone for the Lamentations of Jeremiah is in this mode.

²³Smijers follows the Royal 8 version in Josquin, *Werken, Supplement*, no. 5. The version in *Selectissimae necnon familiarissimae cantiones* is given in Toft, "Pitch Content and Modal Procedure in Josquin's *Absalon, fili mi*," 21-27. Toft aligns his transcription of this version with a transcription of a lute intabulation of *Absalon, fili mi* from Ochsenkun's *Tabulaturbuch auff die Lauten* (Heidelberg, 1558). Toft's study contains a discussion of all sources for *Absalon fili mi*.

Example 8-4a. A comparison between the low-pitched Royal 8 version of Josquin's *Absalon, fili mi*, mm. 1-9, with the higher (*cantus mollis*) version found in *Selectissime cantiones 1540*.

The image displays two systems of musical notation, each consisting of four staves (Soprano, Alto, Tenor, Bass). The top system is labeled "Royal 8 G vii" and the bottom system is labeled "Selectissimae necnon familiarissimae cantiones 1540". Both systems show the same melodic line in the upper voice, but the bottom system is transposed one octave higher. The notation includes various note values, rests, and bar lines, with a measure rest in the fifth measure of each system. The key signature for both is one flat (B-flat).

Example 8-4b. The close of Josquin's *Absalon, fili mi*, mm. 77-85, as found in Ms. Royal 8 and in *Selectissime cantiones* 1540.

The image displays two systems of musical notation for the closing of Josquin's *Absalon, fili mi*. The first system is labeled "Royal 8 G vii" and the second is labeled "Selectissime... cantiones 1540". Both systems consist of four staves: a vocal line (soprano), a lute line (treble clef), a bass line (bass clef), and a basso continuo line (bass clef). The notation includes various rhythmic values, accidentals (sharps, flats, naturals), and phrasing slurs. The key signature is three flats (B-flat, E-flat, A-flat). The first system includes a measure number "80" above the first staff. The second system includes a measure number "80" above the first staff. The notation is presented in a clear, scholarly format, showing the differences between the two manuscript versions.

Absalon, fili mi is an extraordinary piece, both from an expressive and from a technical viewpoint. In the Royal 8 version, its daunting key signatures (from top to bottom, bb, bb, [b]bb, [b]bbb) and remote accidentals (extending as far as Gb!) give this piece a rather radical and farflung appearance for its time.²⁴ Another exceptional feature of this work is its use of chain reactions of flats that is probably the most far-reaching to be found in any piece from Josquin's period (see Example 8-4b).

This chain-reaction passage leads to an ending that is not on the *finalis*, but on the fifth of the mode; Zarlino specifically describes and allows this in his treatise on the modes.²⁵ In most cases, the ending on the fifth of the mode occurs simply, without any long-range modulation. The effect of such an ending (particularly in modes 1, 2, 5, and 6) is, to modern ears, similar to the effect of a tonally unresolved ending on the dominant without previous preparation or modulation (as in Example 5-24b). Most remarkably, however, we find that in *Absalon fili mi*, the ending forms a modulation from Eb to Bb (or from F to C in the later *cantus mollis* version). In other words, rather than staying centered around the Eb (or F) *finalis* of the mode and simply ending on Bb (or C), the entire last 25 measures of the composition (mm. 61ff.) are

²⁴For an explanation of the flat signatures for *Absalon, fili mi* in the Royal 8 version, see p. 21.

²⁵See *Le Istitutioni harmoniche*, bk. 4, ch. 30, trans. Vered Cohen, *On the Modes*, 89-90 and in Oliver Strunk, *Source Readings in Music History* (New York: Norton, 1950), 253-55.

centered around the fifth step of the mode, B \flat (or C).²⁶ Such a large-scale change of tonal center within a single movement is indeed an extraordinary achievement for Josquin's period.

Given all these remarkable features, it may come as a surprise to find that *the range of internal pitch-relationships of this work lies within the normal musical system of Josquin's period.* This can be most readily be seen by studying the 1540 version on F in *cantus mollis*, in which the distant flats notated in Royal 8 (D \flat and G \flat) transpose to flats much more regularly used by Renaissance musicians, namely, E \flat and A \flat . The most distant flat, A \flat , is only two flats beyond the flat signature, and thus falls within the scope of the normal musical system of Josquin's period, as discussed above. No raised tones are stipulated in the 1540 *cantus mollis* version, but the use of B \sharp and F \sharp as leading-tone accidentals is obviously implied, and these raised leading-tone inflections are used in Ochsenkun's intabulation. Thus, the total range of stipulated or clearly implied inflections in the *cantus mollis* version of *Absalon, fili mi* are B \sharp , F \sharp , E \flat and A \flat , which is within the normal vocabulary of *cantus mollis* during Josquin's period (although A \flat is used considerably less in *cantus mollis* than E \flat).²⁷

The earlier version in Royal 8 presents a more complex case. It will be easiest to assess the flat signatures and pitch content of this version if we briefly consider it as if it were transposed up a ninth to the

²⁶An analysis of the close of *Absalon, fili mi* appears in Saul Novack in "Tonal Tendencies in Josquin's Use of Harmony," *Josquin des Prez: Proceedings of the International Josquin Festival*, 322-23.

²⁷This assessment of the cumulative scope of written and implied accidentals is corroborated by Ochsenkun's lute intabulation.

same pitch level as the 1540 *cantus mollis* version. In such a transposition, the clefs would be (from top to bottom) \natural , \natural , b , bb . This would be a somewhat irregular but by no means unique combination of clefs for Josquin's period. A comparison between the two versions, with the Royal 8 version transposed to the same pitch level for comparison yields the following results:

Royal 8 (transposed up a ninth): \natural , \natural , b , bb , mode 6 on F.

1540 version: b , b , b , b , mode 6 on F.

How is it that the Royal 8 version is in the same mode as the 1540 version, since the flat signatures of the two versions correspond only in the tenor? To begin with, the fact that the mode of the tenor is the same in both cases is highly significant, since the tenor is, after all, the modally governing voice in Renaissance polyphony. And furthermore, the discrepancies in the signatures in the Royal 8 version do not change the mode, for the following reasons.

First of all, the whole step below the *finalis* is frequently used in the bass of compositions in modes 5 and 6 to avoid vertical diminished fifths. These are often notated as accidentals, as they are in the 1540 version, while in other cases, it appears in the bass signature as an additional flat (as seen in the Royal 8 version). Indeed, the actual notated pitch content of the bass is essentially the same in both the Royal 8 and the 1540 versions.

The second reason is that the fifth and sixth modes could tolerate a certain degree of discrepancy in intervallic makeup without losing modal identity. Aaron explains this as follows:

I ask you to observe that compositions ending in the position *F fa ut* are to be assigned to the fifth or sixth tone [i.e., mode]. On this point I should like to remove any remaining uncertainty, for seeing that such compositions very often—indeed, almost always—have the flat signature and that the form [i.e., arrangement of tones and semitones] of the tone [i.e., mode] is altered, it would be easy for you to believe the contrary ... Know, then, that in compositions such as these the older composers were more concerned with facility than with proper form and correct structure. For the fifth and sixth tones often require the help of the b-flat, although always to use it would be contrary to the tendencies of the mediations of these tones as laid down by the ancients. ... the older composers altered the third diapente [F-G-A-B♭-C], giving it the nature of the fourth [F-G-A-B♭-C], in order that the tritone which would otherwise occur in running through it might not cause inconvenience or harshness in their music.²⁸

In other words, the older theorists defined modes 5 and 6 on F as having the modal fifth-species F-G-A-B♭-C, but composers were more concerned with convenience than with rigidly adhering to the theoretical scheme, and thus often used B♭ in order to avoid the harshness of the tritone. Thus, compositions in modes 5 and 6 on F would properly (according to traditional theory) be without flat signature (i.e., in *cantus durus*), but, because of the practical need to avoid the tritone, most often occurred with a B♭ signature (i.e., in *cantus mollis*).

This means that, from the standpoint of Aaron's theory, the alto of Royal 8 version of *Absalon fili mi*, which shares the same range but has one flat less than the tenor in its signature, can still be consid-

²⁸Aaron, *Traittato della natura e cognizione di tutti gli toni di canto figurato* (Venice, 1525), ch. 6, trans. in Strunk, *Source Readings*, 215. Aaron's views on this subject are of particular interest here, since, of all theorists to write extensively on the modes, he was the most directly connected with Josquin's circle.

ered to be in the same mode as the tenor, namely, mode 6.²⁹ Similarly, the superius, which occupies an authentic range on the same *finalis*, can be considered to be in the closely related mode 5 even though it has one flat less in the signature than the tenor.³⁰

This study of the Royal 8 version of *Absalon, fili mi* in light of Aaron's modal theory shows that, even though it is more adventurous in the use of flat signatures, it remains nevertheless in the same mode as the later version of 1540 in *cantus mollis*. The main audible difference between the two versions is that the use of a two- rather than three-flat signature in the upper voices of the Royal 8 version gives a greater emphasis to the $\sharp 4$ scale-step above the *finalis* than is found in the 1540 version. In the latter version, the uniform use of $B\flat$ signatures eliminates the augmented fourth above the final at all

²⁹Of course, it was the existence of precisely such discrepancies in modal theory that led Glarean to criticize the eight-mode system and formulate his twelve-mode system in *Dodecachordon* (1547). Whereas Aaron allowed modes 5 and 6 on F whether or not there was a flat signature, Glarean called the F mode without flat signature Lydian, and with flat signature, Ionian. Josquin indicated that he considered his *L'homme armé* mass in the plagal mode on F with $B\flat$ signature as being in mode 6 by naming it *Missa L'homme armé sexti toni*; he thus follows the practice later described by Aaron. Glarean would have disagreed with Josquin's modal attribution, and would have analyzed the mass as being in the Hypoionian mode. Glarean's twelve-mode system had widespread influence, but never entirely supplanted the traditional eight-mode system, which continued to have its adherents.

³⁰Renaissance compositions usually have some combination of voices in authentic and plagal voice ranges sharing the same final, in order to accommodate different voice ranges that could not all easily fit into a single authentic or plagal range. The mode of the tenor was considered to be the governing mode of the work as a whole. Zarlino writes that "The mode in which a composition is written is established in the tenor, and the parts ... should be so arranged that if the tenor occupies the notes of an authentic mode, the bass will contain the notes of the collateral, or plagal, mode. And vice versa, if the tenor occupies the notes of a plagal mode, the bass ought to contain the authentic mode;" see *Le Istitutioni harmoniche*, bk. 4, ch. 31, trans. by Cohen in *On the Modes*, 92. In this chapter, Zarlino describes different combinations of plagal and authentic voice ranges for all the voices of a composition.

places except where implied B \flat s are employed to form raised leading tones or semitone lower neighbors.

The discrepancy in pitch content between the Royal 8 and the 1540 versions is not so great as it might appear at first sight. About half of the As that form an augmented fourth above the E \flat *finalis* in Royal 8 need to be flatted to avoid vertical or melodic dissonances; this would bring the Royal 8 version considerably closer to the 1540 version. Furthermore, about six of the B \flat s that form perfect fourths above the *finalis* F in the 1540 version need to be raised to form leading tones, while another three might be raised to form semitone lower neighbors; there would be no need to raise these pitches in the Royal 8 version, since they are already “raised” to the augmented fourth above the *finalis* by the absence of a third flat in the signature. After these inflections are used (most of which are probable, and are found in Ochsenkun’s intabulation), there remain only some 13-15 notes—mostly rapid passing tones—in which the two versions differ from another.³¹

Since the addition of necessary accidentals brings the upper voices of Royal 8 closer to being in the same signature as the tenor, it is not surprising to find that later versions of *Absalon, fili mi* (such as the 1540 one) simplify the work by using the same signature in each part.

³¹Since many of these remaining notes are purely ornamental, with little structural significance, there does not seem to me any reason to uniformly make them Abs as Smijers does in his edition. Neither do I see why the Royal 8 version would end up having the same pitch content as the 1540 version, as Toft concludes in “Pitch Content and Modal Procedure in Josquin’s *Absalon, fili mi*.” To be sure, they are similar, but it seems more likely that the Royal 8 version would be more “raised fourth-degree oriented” than the 1540 version.

