The Study of Harmony
An Historical Perspective

By

Diether de la Motte

Translated from the Original German

by

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About this Book

(translated and edited from the Fourth German Edition)

The ten chapters in this book cover the harmonic vocabulary of different eras from music history. The first two chapters deal with the materials of broad musical periods, whereas the later chapters, with the exception of a single chapter devoted to harmonic practices in opera, focus on the innovations of specific composers and their personal harmonic styles. The historical treatment of this topic avoids many of the anonymous and artless rules which are regularly associated with "strict" part-writing approaches to the study of harmony *(strenger Satz)*. *The Study of Harmony: An Historical Perspective* is offered as an alternative to the many texts which present "rules" of harmony without reference to actual music. All of the rules and principles found in this book were derived from an examination of numerous musical examples, and each example was chosen to be representative of the specific period or composer under study. Instead of a music theory text, this book is actually a study of musical practice, where harmonic materials and techniques are presented within their appropriate historical and musical contexts.

This text is primarily analysis-centered. Nevertheless, musical exercises are included to provide extra drill and practice for those who wish to thoroughly assimilate the materials and techniques presented in each chapter. It is not necessary to do the musical examples in order to benefit from this text, however. Many readers will find this book to be an excellent source for review of harmonic materials or a tool for building a better understanding of the roles harmony has played in Western music over the past four centuries.

This book is not limited only to compositions that employ functional harmony, although the approaches to such pieces take the largest share of this book. It also covers a number of important topics from the twentieth century, which many texts up to this point have neglected.

The Study of Harmony: An Historical Perspective by Diether de la Motte has been translated into Finnish, Japanese, Italian, Portugese, Polish, Swedish, and now English. The German edition is also available in braille.

About the Author

Diether de la Motte was born in 1928 in Bonn. He studied composition with Wilhelm Maler at the Nordwestdeutsche Musikakademie in Detmold and attended summer courses at Darmstadt under Leibowitz, Krenek, Fortner and Messiaen. He was appointed lecturer at the Evangelische Landeskirchenmusikschule in Düsseldorf (1950). From 1955 he has also been active as a music critic. Between 1959 and 1962 he was a reader/reviewer for the publishing house of Schott. In 1962 de la Motte was appointed lecturer and then professor (1964) at the Hamburg Musikhochschule. He was then elected vice-president of the Free Academy of the Arts in Hamburg in 1972. In 1982 he was appointed Professor of Music at the Hochschule für Musik und Theater in Hannover, and in March of 1988 he took the post of Professor of Composition and Theory at the Hochschule für Musik in Vienna, Austria. He has written operas, orchestra works, chamber, choral, piano and organ works and has many published and recorded compositions. In addition to his *Study of Harmony*, he has published a text on counterpoint, written a number of important journal articles on music theory, and has published several analyses of major works.

About the Translator

Jeffrey Prater is a member of the music faculty at Iowa State University, where he is Associate Professor of Music and Associate Chair of the Music Theory and Composition Division. Born in Endicott, New York, he received the Ph.D. in Music Composition from the University of Iowa, the Master of Music degree from Michigan State University, and his baccalaureate degree from Iowa State University. Among his teachers are William Bergsma, Richard Hervig, H. Owen Reed and Gary White. Before coming to Iowa State University, he held faculty positions at the University of Wisconsin Center-Marinette and Northern Michigan University.

Dr. Prater pursues a strong interest in musical analysis, analysis for the performing musician, and the history and pedagogy of music theory. He has regularly presented lectures and papers to professional meetings, and has written an acclaimed article on "The Great War's Effect on Schönberg's Development of the Twelve-Tone Method" *(College Music Symposium, 1986)*. He has also been active as a program annotator for the Des Moines Symphony and a reviewer of music textbooks and scholarly works. As a composer, Prater has written and published works in a variety of genres and has been the recipient of numerous grants, awards and commissions for composition.

During the 1988-89 academic year, Prater received a faculty improvement leave from Iowa State University. He spent his leave time in northern Germany, where he began the translation of this and another book on music.

Author's Preface

Which pitch of a first-inversion triad should be doubled? If we seek an answer in ten different harmony texts, we are likely to find ten different answers, which lie somewhere between the extreme positions of Bumke ("the third should never be doubled"),[1] and Moser ("all three doubling possibilities are possible").[2] We face the same problem if our question is about hidden parallel perfect intervals. According to Bölsche, hidden parallels are incorrect if they occur between the lower voices or between the two upper voices.[3] Lemacher-Schroeder forbids them only, "if the upper voices leap, for example, when all the voices move in the same direction."[4] Dachs-Söhner prohibits only one special case of hidden parallels,[5] and Riemann holds that all hidden parallels are forbidden.[6]

In specific cases, any of these individual positions could be correct. The problem is, that the authors developed their rules and prohibitions from different musical examples. Furthermore, they made systematic generalizations based these examples without always sharing the examples with the reader.

The so-called "strict" part-writing style *(strenger Satz)* presented in many harmony books was never employed as the basis for actual musical compositions. Nevertheless, nearly all musicianship examinations require the student to write exercises in the "strict" style (where, for example, writing more than three parallel fifths is judged to be unsatisfactory). Even Hugo Distler [whose own compositions are full of contradictions to the "strict" style] taught his students by this method, nobly calling it "exercises for the study of harmony" *(Harmonielehresatz)*.[7] In one of his part-writing assignments, to name only a single example, Distler requires the student to include a dominant-ninth chord. Although this sonority was only first considered a discrete chord in the time of Schumann, the assignment is otherwise to be written in a strict pre-Bach chorale style. Nowhere in Distler's text is there any mention of the reasons for this stylistic mixture, however.

Such pedagogical exercises do not aid, but hinder a good music-history education (it is a wonder that music historians have not protested!). Furthermore, limiting the study of harmony to the "strict" style also tends to lock-out the study of music written before and after the periods dominated by tonal harmony. The "strict" style also ensnares composers, who shoulder the main responsibility of teaching composition, into a conformity with arbitrary rules that often effectively entombs their individuality. Instrumental exams take place on the stage, whereas harmony exams are held in the theory lab: "modulate from ______ to ______ as quickly and convincingly as possible," the junior faculty member [or teaching assistant] barks!

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[1] Gustav Bumcke, *Harmonielehre* (Leipzig: C. Mersburger, 1927).

[2] Hans Joachim Moser, *Allgemeine Musiklehre* (Berlin: de Gruyter, 1940).

[3] Franz Bölsche, *Übungen und Aufgaben zum Studium der Harmonielehre,* 30th ed. (Leipzig: Breitkopf und Härtel, 1955).

[4] Heinrich Lemacher and Hanning Schroeder, *Formenlehre der Kunst Musik* (Cologne: Gerig, 1962).

[5] Michael Dachs and Paul Söhner, *Harmonielehre* (Munich: Kösel-Pustet, 1951).

[6] Hugo Riemann, *Handbuch der Harmonielehre,* 9th ed. (Leipzig: Breitkopf und Härtel, 1921).

[7] Hugo Distler, *Funktionelle Harmonielehre* (Kassel and Basel: Bärenreiter, 1941).

The past four-hundred years has been the most important time in history for the development and change of musical style. Furthermore, the study of these changes is so fascinating, that it is difficult to understand why the teaching of harmony has favored a "strict" approach. The employment of "strict-style" methods is particularly problematic, when we consider the major role that harmony has played as an agent of these stylistic changes. The "strict" style, though easy to present and correct, is not usually even modeled after the music of the greatest composers, such as Haßler, Praetorius and Osiander, but rather, on composers of somewhat lesser historical importance. It is an outrage that "strict" chorale-style exercises, which frequently contain chordal sonorities from the Romantic era, continue to be presented as the fundamental medium of harmonic training for future music teachers, conductors, instrumentalists and opera singers. The joylessness with which students face such exercises is often the silent comment on the pedagogical effectiveness of these methods.

Certainly, traditional manuals of harmony remain better sources than this book, if one wishes only to prepare for the usual [German] competency examinations. Nevertheless, it is my hope that this text will encourage music schools to offer pedagogical approaches (and examinations) that more closely follow the artistic practices found in actual music. Modulation and its various techniques during the course of history (with appropriate exercises), the differences in harmony between those in practice ca. 1600 and the time of Bach, the organ-mixture techniques of Debussy, the special problems dealing with harmony in opera, Liszt's pathway to atonality, the differences in harmonic progressions employed by Handel and Mozart, Wagner's four-tone sonorities, the form building role of the cadential progression in Mozart, Hindemith's sonority classification system, and Schönberg's methods of connecting harmonic sonorities, etc., would all make excellent topics for short lectures and demonstration at the piano. The materials and exercises found in this book could be also used to design examination questions for those pursuing professional study, and certainly, the analyses and approaches used in this book would benefit the professional musician, music educator, or music scholar.

From the very beginning, the great composers are the only master teachers in this book. I have not invented any of the rules or prohibitions; instead, I have derived each principle from actual musical practice and have checked the validity of each principle against numerous works. This text does not stir together, in the same pot, centuries of harmonic developments, but rather presents a new pedagogical method which discusses separate eras and individual composers in self-contained chapters. Each chapter corresponds to specific historical developments which yield corresponding changes in harmonic rules. There are no longer any fixed rules concerning first-inversion triads; it is treated differently in Chapter Three than it is in Chapter One. The major-minor seventh chord in late-Wagner does not [always] appear as a chord of harmonic tension, and it does not always carry dominant function like it did earlier. In Schönberg's music, the traditional consonances are the intervals that require special treatment, whereas, in earlier chapters, it was the dissonant tones that required special voice-leading considerations. Although this approach may seem somewhat confusing (and it certainly does not insure easier reading in every case), an historical approach to harmony brings the study closer to actual musical practice.

The compositional exercises in the first two chapters are isolated from one another. To my knowledge, Chapter One introduces a subject which has never been made available in a harmony

text—a study of homophony, ca. 1600.[8] No longer a strictly contrapuntal art, and not yet bound to tonality, this music has long remained without home between the domains of counterpoint and harmony. Nevertheless, this fascinating world of harmony has proved to be an effective starting point for this study. Bach's *well-tempered* music is shown to be a renunciation of pure [Pythagorean] sonorities. This development made possible the invention of harmonic progressions which do not depend upon a nature-bound ideology. In fact, the renunciation of this ideology provided the groundwork for great homophonic music.

The second chapter, which is the most extensive, comes the closest to other harmony texts. Nevertheless, it takes its direction from works written during the time of Bach and does not introduce harmonic vocabulary that was not in use during that period. The chapters dedicated to single composers such as Schumann, Wagner, Liszt, and Debussy contain models of various harmonic approaches which certainly have appeared in the works of other composers. Although not covered in this text, the harmony of Brahms, Bruckner, Mussorgsky, etc. could be handled in similar fashion. I wish to stress that sonorities and progressions, when presented in the context of musical-historical development, always become less anonymous and less instrumental for the construction of general rules. Instead, the study of harmony becomes more and more a study of individual inventiveness.

Up to this point, harmony texts have attempted to systematically bring together all types of sonorities, making it impossible to consider each sonority type in its proper context. The term *harmony textbook* has come to mean harmonization exercises, which further implies that the materials presented must be used properly. The widely-held doctrine that melodies are *invented*, but that harmonizations are simply *produced* may not have been consciously established, but neither has it been sufficiently challenged. It seems to me, that one of the most important tasks of a harmony course is to point out the vital relationship between individual creativity and the development of harmonic materials.

All of the assignments in this book are either excerpts from actual works or have been designed to match the style of the time period or composer in question. Therefore, the kind of examples and exercises change from chapter to chapter. Standard four-voice exercises are not avoided, but their use is limited to the study of those styles and composers where they can be beneficial. I am convinced that the large variety of assignment materials in this text will be more enjoyable for students. Going over the solutions to these assignments may actually be more useful and stimulating than the usual semester [or more] of writing traditional four-part harmonizations. Most important, the analyses in this text cover a wide range of subjects and materials that can be used as reference points for further study.

With three exceptions, the functional symbols used in this text correspond to those symbols in general use introduced by Wilhelm Maler.[9] Only the following symbols must be newly introduced: $\not{D}^{v}$ (instead of $\not{D}^{9}_{7}$ or D^{v}); ${}^{t}\not{D}\!\!\!D^{v}$ (instead of $\not{D}\!\!\!D^{9>}_{7}$ or $\not{D}\!\!\!D^{v}$); and D^{S7} (instead of $\not{D}^{9}_{7}$ or VII^{7}). These changes were made so that the forms of these sonorities employed during the Baroque and Classical eras no longer appear to be derivations of chords that were actually introduced in later periods. The revised symbols also show the precise functional content of their respective sonorities.

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[8] [Transl. note] One reviewer points out that early homophony is indeed covered in: Eric Wolf, *Der vierstimmige homophone Satz. Die stilistischen Merkmale des Kantionalsatzes zwischen 1590 und 1630* (Wiesbaden: Breitkopf und Härtel, 1965); see Peter Rummenhöller, review of *Harmonielehre* by Diether de la Motte (Kassel: Bärenreiter, 1976), *Zeitschrift für Musiktheorie,* VIII/1 (1977), 48-52.

[9] Wilhelm Maler, *Beitrag zur durmolltonalen Harmonielehre,* 13th ed. (Munich: F.E.C. Leuckart, 1984).

My courage does not carry me past Debussy. Therefore, I am indebted to Dr. Wolfgang Rehm, not only for his patient and persistent encouragement and careful editing, but above all, for his insistence that this book continue into the twentieth century. Now that the work has been completed, I believe that he was correct. A chapter on the sonorities of our own century shows a continuing process of harmonic development which rounds out this study. Special thanks to Jürgen Sommer for his excellent editorial suggestions.

I published an article entitled "Pleading for a Reform of Harmony Pedagogy," with two of my former students, Renate Birnstein and Clemens Kühn.[10] This article precipitated a great deal of response. I had planned to complete this book under the watchful eyes of these two helpful co-workers and critics, but this would have conflicted with the beginning of their teaching careers in Lübeck and Berlin, respectively. So we remained together only until the section on secondary triads in minor keys [Chapter 2.11]. Nevertheless, this is grounds enough for me to offer Ms. Birnstein and Mr. Kühn the most sincere thanks for being my faithful collaborators up to that point. I would also like to thank those colleagues who are in agreement with my work and who have offered me many words of encouragement. They have all gone far beyond the teaching materials found in traditional systematic texts to provide their students with analysis-centered instruction in harmony. At last, my textbook is also ready to take this step.

This book presumes an acquaintance with *Allgemeinen Musiklehre* by Hermann Grabner.[11] As an accompanying discourse, I also wish to recommend *Melodielehre* by Lars Ulrich Abraham and Carl Dahlhaus.[12] Page 18 of the latter would make an excellent foreword and justification for this text.

As far as the musical examples are concerned, only those who would rather pay a higher price for this book shall be allowed to complain that the musical examples appear in my own hand.

Hamburg, Autumn 1975—Diether de la Motte.

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[10] Diether de la Motte, Renate Birnstein, and Clemens Kühn, "Plädoyer für eine Reform der Harmonielehre," *Musica*, III (1973).

[11] Hermann Grabner, *Allgemeinen Musiklehre*, 11th ed. (Kassel: Bärenreiter, 1974).

[12] Lars Ulrich Abraham and Carl Dahlhaus, *Melodielehre* (Köln: Gerig, 1972).

Author's Preface to the Fourth German Edition

Thanks to the following colleagues: Martin Tegen, who produced the Swedish translation, Robert D. Levin and Franz Zaunschirm who pointed out several errors, which the author had not noticed before the third edition went to press.

The reader will also notice that my hand-copied musical examples have been replaced by engraved examples from the Japanese edition.

A supplemental chapter on Chopin, which was dedicated to friends in Warsaw, Kraków and Poznan, will be reserved for the Polish edition, which is currently in preparation.

Sincerest thanks to Dr. Ruth Blume for the diligent and careful editing required to bring this edition into a new format.

Hannover-Herrenhausen, early 1983—Diether de la Motte.

Translator's Foreword

During a professional visit to Germany in 1985, I had the opportunity to visit one of the author's classes at the *Hochschule für Musik* in Hannover. I was both impressed with his breadth of knowledge and the loving excitement with which he approached his lecture. As Professor de la Motte sat at the piano, he demonstrated and explained a surprising melodic-harmonic event in a Mozart concerto. In the course of the hour, he not only discussed the musical materials themselves, but also covered relevant historical and aesthetic factors and compared and contrasted the passage in question to the work of other composers from the Baroque, Classical and Romantic eras. I left his lecture exhilarated. Later that week, while browsing in a book store, I saw de la Motte's harmony text, which I bought and read with great interest. After returning to the United States, I accidentally came across several references to this book in the literature. My curiosity was piqued and I was able to locate no less than twelve reviews of this text in a half-day's search. It was only then that I realized this book was not only a best-selling harmony textbook, but that it had broken important ground in the area of harmony pedagogy in Europe.

In 1986, an article by Siegmund Levarie appeared in an American journal which advocated the use of functional analysis in lieu of the Roman-numeral/figured bass system.[1] In this article, Levarie explains the basic tenets of the functional system and its benefits to the music analyst. It was after reading Levarie, and then Martin Bresnick's insightful review in the *Journal of Music Theory* that this translation project began to gather momentum. In fact, it was Bresnick's final statement that decided the issue for me: "...Diether de la Motte's *Harmonielehre* is a significant book and deserves a careful critical reading by an Anglophone public, not only to provide a window into the state of current German pedagogy but to begin an exchange of views. That exchange can only raise our mutual awareness of the ways of understanding and teaching the practice of tonal harmony."[2]

This book is a textbook for entering music conservatory students in Europe; however, the students there are often older and better prepared in music theory and history than the average beginning college or university student in the United States. For that reason, this study of harmony is probably written at too advanced a level for the average American college freshman or sophomore, although an enterprising instructor might be able to successfully use this book (or parts of it) in a core-theory program. Instead of trying to aim this translation at the beginning music student, I have directed this translation toward the professional theorist/musicologist and the advanced music student. This translation is especially appropriate for those interested in understanding more about the history of theory and functional analysis; and because of its interesting historical approach, it would also make good reading for graduate-level music students who are preparing for preliminary or comprehensive examinations.

To make this book as useful as possible for readers trained in Roman-numeral analysis, and to aid an understanding of the functional harmonic basis of this text, I have added Roman-numeral/figured-bass symbols in brackets [ ] underneath the author's analytical symbols on nearly all of the musical examples. This double-annotation should make it easier for those unfamiliar with functional theory to better understand and correlate the comparative strengths

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[1] Siegmund Levarie, "Harmonic Analysis," *College Music Symposium* XXVI (1986), pp.66-76.

[2] Martin Bresnick, review of *Harmonielehre* by Diether de la Motte (Kassel: Bärenreiter, 1976), *Journal of Music Theory,* XXII (1978), p.324

and weaknesses of the two systems. In the process of this annotation, it was necessary to re-engrave all of the musical examples in the book. Therefore, the artwork in this translation has been completely redrawn, and is not, as the author states in his Preface to the fourth German edition, borrowed from the Japanese translation. In addition, I have added numbers to the musical examples in each chapter so that the written text and the example to which it refers might be more easily cross-referenced.

The explanatory footnotes in this text are mine, although some of the notes contain citations of sources to which the author referred parenthetically within the German text. Since this book was not originally designed as a scholarly resource, the author did not always provide complete bibliographical citations for his outside sources, and only rarely did he include any reference to specific page numbers. Searching all of the author's sources for specific page references would have required an enormous additional outlay of time and resources. Although I run the risk of criticism for lack of scholarly pursuit on this point, I decided on compromise and have included complete bibliographic information, except for page number references in the footnotes.

The author did not completely reference all of the musical examples used in the book. Where sources were readily available to me, I added some additional information, such as the identifying first line of text in many of the Bach-chorale excerpts, or movement titles from Handel's *Messiah,* but in most instances, the scope of this project would not allow me to include complete measure-number references for every example. I took the liberty of changing the text in all examples from Handel's *Messiah* to read in English rather than German. All of the texts to the non-German examples cited in Chapter Six (harmony in opera) were also converted to their original languages and supplied with English translations.

The functional system and its symbols are introduced gradually throughout the book so that a lengthy explanation will not be necessary here. For additional information on the subject, I refer the reader once more to Levarie's excellent article.

There is one feature of the functional system that I find particularly helpful. It is possible, with functional analysis to directly indicate the chord factor that occurs in the bass. With the Roman-numeral I^6, one must know that a tonic chord with a sixth above the bass indicates that the third of the chord is in the lowest voice. With the functional symbol T_3, however, it is immediately obvious that the third of the chord is in the bass. Furthermore, with Roman-numeral analysis, it is not possible to directly show non-harmonic tones when they occur in the bass voice, but with the functional system it is only a matter of writing the appropriate chord factor numbers at the lower right of the symbol (e.g., D_{43} = dominant with a dissonant fourth above the chord root in the bass voice resolving to a third above the root). Coming from a background in Roman-numeral analysis, two of the symbols that have taken the longest for me to assimilate are the chords-of-the-sixth and six-five sonorities. Following Rameau's principles, the functional system allows triads to be constructed either from a third and fifth above the bass (standard triad) or a third and sixth above the bass (chord-of-the-sixth). When a triad is built from a third and sixth above the bass, the functional system still considers the root of the sonority to be the bass note (and not the pitch a sixth above). In other words, the functional system recognizes two types of root-position triads. In order to interpret S^6 (subdominant chord-of-the-sixth) in the Roman-numeral system, however, it is necessary to assume a change of root tone. Thus, S^6 will be interpreted as ii^6. In the same fashion, a six-five sonority such as S^6_5 will be interpreted as ii^6_5.

Many of the technical terms found in this book are cognates in both languages. However, the musical term *parallel* has a fundamentally different meaning in German than it does in

English. In English, the term *parallel* is used to describe major/minor key-pairs which share the same tonic pitch (e.g., A-major/A-minor). In German, however, the term *parallel* is used to refer to major/minor key relationships that share the same key signature (e.g., C-major/A-minor). Therefore, the German term *parallel* and the English term *relative* are roughly equivalent. In order to ease any confusion on this point, I have translated the German *parallel* as *relative*. As suggested by Levarie, those functional symbols which refer to *parallel* (P or p) have also been changed to *relative* (R and r).

The six-four sonority, G-C-E in C-major, will only be considered a "tonic six-four" (I^6_4) if it shows clear tonic function within its musical context. Since the sixth and fourth above the dominant pitch often function as a double-suspension which then resolve to the dominant triad, this figure will be labeled (in Roman-numeral symbols) $V^{6}_{4}{}^{5}_{3}$ instead of I^6_4-V.

De la Motte makes no reference to theorists like Heinrich Schenker, who stand apart from the Riemann tradition, and who call for analytical reduction of entire compositions into "hierarchical" middle-ground and background levels. In his review, Bresnick levels the following criticism: "The problem. . . is essentially the same one found in Piston namely the setting of nearly all harmonic activity at a single fore-ground level. The central deficiency . . . is the over-determination of most fore-ground (chord to chord) activity and a corresponding inattention to the hierarchical relationships of the harmonies that direct the foreground."[3]

Why most German theorists have not warmly embraced other theoretical systems is a more complex question than this short foreword will allow.[4] Suffice it to say that theoretical models outside of the Riemann tradition have not produced many charismatic proponents in Germany. As my Austrian colleague, Franz Zaunschirm wrote me, "The history of German music theory is a history of functional theory (from Riemann . . . to Grabner. . . to de la Motte, etc.)."

Although de la Motte does defer to the Riemann tradition for his analytical procedures and many of his symbols, this book should not be judged as yet another traditional German *Harmonielehre*. In his Preface, de la Motte rails against the theory-minus-music approach which so many German manuals of harmony take; he deplores the customary teaching of partwriting by arbitrary and capricious rules that have little to do with harmonic procedures in actual music; and he encourages the reader to keep in mind the differences of approach among various composers, genres, and time periods. In promotional material for this harmony text, Carl Dahlhaus wrote: "*Harmonielehre* by Diether de la Motte fulfills the need, urgently promoted for years, for a harmony text that incorporates historically accurate models of style in place of abstract schemes. . ."[5] De la Motte's *Harmonielehre* attempts to put the study of harmony on a firm historical and analytical footing, with the hope of making the study of harmony more relevant to the music student, professional musician, or interested amateur.

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[3] Martin Bresnick, review, p. 321-22.

[4] For more about Schenker and how his theories have been received in Germany, see Stephen Hinton, "Natürliche Übergänge," Musiktheorie V/2 (1990), pp.101-4.

[5] Carl Dahlhaus, promotional statement in an advertisement for Bärenreiter-Verlag, *Zeitschrift für Musik,* VI (1976), p.514.

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It is my hope that this translation will provide some fresh insights for the English-language reader into the fascinating technical and historical changes that have taken place in harmony since 1600. Further, it is my hope that the reader will also come to a better understanding of the strengths and weaknesses of functional harmony and the methods used to teach it.

Ames, Iowa, January 1991--Jeffrey Prater

CHAPTER ONE

Harmony ca. 1600 (Lasso-Palestrina-Lechner-Cavalieri)

The principle of equal temperament, in which the octave is divided into twelve equal half-steps, was first established in the time of Bach.[1] Since that time, the more or less universal adoption of equal temperament has done away with all purely-tuned intervals except the octave. In spite of fewer pure intervals, however, there are no longer any unusably out-of-tune intervals. Although the adoption of equal temperament meant renouncing absolute interval purity (the object of all earlier tuning systems), all equal-tempered triads have relatively acceptable intonation. Furthermore, equal temperament allows us to construct and play musical scales of reasonable intonation on any chromatic pitch.

If twelve purely-tuned perfect fifths are constructed upward in a series from the pitch C1, the pitch B♯7 is reached.[2] Because of the *comma of Pythagorus*, B♯7 is actually higher in pitch than C8 (derived by pure-octave transpositions above C1). This fact makes it impossible to construct a closed circle of purely-tuned perfect fifths. Furthermore, if a series of four purely-tuned perfect fifths is constructed upward from the pitch C1, the pitch E3 is reached. Because of the *syntonic comma*, E3, reached by this series of purely-tuned perfect fifths, is higher in pitch than the E3 that is reached by a two-octave upward transposition of E1 (a purely-tuned major third above the starting pitch C1). From these acoustical facts, it can be observed that purely-tuned perfect fifths and purely-tuned major thirds are mutually exclusive; that is, it is impossible to have both purely-tuned perfect fifths and purely-tuned major thirds at the same time.

After relinquishing the necessity to maintain pure perfect fifths, an important aspect of music theory in the Middle Ages (Pythagorean tuning), new systems of tuning came into vogue between the sixteenth and the eighteenth centuries. These systems, called mean-tone temperaments, are actually acoustical compromises between purely-tuned perfect fifths and purely-tuned major thirds. They provide excellent (almost purely-tuned) intonation for those triads which are closely related to a starting reference chord [usually C major]. However, those triads which are distantly related to the reference chord are noticeably out-of-tune. In spite of various methods used to calculate the compromise between pure thirds and fifths, those triads most distant from the reference chord are so out-of-tune that they are unusable for all practical purposes.

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[1] There has been much controversy over the question of whether J.S. Bach actually employed equal temperament, with the strongest arguments presented on the side that he did not himself employ a truly equal-tempered scale, even in the *Well-Tempered Clavier*. Equal temperament began its rise to prominence only toward the end of Bach's life.

[2] The system of octave classification employed in this translation is the one suggested by the International Acoustical Society, where C at approximately 16 Hz. is represented by the symbol CØ and where middle-C is represented by C4.

With the mean-tone tuning systems used during this period, the only black keys of the keyboard with universally acceptable intonation were: C♯, E♭, F♯, G♯, and B♭. The black keys representing the pitches D♭, D♯, G♭, A♭, and A♯ were quite unusable. For example: though the pitch C♯ in the major triad A-C♯-E sounds in-tune, the same C♯ is disagreeably out-of-tune when it is enharmonically employed as a D♭ in the triad D♭-F-A♭. Although it is possible to find spots in the unaccompanied vocal literature of the period where out-of-tune black-key pitches appear (e.g., the astounding juxtaposition of chromatically related triads in the music of Gesualdo), pitch resources were limited to those shown in Ex. 1:1 for all instrumental music and vocal music with instrumental accompaniment. We can verify that certain pitches were indeed unusable if we listen to old organs that are still tuned in mean-tone systems.

Example 1:1

Mean-Tone Tempered Pitches with Acceptable Intonation

Example 1:2

Mean-Tone Tempered Pitches with Unacceptable Intonation

Although equal temperament, which developed during the time of Bach, is extolled by almost every harmony text as the most natural and conclusive method of tuning, equal temperament is really not natural at all; it is actually a repression of nature in favor of increasing the number of pitches with reasonable intonation. This increase in pitch availability has made it possible for composers to develop a wide variety of musical styles and modulatory techniques which require unlimited chromatic freedom.

Homophonic musical textures can already be found in operas written about 1600. These textures contain harmonic sonorities whose progressions, one to another, imply certain basic tonal relationships. In fact, a golden age of contrapuntal composition, based primarily on the juxtaposition of melodic lines derived from the ancient church modes, was brought to a close by the rise of homophony. Nevertheless, early homophonic compositions obeyed a number of rules which closely followed the polyphonic practices of the time.

In order that we might become better acquainted with a correct and unified approach to the limited harmonic materials of this music, it is vital that we study a number of homophonic examples from this era. Indeed, the harmonic vocabulary of this period provides a particularly good starting point for a discussion of tonal harmony. This is because early homophony is primarily concerned with connections between a limited number of pitches and chords. (As was discussed above, the complete chromatic was not yet available to composers of instrumental music.) In addition, an introduction to early homophony may also help provide a better understanding of an important and high-level musical style which is rather neglected in the musical life of our time.

Because this musical style is somewhat unfamiliar today, it is especially important that the reader play through the following examples a number of times so that an aural knowledge of the style can be acquired. This should take place before proceeding to the exercises. The stylistic rules and exercises that follow will be generated directly from analysis of these examples.

Example 1:3a
Palestrina - *Stabat Mater*

Example 1:3b
Palestrina - *Stabat Mater*

Example 1:3c

Palestrina - *Stabat Mater*

Example 1:3d

Palestrina - *Stabat Mater*

Example 1:3e

Palestrina - *Stabat Mater*

Triads found in Examples 1:3 a-e

Major triads (root position): B♭ F C G D A E

Minor triads (root position): g d a e

First-Inversion Triads found in Examples 1:3 a-e

Example 1:4

Jacob Gallus - *Ecce quo modo moritur* (1587)

et ne - mo per - ci - pit cor - de, et ne - mo per - ci - pit cor - de.

Vi - ri jus - ti tol - lun - tur, et ne - mo con - si - de - rat:

a fa - ci - e in - i - qui - ta - tis sub - la - tus est

ju - tus, et e - rit in pa - ce me - mo - ri - a e - jus

Triads found in Example 1:4

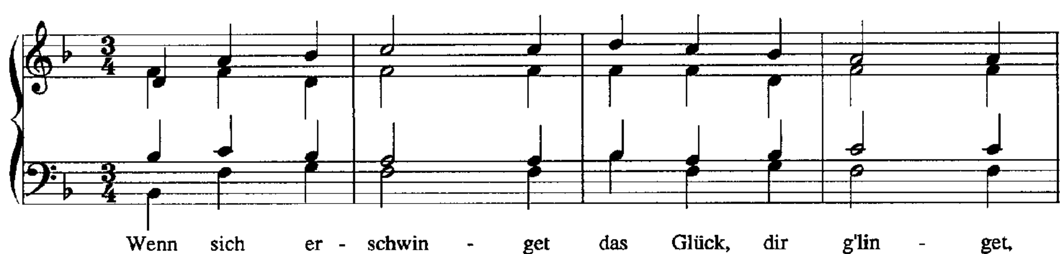
Major triads (root position): E♭ B♭ F C G D A

Minor triads (root position): c g d a

First-Inversion Triads found in Example 1:4

Example 1:5

Leonard Lechner - *Deutsche Sprüche von Leben und Tod* (1606)



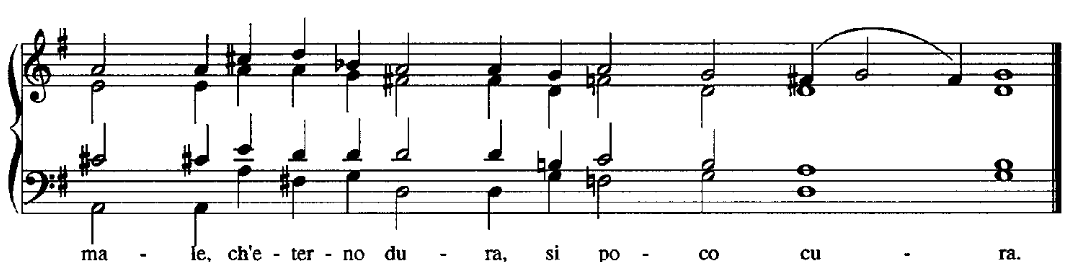
Triads found in Example 1:5

Major triads (root position): B♭ F G D A
Minor triads (root position): c g d

No First-Inversion Triads

Example 1:6

Emilio de' Cavalieri - *La rappresentazione* (1600)



Triads found in Example 1:6

Major triads (root position): F C G D A E
Minor triads (root position): g d a

First-Inversion Triads found in Example 1:6

Example 1:7

Orlando di Lasso- *Sibylla Erythraea* (1550? publ. 1600)

Triads found in Example 1:7

Major triads (root position): E♭ B♭ F C G D A E
Minor triads (root position): c g d a

No First-Inversion Triads

Exs. 1:8-9 chart all of the triads employed in Exs. 1:3-7. Analysis of many pieces by Byrd, Titelouze, Sweelinck, Carissimi, Anerio, Capello, Peri, Haßler, Demantius, and others confirms that only those triads appearing in Exs. 1:8-9 were in general use during the period.

Example 1:8

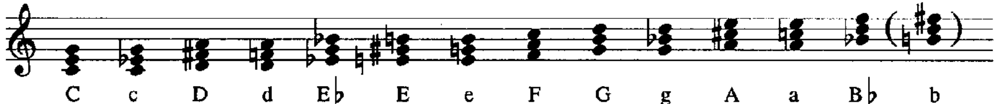
(*arranged in circle of fifths*)

The triads in bold type are the most frequently heard; those in smaller plain type are less frequent. The B-minor triad, in parenthesis, is the least frequently encountered.

Major Keys:	E♭	**B♭**	**F**	**C**	**G**	**D**	**A**	E
Minor keys:	c	**g**	**d**	**a**	**e**	(b)		

Example 1:9

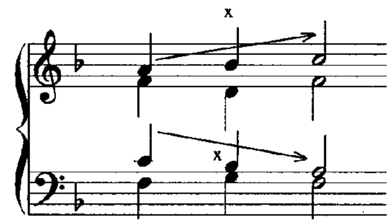
(*scalar representation*)



The roots of root-position major triads are always doubled in four-voice homophonic style (ca. 1600). In addition, root-position major triads are seldom found in incomplete form (without third or fifth). Only in the example by Lechner (Ex. 1:5) do we find the fifth of the last chord omitted (in cases like this it is usual to triple the root). Whereas the third of the final chord was frequently omitted in pieces written around 1550, by 1600 the third became an indispensable component of all closing sonorities. Minor triads also normally double their root tones in four-voice textures, but the third may be doubled if contrary melodic motion is employed (see Ex. 1:10).