This automatically smooths out many of the vertical and melodic dissonances that arise from the use of partial signatures in Royal 8. The motet is further simplified by being placed in a normal *cantus mollis* position on F. A comparison of the two versions of the motet's ending (given in Example 8-4b) shows how much easier the 1540 "normalized" version would be for singers. What is perhaps the most interesting lesson to be learned from this comparison of the different versions of *Absalon, fili mi*, is that it provides an example in which a difficult, "chromatic" version of a composition by Josquin seems not to have been cultivated, and that a simpler, "regularized" version, one which singers could more easily negotiate, was preferred.

One last issue concerning *Absalon, fili mi* will be discussed here. It might be argued that the Royal 8 version, with its B \flat -E \flat signatures in the upper voices and the use of G \flat as an accidental, shows the use of three flats beyond the signature. I would argue that the tenor's three-flat signature is the main signature of the composition, against which the A \natural of the two-flat signatures does not sound essential to the mode, but has the effect of a raised fourth step above the *finalis*. As we have seen, the musical system of Josquin's era allowed three notes in the raised direction beyond the signature, and this A \natural would represent the first raised note beyond the modally governing signature of the tenor.³² The Renaissance musicians who edited the later versions of this work must have agreed that the composition was essentially in the mode of

³²This is further corroborated by the fact that, if the tenor of the Royal 8 version were transposed to *cantus durus*, the cleffing would be $\sharp, \sharp, \natural, \flat$, thus yielding a musical system with F \sharp and B \flat .

the tenor; they eliminated the "raised" effect by incorporating the perfect fourth above the *finalis* into every voice by using the tenor's *cantus mollis* B \flat signature in each voice.

In concluding our study of *Absalon, fili mi*, we reaffirm that the work is bold in conception. The boldness, however, is not in going beyond the usual limits of the musical system of Josquin's era, but rather in the way in which aspects already present within the system are developed to a level not previously attained. For all of its extraordinary qualities, the work still remains understandable within the theory and normal vocabulary of its age. Thus, apart from its unusual transposition level in Royal 8, this work turns out to be composed within the scope of pitches available in the normal musical system. In fact, despite its remarkable use of chain-reaction accidentals and modulation, *Absalon, fili mi* does not even use the entire range of pitches available within the system: both flats beyond the main flat signature (in Royal 8, the tenor's three-flat signature) are used, but only two of the three available raised inflections are used.

One may question whether an extensive use of implied accidentals inevitably led to the kind of elimination of imperfect intervals as has so often been supposed. This is certainly not the case with the anonymous chanson, *Il estoit ung bonhomme*, which dates from the early sixteenth century. The last fifteen measures of this composition contain written-out solmization syllables suggesting specific inflec-

tions, a rarity in Renaissance practical sources (see Example 8-5 for the final measures).³³

Example 8-5. Passage with written-in solmization syllables from Anon., *Il estoit ung bonhomme*, closing measures.

The image displays a musical score for a passage from Anon., *Il estoit ung bonhomme*. The score is organized into two systems, each containing four staves. The first system features a vocal line with the following solmization syllables: *sol fa*, *Fa fa re la mi re la sol fa*, *fa*, *Fa fa fa*, *fa*, *Fa fa re la mi*, *Fa fa re la mi*. The second system continues with: *re la mi re la sol fa mi re ut.*, *Sol fa mi re ut*, *re la sol fa mi re ut.*, and *sol, Fa mi re ut.* The notation includes various clefs, notes, rests, and accidentals, with some syllables written in different cases (e.g., 'Fa' vs 'fa').

³³The closing measures of Anon., *Il estoit ung bonhomme*, are given in Albert Seay, "The 15th-Century Coniuncta: A Preliminary Study," *Aspects of Medieval and Renaissance Music*, 735-36. Seay remarks on the arbitrariness of some of the solmization syllables (such as in the change of syllable from *re* to *ut* on the same pitch at the end of the alto part).

Virtually all of these inflections adjust the whole-step lower neighbor to a half step (rule 4 in this study). Interestingly, the inflections give rise to unaccented vertical augmented unisons and diminished fifths; the effect is reminiscent of the small clashes so frequently observed in lute music.

In Josquin's period, the scope of accidentals available within a single system (such as *cantus durus* or *mollis*) was generally only of local significance, and was relatively limited in comparison to the range of inflections available to the sixteenth-century Italian chromaticists or to the music of the following centuries. Thus, true modulation was not a characteristic of Josquin's period, but might occur only as a rare exception such as seen in the case of *Absalon, fili mi*.

Two procedures pointing in the direction of modulation were possible, however, in Josquin's era. First, although full scale modulations were generally not possible, local tonicizations of a pitch other than the *finalis* of the mode occurred fairly often: Example 4-23a shows a tonicization of C within a piece with an F-*finalis*, while Example 4-23b shows tonicizations of A and D within an E-Phrygian piece. In each case, the tonicization is brought about by the use of a raised cadential subsemitone. Second, it was possible to move from one mode to another and then back to the original mode, as is shown in Example 8-6.³⁴

³⁴Josquin, *Memor esto verbi tui*, in *Werken, Motetten, Bundel 6*, no. 31.

Example 8-6. Shift from Dorian to Phrygian and back to Dorian in Josquin, *Memor esto verbi tui*, mm. 257-74.

The image displays two systems of musical notation for Josquin's *Memor esto verbi tui*, measures 257-74. Each system consists of four staves: a vocal line (soprano and alto clefs) and two lute lines (treble and bass clefs). The first system is labeled 'D Dorian' at the beginning and 'E Phrygian' at the end. The second system is labeled 'D Dorian' at the end. Measure numbers 260 and 265 are marked above the first system, and 270 is marked above the second system. The notation includes various rhythmic values, accidentals, and phrasing slurs.

Here, the motion from D-Dorian to E-Phrygian does not result in a modulation to E with the use of a secondary dominant (nor does all the chromaticism that would be necessary for this arise); rather, the music remains within the diatonic gamut and takes on the new characteristics of the E-Phrygian mode merely by moving away from D and momentarily dwelling within the new arrangement of diatonic tones and semitones around E.³⁵

Actually, it was not even possible to tonicize E by approaching it with its own V or vii⁶, as it was possible for any other note in the diatonic gamut of *cantus durus*.³⁶ For while a B-F[#] or B-D-F[#] sonority was used on rare occasions, it arose from a local use of F[#] to avoid the vertical diminished fifth, not from a harmonic establishment of E-minor. Even less available (in the untransposed system of *cantus durus*) was the full-fledged dominant of E-minor, namely, B-D[#]-F[#], since D[#] is located not three, but four sharps beyond the signature, and thus lies outside of the boundaries of the system as outlined above.

An examination of E-Phrygian compositions of Josquin's period shows how clearly the music of that era was shaped around the diatonic notes, which, for lack of a perfect fifth above B, specifically prevented any major structural role for five-three sonorities on B. For, in music in any of the modes, the absence of the perfect fifth above B in

³⁵Note that the transition from D (Dorian) to E (Phrygian) in mm. 259-264 occurs through successive fifths D-A-E.

³⁶The Roman numerals V and vii⁶ are used here with tonal implications. While I do not believe that Renaissance music lends itself to traditional Roman numeral analysis, I do believe that the effect of primary and secondary V and vii⁶ chords is already present even before Josquin's period, despite the fact that the overall musical context is not yet fully triadic.

the natural diatonic order did not lead to a compensating use of accidentals to enable the use of the five-three sonority on B \flat . Rather, on a local level, it led to the frequent alteration of B to B \flat to avoid the vertical B-F diminished fifth, and the far less frequent use of F \sharp for this purpose. On a larger level, the diminished fifth above B prevented that note from being used as a modal *finalis*, and prevented the five-three sonority on B from having any major structural role. In the Phrygian mode, it led to a greater emphasis to shaping the music around the poles of E, A, and C rather than around E and B.³⁷ It is this very fact that, along with the semitone step above the *finalis*, gives the Phrygian mode its special character, different from the effect of the Dorian mode on D or on A, which is much closer to the modern minor mode. For a more harmonic use of five-three sonorities built on B, we need to wait for chromaticism in the sixteenth-century Italian madrigal.³⁸

While we find V-I progressions on E in the mid-sixteenth century, there was still quite a distance to travel between the modally based music of that era (with its new chromatic excursions) to the full-fledged major-minor system. An important step along this way involves the increasing use of sonorities built on B. In the seventeenth century,

³⁷Zarlino states that the note B \flat "does not have a corresponding fifth above or fourth below," and that the third mode would sound harsh if it were not "tempered by the diapente of the ninth mode [=Glarean's Aeolian] and by the cadence made on a..." *Le Istitutioni harmoniche*, bk. 4, ch. 20, trans. Cohen, *On the Modes*, 63-64.

³⁸See, for example, Giulio Fiesco's beautiful madrigal *Bacio soave con ch'il cor*, published in 1554, which uses the V-I progression between B major and E major a number of times. This madrigal shows a highly sophisticated sense of harmonic progression. Transcr. in Henry W. Kaufman, "A "Diatonic" and a "Chromatic" Madrigal by Giulio Fiesco," *Aspects of Medieval and Renaissance Music*, 478-82.

there are further indications that the B-sonority was becoming more usable in a harmonic or structural way:

- 1) Seventeenth century theorists (such as Bernhard and Crüger) use F \sharp to correct the melodic and vertical augmented fourth and diminished fifth between F and B much more readily than do late fifteenth- and sixteenth-century theorists.³⁹
- 2) Seventeenth century theorists recognized triads and modes starting on the note B (using F \sharp to avoid the diminished fifth).⁴⁰

It was the increased availability of B major and minor triads in the seventeenth century that would eventually lead to the decline of the Phrygian mode. Even in Josquin's era, the V-I cadence (as it arose in the typical voice-leading of that era) was highly favored, and the new possibilities for tonicizing E with a V-I cadence had the effect of leading away from Phrygian modal patterns towards a greater tendency to organize music around the I-V-I progression, thus bringing the musical system closer to the full-fledged major-minor system.

To summarize our discussion, then, we see that the diminished fifth had far-reaching effect on the modal system and the shaping of the harmonic language of Renaissance music. This effect was largely one

³⁹Christoph Bernhard, *Tractatus compositionis augmentatus*, ch. 12, and *Ausführlicher Bericht vom Gebrauche der Con- und Dissonantien*, ch. 3. (Example 151), trans. and transcr. in Walter Hilse, "The Treatises of Christoph Bernhard," *The Music Forum III*, eds. William J. Mitchell and Felix Salzer (New York: Columbia University Press, 1973), 66 and 70. Johann Crüger, *Synopsis musica* (Berlin, 1654), 123, discussed (with a translation of the relevant passage) in Joel Lester, "Major-Minor Concepts and Modal Theory in Germany, 1592-1680," *Journal of the American Musicological Society*, vol. 30 (1977), 232-33.

⁴⁰Bernhard, *Tractatus*, ch. 45, trans. Hilse, p. 126. Crüger, *Synopsis*, in Lester, "Major-Minor Concepts," 232-33. Some seventeenth-century theorists presented the modes on B as transpositions of other modes (as Bernhard did), while others, such as Crüger, added them on as new modes beyond the twelve of Glarean.

of limitation, preventing modes to be formed on B and (in most cases) eliminating five-three sonorities on B. The "conquest" of the dissonant B-F interval by the use of F \sharp to form the B-F \sharp vertical perfect fifth on a frequent basis had a far-reaching effect of liberating music from the narrower confines formerly imposed by the B-F diminished fifth. It expanded the musicians' ability to organize phrases around the V-I relationship, and their ability to make internal transpositions needed for tonicizations and modulations, whereas before, in the modal system, the music remained primarily shaped around the original diatonic gamut, and took on the characteristics of the mode of whichever note was being emphasized at any one point.

It would be a very fruitful for our understanding of the history of tonality to study closely the growth in the use of B-minor and B-major sonorities (as well as other five-three sonorities containing sharps) in the sixteenth and seventeenth centuries, and to see how this contributed to breaking open the former confines of the modal system.⁴¹ A next stage might involve seeing how harmonies involving more than one sharp came into increasing use in the sixteenth and seventeenth centuries. This could be followed by an examination of the growth in use of internal transpositions and modulations, and by a study of the extent to which phrases were shaped around the tonic-dominant relationship, in relation both to the main tonic and to passages in secondary keys.