Example 1:10

(Lechner)



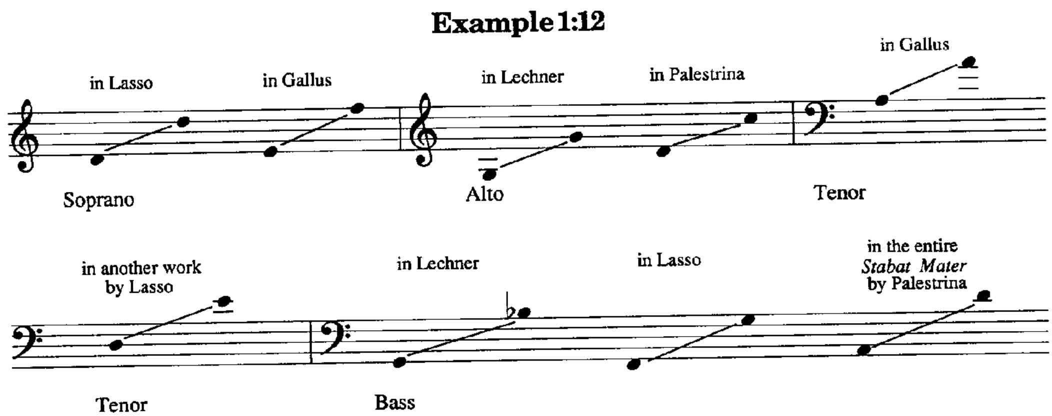
The third of a minor triad may be doubled if it occurs as a result of contrary motion between two voices (x).

Modern choral music employs the approximate vocal ranges shown in Ex. 1:11.

Example 1:11

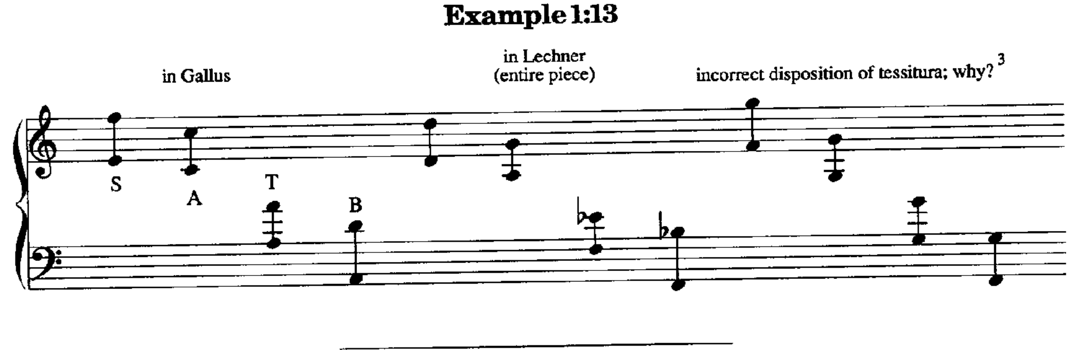
Specific vocal ranges were not firmly established around 1600, however. Exs. 1:3-7 show that individual voice ranges seldom exceed a ninth (or an eleventh in the bass). However, the *tessitura* of each individual voice part varies considerably from piece to piece.

Example 1:12



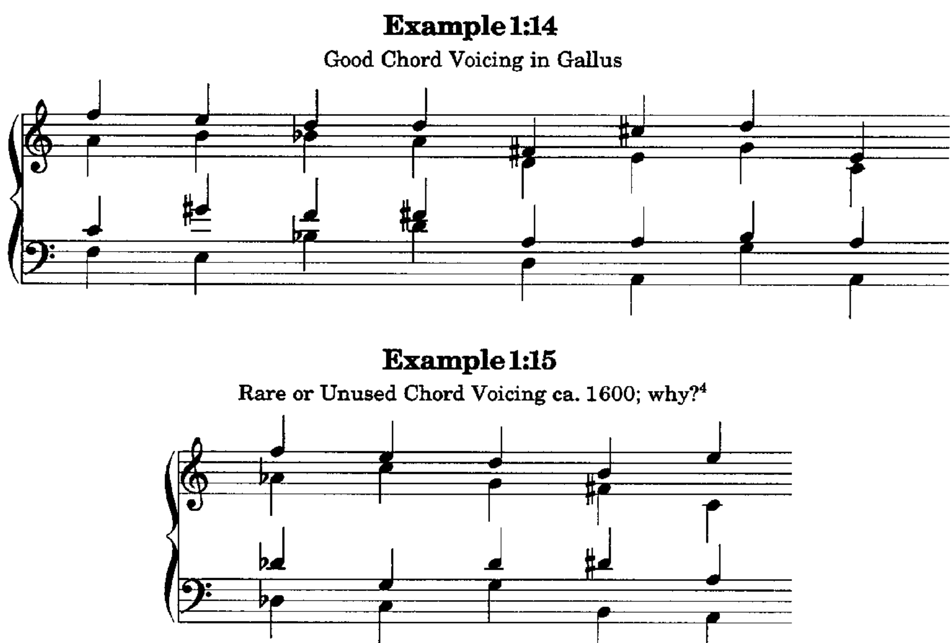
One octave is the maximum interval allowed between the soprano and the alto, as well as between the alto and the tenor. Wider spacing is permitted between upper voices only in the case of isolated individual chords which immediately return to sonorities in normal spacing. There is no spacing limit between the tenor and bass. However, the perfect twelfth is the widest observed spacing between tenor and bass in the examples by Lechner (Ex. 1:5) and Lasso (Ex. 1:7).

Example 1:13



[3] The alto and tenor voices cover exactly the same range.

Exercises: In the same manner as shown in Ex. 1:13, chart the individual voice ranges of other excerpts from Exs. 1:3-7. Write down as many four-voiced single triads as possible that can be constructed within the ranges charted for each piece; become acquainted with all the possibilities (e.g., high or low register chords, chords in open or closed structure, etc.).



Example 1:14
Good Chord Voicing in Gallus

Example 1:15
Rare or Unused Chord Voicing ca. 1600; why?[4]

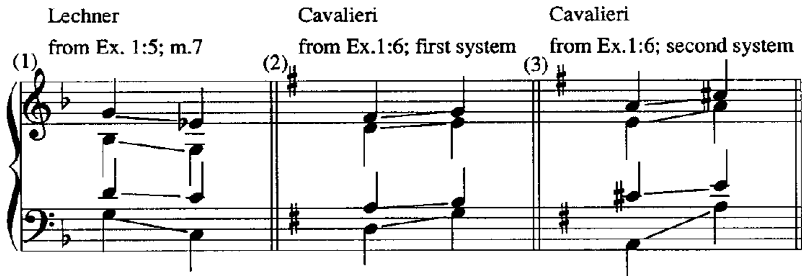
Voice Crossing: Crossing parts to facilitate good voice leading occurs a number of times between alto and tenor and soprano and alto. To prevent all of the voices from ascending at the same time, Lechner (Ex. 1:5, measure 1) begins the alto above the soprano. In the example from Lasso (Ex. 1:7, measure 10), the tenor is already written above the alto so that only the soprano and alto need leap upward into the next measure.

Voice Leading: It is rare for all voices to move in a downward direction at the same time. Ex. 1:16 (1) shows an example of simultaneous downward motion. More conspicuous to the ear, and therefore even more rare, is simultaneous ascending motion in all four voices. In Ex. 1:16 (2), simultaneous upward motion in all four voices is somewhat softened by stepwise voice leading in three of the four voices. Ex. 1:16 (3) shows that a simultaneous leap in the same direction by all voices is permitted if there is no change of harmony between two chords.

---

[4] In addition to the overly-wide spacing, which occurs between two of the upper three voices in chords 2 and 5, there are many voicing difficulties in this example. Other traditional errors here include: a melodic tritone in the tenor between chords 1 and 2; parallel perfect fifths between chord 2 and 3 (bass and tenor); incorrect doubling (missing third) in chord 3; double melodic tritones between chords 4 and 5 (alto and tenor).

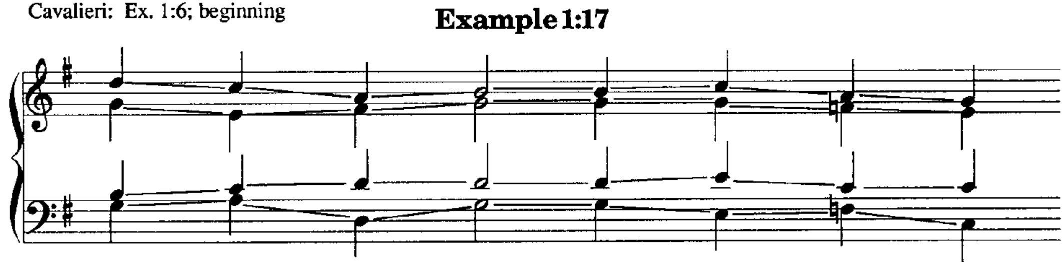
Example 1:16



For a given chord voice, there are three possibilities of forward motion: rising, falling, and remaining the same. Except for the frequently-occurring direct repetition of an entire chordal sonority, it is quite normal for at least two kinds of melodic motion to be present at the same time between chords. A nearly constant change in the direction within individual voice parts occurs in Ex. 1:17. This frequent changing of linear direction is an especially important aspect of this style.

Cavalieri: Ex. 1:6; beginning

Example 1:17

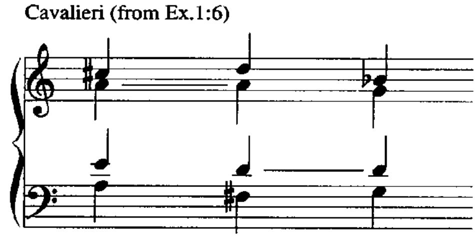


When separate voices are coupled to each other for long periods by motion in the same direction, the individual voices tend to lose their independence. Therefore, it was considered faulty technique to imply a two-part texture when working in four voices. For example, a lengthy series of rising chords against a falling bass line gives the impression of two opposing streams of materials rather than four discrete and independent parts (see Ex. 1:18).

Example 1:18

All standard harmony texts recommend keeping the common tone in the same voice when moving from one chord to the next. As is shown in Ex. 1:19, this principle also applies to early homophony.

Example 1:19



Common tones between chords should be kept in the same voice.
The horizontal lines show normal application of the common tone rule

Simultaneous leaps in all voices between chords with the same root [e.g., Ex. 1: 16 (3)] are freely allowed, however. Another important exception to the common-tone principle is the practice of allowing simultaneous leaps in all voices directly after a cadence (see: Ex. 1:4 at the first quarter rest). Some further license should also be granted for deliberate infringements of the common-tone principle, especially in situations where a piece might not otherwise be able to move forward freely. For example, had Lasso strictly followed the common-tone principle in Ex. 1:7 (measures 6-8), it might have appeared as shown in Ex. 1:20. To obey the common-tone principle, it would have been necessary for Lasso to limit the range of the soprano to the pitches G4-G#4-A4. Lasso's soprano (Ex. 1:7) has much more melodic freedom than is allowed by the strict adherence to the common-tone principle. Therefore, melodic considerations can sometimes take precedence over the common-tone rule.

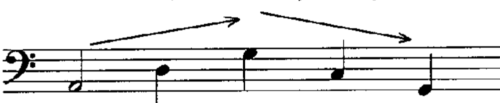
Example 1:20

Linear Considerations: With the exception of the leap of an octave (which has always been permissible), the centuries-old contrapuntal rule limiting melodic leaps to intervals smaller than a minor sixth can also be applied to linear considerations of pitch choice in early homophony. (Leaps of major sixths and all sevenths were prohibited.) There is a minor-sixth leap in the tenor at the end of the example by Lasso (Ex. 1:7, penultimate measure), an octave leap in the soprano

in the example by Lechner (Ex. 1:5, penultimate measure), and several octave leaps in the bass in the examples by Cavalieri (Ex. 1:6) and Lasso (Ex. 1:7). As a rule, larger leaps occur most frequently in the bass. Consecutive large-interval leaps in the same direction, as in Ex. 1:21, are quite rare, however.

Example 1:21

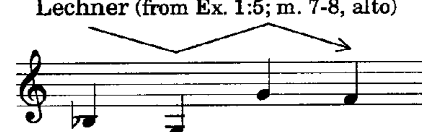
Lechner (from Ex. 1:5; m. 6-7, bass)



Large leaps are most often preceded and followed by motion in the opposite direction (see Ex. 1:22)

Example 1:22

Lechner (from Ex. 1:5; m. 7-8, alto)



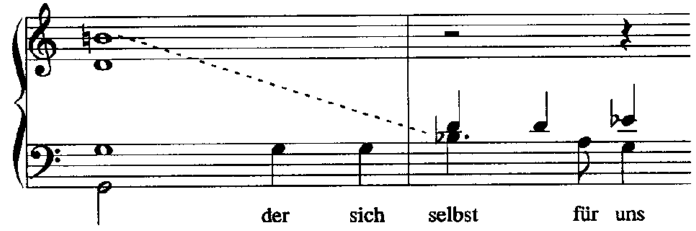
Since the top line is the most conspicuous voice, melodic intervals of seconds and thirds tend to predominate in the soprano. Melodic augmented and diminished intervals should be avoided in all voice parts, with the exception of the augmented unison, which allows for chromatic alteration of an individual pitch. Since musical style around 1600 was generally conceived in a very strict manner, the chromatic half-step should not be overused, however. Lasso employs it very sparingly in Ex. 1:7 (C-C♯ in the soprano, measures 3-4; F-F♯ in the alto, measures 11-12). The chromatic half-steps B-B♭, G-G♯, E-E♭ (and others) are employed in Exs. 1:3-7.

A cross relation is created when a chromatic half-step occurs in immediate or close succession between different voices. Exs. 1:23a-b show how Schütz employed cross relations in a mid-seventeenth century work.

Example 1:23a

Heinrich Schütz - *Es ist erscheinen* (1648)

Cross relations between different octaves.



Example 1:23b

Heinrich Schütz - *Es ist erscheinen*

Cross relations in the same register, but softened by a rest.

Cross relations appear only twice in Exs. 1:3-7, and in both cases the effect of the cross relation is somewhat softened. Gallus (Ex. 1:4) employs a rest between the two chromatically related pitches (see both sides of the first quarter rest). C♯ in the alto is followed by the quarter rest which is in turn followed by C♮ in the tenor voice. Lasso (Ex. 1:7) prevents a direct coincidence of chromatically related pitches in the first half of the penultimate measure (tenor B♮ against alto B♭) by using quarter-note motion in the tenor. Though cross relations are quite rare in this style, when they do occur, there is a preference for softening their effect.

Forbidden Parallel Motion: Every study of harmony prohibits motion between two voices in parallel perfect octaves, unisons, or perfect fifths (see Ex. 1:24). It would be ridiculous even to attempt establishing principles of voice leading based on the insignificant number of such parallelisms that actually occur in the music of the great composers.

Example 1:24

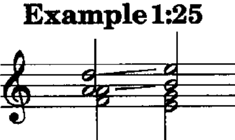
There are two usual explanations for the prohibition of parallel perfect octaves and fifths between any two voices:

1) The octave has a simple ratio of 1:2 between the frequencies of its lower and upper notes (for example: if the frequency of the lower pitch is 100 Hz., then the frequency of the upper pitch will be 200 Hz.). Because of this acoustical phenomenon, the two tones of the octave are often perceived as a single unified sonority. Similarly, the perfect fifth, which has the next most simple ratio (2:3) between its upper and lower tones, is also frequently perceived to be a strong unified sonority. Therefore, two voices which move in parallel octaves or perfect fifths will tend to lose some of their own melodic individuality and independence.

2) Parallel perfect octaves and perfect fifths simply sound "bad."

Both of these traditional explanations are somewhat troublesome. In explanation 1), why are we not also cautioned against the use of parallel perfect fourths (Ex. 1:25), the next most simple ratio (3:4)?

Example 1:25



In explanation 2), why is it claimed that parallel perfect octaves and fifths sound "bad," when, as shown in Ex. 1:26, such structures abound in the music of the Middle Ages? (Furthermore, in the style of Medieval parallel organum, the parallelisms in question are said to have a particularly "good" sound.)

Example 1:26

Excerpt from a Thirteenth-Century Conductus

* Parallel perfect octaves and fifths, broken by rests or cadences, were also generally permitted and employed in later musical styles.

All technical arguments which attempt to explain why parallel perfect octaves and fifths should be avoided create problems that cannot be resolved. For that reason, I shall attempt to explain the origin of this rule a different way.

The major triad is a basic harmonic element that was common to Western music during a period of some 500 years (from Dufay to Reger). It also plays a vital role in twentieth-century music, especially in the works of Hindemith and Stravinsky. Dominant-seventh and diminished-seventh chords, which are newer structures than the major triad, are quite rare in twentieth-century music literature, however. This is because both of these sonorities are associated with the kind of dominant-function harmony that is particularly characteristic of the Classical and Romantic periods. By 1925, many composers refused to employ dominant- or diminished-seventh chords in their works because these sonorities evoked musical styles and aesthetics that were no longer in vogue. In short, harmonies which had played such an important part in the music of the past were simply rejected as old-fashioned by composers of a newer age.