⁴¹In *cantus durus* the only five-three harmonies containing sharps available in Josquin's period were (using modern terminology for convenience) A-major, D-major, and E-major, which arose from the use of cadential leading tones and Picardy thirds, and B-minor, which arose from the use of F \sharp to avoid the diminished fifth.

As was previously stated, music in the modal system was basically shaped around the original diatonic gamut, and when the music shifted away from the *finalis*, rather than forming a clear modulation, it took on the characteristics of the mode of whichever note was being emphasized. Interestingly, a remnant of this characteristic is found in the major-minor system, for when the tonal focus shifts (modulates) from the tonic to a new temporary tonic, the mode of the new key is usually determined by the placement of the new tonic within the scale of the original, main tonic. In other words, if there is a modulation from a tonic C to a temporary tonic A, the mode of the new key is most likely to be minor rather than major, since the key of C contains an A minor triad rather than A major triad. Similarly, a modulation from C to F will most likely end in a major mode, since F is a major triad in the key of C major, and so forth.

This is particularly true in the periods immediately following the Renaissance; Bach, for example, most frequently modulates to the closest diatonically related keys. This is not so much the case in the late Classical and Romantic periods, in which the choice of key areas for modulations becomes increasingly adventurous and chromaticized, as when Beethoven modulates from C to E major in the first movement of the Waldstein sonata. And now, as Cole Porter tells us, anything goes.

APPENDIX A
(to Chapter 3)

The following list augments the examples given in Chapter 3 and is intended to give a picture of how often the phenomena described there might appear. Examples from all of the main sources for this study are given. Since lute sources notate pitches more precisely than mensural sources, they are listed first, and then the mensural sources are given. Since this study is primarily concerned with inflections in vocal music, only those examples from the lute sources which apply directly to the vocal versions are listed. This means that examples from the lute sources which fit the following categories but which arise through instrumental figurations or alterations of the vocal texts are not included. Thus in actuality there are sometimes more examples in the lute sources than are listed, but a complete catalogue of every instance arising from instrumental practice is beyond the concern of this study.

In the mensural sources, it is impossible to say that all examples are given, since they may be subject to alteration. The examples from these sources which conform to the rules or are specifically marked with accidentals are certainly valid. The other categories, which go beyond the rules (such as diminished fifth outlines followed by a rest or by a leap) are bolstered by the appearance of parallel situations in the lute sources. Furthermore, some of these figures are preserved without adjustment in lute intabulations (see for example the discussion of Example 3-10b). Indeed, diminished fifth outlines are by no means shunned in lute sources, either as they might occur in the vocal model or in instrumental figuration.

Certain classes of outlined accidentals are common in lute sources, but rare in mensural sources—cadential and non-cadential sharps are the main category of this type. Thus, certain categories of diminished fifth outlines (such as those involving cadential or non-cadential leading tones) are given only in lute sources. This doesn't mean that they would not arise in vocal performance. In particular, leading tones are applied so automatically at certain cadential figures that one would expect that a cadential figure such as C-B-A-G-F-A would be adjusted to C-B-A-G-F(#)-G.

The augmented fourths are not listed, because they are relatively rare in the lute sources, and because those that appear in the mensural sources are generally easier to adjust without disturbing the overall harmony, and indeed, normally require adjustment using a flat. The

treatment of the augmented fourth and appropriate examples are dealt with in the text.

There were a sufficient number of diminished fourths found to warrant inclusion in this list.

Because of its great length, the examples from Florence 229 were culled as far as no. 120. Special examples beyond no. 120 are discussed in the text.

CADENCES ON G WITH THE B-F# (Descending) PERFECT FOURTH (OR E-B \flat IN *CANTUS MOLLIS*)

BOSSINENSIS: I: 27, mm. 26-28 (in mode 5 on C).

CAPIROLA: For a corresponding example in *cantus mollis* (with the perfect fourth B \flat -E, see Capirola p. 37, s. 3, mm. 7-9 (in mode 6 on F)).

SPINACINO: I: 19, mm. 89-92 (in mode 3, transpose up a major third from Schmidt's transcription).

DIMINISHED FIFTHS OUTLINED ACCORDING TO THEORISTS' RULES

DIATONIC STEPWISE DIMINISHED FIFTHS FOLLOWED BY STEPWISE CHANGE OF DIRECTION

BOSSINENSIS: I: 4, mm. 7-8; I: 10, mm. 6-7 (diminished fifth outlined by instrumental figuration); I: 33(34), mm. 17-18; I: 36(37), mm. 12-13 and mm. 21-22; I: 37(38), mm. 5-7 and 20-21; I: 40, mm. 2-4 and mm. 20-21; I: 43, mm. 18-19; I: 47, mm. 1-2; I: 54, mm. 1-3 and mm. 24-26; I: 57, mm. 4-5.

CAPIROLA: p. 63, s. 3, mm. 6-7 and p. 107, s. 2, mm. 6-8.

SPINACINO: II: 3, mm. 11-12; II: 6, m. 27; II: 14, mm. 9-10 and mm. 45-51 (2 examples); II: 18, mm. 22-23; II: 28, mm. 44-46.

BRUSSELS 228: no. 9, mm. 27-30 and mm. 53-54; no. 26, mm. 50-52 (2 examples); no. 32, mm. 10-11; no. 40, mm. 38-40; no. 42, mm. 14-17 (2 examples); no. 44, mm. 33-34; no. 47, mm. 43-44; no. 56, mm. 38-39; no. 57, mm. 14-15.

FLORENCE 229 (through no. 120): no. 7, mm. 23-24; no. 16, mm. 37-39; no. 35, mm. 36-38; no. 48, mm. 30-32; no. 52, mm. 15-16; no. 55, mm. 11-12 and mm. 31-33; no. 58, mm. 4-7 and mm. 21-23; no. 66, mm. 35-37; no. 68, mm. 28-29; no. 70, mm. 9-10, and mm. 52-53; no. 72, mm. 18-20; no. 75, mm. 72-73; no. 78, mm. 29-31, mm. 40-41, and mm. 43-44; no. 81, mm. 22-23 and mm. 45-46; no. 88, mm. 33-38 (3 examples); no. 89, mm. 2-3 and mm. 5-6; no. 93, mm. 11-14 (2 examples) and mm. 39-41; no. 94, mm. 4-5 and mm. 17-19; no. 96, mm. 55-57; no. 103, mm. 15-17; no. 104, mm. 6-7, and mm. 66-68; no. 105, mm. 16-19 (2 examples); no. 106, mm. 5-6; no. 107, mm. 12-13 and mm. 43-46 (2 examples); no. 111, mm. 54-55; no. 112, mm. 19-22; no. 113, mm. 39-41; no. 118, mm. 25-27; no. 120, mm. 6-8.

MEDICI CODEX: no. 1, mm. 49-50; no. 2, mm. 42-43; no. 3, pt. 2, mm. 69-71; no. 5, mm. 26-28 (2 examples) and mm. 70-71; no. 6, pt. 2, mm. 24-26 and mm. 120-123; no. 10, mm. 136-37; no. 15, mm. 15-17, mm. 37-38 and mm. 141-42; no. 17, mm. 52-53; no. 19, mm. 21-22 and mm. 28-31; no. 21, pt. 2, mm. 21-23; no. 22, pt. 2, mm. 82-84; no. 33, mm. 58-59; no. 40, mm. 26-27, mm. 49-50, mm. 74-76, and pt. 2., mm. 49-51; no. 41, mm. 52-54; no. 42, mm. 100-02 and pt. 3, mm. 20-22; no. 44, pt. 2, mm. 89-91; no. 45, pt. 2, mm. 29-31; no. 51, mm. 31-35 (2 examples) and mm. 56-60.

DIATONIC DIMINISHED FIFTHS PARTIALLY FILLED IN, FOLLOWED BY STEPWISE CHANGE OF DIRECTION

BOSSINENSIS: I: 57, mm. 4-5.

SPINACINO: II: 28, mm. 50-51; II: 30, mm. 22-23 and mm. 45-46.

BRUSSELS 228: no. 15, mm. 48-49; no. 22, mm. 25-26; no. 31, mm. 35-40; no. 33, mm. 38-39.

FLORENCE 229 (through no. 120): no. 5, mm. 6-8; no. 13, mm. 73-74; no. 52, mm. 4-6; no. 53, mm. 6-7 and mm. 14-17 (2 examples); no. 75, mm. 4-6 and mm. 41-44; no. 76, mm. 3-5; no. 91, mm. 27-29; no. 94, mm. 4-5; no. 102, mm. 33-36; no. 105, mm. 36-37; no. 110, mm. 47-48.

MEDICI CODEX: NO. 40, mm. 36-38; no. 42, pt. 3, mm. 21-22; no. 48, mm. 27-29 and pt. 2, mm. 28-30.

DIMINISHED FIFTHS USED IN WAYS NOT CONFORMING
TO THEORISTS' RULES

DIMINISHED FIFTH DESCENTS AT CADENCES WITH
RAISED LEADING TONE

(Since sharps are only rarely notated in mensural sources, only
the lute sources are given for the next three categories.)

BOSSINENSIS: I: 30, mm. 21-23. In I: 18(17), mm. 11-12 and I: 30, mm. 2-4 (upper line in lute part) the cadential leading tone is embellished by an upper neighbor before resolving (see Example 7b). In I: 25(26), mm. 35-37, the cadential leading tone appears at the beginning rather than at the penultimate note of the diminished fifth.

CAPIROLA: P. 108. s. 2, m. 7-s. 3, m. 1 and s. 4, mm. 4-6; p. 132, s. 3, m. 9-s. 4, m. 1. In p. 64, s.1, m. 5-s. 2, m. 2 and p. 109, s. 1, m. 10-12 Capirola embellishes the cadential leading tone with an upper neighbor before it resolves—the neighbor is not in the vocal original in these two examples.

SPINACINO: I: 1, mm. 28-30; I: 20, mm. 55-56; II: 2, mm. 40-44; II: 12, final cadence, and II: 19, mm. 33-37. In I: 17, mm. 35-36, the cadential leading tone is embellished by an upper neighbor before resolving—the neighbor is not in the vocal original. In I: 2, mm. 23-24, and II: 28, mm. 36-37 the cadential leading tone appears at the beginning rather than at the penultimate note of the diminished fifth.

DIMINISHED FIFTH OUTLINES WITH RAISED NON-CADENTIAL
LEADING TONE

BOSSINENSIS: I: 15 (14), mm. 21-23; I: 30, mm. 1-2, mm. 16-18; I: 25(26), mm. 25-26; I: 33(34), mm. 6-7 and mm. 19-20; I: 37(38), mm. 26-28; I: 54, mm. 9-10 and mm. 15-16; I: 58, mm. 5-7; I: 61, mm. 3-4; I: 62, mm. 25-26 and mm. 31-32.

CAPIROLA: p. 28, s. 4, m. 2-6 (Capirola adds fermata here, not in original).

SPINACINO: II: 3, mm. 27-28.

DIMINISHED FIFTH OUTLINES IN WHICH THE LAST NOTE IS A LOWER NEIGHBOR TO A CADENTIAL LEADING TONE

BOSSINENSIS: I: 7(8), mm. 23-24; I: 11, m. 22; I: 23, mm. 9-10; I: 32(33), mm. 10-12; I: 55, mm. 15-17. This figure appears with a non-cadential leading tone in I: 33(34), mm. 1-2.

CAPIROLA: p. 88, s. 1, mm. 3-6.

DIMINISHED FIFTH OUTLINES WITH FLATTED UPPER NOTE

BOSSINENSIS: I: 8(9), mm. 5-6, and mm. 15-16; I: 42, mm. 9-10 (E-F#-[!]-G-A-Bb-A).

SPINACINO: II: 27, mm. 44-45; II: 28, m. 48 and mm. 54-55.

BRUSSELS 228: no. 42, mm. 30-32.

FLORENCE 229: no. 24, mm. 44-45.

DIMINISHED FIFTH OUTLINES FOLLOWED BY REST

BOSSINENSIS: I: 27, mm. 26-28; I: 33(34), mm. 3-4; I: 69(70), mm. 4-6 and mm. 7-9. In these examples, a Picardy third precedes the rest.

CAPIROLA: p. 94, s. 4, mm. 3-4; p. 95, s. 1, m. 9-s. 2, m. 1; p. 120, s. 1, mm. 1-4.

SPINACINO: II: 8, mm. 12-12, mm. 23-24, mm. 33-34 and mm. 48-49; II: 18, mm. 22-23

BRUSSELS 228: no. 11, mm. 19-20; no. 23, mm. 51-61. See also Ex. 9b (rest following diminished fifth not shown in the example) and 9c.

FLORENCE 229: no. 74, mm. 24-26; no. 88, mm. 29-30; no. 93, mm. 32-35; no. 94, mm. 32-35.

MEDICI CODEX: no. 5, mm. 73-74; no. 17, mm. 56-58; no. 27, mm. 53-60; no. 33, mm. 59-60; no. 42, mm. 32-33; no. 47, mm. 69-71.

DIMINISHED FIFTH OUTLINES FOLLOWED BY LEAP

BOSSINENSIS: I: 5, mm. 11-12, and mm. 23-24; I: 15(14), mm. 2-3; I: 31, mm. 5-6; I: 46, mm. 13-14; I: 59, mm. 1-2 and mm. 4-5; I: 65, mm. 1-2. Examples involving Picardy thirds are Bossinensis I: 24(25), mm. 6-7; I: 37(38), mm. 6-9 and mm. 18-21.

CAPIROLA: p. 36, s. 2, mm. 1-3; end of p. 101 to beginning of p. 102.

SPINACINO: II: 28, mm. 33-34.

BRUSSELS 228: no. 16, mm. 6-7 and no. 28, mm. 43-44.

FLORENCE 229: no. 52, mm. 46-48 (2 examples); no. 59, mm. 61-63; no. 75, mm. 55-56; no. 81, mm. 29-30; no. 88, mm. 8-10, mm. 46-48, and mm. 51-52; no. 95, mm. 34-36, no. 106, mm. 24-25.

MEDICI CODEX: no. 7, mm. 31-34; no. 9, mm. 28-29; no. 28, mm. 21-23; no. 31, mm. 12-13.

DIMINISHED FOURTHS OUTLINED

BOSSINENSIS: I: 4, mm. 8-9; I: 5, m. 25; I: 7, mm. 13-14 and mm. 32-33; I: 8(9), mm. 26-27; I: 11, mm. 28-30 (three examples); I: 18(17), mm. 25-26, mm. 28-29 and mm. 31-32; I: 24(25), mm. 23-25 (three examples); I: 25(26), mm. 33-35 (2 examples); I: 28, mm. 5-8 (four examples); I: 30, mm. 8-9 and mm. 19-20; I: 32(33), mm. 13-14; I: 34(35), mm. 2-3 (with rest in between) and mm. 26-27; I: 35(36), mm. 10-11; I: 36(37), m. 9 and m. 18; I: 37(38), mm. 23-24 and mm. 36-38; I: 40, mm. 20-21; I: 43, mm. 3-4 and m. 13 and mm. 15-16; I: 46, mm. 17-18; I: 47, mm. 5-7; I: 49(50), mm. 23-24; I: 51, m. 2 and m. 15; I: 55, m. 11; I: 58, mm. 6-7; I: 59, m. 18 and m. 29; I: 66, m. 6.

CAPIROLA: p. 13, s. 1, mm. 1-4 (2 examples); p. 14, s. 1, m. 10-s. 2, m. 1; p. 33, s. 2, mm. 4-9; p. 88, s. 2, mm. 1-3 and s. 2, mm. 3-6 and s. 3, mm. 1-3 (2 examples) and s. 4, mm. 6-8; end of p. 98-beginning of p. 99; p. 99, s. 4, mm. 4-5 and mm. 12-14; p. 102, s. 2, mm. 7-9 and s. 4, mm. 6-7; p. 104, s. 3, m. 8-s. 4, m. 1; p. 119, s. 2, mm. 7-9 and s. 4, mm. 7-9; p. 120, s. 2, mm. 3-5; p. 120, s. 2, mm. 3-5.

SPINACINO: I: 3, mm. 21-23; I: 20, mm. 3-4; II: 3, mm. 34-35 and mm. 65-66; II: 8, mm. 5-3; II: 10, mm. 30-end; II: 13, mm. 25-26; II: 17,

mm. 21-22; II: 21, mm. 42-44 and mm. 53-54; II: 27, mm. 21-22, mm. 84-86 and mm. 186-88; II: 28, mm. 57-58.

BRUSSELS 228: no. 29, mm. 4-7.

DIMINISHED FOURTH LEAPS

BOSSINENSIS: I: 16(15), m. 2; I: 18(17), m. 25 and m. 28; I: 28, mm. 2-3; I: 37(38), mm. 8-9, mm. 11-12, and mm. 20-21; I: 55, mm. 17-18; I: 61, mm. 4-5.

CAPIROLA: p. 13, s. 1, mm. 4-5; p. 32, s. 1, mm. 7-9; p. 60, s. 3, m. 1; p. 101, s. 1, m. 2.

MEDICI CODEX: no. 31, mm. 5-6.

APPENDIX B
(to Chapter 4)

The following table lists the use of the *una nota supra la* practice (Rule 3) in the main sources for this study.¹ In the listings for Bossinensis, Capirola, and Spinacino, only examples that come directly from the models (i.e., original compositions in mensural notation) are included—there is no listing of the examples that arise from instrumental figuration. In mensural sources, only examples with notated inflections were listed, since those without notated accidentals could usually be interpreted with or without *una nota supra la* flats.

1. *Una nota supra la* applied, no tritone avoided (54 examples)

BOSSINENSIS: I: 11, m. 28; I: 37(38), m. 36 (2 examples); I: 42, m. 10; I: 62, m. 30, m. 36; I: 65, m. 5; I: 68, m. 14. (8 examples)

CAPIROLA: p. 94, s. 1, m. 1. (1 example)

SPINACINO: I: 1, m. 4; I: 4, m. 44; I: 13, m. 22*; II: 22, m. 138; II: 27, mm. 43-44 (2 examples); II: 28, m. 36, m. 48. (8 examples)

BRUSSELS 228: no. 9, m. 27*; no. 13, m. 24; no. 14, m. 6; no. 17, mm. 15*-16; no. 28, m. 21*; no. 33, m. 32. (6 examples)

FLORENCE 229 (through no. 120): no. 10, m. 55; no. 12, m. 22*; no. 13, m. 33, m. 39; no. 22, m. 15; no. 26, m. 35; no. 31, mm. 4-5; no. 45, m. 3, m. 7; no. 71, m. 19; no. 73, m. 9; no. 76, m. 3, m. 4; no. 89, m. 8*, m. 9; no. 91, m. 34*; no. 107, m. 37; no. 120, m. 4*. (18 examples)

MEDICI CODEX: no. 8, m. 95, m. 104; no. 42 mm. 47-48, mm. 50-51, pt. 3, m. 11, m. 12 (two examples); no. 46, mm. 13-14, m. 51; no. 49, m. 21*, m. 25*, m. 41*; no. 51, m. 86*. (13 examples)

¹The asterisks indicate that the *una nota supra la* inflection also corrects an imperfect fifth or octave. The accidental may have been used primarily for the sake of vertical consonance in these cases. The small circles indicate that leaps of the augmented fourth have been adjusted to a perfect fourth.

2. Tritone avoided by the use of *una nota supra la* (43 examples)

BOSSINENSIS: I: 14(13), m. 28*°; I: 22, mm. 14-15*°; I: 37(38), m. 12*°; I: 38(32), m. 19*°, m. 22*°; I: 62, m. 8°, m. 38°; I: 65, m. 5. (8 examples)

CAPIROLA: p. 31, s. 3, m. 7; p. 33, s. 3, m. 13. (2 examples)

SPINACINO: I: 2, m. 30*; I: 13, m. 49°, m. 56°; I: 14, m. 4, m. 10; II: 3, m. 65°; II: 11, m. 59; II: 28, m. 41. (8 examples)

BRUSSELS 228: no. 1, m. 75*, no. 13, m. 22°, m. 27°, m. 34*°; no. 45, m. 42; no. 48, m. 11; no. 50, m. 35. (7 examples)

FLORENCE 229 (through no. 120): no. 6, m. 52°; no. 12, m. 46*°; no. 13, m. 24*°; no. 22, m. 32°; no. 24, m. 45; no. 29, m. 55°; no. 43, m. 38*°; no. 59, m. 44*; no. 73, m. 18, m. 33*; no. 95, m. 29°; no. 105, m. 4; no. 108, m. 28°; no. 117, m. 55. (14 examples)

MEDICI CODEX no. 6, mm. 149--50*; no. 26, m. 51; no. 53, m. 48*, m. 57*. (4 examples)

3. The *una nota supra la* rule not applied, no tritone involved²
(22 examples)

BOSSINENSIS: I: 1, m. 12, m. 20; I: 14(13), m. 10, m. 19; I: 15(14), m. 14. (5 examples)

CAPIROLA: p. 98, s. 4, m. 2; p. 103, s. 4, m. 5. (2 examples)

²Concerning categories 3 and 4 in the mensural sources: an accidental is not always notated at places in which the *una nota supra la* rule could be invoked. These situations (when they arise in mensural sources) have not been included in the lists, since they are inconclusive, and could be performed either with or without flats. For the mensural sources, only those few cases in which natural signs are specifically given are included in categories 3 and 4.

SPINACINO: I: 7, m. 18; I: 13, mm. 30-31, mm. 33-34, m. 47; II: 3, m. 61; II: 5, m. 3³; II: 23, m. 32; II: 26, m. 27, m. 58; II: 27, m. 37. (10 examples)

BRUSSELS 228: no. 19, m. 40. (1 example)

MEDICI CODEX: no. 32, mm. 34-37, m. 64; no. 47, m. 16, pt. 2, m. 35. (4 examples)

4. The *una nota supra la rule* not applied, tritone outlined
(7 examples)

SPINACINO: I: 13, m. 63; II: 11, m. 58; II: 13, mm. 54-55; II: 17, m. 60; II: 23, m. 68. (5 examples)

BRUSSELS 228: no. 22, m. 52; no. 50, m. 96. (2 examples)

³In Schmidt's transcription of Spinacino's arrangement, this composition is transposed down a minor third from its original pitch. In order to check this reference in Schmidt's transcription, it is necessary to know that the G written as a tenor voice also belongs to the bass voice (bass and tenor in unison). This G (or E at the original pitch of the composition, which is in *cantus mollis*) is the note which could have been flatted according to the *una nota supra la rule*, but was not by Spinacino.

APPENDIX C
(to Chapter 4)

The following table lists the application or omission of the raised lower neighbor rule (Rule 4) in Bossinensis, Capirola and Spinacino. Only examples that directly concern the vocal originals are included—there is no listing of examples that arise from instrumental figuration. Furthermore, examples in which the lower neighbor was not raised because it forms a perfect interval with another voice are not included, since the perfect interval tends to eliminate the option of using a raised lower neighbor.

Examples of raised (semitone) lower neighbors (98 examples)

BOSSINENSIS: I: 4, m. 3; I: 5, m. 10, m. 14, m. 15, m. 22, m. 25, m. 28, m. 30, m. 32, m. 33, m. 36; I: 6, m. 5; I: 8(9), m. 30, m. 36; I: 9(7), m. 5; I: 11, m. 29; I: 12(20), m. 9; I: 13(12), m. 1; I: 14(13), m. 14; I: 15(14), m. 15, m. 22; I: 16(15), m. 1; I: 18(17), m. 6, m. 9; I: 20(19), m. 12; I: 23, m. 3, m. 43, m. 11; I: 24(25), m. 1, m. 14, m. 21, m. 23, m. 25; I: 25(26), m. 1, m. 18, m. 33; I: 26(24), m. 3, m. 8; I: 27, m. 13; I: 28, m. 4; I: 29, m. 10; I: 30, m. 1; I: 33(34), m. 6, m. 19; I: 35(36), m. 17, m. 23; I: 36(37), m. 1, m. 6, m. 9, m. 14, m. 18, m. 23; I: 39, m. 1, m. 18, m. 31, m. 32; I: 40, m. 21; I: 45, m. 22; I: 46, m. 19; I: 58, m. 7. (70 examples)

CAPIROLA: p. 11, s. 1, m. 5; p. 28, s. 1 m. 2; p. 37, s. 3, m. 12; p. 60, s. 1, m. 6; p. 62, s. 1, m. 7; p. 64, s. 3, m. 1; p. 67, s. 2, m. 6 and s. 3, m. 1; p. 106, s. 4, m. 4; p. 108, s. 3, m. 10; p. 130, s. 3, m. 7 and s. 4, m. 2; p. 132, s. 2, m. 5. (13 examples)

SPINACINO: I: 3, m. 14; I: 4, m. 35; I: 14, m. 30; I: 18, m. 2 and m. 41; I: 20, m. 3; II: 3, m. 28; II: 13, m. 25, m. 39, and m. 52; II: 20, m. 7; II: 25, m. 66; II: 26, m. 38, m. 44, and m. 72; II: 27, m. 26. (15 examples).