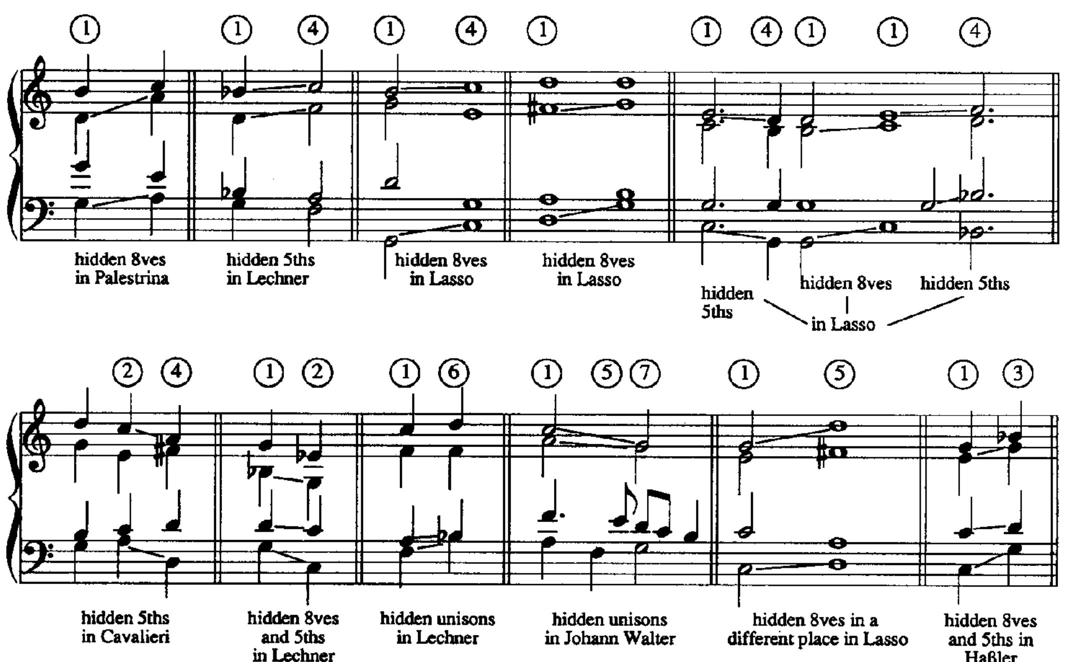
Parallel perfect octaves, unisons, and perfect fifths were first considered errors of compositional technique in the fourteenth century. In many ways, compositions of this era also manifest

an aversion to earlier musical expressions. Since composers of the fourteenth century considered the music of the previous era to be primitive, it is possible that disdain for and avoidance of earlier techniques helped establish the rule that: *parallel perfect consonances are musically incorrect.*

Hidden Parallels: Musical situations where two voices move in the same direction from various harmonic intervals into a perfect octave, unison, or perfect fifth are called *hidden* or *covered parallels*. Hidden parallels are either partially or totally prohibited in many harmony texts. These rules, however, are only distantly connected to actual musical practice. In spite of the fact that hidden parallels are forbidden in strict "textbook" assignments, the literal observation of this rule is mostly an exercise in music theory for its own sake. Exs. 1:3-7 show, contrary to the opinions expressed in many treatises, that hidden parallels occur regularly and equally often between lower, upper, middle and outer voices. Hidden parallels appear in many musical masterworks ca. 1600 and should therefore be considered permissible in the style.

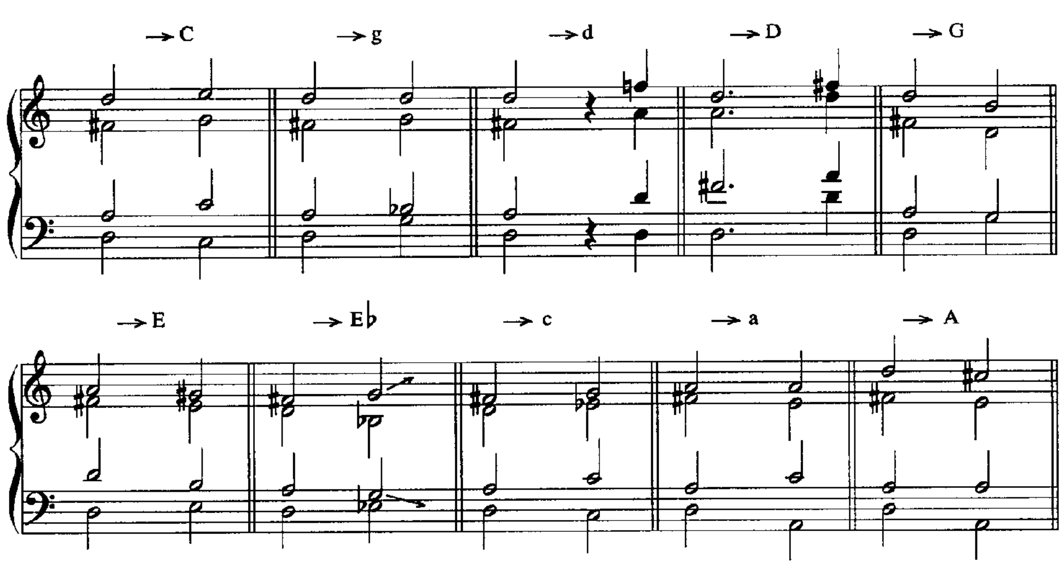
Ex. 1:27 shows the most frequently encountered hidden parallels. At those spots marked (1), a step of a second and a leap occurs; at (2), though appearing less often, both voices leap downward; at (3), appearing even less often, both voices leap upward. In the case of hidden parallels, where the soprano voice is involved (4), the soprano usually moves by the smaller of the two intervals; at (5), the soprano only infrequently moves by the larger of the two intervals. Hidden unisons regularly occur between the tenor and bass (6), but seldom appear between the soprano and alto (7).

Example 1:27



Exercises: Choose a chord (Ex. 1:28 uses D major). Employing various voicings, write as many single-chord progressions from this chosen starting sonority as possible. Make sure to observe all of the principles of partwriting discussed above.

Example 1:28



From a freely chosen starting chord, compose a succession of chords where at least one voice in each chord provides a common-tone connection to the next chord in the progression. Use only those chords found in Exs. 1:3-7 and mark all the common tones as in Ex. 1:29.

Example 1:29

Compose a number of chord progressions that will not allow common tones between chords; the possibilities are somewhat limited (see Ex. 1:30).

Example 1:30

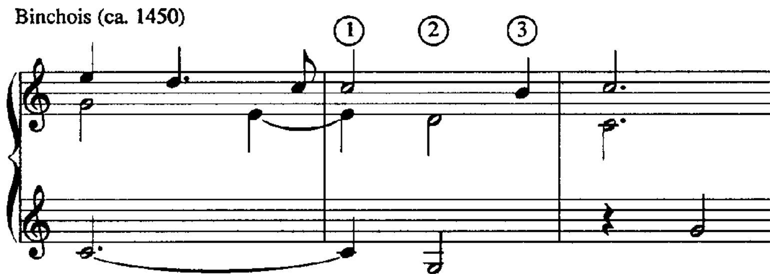
Complete the outer-voice frameworks found in Exs. 1:31a-b by adding the alto and tenor parts.

Example 1:31a

Example 1:31b

In earlier music, phrases were concluded by various melodic closing formulas (*clausulas*), but by the time of Zarlino (1517-1590),[5] phrase endings were already regarded as musical events that require more than one voice. Early multiple-voice cadences employed a particular idiomatic device which is known today as a *suspension*. (See: Ex. 1:32.)

Example 1:32



In Ex. 1:32, the C in the soprano is introduced as a consonance at (1). At (2) the C remains in the soprano while the other two voices move. This produces a dissonant-fourth suspension between the soprano and the lowest voice. The dissonant fourth is then resolved downward by step in the soprano, creating a consonant third between the soprano and the lowest voice (3).

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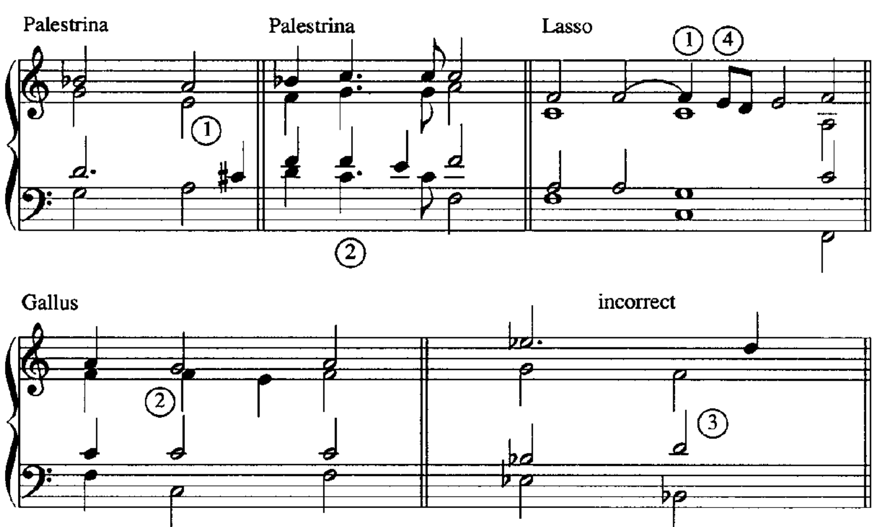
[5] Gioseffo Zarlino, *Le Istituzioni armoniche* (Venice: 1588).

To present all of the related cadence formulas in use around 1600 and their histories would require a complete study of counterpoint. It should be noted, however, that the suspended fourth was actually employed very little in the music of this era (outside of its regular appearance at cadences). Exs. 1:3-7 all contain cadential suspended fourths and demonstrate their most important possibilities. The dissonant (suspended) pitch must first be introduced as a consonance and then, as is shown in Ex. 1:33, be held-out or tied over (1), or repeated (2). Although momentarily delayed, the resolution pitch becomes the third of the new chord. This allows the fourth to be heard suspended for an instant between the consonances. The pitch of resolution should not be sounded in another voice at the same time as the dissonant suspension (3). The suspended fourth should appear in a stronger metrical position than the pitch of resolution. Sometimes the pitch of resolution may be ornamented by means of a neighboring-tone figure (4).

Example 1:33



As a rule, the harmonic goal of a chord progression containing a suspended fourth is a chord whose root is a perfect fifth lower (or a perfect fourth higher) than the root of the chord at the point of the suspension resolution. (In a later definition, this will be discussed in terms of motion from dominant [D] to tonic [T].) Though the suspended-fourth figure does produce the implication of a tonal center, the concept of a single predominant key for a piece was not yet established. The example by Gallus (Ex. 1:4) cadences first in D major, and then later in F major. Even the first and last chords of a work during this period are frequently different. Palestrina's *Stabat Mater* (entire work) begins on an A-major triad and closes on a D-major triad; Lasso's *Sibylla* (entire work) begins on an F-major triad and concludes with a C-major triad, etc.

In view of such wandering successions of tonal centers, the suspension cadence becomes all the more important as a momentary device for strengthening the tonal goals and harmonic resting places within a piece.

Exercises: Compose suspended-fourth cadences in four parts, employing the single-voice excerpts in Ex. 1:34; write several additional cadences of your own invention based on the principles discussed above.

Example 1:34

We should also examine one of Cavalieri's more freely-conceived suspension formations. In Ex. 1:6 (last two chords), the soprano has a consonant third (above the bass) both before and after the dissonant suspended fourth. In the example by Lechner (the penultimate measure of Ex. 1:5), the same process is observed in the alto, but the initial consonant third is interrupted by a leap.

Four-voice chorales (ca. 1600) employ the same basic harmonic resources as homophonic compositions. Ex. 1:35 contains an early chorale setting which employs eleven different major and minor triads. Though this example includes no first-inversion triads, limiting triads to their root-position form is an exception to harmonic practice in this style, not the rule. Note that the phrase endings (fermati) cadence on A, D, and F major, as well as on D and A minor.

Example 1:35

Osiander-*Christ lag in Todesbanden* (1586)

Example 1:35 (cont.)

Triads found in the Example 1:35

Major triads (root position):	B♭ F C G D A E
minor triads (root position):	g d a e

Exercises: At the end of each single-line excerpt in Exs. 1:36 a-d, tables are given which list all major and minor triads found in the original work from which the line was taken. Using only the triads listed in the tables following each example, compose a stylistic (ca. 1600) four-voice setting of each excerpt. Since there are many possible solutions for each line, try completing more than one setting of each.

Example 1:36a

Lasso - *Sibylla Samia* (1600)

Triads employed in the original setting of Ex. 1:36a

Major triads (root position):	E♭ B♭ F C G D A E
minor triads (root position):	c g d

Example 1:36b(1)
Lasso - *Sibylla Cumana*

Triads employed in the original setting of Ex. 1:36b(1)

Major triads (root position):		B♭	F	C	G	D	A
minor triads (root position):	c		d				

Example 1:36b(2)
Lasso - *Sibylla Cumana*

Triads employed in the original setting of Ex. 1:36b(2)

Major triads (root position):	E♭	B♭	F	C	G	D
minor triads (root position):	c					

Example 1:36b(3)
Lasso - *Sibylla Cumana*

Triads employed in the original setting of Ex. 1:36b(3)

Major triads (root position):	E♭	B♭	F	C	G	D	A
minor triads (root position):	c	g	d				

Example 1:36c(1)

Palestrina - *Stabat Mater*

Triads employed in the original setting of Ex. 1:36c(1)

Major triads (root position):	B♭ F C G D A E
minor triads (root position):	g d a

Example 1:36c(2)

Palestrina - *Stabat Mater*

Triads employed in the original setting of Ex. 1:36c(2)

Major triads (root position):	F C G D A E
minor triads (root position):	d a

Example 1:36d

Gabrieli (1615)

Triads employed in the original setting of Ex. 1:36d

Major triads (root position):	B♭ F C G D A
minor triads (root position):	g a

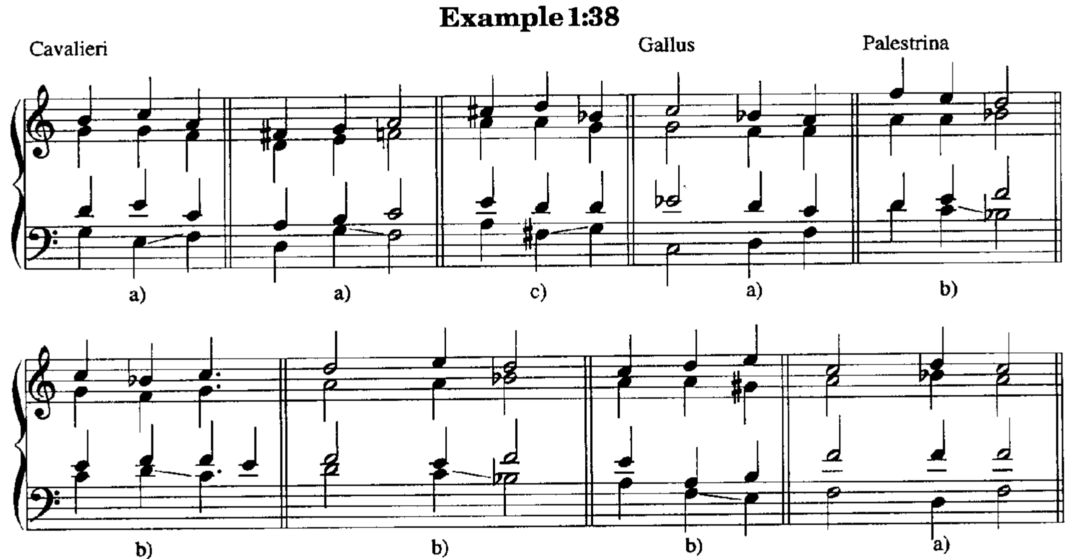
A *first-inversion triad* is known in early theoretical treatises as a *chord-of-the-sixth* [*Sextakkord*].[6] The third of a first-inversion triad occurs in the bass and most standard harmony texts claim that the chord root should be doubled in one of the upper voices (see Ex. 1:37).

Example 1:37

In order to understand more about the harmonic characteristics of homophony around 1600, it is important to evaluate whether individual chords are constructed from the intervals of a third and fifth, or a third and sixth above the bass. Exs. 1:3-7 show that the root of a root-position triad is always doubled, but the doubled pitches in a first-inversion triad are not limited only to the root.

Ex. 1:38 shows all doublings of first-inversion triads which occur in Exs. 1:3-7.

Example 1:38



a) bass doubled (third of the chord); b) third above bass doubled (fifth of the chord); c) sixth above bass doubled (root of the chord)

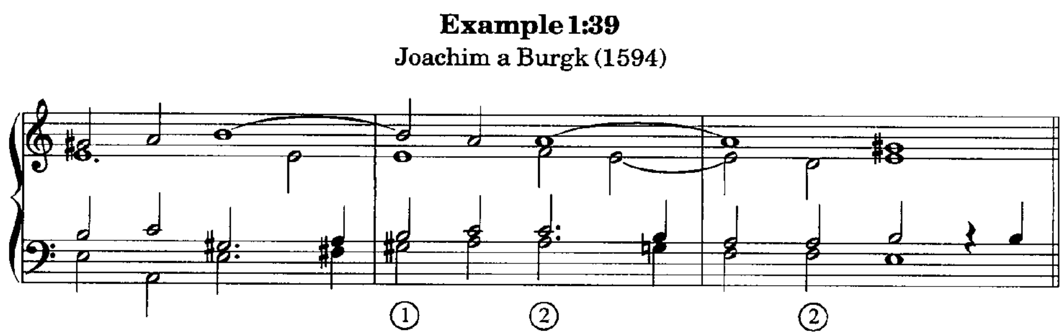
---

[6] As the author will point out in Chapter Two, triads during this period could be constructed either from a third and fifth or a third and sixth above a bass tone. The latter is called a *chord-of-the-sixth*. Constructing a chord-of-the-sixth actually produces the same intervallic structure that gradually came to be known as a *first-inversion triad* (a triad with the third in the bass). However, the concept of maintaining the specific function of a triad, regardless of inversion, was not universally accepted until later. Around 1600, a chord-of-the-sixth was generally held to be a discrete triad with its own specific function, and was not considered to be an inverted root-position triad.

The preference for stepwise motion in the bass, when progressing away from a first-inversion triad (see Ex. 1:38), demonstrates the importance of maintaining smooth voice leading when considering an appropriate use of this "extraordinary sonority" (Werckmeister).[7] The penchant for stepwise motion in the bass does not exclude other possibilities, but simply indicates the preferred practice of a less complicated age. It is important not to overemphasize any one method of employing this sonority, since it is easy to focus too narrowly and miss a broader view of the musical/historical change that was taking place about 1600.

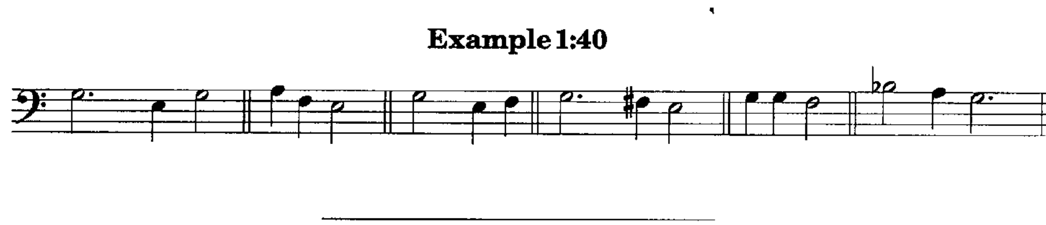
Ex. 1:39 is an excerpt from a piece written in an older style, but where the later concept of triad inversion seems to apply. The first-inversion chord at (1) can certainly be understood as an inversion of the previously occurring root-position E-major chord (measure 1, beat 3). Without a doubt, however, both of the sonorities at (2) were constructed from the bass to be harmony carrying chords-of-the-sixth.

Example 1:39
Joachim a Burgk (1594)



Exercises: In four parts, harmonize the bass-line excerpts in Ex. 1:40. The second chord of each example should be a first-inversion triad. Compose additional short progressions similar to the ones given (a longer exercise would be meaningless, since regular and frequent use of first-inversion triads does not occur in this style). Perhaps a judicious number of first-inversion chords might be added to some of the previously worked-out exercises.

Example 1:40



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[7] Andreas Werckmeister, *Harmonologia Musica* (Frankfurt: 1697).

CHAPTER TWO

Harmony between 1700 and 1750 (Bach-Handel-Vivaldi-Telemann)

1. The Perfect-Fifth Relationship in Major Keys

At the beginning of Chapter One it was explained that the acoustically true sound of purely tuned triads was relinquished during the time of Bach because of the gradual adoption of equal temperament. Although purity of intonation was lost, what was gained with equal temperament was the ability to employ and connect all chords. Before the time of Bach, all instrumental works avoided the use of certain out-of-tune triads which were produced by various mean-tone temperaments (see p. 2). By superimposing equal temperament on the major-minor system, it finally became practical to modulate to any key and employ all possible triads. Nevertheless, from the time of Bach until the end of the nineteenth century, individual triads were considered to possess a certain contextual relationship to a single pitch which functions as the center of tonality in a musical work. *Tonic* (Rameau: *tonique*[1]) is the musical term used to describe this central pitch, and the term *tonic triad* is used to describe the triad whose root is the tonic pitch.

In Chapter One, we discussed a centuries-old harmonic closing formula which is characterized by a downward perfect-fifth leap in the bass (see p. 20). This type of cadence seems so natural that it is almost unimaginable that any other cadential process could be as convincing. It is almost as if this cadence formula possesses an intrinsic ability to resolve harmonic tension. One should be careful about such generalizations, however. Do the harmonic closing gestures in Perotin's *Sederunt* or Debussy's *Pelleas* (compositions containing cadences without downward-resolving perfect fifths) really seem unnatural and in need of replacement? Every composer, or at least the musical tradition in which a composer stands, seeks to invent musical structures that seem natural; that is, where everything beautiful seems to be "finished from eternity" (Schiller).

Even in compositions where falling perfect-fifth cadences predominate, however, two major triads whose roots are a perfect fifth apart cannot absolutely confirm a specific tonic. Since there are two pitches of the diatonic scale which are not used (when we construct triads upward from only the first and fifth scale degrees), the two chords in Ex. 2:1 could belong to either the key of A major or the key of D major. Although it is quite obvious that one of the two unused pitches is B♮ (rather than B♭), it is impossible to determine from context whether the other unused pitch should be G♮ or G♯.

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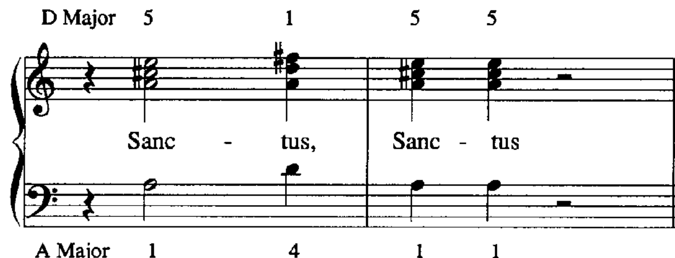
[1] Jean-Philippe Rameau, *Traité de l'harmonie reduite à ses principes naturels* (Paris: 1722).

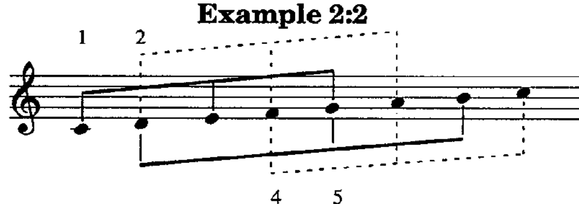
Example 2:1

Charpentier (1634-1704)-*Te Deum*



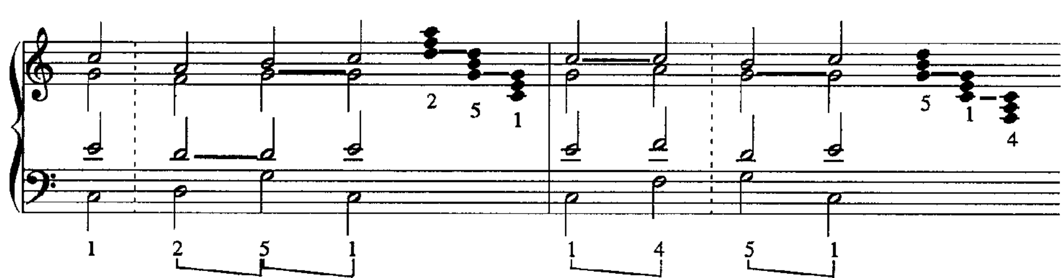
In order to provide a harmonic place for the two missing notes of the scale, a third triad must be constructed which includes these tones. There are actually two triads which contain the missing pitches—the triad built on the fourth scale degree, and the triad built on the second scale degree (see Ex. 2:2--dotted lines).

Example 2:2



Since the triad built on the fourth scale degree and the triad built on the second scale degree both contain pitch *four* and *six* of the scale, it follows that the triad progressions based on the root tones 1-2-5-1 and 1-4-5-1 will contain all the diatonic pitches within a major key. As is shown in Ex. 2:3, both these progressions also contain two falling perfect fifths (⌴) and both have one unstable position, where two successive chords of the progression share no common tones (⁞). The most frequent cadence type used later during the Classical period is often described in theoretical treatises as a fusion of the two basic cadence types shown in Ex. 2:3 (see p. 61).

Example 2:3



The Triad Built on the First Scale Degree (1) = T (Tonic) [I]
The Triad Built on the Fourth Scale Degree (4) = S (Subdominant) [IV]
The Triad Built on the Fifth Scale Degree (5) = D (Dominant) [V]

The functional terms *tonic*, *subdominant*, and *dominant* date back to Rameau (1683-1764). In Rameau's system, however, these terms were not only defined in the manner that has become standard today (see: Ex. 2:3, caption), but they also took on additional meanings. For Rameau, every root-position seventh chord was considered to be a *dominant* if it was followed by a chord whose root was a perfect fifth lower. In C major, for example, the [minor-] seventh chords D-F-A-C and A-C-E-G were considered dominant in function if they resolved to G-B-D or D-F♯-A, respectively. However, if a major sixth above the root (*sixte ajoutée*) was added to a major triad, a chord with *subdominant* function was formed. Thus, Rameau would have considered the chord C-E-G-A to have a subdominant function in the key of G-major, rather than tonic function in C-major.

Secular music developed a system of harmony based on chord progressions related to the three basic chord functions much earlier than sacred music. The harmonic progressions in Exs. 2:4a-b (composed ca. 1530), already relied extensively on the three key-determining triads (T, S, and D):

Example 2:4a

Attaingnant-*Gaillarde*

F: T S T D T ——

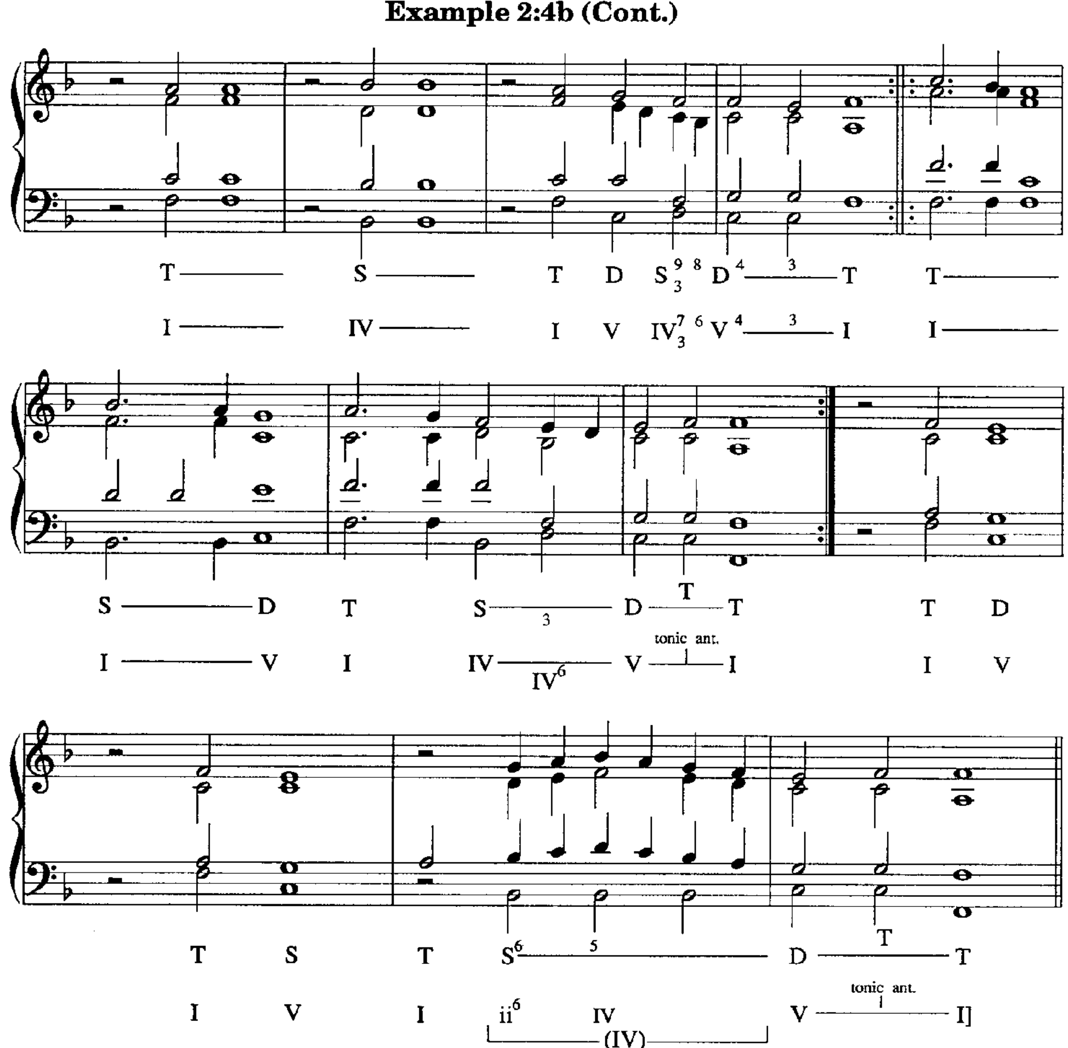
[I IV I V I ——]

Example 2:4b

Attaingnant-*Pavane*

* The symbol Tr (relative tonic) will be consistently substituted in this translation for the author's Tp (parallel tonic). It is the translator's hope that this will alleviate the somewhat confusing differences between the standard German and standard English usage of the musical term *parallel* (see Translator's Foreword).

Example 2:4b (Cont.)



The three primary functions play a major harmonic role in music between 1700 and 1850. Since Hugo Riemann (1849-1919), it has been possible to speak of the tonic, subdominant, and dominant functions as the principal harmonic poles of tonality.[2] In Riemann's system of harmonic analysis, all chords (employed in tonal music) have one of three functions: *tonic function* (the stable center of a tonality); *dominant function* (the strong pole of harmonic tension which seeks resolution to the tonic); *subdominant function* (a weaker harmonic pole which leads away from tonic).

[2] Hugo Riemann, *Handbuch der Harmonielehre*, 9th ed. (Leipzig: Breitkopf und Härtel, 1921).

In his textbook on harmony, Wilhelm Maler further discussed the functional differences between the dominant and subdominant.[3] Studying and playing Exs. 2:5-7 (especially Ex. 2:6) should help demonstrate these differences.

Example 2:5

Charpentier-*Te Deum*

in ae - ter - num, non con - fun - dar in ae - ter - -

D: T D——— ^{5} T_3 D_3 T S D^7_3 $^6_4$ $^5_4$ $^5_3$

[I V V^6_4 I^6 V^6 I IV V^7 *V^6_4 V^5_4 $^5_3$

(V)

- num, in ae - ter - - - -

in ae - - ter num

T S T

I IV I]

* While many English-language harmony texts label this sonority I^6_4, the function of this chord is actually that of a dominant triad with two suspended non-harmonic tones. It will be labeled V^6_4 here so that the Roman-numeral symbol matches the German functional symbol D^6_4. I^6_4 will be used only where the sonority clearly functions as a second-inversion tonic (arpeggio or passing six-four—see Section Three of this Chapter and Translator's Foreword).

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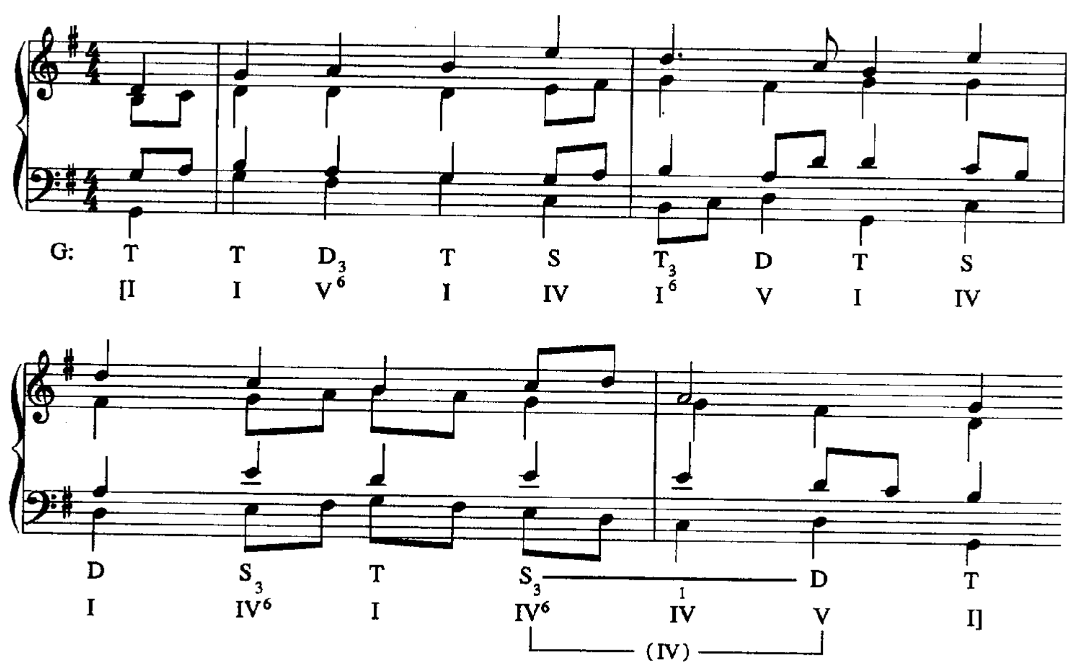
[3] Wilhelm Maler, *Beitrag zur durmolltonalen Harmonielehre*, 13th ed. (Munich: F.E.C. Leuckart, 1984). Maler claims that the subdominant is perceived by its sonority content (*Klanggehalt*), while the dominant is perceived by its tension content (*Spannungsgehalt*).