Examples of unraised (whole step) lower neighbors (119 examples)

BOSSINENSIS: I: 1, m. 27; I: 2, m. 13; I: 3, m. 15, m. 27; I: 7(8), m. 17, m. 26, m. 36; I: 8(9): m. 22, m. 32; I: 9(7): m. 1; I: 13(12), m. 8, m. 21; I: 14(13), m. 8; I: 15(14), m. 24; I: 16(15), m. 3; I: 37(38),

m. 2, m. 5, m. 10, m. 17; I: 39, m. 15, m. 23, m. 29, m. 34, m. 41; I: 40, m. 15, m. 24; I: 53, m. 20, m. 28; I: 54, m. 20; I: 59, m. 11; I: 60, m. 10, m. 22, m. 30, m. 45; I: 67, m. 3. (35 examples)

CAPIROLA: p. 7, s. 2, m. 2; p. 23, s. 2, m. 1 and m. 5; p. 59, s. 4, m. 1; p. 63, s. 2, m. 5; p. 68, s. 2, mm. 1-3 (3 examples), m. 6, m. 8, and m. 10; p. 93, s. 2, m. 12 and s. 3, m. 4; p. 98, s. 2, m. 2; p. 106, s. 2, m. 3 and s. 4, m. 5; p. 117, s. 1, m. 1; p. 119, s. 2, m. 5; p. 132, s. 2, m. 6, m. 8, and m. 9; p. 134, s. 3, m. 11 and s. 4, m. 3. (23 examples)

SPINACINO: I: 1, m. 24, m. 25, m. 44, m. 46; I: 3, m. 54; I: 4, m. 14, m. 22, and m. 39; I: 5, m. 30; I: 14, m. 2; I: 15, m. 16, m. 24, m. 29 (2 examples), m. 31, m. 33; I: 18, m. 26; II: 2, m. 5, m. 37; II: 3, m. 60; II: 4, m. 41, m. 43, and mm. 56-58 (4 examples); II: 5, m. 18, m. 30, m. 56, m. 61, and m. 74; II: 10, m. 15, m. 28; II: 11, m. 5, m. 7, mm. 9-11 (6 examples), m. 15, and m. 36; II: 12, m. 21; II: 13, m. 20, m. 24; II: 17, m. 37, m. 42; II: 19, m. 42; II: 21, m. 12; II: 22, m. 58; II: 23, m. 60, m. 74; II: 25, m. 10, m. 19; II: 27, m. 32, m. 60; II: 28, m. 56, and m. 59 (3 examples). (61 examples)

APPENDIX D
(To Chapter 4)

The following table lists cadences in which there was a choice between raising the upper penultimate note of a cadence or flat the lower voice (for a Phrygian cadence) to form a major sixth to octave progression (Rule 5). This situation occurs most often in modes 1, 2, and 3; all of the examples are from compositions in those modes.

Cadences with raised leading tones (15 examples)

mode 1 on D in *cantus durus*, cadences on A using G# (7 examples)

BOSSINENSIS: I: 5, mm. 16-17, mm. 34-35; I: 33, mm. 3-4. (3 examples)

SPINACINO: II: 7, mm. 95-96; II: 22, mm. 23-24, mm. 37-38, mm. 86-87. (4 examples)

modes 1 and 2 on G in *cantus mollis*, cadences on D using C# (6 examples)

BOSSINENSIS: I: 7(8), mm. 24-25; I: 30, m. 8; I: 61, m. 4. (3 examples)

CAPIROLA: (b,b,bb) p. 5, s. 4, m. 14; p. 6, s. 1, m. 12. (2 examples)

SPINACINO: I: 1, m. 24. (1 example)

mode 3 on E in *cantus durus*, cadences on A with G# (2 examples)

CAPIROLA: p. 119, s. 4, mm. 8-9; p. 133, s. 2, mm. 3-4. (2 examples)

Phrygian cadences (12 examples)

mode 1 on D in *cantus durus*, cadences on A using B \flat (6 examples)

BOSSINENSIS: I: 49(50), mm. 25-26; I: 59, mm. 11-12. (2 examples)

SPINACINO: I: 1, m. 46; I: 18, mm. 16-17, mm. 26-27, mm. 55-56. (4 examples)

APPENDIX E
(To Chapter 6, for Rule 7)

List of cross relations found in examples from
Chapters 3, 4, and 5.

Ex. 3-4, dim. fifth, outer voices, E (m. 38) and B \flat (m. 39).*

Ex. 3-12a, aug. fourth, lower voices, F (m. 67) and B (m. 68).

Ex. 3-16, aug. octave, upper voices, m. 18, F and F \sharp .*

Ex. 3-17, dim. fifth, Spinacino's version, upper voices, B \flat (m. 53) and E \natural (m. 54).

Ex. 3-18, two aug. octaves, superius and lower voices, both slightly separated by an intervening note, F (m. 3), F \sharp (m. 4) and F (m. 5).*

Ex. 3-19, aug. octave, outer voices, slightly separated by an intervening note, F and F \sharp (m. 2).*

Ex. 3-21, two aug. fourths, altus and bass, E (m. 57) and B \flat (m. 57), and E (m. 58).

Ex. 3-22a, aug. octave, outer voices, slightly separated by an intervening note, C (m. 5) and C \sharp (m. 6).*

Ex. 3-26a, aug. fourth, outer voices, D and A \flat (m. 20).*

Ex. 4-8, aug. octave, lower voices, slightly separated by intervening note, F \sharp (m. 5) and F (m. 6).*

Ex. 4-10, aug. fourth, F, lower voice and B, upper voices (m. 7).

Ex. 4-11, aug. fourth, lower voices, B (m. 25) and F (m. 26).

Ex. 4-14, dim. fifth, outer voices, B \flat (m. 23) and E (m. 24).

Ex. 4-17, aug. fifth, Capirola's version, lower voices, F (m. 7) and C \sharp (m. 8).*

*Examples marked with asterisks form cross relations using accidentals. Those without asterisks contain diatonic cross relations.

Ex. 4-18a, aug. fourth, Spinacino's version, outer voices, C and F \sharp (m. 22).*

Ex. 4-18b, aug. fifth, Capirola's version, upper voices, C (m. 34) and G \sharp (m. 35).*

Ex. 4-20, aug. fourth, Spinacino's version, outer voices, C \sharp (m. 13) and D (m. 14).*

Ex. 4-21, aug. unison cross relation implied by Spinacino's version, although sounding like a direct chromatic line in his intabulation, alto and bass, B (m. 37) and B \flat (m. 38).*

Ex. 4-22, dim. fourth, Capirola's version, upper voices, C \sharp (m. 46) and F (m. 47).*

Ex. 4-23, two aug. fifths, upper voices, C and G \sharp (m. 83) and lower voices, F and C \sharp (m. 85).* Dim. fourth, inner voices, C \sharp (m. 85) and F (m. 86).*

Ex. 4-24, dim. fourth, upper voices, C \sharp (m. 24) and F (m. 25).* Aug. fourth, upper voices, G (m. 25) and C \sharp (m. 26).*

Ex. 4-28, two aug. fourths, lower voices, F (m. 6), B (m. 7) and F (m. 6).*

Ex. 5-1, two aug. fourths, first example, B \flat , E and B \flat , aug. fourth in second example, E \flat and A.*

Ex. 5-4, aug. fourths, upper voices, third and fourth notes, B \flat and E, ninth and tenth notes, B \flat and E. Aug. fourths, lower voices, seventh, eighth and ninth notes, E \flat , A, and E \flat , and twelfth and thirteenth notes, E \flat and A.*

Ex. 5-6a, two aug. fourths, inner voices, A and E \flat (m. 29) and A (m. 30).*

Ex. 5-9c, aug. fourth, superius and tenor, D (m. 54) and A \flat (m. 55).*

Ex. 5-10, two aug. fourths, outer voices, E (m. 24), B \flat (m. 25) and E (m. 26).* Aug. fourth, lower voices, F (m. 26) and B (m. 27).

Ex. 5-14, two aug. fourths, upper voices, F (m. 26) and B (m. 27), and outer voices, B \flat (m. 28) and E (m. 29).*

Ex. 5-15a and b, two aug. octaves labelled in the example.*

Ex. 5-16b, dim. fifth, outer voices, B \flat and E (m. 44).

Ex. 5-17a, aug. fourth, upper voices, B \flat and E (m. 29).

Ex. 5-21a, aug. fourth, lower voices, E \flat and A (m. 74).*

Ex. 5-23a, aug. fourth, inner voices, B \flat (m. 23) and E (m. 24).*

Ex. 5-23b, dim. fifth, upper voices, E and B \flat (m. 13).*

APPENDIX F
(To Chapter 6)

Picardy Thirds in Lute Sources (Rule 8).

Categories 1 and 2 deal with the treatment of thirds at internal cadences, and categories 3 and 4 with the treatment of thirds at cadences at the end of sections or of entire pieces.

1. *Picardy thirds at the end of internal phrases.*

BOSSINENSIS: I: I: 11, m. 11 and m. 24; I: 18(17), m. 10; I: 22, m. 4; I: 23, m. 5; I: 24(25), m. 6, m. 13, and m. 16; I: 25(26), m. 8, m. 12, and m. 32; I: 26(24), m. 16; I: 28, m. 5; I: 30, m. 2, m. 8, and m. 23; no. 33(34), m. 4 and m. 13; no. 34(35), m. 2, m. 14, and m. 26; I: 37(38), m. 8 and m. 20; I: 40, m. 6 and m. 9; I: 43, m. 3 and m. 15; I: 46, m. 3, m. 9, and m. 15; I: 50(48), m. 4; I: 56, m. 28; I: 61, m. 4; I: 69(70), m. 4. (37 examples)

CAPIROLA: p. 11, s. 2, m. 1 (raised third appears in instrumental figuration); p. 12, s. 1, mm. 9-10; p. 12, s. 2, mm. 5-6; p. 13, s. 1, m. 2 and m. 4, s. 2, m. 5, and s. 3, m. 5; p. 28, s. 4, m. 5; p. 65, s. 2, mm. 1-2; p. 88, s. 2, m. 8 and p. 88, last measure. (11 examples)

SPINACINO: I: 17, m. 69*; I: 20, m. 33; II: 21, m. 54 (m. 55 in *Odhecaton* version). (3 examples)

2. *Internal phrase endings with unraised thirds.*

BOSSINENSIS: I: 33(34), m. 17+; I: 46, m. 3+ and m. 18; I: 49(50), m. 9+; I: 59, m. 24; I: 60, mm. 5-6+; I: 65, mm. 7-8+. (7 examples)

*Phrygian cadence with third on top. As can be seen from the table, this third may either be raised or unraised, and the latter possibility is nearly always preferred.

+Cadences with a continuing third (i.e., a third that occurs in a voice that is newly introduced as a final note of a cadence occurs in other voices, or that is already present as the cadence is occurring, but just continues on in motion). Sometimes the third is introduced not on the note coinciding with the cadential arrival, but on the following note). Such thirds are not normally raised.