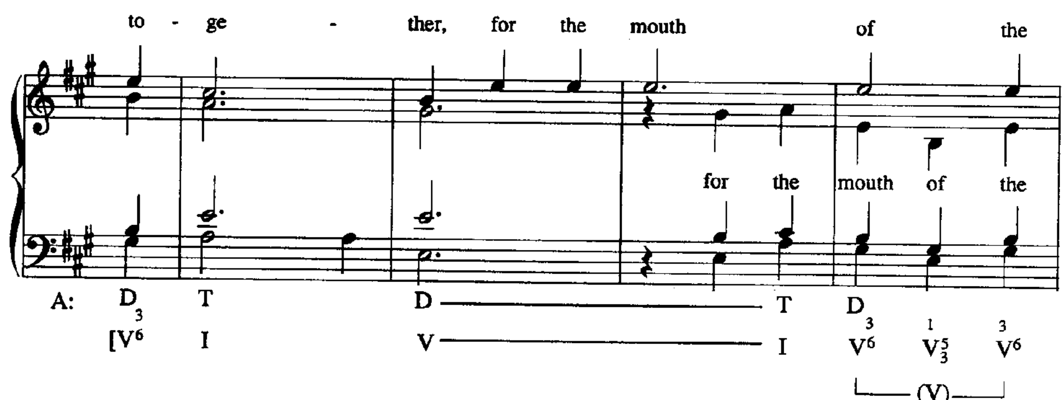
Example 2:6

Bach- *Was Gott tut, das ist wohlgetan*

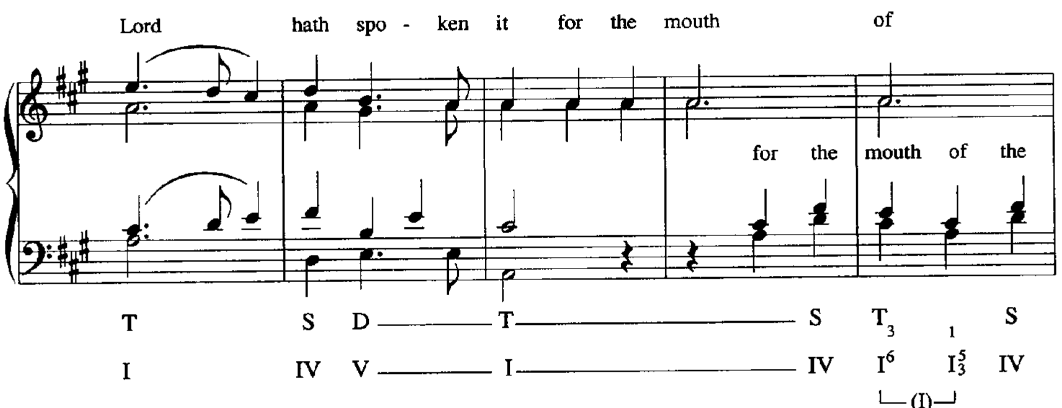


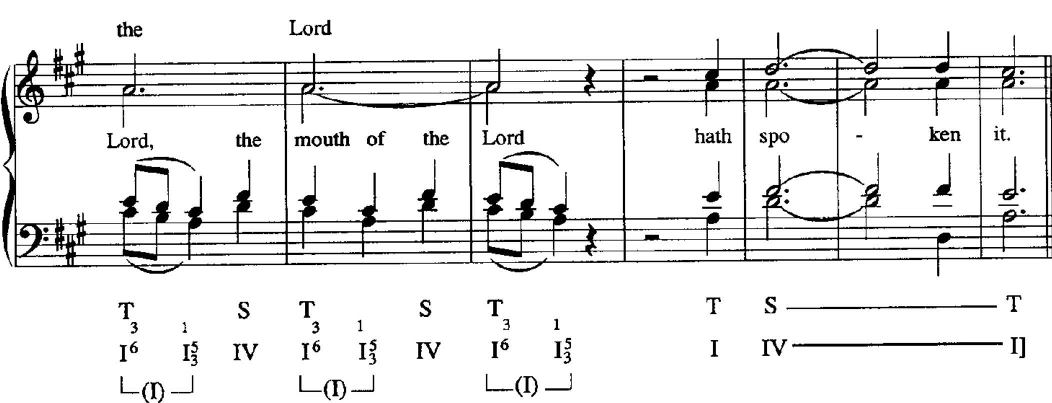
Example 2:7

Handel- *"And the Glory of the Lord"* from *Messiah*



Example 2:7 (Cont.)





Exs. 2:5-7 contain typical Baroque-era harmonic progressions which employ primary triads. However, Ex. 2:6 is not typical of Bach, since this chorale excerpt makes reference to only one tonal center (G-major). Bach's style is often more complex, with internal melodic and harmonic references to several tonic pitches.

In Ex. 2:8, Bach embellishes a simple harmonic progression with finely honed and highly crafted individual lines.

Example 2:8

Bach-*Nun danket alle Gott*

G: T D^7_4 3 T D_8 7 T—S—S^6_8 $^5_7$ 8 D^4 3 T

IV^6 w/ ton.-dom. pedaltones

accented lower neighbor in bass

[I V^6_5 I V I^6—ii^6 ii^6_5 V^4 3 I]

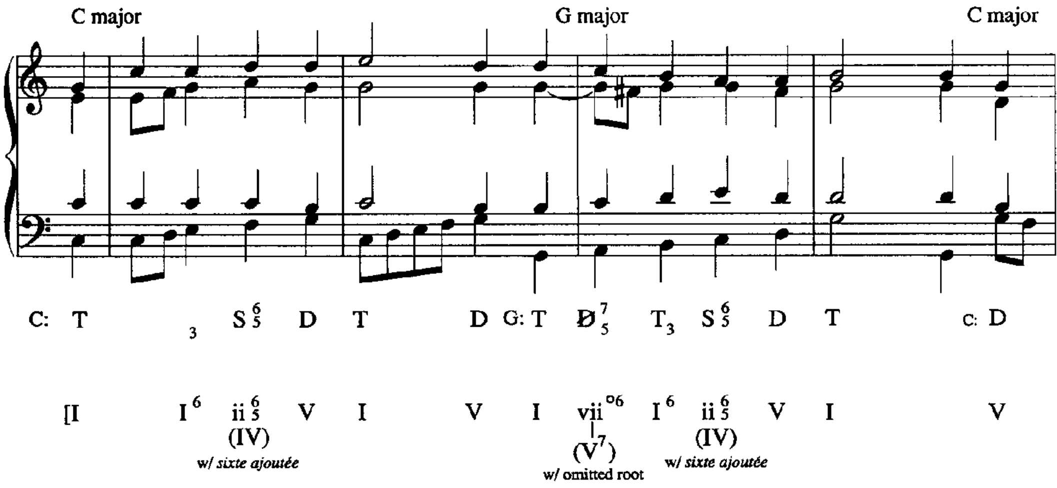
9-10 suspension in bass

passing 7th in bass

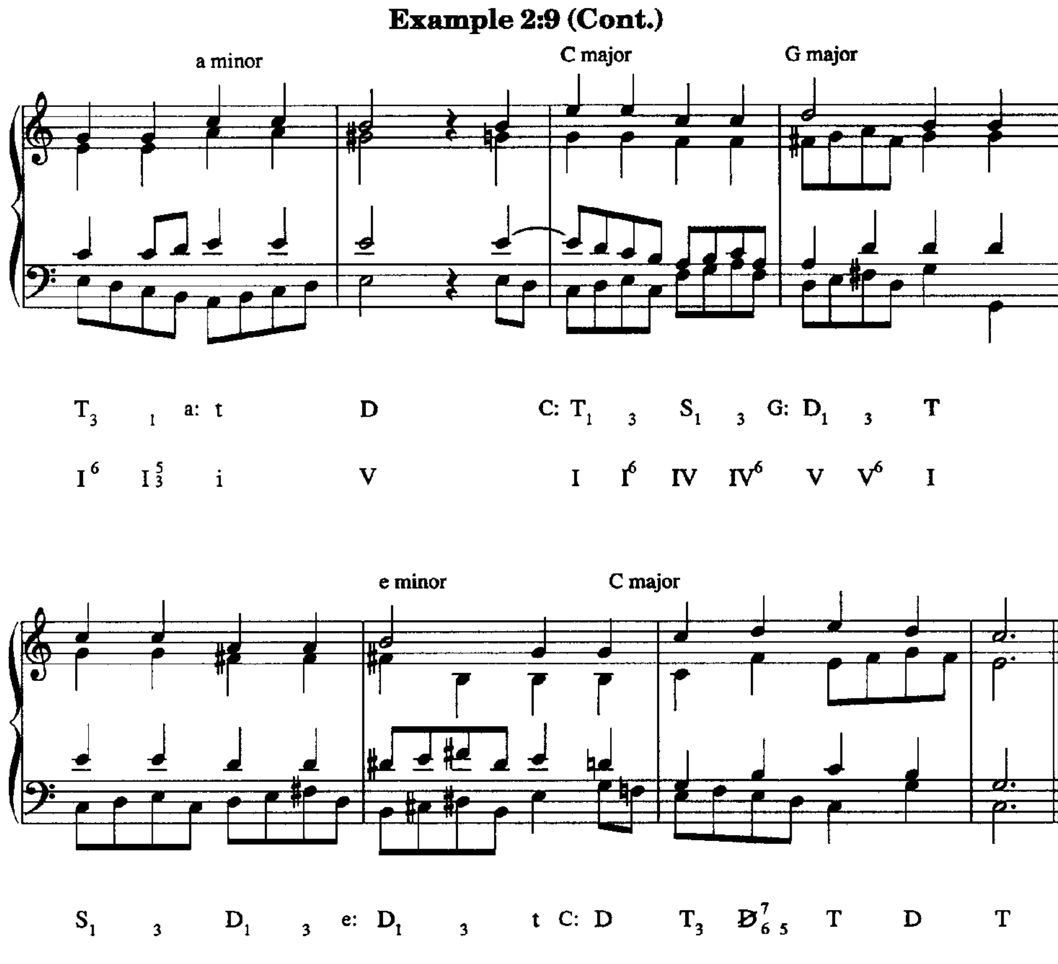
During the time of Bach, simple harmonic progressions also provided a foundation for more complex procedures of harmonic development. Ex. 2:9 contains phrases that relate to the keys of C, D, E, F, G and B major, as well as E and A minor. Each phrase of this chorale establishes a new key area within the space of only eight chords, and each of these intermediate areas is established by means of very basic harmonic progressions.

Example 2:9

Bach-*In allen meinen Taten*



Example 2:9 (Cont.)



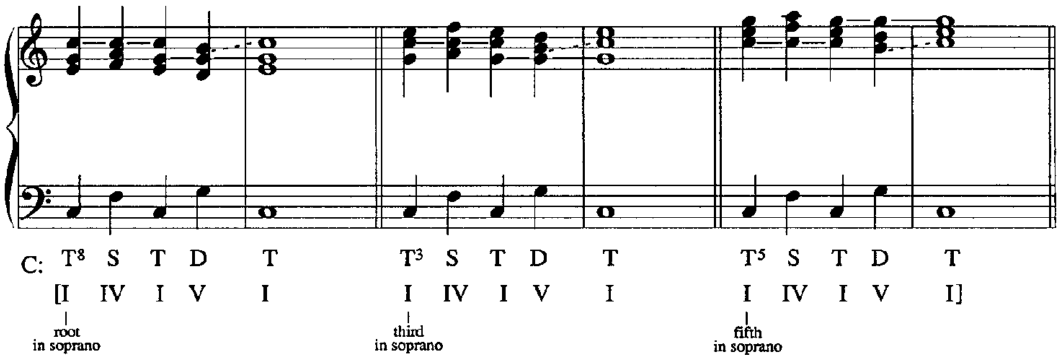
IV IV^6 V V^6 V V^6 i V I^6 vii^{o6} I V I]

(V^7)

w/ omitted root
and accented passing tone
in bass

If we ignore the added tones in auxiliary sonorities such as (S^6_5) and suspension figures such as ($D^{6\ 5}_{4\ 3}$), the basic harmonic progression T-S-D-T [I-IV-V-I] begins to emerge as a standard harmonic pattern (see the first two phrases of Ex. 2:9). Although this simple cadence formula begins the study of chord progression in almost every hàrmony text, it occurs in this basic form far less frequently in actual music literature than in textbook exercises. Nevertheless, to gain familiarity with this important pattern, the progressions in Ex. 2:10 should be played at the keyboard in all keys. Make sure that the leading-tone of the scale (third of the dominant chord) always moves directly to the tonic pitch in the same voice. Common tones between chords should also be retained in the same voice.

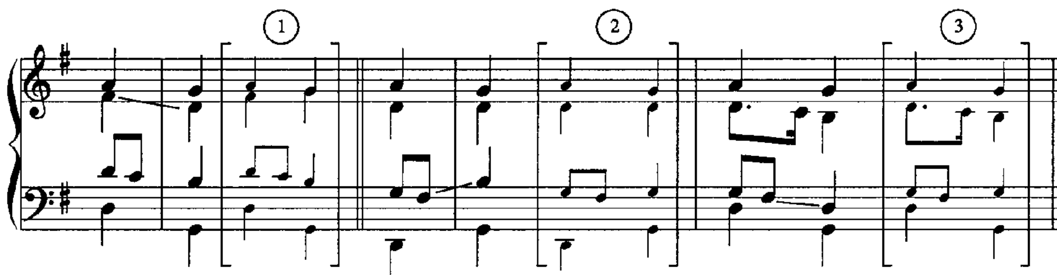
Example 2:10



For the present, always double the root of each chord. When the leading-tone of the scale is found in one of the inner voices and when there is irregular voice leading in the soprano, the leading-tone may leap downward to the nearest chord tone of the next chord (rather than resolve in its usual manner, by half-step directly to tonic). This irregular voice leading makes it possible for the following chord to contain all of its constituent tones and to be regularly doubled.

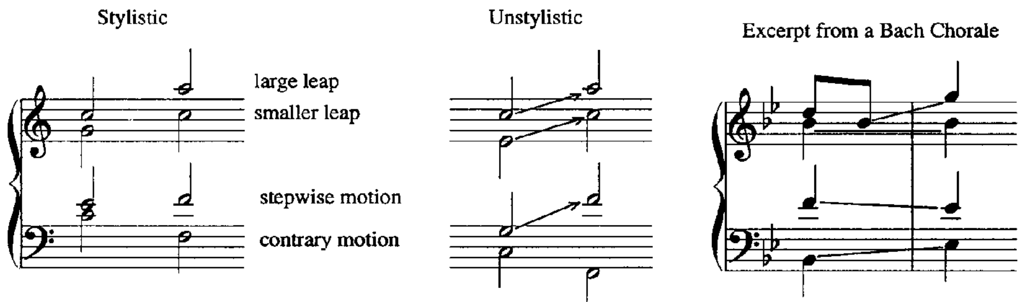
Ex. 2:11 shows three excerpts from the chorales of Bach which employ irregular voice leading. The numbered progression in brackets following each excerpt indicates what would have occurred had normal voice-leading principles been followed. A possible, but irregularly doubled final chord (without a fifth) would have been produced in both (1) and (3); a very non-stylistic final chord without a third would have been produced in (2).

Example 2:11



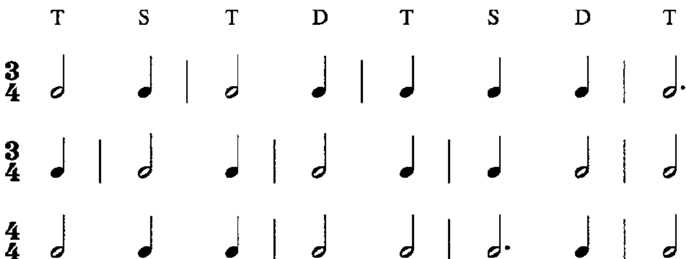
In Chapter One, license was given to break the common-tone rule when melodic considerations dictated (see p.13). Deliberate infringement of the common tone rule is permitted even more freedom in music from the time of Bach. However, when leaps occur in several parts at the same time, it is important to maintain the maximum amount of contrary motion between the voices and to make certain that all voice parts are not allowed simultaneous wide leaps in the same direction (see Ex. 2:12).

Example 2:12



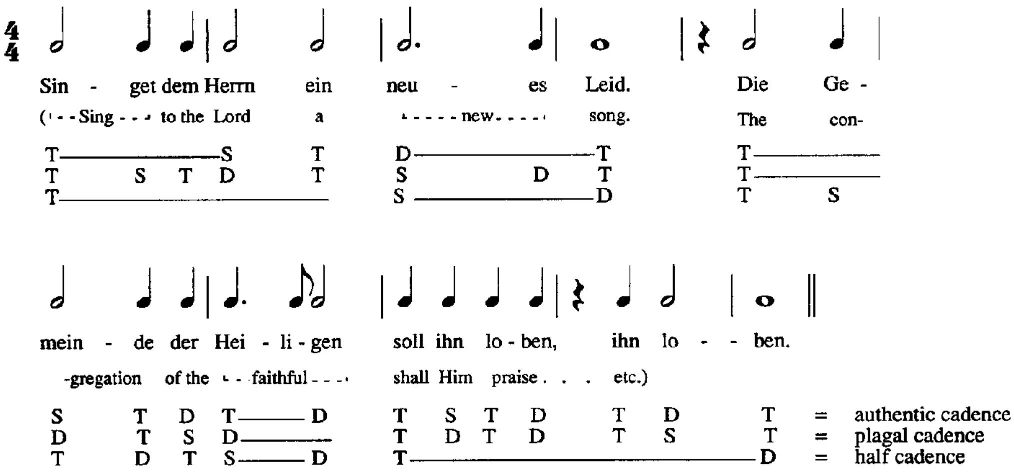
The same rules concerning parallel fifths and octaves that were applied to the works discussed in Chapter One (see pp.15-17) also apply to the music of the Baroque-era. Since a root-position dominant triad in the time of Bach was never followed by a root-position subdominant triad, the possible progressions of root-position tonic, subdominant and dominant triads will be limited, for the present, to those shown in Ex. 2:13.

Example 2:13



Exercises: Employing the Psalm text and the associated rhythmic/harmonic patterns given in Ex. 2:14, choose a pattern and compose a setting for mixed chorus (SATB). As you write, keep in mind the style of Handel rather than Bach, since the progressions given in Ex. 2:14 are more typical of Handel's style. For additional practice, choose another of the given patterns and create a new setting, or write out and play several rhythmic/harmonic exercises of your own invention based on the same text.

Example 2:14

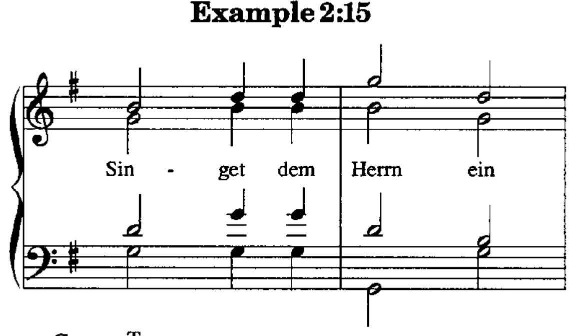


The following additional verse of text can be set in a similar manner for extra practice:

Lobet im Himmel den Herrn;
(Praise in heaven the Lord;
lobet ihn in der Höhe.
praise Him in the highest.
Lobet ihn, Sonne und Mond;
Praise Him, sun and moon;
lobet ihn, alle leuchtenden Sterne.
Praise Him, all shining stars.
Sie sollen loben seinen Namen in Reigen;
They shall praise His name in dance;
mit Pauken und Harfen sollen sie ihm spielen.
with drums and harps shall they to Him play.)

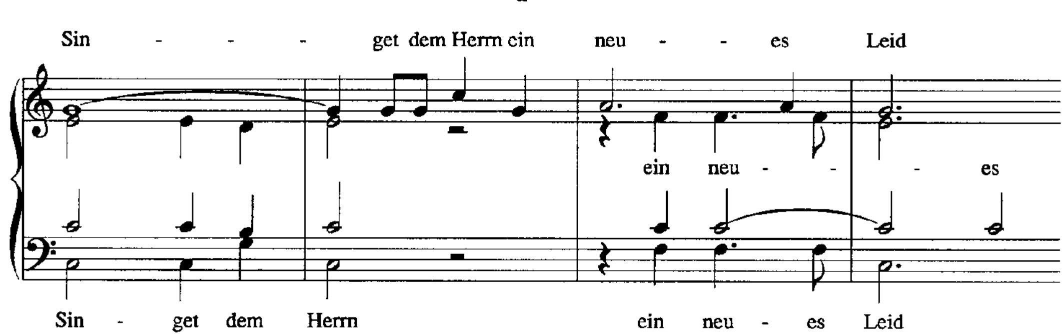
After cadences or in places where there are several repeated chords with the same root tone, the spacing between voice parts often changes from closed to open position or vice versa. The tessitura of the individual voice parts should also change frequently when chords of the same function are repeated (see Ex. 2:15).

Example 2:15



As is shown in Ex. 2:16, another important means of progression with primary triads is initiated by holding-out long common-tone pitches above rhythmically active chord changes (see also Ex. 2:7).

Example 2:16



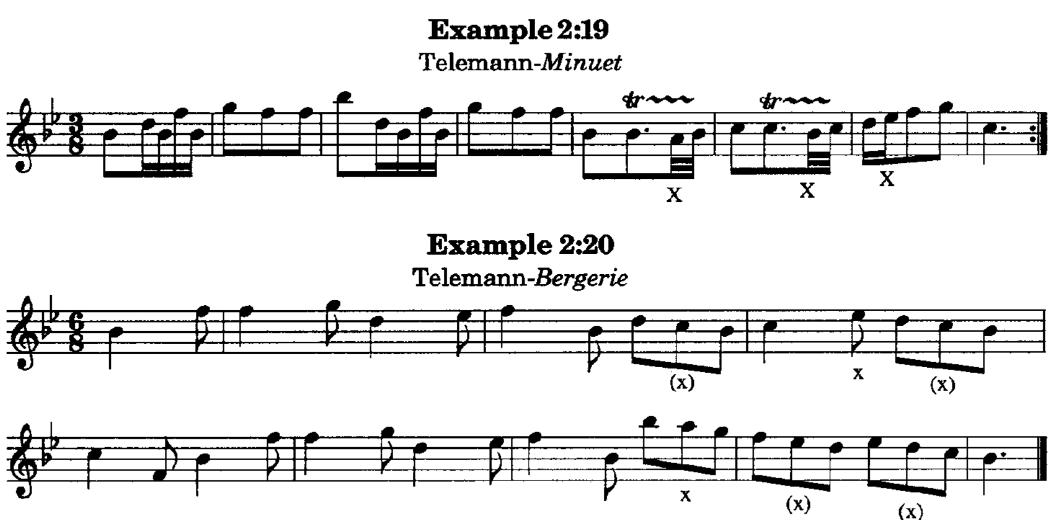
Exercises: Limited to the functional symbols T, S, and D, label the harmonic progression implied by the bass line in Ex. 2:17. After labeling the implied progression, create as many workable melodies to accompany the bass line and its implied harmonic structure as possible. When composing these melodies, limit your pitch choices to the three notes of each implied primary triad. Add texts to these melodies, then sing and play them, always retaining the same background progression. Model your settings after a Baroque aria with keyboard accompaniment. Make sure that no parallel octaves or parallel perfect fifths occur between the vocal part and the bass line. The right hand of the keyboard part can be freely composed and does not need to double the vocal line.

Example 2:17

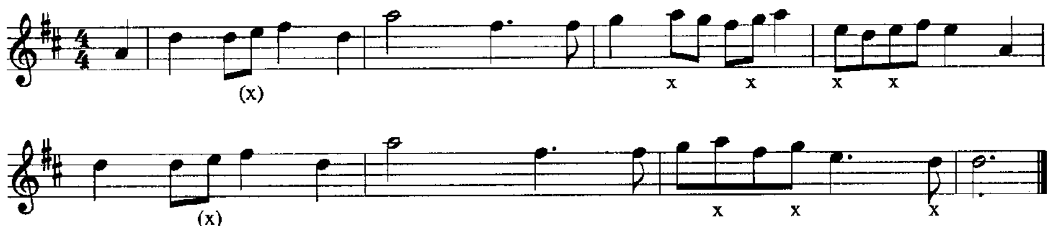
Ex. 2:18 shows two possible melodic settings of the first two measures of Ex. 2:17.

Example 2:18

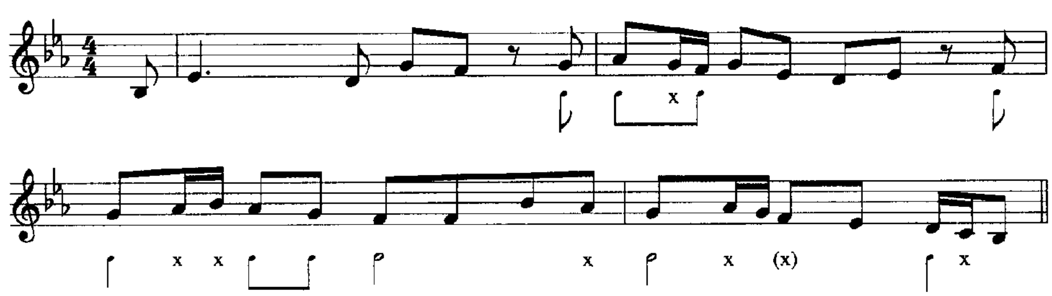
The most important goal in the study of harmony is to be able to hear the functional relationships between chords. Although the following excerpts were not limited to the three primary triads in their original settings, their background structures can all be derived from the primary-triad progressions shown in Ex. 2:13. Label the harmonic implications of the melodies in Exs. 2:19-22 with the functional symbols T, S, and D. In these examples, there can be more than one stylistically correct harmonization. Sing each melody while playing its harmonic progression at the keyboard. The notes marked x should not be harmonized; notes marked (x) may be harmonized, but do not require harmonization.



Example 2:21
Charpentier - *Te Deum*



Example 2:22
Handel-*"He was despised"* from *Messiah*



2. First-Inversion Triads

Around 1600, triads were constructed from either the intervals of a third and fifth, or a third and sixth above the bass (see Chapter One, pp. 26-27). In four-voice works of that era, it was quite normal to double any triad member in a chord-of-the-sixth, while root-position triads almost always doubled the chord root. It was only much later, in the music of the Viennese Classical period, that the chord-of-the-sixth acquired its unequivocal role as an inverted root-position triad. During that period, doubling the bass (the third) in a chord-of-the-sixth became equated with the unacceptable practice of doubling the third in a root-position triad. Maler claims that the sonority content (*Klanggehalt*) of the Classical first-inversion triad is characterized by a lovely, gentle, less-robust and less-stable nature.[4] Therefore, the sensitive sound of this sonority, as it appeared during the time of Mozart and Haydn, can be attributed to the late eighteenth-century practice of doubling the root or fifth, but not the third.

---

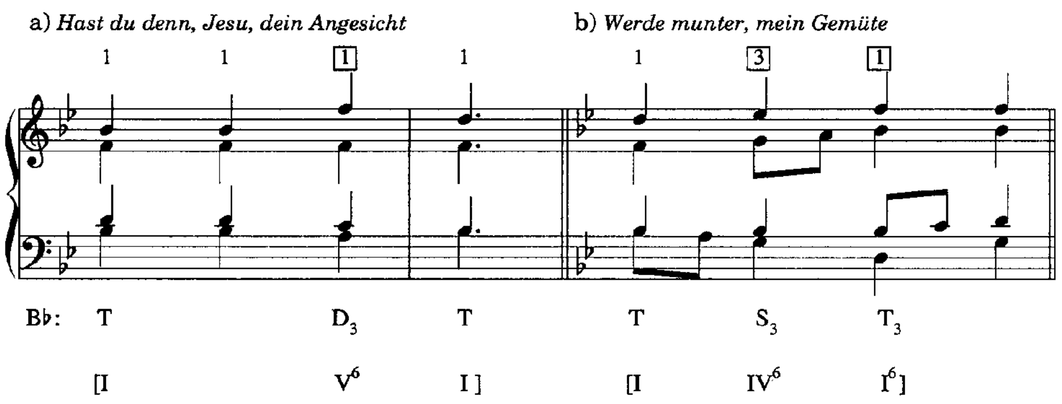
[4] Wilhelm Maler, *Beitrag zur durmolltonalen Harmonielehre*, 13th ed. (Munich: F.E.C. Leuckart, 1984).

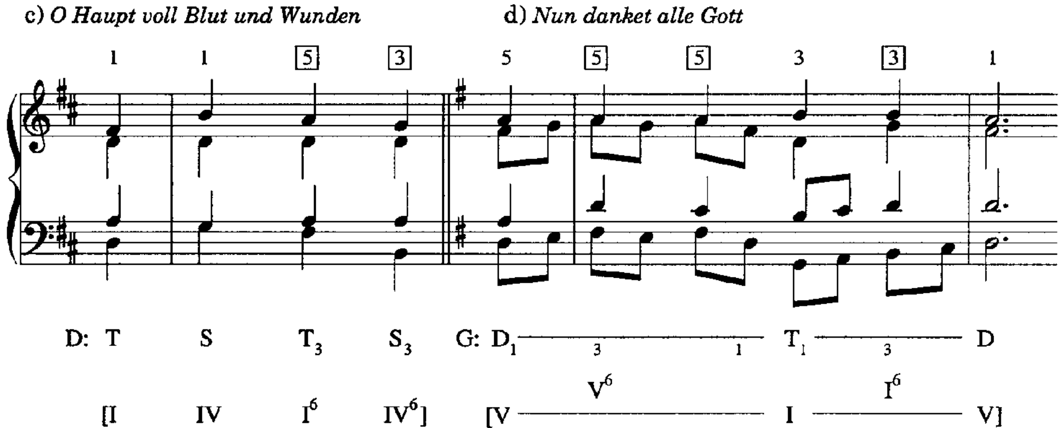
During the time of Bach, however, the chord-of-the-sixth was in a transitional phase between those practices employed around 1600 and those characteristic of the later eighteenth century. Nevertheless, between 1700 and 1750, the chord-of-the-sixth was already considered (in most instances) to be an inverted root-position triad; that is, it generally maintained the same harmonic function as the root-position triad with the same root. Furthermore, it is possible to find, at climax points, a number of examples of this sonority in early eighteenth-century compositions which seem to exhibit the same illuminating power and graceful sensitivity that would become so typical later.

However, as Exs. 2:23a-d and 2:24a-c show, four-voice works composed during the time of Bach generally followed the freer chord-doubling principles observed in homophonic works from around 1600.

Example 2:23a-d

Excerpts from the Chorales of Bach





Example 2:24a

Handel- *"All We Like Sheep"* from *Messiah*

1 [1] 3 1 1 [5] 1 1 1 [1] 3 1

All we like sheep

F: T_1 $_3$ S T D T_3 $_1$ D D T_3 S T

[I I^6 IV I V I^6 I V V I^6 IV I]

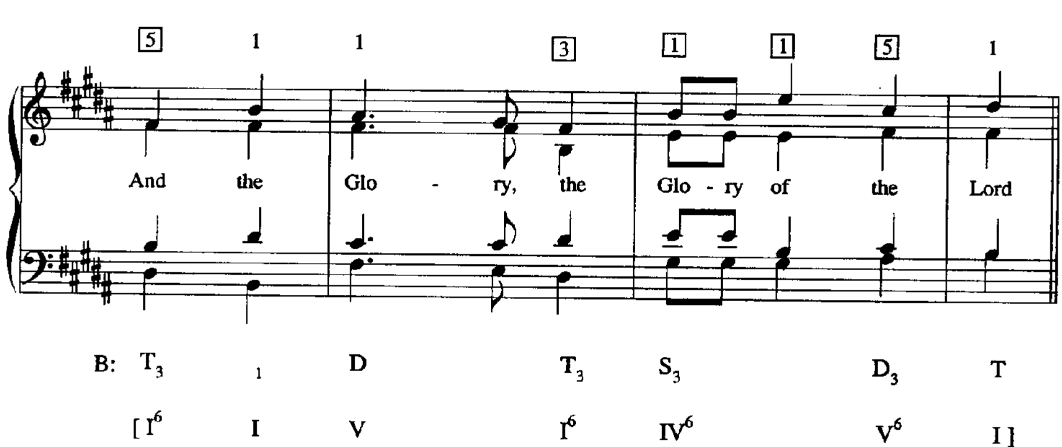
1 [1] 1 1 1 [5] 1 1

F: D_1 $_3$ T D T_1 $_3$ $_1$ D

[V V^6 I V I I^6 I V]

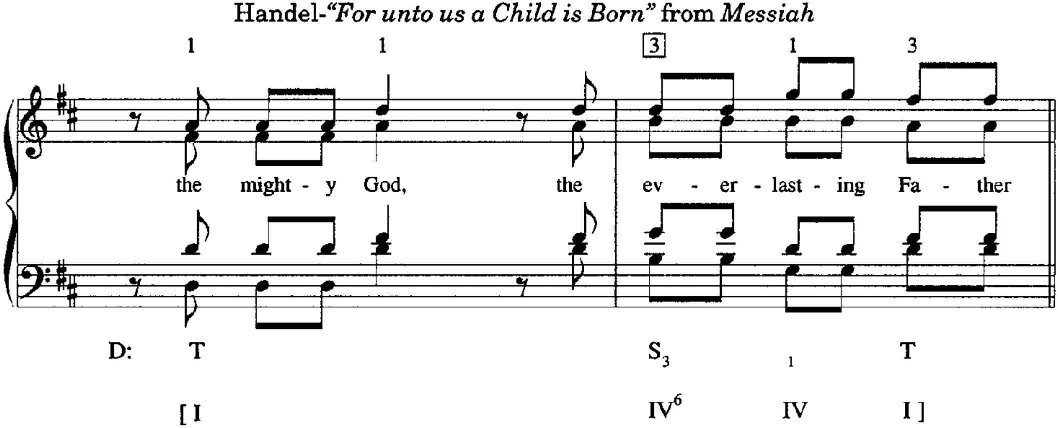
Example 2:24b

Handel- *"And the Glory of the Lord"* from *Messiah*



Example 2:24c

Handel-*"For unto us a Child is Born"* from *Messiah*



The frequently quoted rule that *first-inversion triads should double the root* must be confined to music from the Viennese Classical period, and should not be applied strictly to earlier eighteenth-century styles. The numbers found above Exs. 2:23a-d and 2:24a-c indicate which member of each triad is doubled. Root-position chords (labeled with an unboxed 1, 3 or 5) demonstrate a definite preference for doubling the root, whereas first-inversion triads (labeled with a [1], [3] or [5]) double the third and fifth just as frequently as the root. Ex. 2:25 is a table of chord-member doublings from seventeen works (or excerpts) composed between 1700 and 1750. Contrary to the doubling rules established by many harmony texts, the data in Ex. 2:25 indicate that it was possible to double any member of a first-inversion triad during the time of Bach.

Example 2:25

	Doubled Pitches					
	Root-Position Major Triads			**First-Inversion Major Triads**		
Chord Tone Doubled	1	3	5	1	3	5
Eight Bach Chorale Settings	153	7	5	21	32	20
Five Excerpts from Handel's *Messiah*	122	21	3	24	7	29
Four excerpts from Charpentier's *Te Deum*	112	8	6	13	11	8
Total	387	36	14	58	50	57

The sacred works of Haydn exemplify a more traditional and conservative approach to the use of musical materials, whereas his string quartets are known for their many new compositional techniques. Ex. 2:26 shows that chord doublings in the three excerpts from Haydn's *Harmoniemesse* correspond directly to doubling principles employed during the time of Bach. However, the four string-quartet excerpts seem to employ the later doubling principles.

Example 2:26

	Doubled Pitches					
	Root -Position Major Triads			**First -Inversion Major Triads**		
Chord Tone Doubled	1	3	5	1	3	5
Three Excerpts from Haydn's *Harmoniemesse*	80	25	6	25	14	21
Four Excerpts from Haydn's String Quartets	93	5(!)	10(!)	28(!)	5(!)	4(!)