CAPIROLA: p. 6, s. 3, m. 12⁺; p. 11, s. 3, mm. 1-2 and s. 4, mm. 1-2 (in both cases, third omitted at cadential arrival, and left unraised in subsequent instrumental figuration); p. 28, s. 2, mm. 6-7; p. 59, first measure⁺; p. 60, s. 3, m. 5⁺; p. 61, first measure⁺; p. 65, s. 4, mm. 1-4 (third doubled)¹; p. 93, s. 4, m. 7^{*}; p. 94, s. 2, m. 1^{*} (raised third precluded because the perfect fifth is subsequently introduced beneath the unraised third); p. 98, s. 4, m. 5^{*}; p. 103, s. 2, mm. 7-8 (raised third precluded because the perfect fifth is subsequently introduced beneath the unraised third); p. 118, s. 3, m. 7^{*}; p. 119, s. 2, m. 9; p. 120, s. 2, mm. 5-6; p. 133, s. 2, m. 4⁺; p. 134, s. 1, m. 9^{*}. (17 examples)

SPINACINO: I: 1, m. 35^{*} and m. 37^{*}; I: 6, mm. 31-32; I: 7, m. 4 and m. 18⁺; I: 18, m. 27^{*}; I: 21, m. 5; II: 4, m. 3 and mm. 11-12; II: 7, m. 16; II: 13, m. 28^{*}; II: 22, mm. 139-40 (soprano descends into third at Phrygian cadence, while tenor crosses above); II: 27, m. 34; II: 28, m. 10 (scale in bass introduces octave below unraised third; raised third unlikely since an augmented octave or two simultaneous sharps would have to be used). (14 examples)

3. *Raised thirds at final cadences of sections or of the entire work.*

BOSSINENSIS: (all at end) I: 22, I: 23, I: 24(25), I: 25(26), I: 37(38), I: 46, and I: 49(50)^{*}. (7 examples)

CAPIROLA: p. 12, end; p. 14, s. 2, m. 1 and s. 2, last measure²; p. 33, end; p. 91, s. 3, m. 3; p. 98, s. 2, m. 10; p. 108, end; p. 117, end; p. 120, end. (8 examples)

SPINACINO: I: 21, m. 35. (1 example)

¹The sharpening of two notes simultaneously is virtually non-existent in Josquin's period. Thus, the presence of a doubled third would almost certainly preclude the raising of the third.

²The first raised third corresponds to the one given at the end of the vocal source (which is not the ending of the entire piece, since *da capo* is indicated). Instead of going back to the beginning, Capirola has evidently written a new coda, which ends with the second Picardy third listed here. Only one of these is listed in the final tally, since only one actually appears at the end of the entire intabulation.

4. *Unraised thirds at final cadences of sections or of the entire work.*

BOSSINENSIS: (no examples)

CAPRIOLA: p. 28, end, third omitted (Picardy third appears in the vocal model). p. 134, last measure, minor third above bass added by Capirola; there is no third in the final sonority of the vocal model. (2 examples)

SPINACINO: I: 19, m. 58. (1 example; third omitted)

APPENDIX G

Summary of the findings of this study (*musica vera*, *musica ficta*, the rules for accidental usage and their practical application, treatment of imitative devices, and the scope of the musical system)

Musica vera: the basic musical system of the Renaissance, consisting of the diatonic gamut ranging from G to e², containing only one note that can be inflected: either B \sharp or B \flat may be used. Thus, there are two systems in *musica vera*, namely, *cantus durus* (without flat signature, with B \sharp), and *cantus mollis* (with B \flat signature). *Cantus mollis* represents the same musical system as *cantus durus*, only transposed to different pitches and hexachords by the use of the B \flat signature.

Musica ficta: essentially, anything beyond the scope of *musica vera*. Any musical system with signatures containing more than one flat in the signature or, on rare occasions, containing sharps. Such musical systems are called *cantus fictus*, and represent the same musical system as *cantus durus*, only transposed to different pitches and hexachords by their various key signatures (usually with two or three flats). Also, any sharp inflection and any flat other than B \flat .

RULES GOVERNING ACCIDENTALS AND THEIR APPLICATION IN PRACTICE

1) Augmented fourths, diminished fifths and imperfect octaves are not permitted in direct melodic leaps; they are frequently avoided when outlined melodically, though they are permitted in some cases.

According to most theorists and practical sources, the B-F diminished fifth and F-B augmented fourth leap is usually avoided by the use of B \flat (or E \flat in *cantus mollis*):



A few theorists mention the use of F \sharp for this purpose, and examples in practical sources are found, but only rarely (B \sharp in *cantus mollis* is also found infrequently in sources):



Rare examples of diminished fifth and augmented fourth leaps do exist.



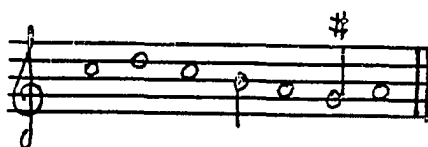
Theorists allow the use of F \sharp to avoid the augmented fourth melodic outline when approaching cadences on G in modes 7 and 8:



Zarlino (1558) and Ramos (1482) allow the diminished fifth outline on diatonic steps (either fully or partially filled in by step) when followed by stepwise change of direction; these occur frequently:



Zarlino forbids the diminished fifth outline when it involves inflections, but these are used fairly often, especially at cadences:



In fact, diminished fifth outlines occur in practice with a variety of inflections; the following shows some possibilities:



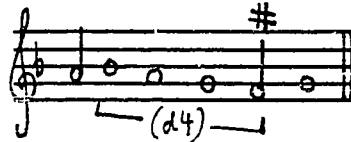
Diminished fifth outlines frequently occur with the highest note flatted, or followed by rest, or both, as here:



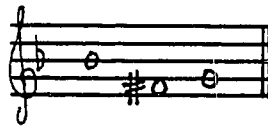
Lanfranco (1533) allows the melodic outline of a tritone when descending from step:



In practice, however, the diminished fourth outline is frequently used, especially between B \flat and F \sharp in *cantus mollis*:



The direct leap of a diminished fourth is used infrequently, but more than the leap of a diminished fifth or augmented fourth:



2) Direct chromatic progressions are generally prohibited.

The use of direct chromatic steps (permutation) is not a normal part of the musical language of Josquin's day, although they are not entirely forbidden by theorists and crop up occasionally in instrumental figuration. Chromatic cross relations (such as C \flat in the soprano being followed directly by C \sharp in the alto) are much more characteristic of the style than are direct chromatic steps in a single voice (such as C-C \sharp).

3) *Una nota supra la semper est canendum fa.* A note above the solmization syllable la is sung as fa.

This rule is presented by theorists in two different ways:

1. The rule is applied only when needed to avoid a melodic tritone
2. The rule is given independently of any tritone considerations

Actual practice is more flexible, and falls into four categories:

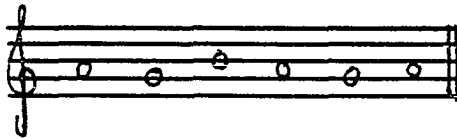
1. The *una nota supra la* rule is applied, and a tritone leap or outline is avoided (common):



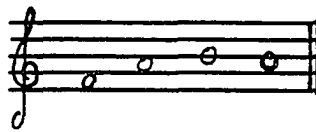
2. The *una nota supra la* rule is applied, and there is no tritone involved (common):



3. The *una nota supra la* rule is not applied, and there is no tritone involved (common):



4. The *una nota supra la* rule is not applied, and a tritone results (infrequent):



4) In lower neighbor note figures involving whole steps (such as G-F-G), the middle note is raised, so that a half-step is sung (G-F \sharp -G).

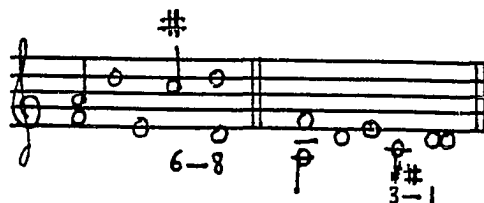
This rule was followed according to taste. Even within a single composition arranged by a single person, the rule was normally

followed inconsistently. One performer might prefer to use raised lower neighbors more often than not, while others might prefer to leave them unraised more often than not:



5) An imperfect interval progressing to a perfect interval should be as close to the perfect interval as possible: a sixth going to an octave should be major, a third going to a unison should be minor, and a third going to a fifth should be major. Thus, a m6-8 progression will be adjusted to M6-8, and so forth.

By Josquin's period, this rule remained in general use only at 6-8 (or 3-1) progressions at cadences; thus, it was in effect a rule bringing about cadential leading tones:



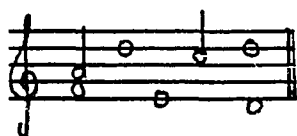
The cadential leading tone was probably the most widespread and consistently applied type of accidental in the entire Renaissance. Typical 6-8 and 3-1 cadential progressions were given leading-tone sharps even when the cadence was imperfected, as here, with the bass moving to the third or the fifth below the cadence-tone:



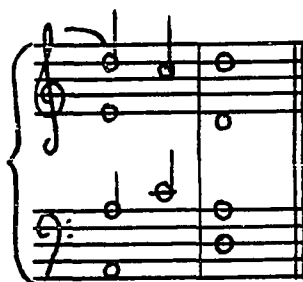
The cadential leading tone was also typically applied at interrupted cadences, in which one voice drops out rather than reaching the cadence-tone:



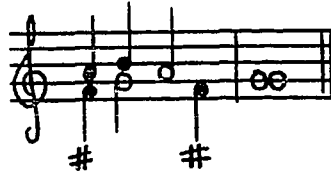
In all such cases, the soprano singer would recognize one of the standard melodic cadence formulas and would automatically add cadential inflections; whether the cadence was completed, imperfected, or interrupted in another voice was a compositional issue, not one that affected the accidentals in the soprano part. Every now and then we find (in lute intabulations of vocal music) a cadence that was left uninflected:



On the basis of very sparse evidence, it seems that the doubling of the cadential subtone precluded the use of a leading-tone:



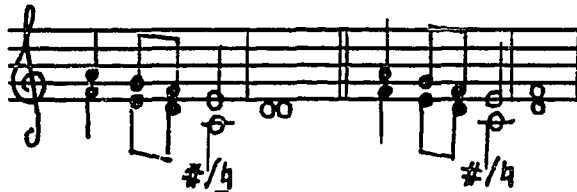
When the subtone appears in the approach to the cadence, it is usually raised in advance in lute intabulations:



Only Spinacino frequently left the raised inflection to the very last subtone of a cadence:



The absence of typical cadence-features (such as the use of suspension, or resolution to the unison or octave) could render the use of a leading tone uncertain:



Cadences on A in *cantus durus* or D in *cantus mollis* could either use leading tones in the upper voice (leading tone cadences) or flats in the lower voice (Phrygian cadences), according to taste:



Bossinensis and Capirola favor the leading tone cadence, while Spinacino uses the Phrygian cadence just as frequently.

6) Diminished or augmented fourths, fifths and octaves are prohibited in counterpoint by the rule forbidding the singing of *mi contra fa*.

This rule was normally followed by using B \flat (or E \flat in *cantus mollis*):



The use of F \sharp (or B \sharp in *cantus mollis*) is relatively infrequent:



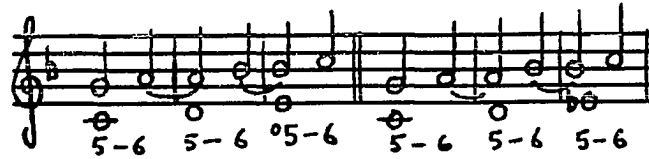
The progression of a diminished fifth resolving inward by step to a third was allowed by theorists and is commonplace in practice:



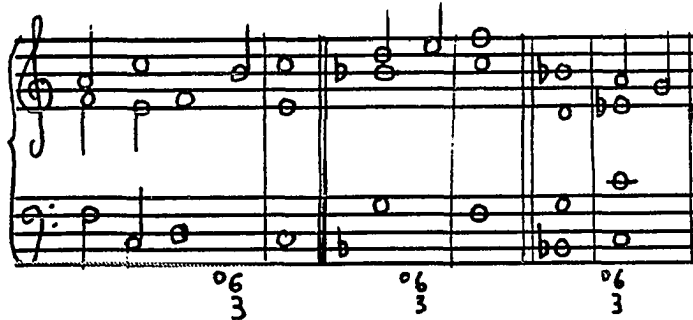
It is also common for the diminished fifth-to-third progression to be adjusted to perfect fifth-to-third progression using B \flat :



5-6 progressions may have only perfect fifths or may also contain a diminished fifth:



The vertical augmented fourth frequently appears in diminished six-three sonorities. The first two examples were specifically sanctioned by theorists; the third is a diminished six-three sonority arising from an idiomatic voice leading used in the sixteenth century:



Imperfect octaves or unisons were rarely used, and were probably considered borderline cases. For example, Aaron condemned and Spataro accepted the following:



Such clashes do appear from time to time in vocal and instrumental sources, and were evidently tolerated by some musicians more than others. Perhaps the most frequent way in which they might have arisen is when $b6-5$ in a lower voice conflicted with cadential raised notes (including $B\sharp$) in an upper voice, as here:



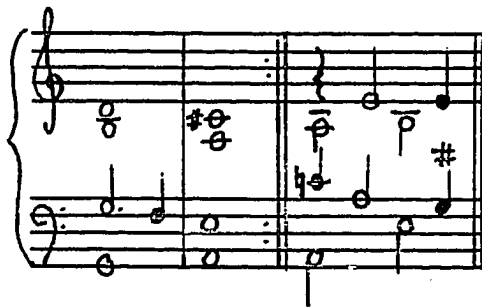
7) Cross relations of the diminished or augmented perfect intervals are prohibited in two voices; they are allowed in music for more voices.

Zarlino forbade cross relations of diatonic and chromatic imperfect fourths, fifths, and octaves in two voices and only grudgingly allowed them out of necessity in music for more voices. Theorists from Josquin's period had no such restrictions, however, and cross relations were part of the musical language of that period in music for two voices as well as in music for more voices:

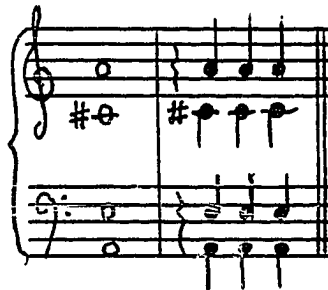


8) Minor thirds are raised to major at cadences (Picardy thirds).

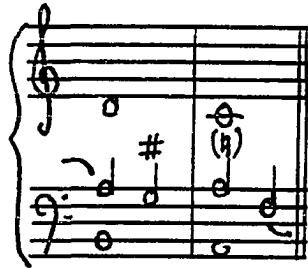
Aaron (*Toscanello*, 1523) is the first theorist known to mention this practice. This rule was inconsistently applied, according to taste. It was applied more often than not at cadences at the end of a section, but internal cadences favored the use of the unraised third, although the raised third could be used there too. A raised third was usually not continued into the next phrase if the third in the new phrase appeared in a different voice, thus producing a chromatic cross relation:



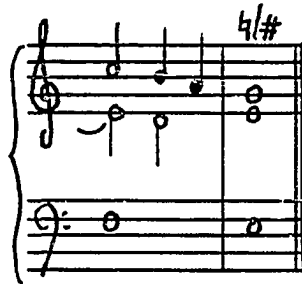
A raised third was continued if the third in the new phrase appeared in the same voice, thus avoiding a chromatic semitone:



Some cadences were integrally conceived without a raised third, as when a note forming an octave or fifth is subsequently introduced below it:



A common type of Phrygian cadence, in which the soprano descends by step to the third, usually did not have the raised third, although it was possible:



The third of a falling-third figure at a cadence (a favorite Josquin device) was not raised:



IMITATIVE AND REPETITIVE DEVICES

The regular diatonic order is normally the underlying basis for imitation, canon, and ostinato. Whether the intervals of a *dux* and *comes* in imitation or canon are the same depends not on the use of accidentals, but on the interval of transposition; often (although not always), the intervals remain the same if the *comes* followed at the unison, fourth, fifth, or octave, and are altered if the *comes* follows at the second, third, sixth, or seventh. Different statements of an ostinato figure follow the arrangement of tones and semitones of the diatonic gamut, and thus will either remain intervallically identical or altered according to where they are placed within the gamut. There is no tradition of using accidentals to make imitation, canon, or ostinato intervallically consistent in each statement; in fact, lutenists sometimes use accidentals that render different statements less consistent than they would have been without them. Theorists do not state any preference for exact imitation, and do not suggest that inexact imitation be altered to become exact.

The main exception is in the use of partial signatures to make different statements of imitation or canon at the fifth closer intervallically. Even here, there is no guarantee that every statement will come out exactly the same; there are examples in which they do not.

THE SCOPE AND USE OF ACCIDENTALS IN THE MUSICAL SYSTEM

In the musical system of Josquin's period, the sources show the availability of three sharps and two flats beyond what is found in the signature. This yields the following scope of accidentals:

cantus durus: F \sharp , C \sharp , and G \sharp ; B \flat and E \flat .

cantus mollis: B \sharp , F \sharp , and C \sharp ; E \flat , and A \flat .

cantus fictus with two flats: B \sharp , E \sharp , and F \sharp ; A \flat , and D \flat , and so forth for other transpositions.

The flat nearest the key signature was used more commonly than the second flat, which was usually not directly introduced, but rather brought in after the first one, usually to solve a problem created by the first flat.

Inflections usually only occur in one voice at a time; they occasionally occurred in two and infrequently in three voices at a time. While the use of two simultaneous flat inflections is a normal occurrence, the use of sharp inflections in more than one voice at a time is virtually non-existent.

BIBLIOGRAPHY

1. Books, articles, treatises and translations.

- Aaron, Pietro. *Toscanello in Musica*, trans. Peter Bergquist. Colorado Springs: Colorado College Music Press, 1970.
- Aldrich, Putnam. "An Approach to the Analysis of Renaissance Music." *Music Review* 30 (1969): 1-21.
- Allaire, Gaston. *The Theory of Hexachords, Solmization and the Modal System*. [Rome]: American Institute of Musicology, 1972.
- Apel, Willi. "Punto intenso contra punto remisso." In *Music East and West: Essays in Honor of Walter Kaufmann*, ed. Thomas Noblitt. New York: Pendragon, 1981.
- Atlas, Allan. Review of *The Mellon Chansonnier* eds., Leeman Perkins and Howard Garey. In *Journal of the American Musicological Society* 34 (1981): 132-43.
- Bent, Margaret. "Musica Recta and Musica Ficta." *Musica Disciplina* 26 (1972): 73-100.
- _____. "Diatonic Ficta." *Early Music History* 4 (1984): 1-48.
- Benthem, Jaap van. "Fortuna in Focus: Concerning 'Conflicting' Progressions in Josquin's *Fortuna d'un gran tempo*." *Tijdschrift van de Vereniging voor Nederlandse Muziekgeschiedenis* 30 (1980): 1-50.
- Berger, Karol. *Musica Ficta: Theories of accidental inflections in vocal polyphony from Marchetto da Padova to Gioseffo Zarlino*. Cambridge: Cambridge University Press, 1987.
- Bergquist, Peter. "The Theoretical Writings of Pietro Aaron." Ph.D diss., Columbia University, 1964.
- Brown, Howard Mayer. "Accidentals and Ornamentation in Sixteenth-Century Intabulations of Josquin's Motets." In *Josquin des Prez: Proceedings of the International Josquin Festival-Conference*, ed. Edward Lowinsky (London: Oxford University Press, 1976).
- _____. *Embellishing 16th Century Music* (Oxford: Oxford University Press, 1976).

- _____. "Notes (and Transposing Notes) on the Viol in the early Sixteenth Century." In *Music in Medieval and Early Modern Europe*, ed. Iain Fenlon. Cambridge: Cambridge University Press, 1981.
- Burtius, Nicolaus. *Musices Opusculum*, trans. Clement Miller. Neuhausen-Stuttgart: American Institute of Musicology, 1983.
- Carvell, Bruce. "A Practical Guide to "Musica Ficta": Based on an Analysis of Sharps Found in the Music Prints of Ottaviano Petrucci (1591-1519)." Ph.D. diss., Washington University, 1982.
- Census-Catalogue of Manuscript Sources of Polyphonic Music 1400-1550*. Neuhausen-Stuttgart: American Institute of Musicology, 1979-88. 4 vols.
- Cochlaeus, Johannes. *Tetrachordum Musices*, trans. Clement Miller. [Rome]: American Institute of Musicology, 1970.
- _____. *Tetrachordum Musices*, facsimile reprint. Hildesheim: Georg Olm, 1971.
- Coclico, Adrian Petit. *Compendium Musices*. Facsimile, ed. Manfred Bukofzer. Kassel: Bärenreiter, 1954.
- _____. *Compendium Musices*, trans. by Albert Seay as *Musical Compendium*. Colorado Springs: Colorado College Music Press, 1973. 2 vols.
- Coussemaeker, Edmond de. *Scriptorum de musica medii aevi nova series a gerbertina altera*. Paris: A. Durand, 1869.
- Dahlhaus, Carl, "Zur Akzidentiensetzung in den Motetten Josquins des Prez." In *Musik und Verlag. Karl Vötterle zum 65. Geburtstag am 12. April, 1968*, eds. R. Baum and W. Rhem. Kassel: Bärenreiter, 1968.
- Gafurius, Franchinus. *Practica Musicae*, trans. Clement Miller. [Rome]: American Institute of Musicology, 1968.
- Glarean, Heinrich. *Dodecachordon*, trans. Clement Miller. [n. p.]: American Institute of Musicology, 1965.
- Gombosi, Otto. *Der Lautenist Valentin Bakfark (1507-1576)*. Budapest: Akadémiai Kiadó, 1967.

- [Goscalus]. *The Berkeley Manuscript*, trans. Oliver Ellsworth. Lincoln: University of Nebraska Press, 1984.
- Haar, James. "Zarlino's Definition of Fugue and Imitation." *Journal of the American Musicological Society* 24 (1971): 226-54.
- _____. "False Relations and Chromaticism in Sixteenth-Century Music." *Journal of the American Musicological Society* 30 (1977): 391-418.
- Harrán, Don. "New Evidence for Musica Ficta: The Cautionary Sign." *Journal of the American Musicological Society* 29 (1976): 77-98.
- _____. "More Evidence for Cautionary Signs." *Journal of the American Musicological Society* 31 (1978): 490-94.
- Haydon, Glen. "The Case of the Troublesome Accidental." In *Natalicia musicologica Knud Jeppesens*, eds. Bjørn Hjelmberg and Søren Sørensen. Oslo: Hansen, 1962.
- Heyden, Seybald. *Musica, id est artis canendi*. Nuremberg: Petreius, 1537.
- _____. *De arte canendi*, trans. Clement Miller. [n. p.]: American Institute of Musicology, 1972.
- Hiise, Walter. "The Treatises of Christoph Bernhard." *The Music Forum III*, eds. William Mitchell and Felix Salzer. New York: Columbia University Press, 1973.
- Hoppin, Richard. "Partial Signatures Reviewed." *Journal of the American Musicological Society*, 9 (1956): 97-117.
- Horsley, Imogene. "Fugue and Mode in 16th-Century Vocal Polyphony." In *Aspects of Medieval and Renaissance Music. A Birthday Offering to Gustave Reese*, ed. Jan La Rue. New York: Norton, 1966.
- Hothby, John. *La Calliopea legale*. In *Histoire de l'harmonie au moyen âge*, ed. Edmond de Coussemaker. Paris: Victor Didron, 1852.
- _____. *Spetie tenore del contrapunto prima*. In Hothby, *De arte contrapuncti*, ed. Gilbert Reaney. [n.p.]: American Institute of Musicology, 1977.

- Howlett, Derq. "A Translation of Three Treatises by Martin Agricola." Ph.D. diss., Ohio State University, 1979.
- Hughes, Andrew. "Solmization." In *The New Grove Dictionary of Music and Musicians*, ed. Stanley Sadie. London: Macmillan, 1980, vol. 17.
- Kaufman, Henry. "A 'Diatonic' and a 'Chromatic' Madrigal by Giulio Fiesco." In *Aspects of Medieval and Renaissance Music. A Birthday Offering to Gustave Reese*, ed. Jan La Rue. New York: Norton, 1966.
- Jacobs, Charles. "Spanish Renaissance Discussion of Musica Ficta." *Proceedings of the American Philosophical Society* 112, no. 4 (1968): 277-98.
- Jeppesen, Knud. "Eine musiktheoretische Korrespondenz des früheren Cinquecento." *Acta Musicologica* 13 (1941): 3-39.
- Lanfranco, Giovanni Maria. *Scintille di Musica*, facsimile ed. Bologna: Forni, 1970.
- Lee, Barbara. "Giovanni Maria Lanfranco's 'Scintille di Musica' and its Relation to 16th-Century Music Theory." Ph.D. diss., Cornell University, 1961.
- Leech-Wilkinson, Daniel. Review of *Musica ficta* by Karol Berger. In *Musical Times* 130 (1989): 213.
- Lester, Joel. "Major-Minor Concepts and Modal Theory in Germany, 1592-1680." *Journal of the American Musicological Society* 30 (1977): 208-53.
- Levitan, Joseph. "Adrian Willaert's Famous Duo: *Quidnam ebrietas*." *Tijdschrift van de Vereniging voor Nederlandse Muziekgeschiedenis* 15 (1939): 166-233.
- Listenius, Nicolaus. *Musica*, trans. Albert Seay. Colorado Springs: Colorado College Music Press, 1975.
- Lockwood, Lewis. "A Dispute on Accidentals in Sixteenth-Century Rome." *Analecta Musicologia* 2 (1965): 24-40.
- _____. "A Sample Problem of *Musica Ficta*: Willaert's *Pater Noster*." In *Studies in Music History: Essays for Oliver Strunk*, ed. Harold Powers. Princeton: Princeton University Press, 1968.

- Lowinsky, Edward. "The Goddess Fortuna in Music." *The Musical Quarterly* 29 (1943): 45-77.
- _____. "The Function of Conflicting Signatures in Early Polyphonic Music." *The Musical Quarterly* 29 (1945): 227-60.
- _____. *Secret Chromatic Art in the Netherlands Motet*. New York: Columbia University, 1946, repr. 1967.
- _____. *Tonality and Atonality in Sixteenth-Century Music*. Berkeley: University of California Press, 1961.
- _____. "Foreword." *Musica Nova*, ed. H. Colin Slim. *Monuments of Renaissance Music*, vol. 1. Chicago: University of Chicago, 1964.
- _____. "Renaissance Writings on Music Theory." *Renaissance News* 18 (1965): 358-70.
- _____. "Secret Chromatic Art Re-examined." In *Perspectives in Musicology*, eds. Barry Brook, Edward Downes, and Sherman Van Solkema. New York: Norton, 1972.
- Marchetto da Padova. *Lucidarium in arte musicae planae*, trans. by Jan Herlinger in *The Lucidarium of Marchetto of Padua. A Critical Edition, Translation and Commentary*. Ph.D. diss., Univ. of Chicago, 1978, 335ff. See also the more recent version of Herlinger's dissertation published under the same title; Chicago: Chicago University Press, 1985.
- Martínez de Bizcargui, Gonzalo. *Arte de canto llano et de contrapunto et canto de organo con proporciones et modes*, ed. A. Seay. *Critical Texts* 9. Colorado Springs: Colorado College Music Press, 1979.
- McGary, Thomas. "Partial Signature Implications in the Escorial Manuscript V.III.24." *The Music Review* 40 (1979): 77-89.
- Mendel, Arthur. "Pitch in the 16th and Early 17th Centuries—Part I." *The Musical Quarterly* 34 (1948): 29-45. Repr. in Alexander Ellis & Arthur Mendel, *Studies in the History of Musical Pitch*. New York: Da Capo Press, 1968.
- Morley, Thomas. *A Plaine and Easie Introduction to Practicall Musicke*. Ed. R. A. Harmon as *A Plain and Easy Introduction to Practical Music*. 2nd ed. New York: Norton, 1963.

- Noblitt, Thomas. "Chromatic Cross-Relations and Editorial *Musica Ficta* in Masses of Obrecht." *Tijdschrift van de Vereniging voor Nederlandse Muziekgeschiedenis* 32 (1982): 30-44.
- Novack, Saul. "Tonal Tendencies in Josquin's Use of Harmony." In *Josquin des Prez: Proceedings of the International Josquin Festival*, ed. Edward Lowinsky. London: Oxford University Press.
- Ornithoparchus, Andreas. *Musice active micrologus* (Leipzig, 1517), trans. by John Dowland in *Andreas Ornithoparchus, his Micrologus* (London, 1609). Facsimile edition in Ornithoparchus & Dowland, *A Compendium of Musical Practice*, with an introduction by Gustave Reese and Steven Ledbetter. New York, Dover Publications, 1973.
- Powers, Harold. "Tonal Types and Modal Categories in Renaissance Polyphony." *Journal of the American Musicological Society* 34 (1981): 428-70.
- Prizer, William. "Lutenists at the Court of Mantua in the Late Fifteenth and Early Sixteenth Centuries." *Journal of the Lute Society of America* 13 (1980): 5-34.
- Prosdocimus de' Belmandi. *Contrapunctus*, trans. Jan Herlinger. Lincoln: University of Nebraska Press, 1984.
- Ramos, Bartolomeo. *Bartolomei Rami de Pareia, Musica Practica*, ed. Johannes Wolf. Leipzig: Breitkopf & Härtel, 1901.
- Nicholas Routely, "A Practical Guide to *Musica Ficta*," *Early Music* (13) 1985, 59-71.
- Seay, Albert. "The 15th-Century *Coniuncta*: A Preliminary Study." In *Aspects of Medieval and Renaissance Music. A Birthday Offering to Gustave Reese*, ed. Jan La Rue. New York: Norton, 1966.
- Tinctoris, Johannes. *De Natura et Proprietate Tonorum*, trans. Albert Seay as *Concerning the Nature and Propriety of Tones*. Colorado Springs: Colorado College Music Press, second ed., 1976.
- _____. *Expositio manus* (Naples, before 1475), ed. Albert Seay in *Johannes Tinctoris, Opera Theoretica* vol. 1 (American Institute

of Musicology, 1975); trans. Albert Seay, "The Expositio manus of Johannes Tinctoris," *Journal of Music Theory* 9 (1965), 195-232.

_____. *Liber de arte contrapuncti*. In *Opera theoretica*, ed. Albert Seay. [n.p.]: American Institute of Musicology, 1975. Trans. by Seay as *The Art of Counterpoint* [n. p.]: American Institute of Musicology, 1961.

_____. *Terminorum Musicae Diffinitorium*, trans. Carl Parrish as *Dictionary of Musical Terms*. Glencoe: Free Press, 1963.

Toft, Robert. "Pitch Content and Modal Procedure in Josquin's *Absalon, fili mi*." *Tijdschrift van de Vereniging voor Nederlandse Muziekgeschiedenis* 33 (1983): 3-27.

_____. "Pitch Content and Modal Procedure in Selected Works of Josquin Desprez." Ph.D. diss., Kings College, University of London, 1983.

_____. "Traditions of Pitch Content in the Sources of Two Sixteenth-Century Motets." *Music and Letters* 69 (1988), 334-44.

Wollick, Nicolas. *Enchiridion Musices*, facsimile ed. Geneva: Minkoff Reprint, 1972.

Zarlino, Gioseffo. *Le Istitutioni harmoniche*. Facsimile of the 1558 edition. New York: Broude Brothers, 1965.

_____. *Le Istitutioni harmoniche* bk. 3. Trans. by Guy Marco and Claude Palisca as *The Art of Counterpoint*. New Haven: Yale University Press, 1968; repr. New York: Norton, 1976.

_____. *Le Istitutioni harmoniche* bk. 4. Trans. by Vered Cohen in *On the Modes*. New Haven: Yale University Press, 1983.

2. Musical sources, editions, and facsimiles.

- Agricola, Alexander. *Opera Omnia*, ed. Edward Lerner. [n. p.]: American Institute of Musicology, 1961-70. 5 vols.
- Bossinensis, Franciscus. *Tenori e contrabassi intabulati col soprano in canto figurato per cantar e sonar col lauto, libro primo*. Venice: Petrucci, 1509.
- _____. *Tenori e contrabassi intabulati col soprano in canto figurato per cantar e sonar col lauto, libro primo*. Facsimile repr. Geneva: Minkoff, 1971.
- _____. *Le frottole per canto e liuto intabulate de Franciscus Bossinensis*, ed. Benvenuto Disertori. Vol. 3 in Istituzioni e Monumenti dell'Arte Musicale Italiana, nuova serie. Milan: Ricordi, 1964.
- Brown, Howard Mayer, ed. *A Florentine Chansonnier from the time of Lorenzo the Magnificent: Florence, Biblioteca nazionale centrale, MS Banco rari 229*. In *Monuments of Renaissance Music*, vol. 7. Chicago: University of Chicago Press, 1983. 2 vols.
- Brumel, Antoine. *Opera Omnia*, ed. Barton Hudson. [n. p.]: American Institute of Musicology, 1969-72. 6 vols.
- Capirola, Vincenzo. *Compositione di Meser Vincenzo Capirola*, facsimile ed. Orlando Christoforetti. Florence: Studio per Edizione Scelte, 1981.
- _____. *Compositione di Meser Vincenzo Capirola: Lute-book (circa 1517)*, ed. Otto Gombosi. Neuilly-sur-Seine: Société de musique d'autrefois, 1955.
- Gafurio, Franchino. *Collected Musical Works*, ed. Ludwig Finscher. Rome: American Institute of Musicology, 1955-. 5 vols.
- Ghiselin, Johannes. *Johannes Ghiselin-Verbonnet, Opera Omnia*, ed. Clytus Gottwald. [n. p.]: American Institute of Musicology, 1961-8. 4 vols.
- Hayne van Ghizeghem, *Opera Omnia*, ed. Barton Hudson. Neuhausen-Stuttgart: American Institute of Musicology, 1977.
- Isaac, Heinrich. *Heinrich Isaac: Weltliche Werke*, ed. Johannes Wolf. In *Denkmäler der Tonkunst in Österreich*, ed. Guido Adler.

Vienna: Österreichischer Bundesverlag, 1894-1959, XIV/28 Band 28; repr. Graz: Akademische Druck—U. Verlagdanstadt, 1959.

Josquin des Prez. *Liber primus Missarum Josquin*. Fossombrone: Petrucci, 1516.

_____. *Werken*, ed. A. Smijers. Amsterdam: Alsbach; Leipzig: Kistner and Siegel, 1925- .

_____. *Josquin des Prez, Missa Pange lingua*, ed. Thomas Warburton. Chapel Hill: University of North Carolina Press, 1977.

_____. *Keyboard Intabulations of Music by Josquin des Prez*, ed. Thomas Warburton. Madison: A-R Editions, 1980.

The Liber Usualis. Tournai: Desclée, 1961.

Lowinsky, Edward, ed. *The Medici Codex of 1518*, in *Monuments of Renaissance Music*, vols. 3-5. Chicago: University of Chicago Press, 1968.

Obrecht, Jacob. *Werken*, Amsterdam: Johannes Müller; Leipzig: Breitkopf & Härtel, 1908-21; Repr. Farnborough: Gregg, 1968.

_____. *New Obrecht Edition*. Amsterdam: Vereniging voor Nederlandse Muziekgeschiedenis, 1983- .

Petrucci, Ottaviano (printer). *Frottole, libro nono*. Venice: Petrucci, 1508.

_____. *Le Frottole Nell'Edizione Principe de Ottaviano Petrucci ... nella trascrizione di Gaetano Cesari*, ed. Raffaelli Monterosso. Cremona: Athenaeum Cremonense, 1954.

_____. *Harmonice Musices Odhecaton A*. Venice: Petrucci, various eds. 1501-4. Modern ed., Helen Hewitt. Cambridge, Mass.: Mediaeval Acad., 1942, 2nd. ed. rev., 1946; repr. New York: Da Capo, 1978.

_____. *Motetti C*. Venice: Petrucci, 1504.

_____. *Ottaviano Petrucci, Frottole, Buch I und IV*, ed. Rudolf Schwartz. Leipzig: Breitkopf & Härtel, 1935.

- Perkins, Leeman, and Howard Garey, eds. *The Mellon Chansonnier*.
New Haven: Yale University Press, 1979.
- Picker, Martin, ed. *The Chanson Albums of Marguerite of Austria*.
Berkeley: University of California Press, 1965.
- Rokseth, Yvonne, ed. *Treize Motets et un Prélude pour Orgue*.
Paris: E. Droz, 1930.
- Schmidt, Henry. "The First Printed Lute Books: Francesco Spinacino's
Intabulatura di Lauto, 'Libro primo' and 'Libro secundo' (Venice,
Petrucci, 1507)." Ph.D. diss., University of North Carolina, 1969.
- Spinacino, Francesco. *Intabulatura di Lauto, Libro primo and Libro
secundo*. Venice: Petrucci, 1507.
- Stevens, John, ed. *Music at the Court of Henry VIII*, in *Musica
Britannica*, vol. 18. London: Stainer & Bell, 1962; 2nd rev. ed.,
1973.
- Tinctoris, Johannes. *Opera Omnia*, ed. Fritz Feldman. Rome:
American Institute of Musicology, 1960. 1 vol. (discontinued).
- _____. *Opera Omnia*, ed. William Mellin. Rome: American
Institute of Musicology, 1976 (complete edition).