Another common misconception is highlighted in Exs. 2:25-6. The examined excerpts in Ex. 2:25 show that Bach, Handel and Charpentier doubled the third of root-position triads a total of thirty-six times. Similarly, Haydn doubled the third of root-position triads twenty-five times in the excerpts from his *Harmoniemesse.* This results in a total of sixty-one times that the third is doubled, as opposed to only twenty times that the fifth is doubled. The frequently cited rule that *root-position major triads should most often double the root, followed next most often by doubling the fifth, and only in exceptional circumstances, the third* proves to be inaccurate for music from the time of Bach. In fact, this principle holds true only for Classical-period instrumental music (from which the rule was apparently derived). Notice that the string-quartet excerpts by Haydn (Ex. 2:26) do indeed follow the rule (the third of root-position triads is doubled only five times, whereas the fifth is doubled ten times).

Exercises: Play through Ex. 2:27. Here, differently voiced root-position major triads invert to chords-of-the-sixth and then return again to root-position sonorities. Become acquainted with the sound of all three doubling possibilities.

Example 2:27

doubled third

doubled fifth

doubled root

As Exs. 2:23a-d and 2:24a-c show, first-inversion triads can appear in both accented and unaccented metrical positions.

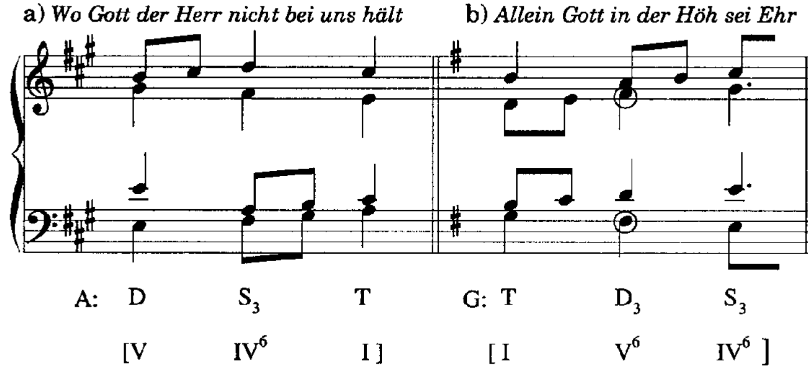
Exercise: In all major keys, play and write-out the following progression in four voices:

T_1 T_3 | S_1 S_3 | D_1 D_3 | T | S_3 S_1 | T_3 T_1 | D_3 D_1 | T ||

[I I^6 | IV IV^6 | V V^6 | I | IV^6 IV | I^6 I | V^6 V | I ||]

The rule cited earlier (p. 38), that *the dominant triad must be followed by the tonic triad,* does not seem to apply in the case where a root-position or first-inversion dominant triad is followed directly by a first-inversion subdominant chord. In fact, the progression D_3-S_3 [V^6 - IV^6] is not at all unusual in works composed during the first half of the eighteenth century. Ex. 2:28a-b shows two spots from the chorales of Bach where root-position or first-inversion dominant triads are followed immediately by a first-inversion subdominant chord.

Example 2:28



Ex. 2:28b also shows that the partwriting rule which forbids doubling of the leading-tone must be more precisely stated than is customary. In relation to music written during the time of Bach, the rule should actually read: *the leading-tone should not be doubled in a dominant chord that progresses directly to tonic.* Notice, in Ex. 2:28b (circled pitches), that Bach employs a doubled leading-tone in the progression D_3 - S_3 [V^6-IV^6].

First-inversion triads may be approached by step or leap in the bass, whether from a chord with the same root, or from a chord with a different function. When progressing away from a first-inversion triad, however, the bass most often moves by step. Since a first-inversion triad is somewhat less stable than a root-position triad, a stepwise progression in the bass following a first-inversion triad can help prevent an overemphasis of this expressive sonority. The bass tone of a first-inversion triad may leap downward by third to the root of the chord. This produces a root-position triad of the same function. A leap in the bass from a first-inversion triad to a chord of a different function is much less frequently encountered, however.

Exercise: In all major keys, play and write-out the following progression in four voices:

T D_3 | T | T_3 S | D | D_3 T | S_3 D | T_3 D | T | S T_3 | S | T ‖

[I V^6 | I | I^6 IV | V | V^6 I | IV^6 V | I^6 V | I | IV I^6 | IV | I ‖]

[/ or \ indicates required motion by step in the bass after first inversion triads]

First-inversion triads also frequently follow one another in a harmonic progression. When this is the case, leaps in the bass are unobjectionable.

Exercises: In all major keys, play and write-out the following progression in four voices.

T T_3 | S_3 S | T_3 D_3 | T | S_3 T_3 | S T | S_3 D_3 | T ‖

[I I^6 | IV^6 IV | I^6 V^6 | I | IV^6 I^6 | IV I | IV^6 V^6 | I ‖]

When working-out these exercises, attempt to double about an equal number of roots, thirds, and fifths in the first-inversion triads. The root-position triads, however, should nearly always double the root.

For practice with D-S_3 [V-IV^6] and D_3-S_3 [V^6-IV^6] progressions, play and write-out the following harmonization problem in four voices. Complete in all major keys.

T D_3 | S_3 D | T T_3 D | S_3 T D_3 | T ‖

[I V^6 | IV^6 V | I I^6 V | IV^6 I V^6 | I ‖]

The following bass lines (Exs. 2:29a-c) are excerpts from well-known choruses in Handel's *Messiah*. Copy these bass lines to the bottom line of a two-staff system. Write the correct functional symbols below each bass line and complete a correct harmonization of your functional analysis by adding the top three voices.

Example 2:29a

Handel-*"Hallelujah"* from *Messiah*

Example 2:29b

Handel-*"And the Glory of the Lord"* from *Messiah*

Example 2:29c

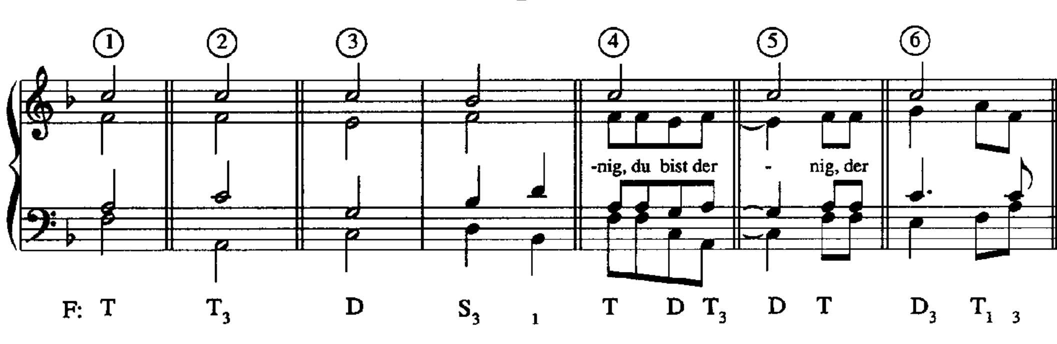
Handel-*"And the Glory of the Lord"* from *Messiah*

The pitches at x should not be harmonized

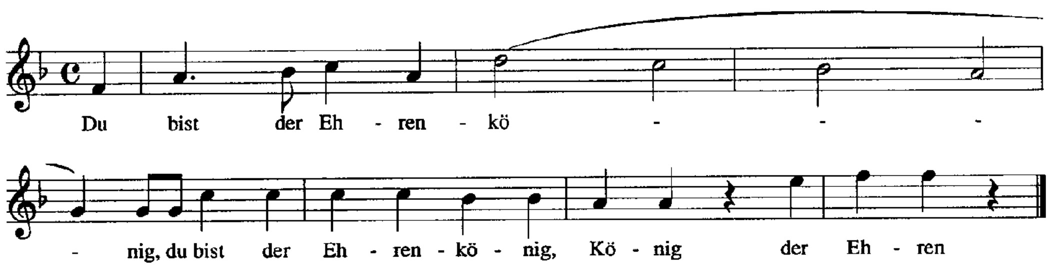
The implied harmonic progressions in each of the bass lines (Exs. 2:29a-c) are quite clear, but the soprano lines in Exs. 2:31 a-c can be harmonized in a number of different ways.

Exercises: Copy each of the soprano lines in Exs. 2:31 a-c to the top line of a two-staff system and complete a harmonization of each soprano by adding the three bottom voices. It is important to experiment with the different harmonic implications of each soprano line when working-out these examples. Ex. 2:30 shows several different methods of harmonizing the seventh pitch in Ex. 2:31 a.

Example 2:30



Example 2:31a
Handel-*Utrecht Te Deum*



Translation: *"Thou art the honored King"*

Example 2:31b
Handel-*Utrecht Te Deum*

Translation: *"Day by day we pray to Thee"*

Example 2:31c
Handel-*Utrecht Te Deum*

Translation: *"In Thee, Lord, have I put my hope; let me live with Thee forever."*

3. Six-four Sonorities

Six-four chords (triads which contain tones a sixth and fourth above a bass pitch) were employed in four different ways during the time of Bach. Of these four, two treat the sonority as a dissonance, and two as a consonance. The *pedal six-four* and *suspension six-four* are considered dissonant, since the bass tone is heard as the chord root, while the other two chord members (the sixth and fourth above) sound as dissonant voices which require resolution. The *arpeggio six-four* and *passing six-four* are considered to be consonances, because the bass is perceived as the fifth of the chord.

Pedal Six-Four Chords: In order to form a pedal six-four, it is necessary to begin with a bass pitch that is shared (*pedal point*) among three successive sonorities. Beginning with a root-position triad, two upper voices containing the third and fifth above the bass move to their respective upper-neighboring tones (a sixth and fourth above the bass). Although a pedal six-four may be approached more freely than departed (see Ex. 2:32b), the sixth and the fourth often resolve again to the same pitches from which they were approached (see Ex. 2:32a). The pedal six-four chord usually occurs in a metrically weak position and, in four-voice texture, the bass is always doubled. Exs. 2:32c-d include excerpts from works by Handel and Vivaldi which employ the pedal six-four.

Example 2:32a-b

a) Pedal $^6_4$ chords

b) Pedal $^6_4$ chords (freer use of voice leading)

C: T^5_3 $^6_4$ $^5_3$ D^5_3 $^6_4$ $^5_3$ | T^5_3 $^6_4$ $^5_3$ | T^5_3 $^6_4$ $^5_3$

[I^5_3 $^6_4$* $^5_3$ V^5_3 $^6_4$† $^5_3$] [I^5_3 $^6_4$* $^5_3$ I^5_3 $^6_4$* $^5_3$]

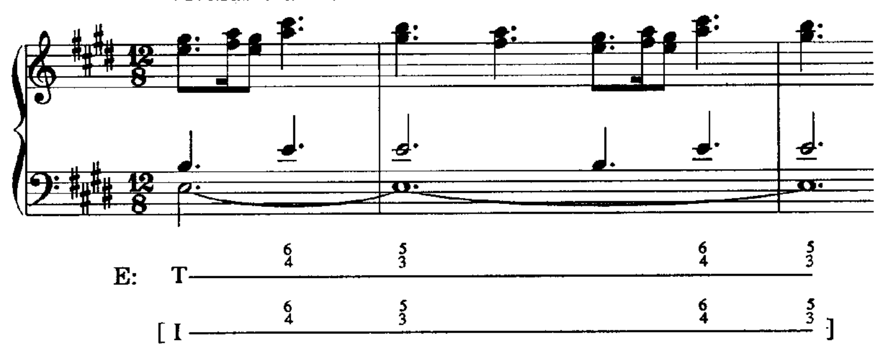
In many English language harmony texts, the chords at * would be labeled IV^6_4; the chord at † would be I^6_4 (see caption to Ex. 2:5 on p. 32 and Translator's Foreword).

Example 2:32c

Handel-*"Pifa"* from *Messiah*

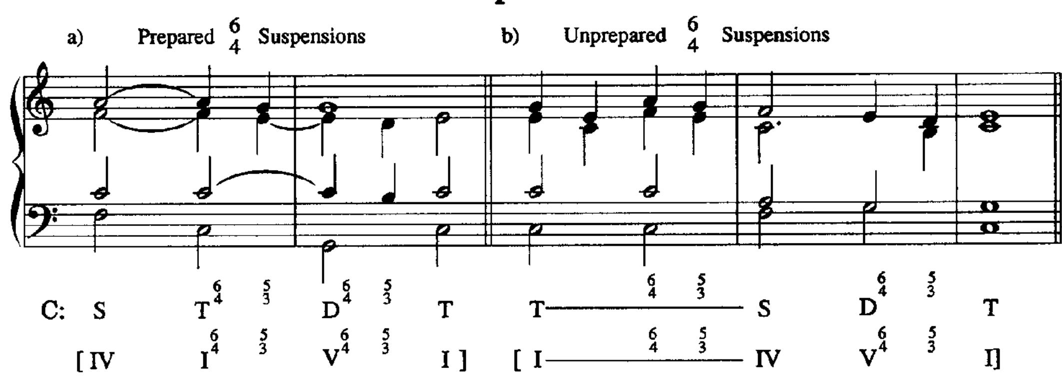
Example 2:32d

Vivaldi-*"La Primavera"* from *The Four Seasons*



Suspension Six-Four Chords: A suspension six-four chord is formed when the fifth and the third of a root-position triad are preceded, respectively, by the dissonant intervals of a sixth and fourth above a stationary bass pitch. The double-suspension figure (six-four) is always introduced in a strong metrical position, followed by resolution to the fifth and third in a weak metrical position. The dissonant sixth and fourth may be prepared as consonant members of the previous sonority (see Ex. 2:33a), or they may enter unprepared (see Ex. 2:33b).

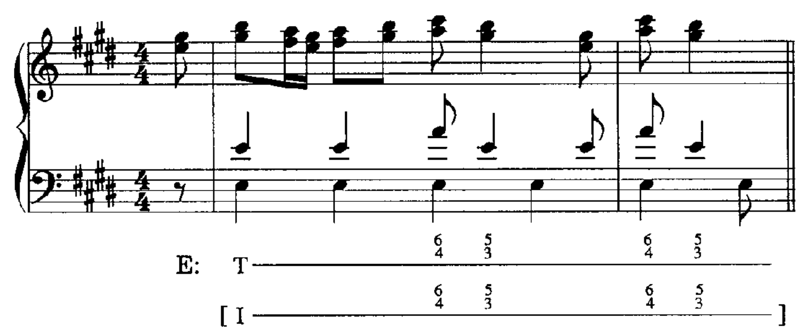
Example 2:33a-b



The dissonant dominant six-four chord (D^6_4) [V^6_4], often called the *cadential six-four*, is a very important element in the construction of final cadences. Exs. 2:34a-c show the frequently employed *pedal six-four / suspension six-four* combination. This six-four sonority always enters in a strong metrical position and resolves in a weak metrical position.

Example 2:34a

Vivaldi-*"La Primavera"* from *The Four Seasons*

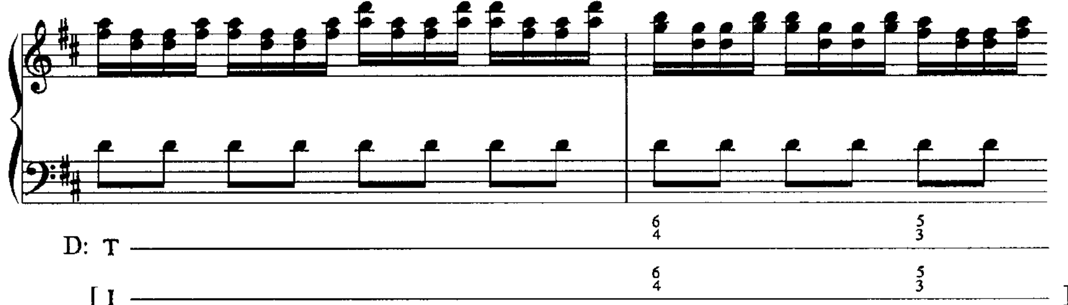


Example 2:34b

Handel-*"Pifa"* from *Messiah*

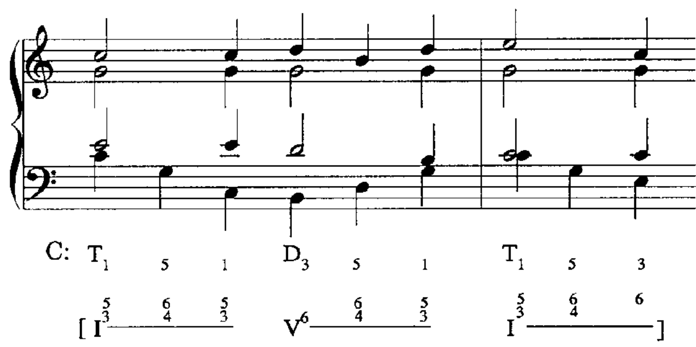
Example 2:34c

Handel -*"And Suddenly There Was With The Angel"* from *Messiah*

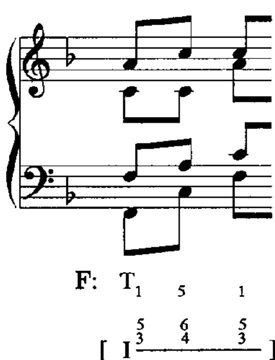


Arpeggio Six-Four Chords: An arpeggio six-four chord is created when, in a series of successive triads with the same root, the bass skips through the triad members from root or third to the fifth and back again to the root or the third (see Ex. 2:35a). The more harmonically stable surrounding chords (root-position or first-inversion triads) make clear the function of the less stable six-four chord. In this case, the six-four chord is functionally equivalent to the chords on either side and, therefore, is perceived to be consonant (a second-inversion triad). Exs. 3:35b-c contain excerpts from the works of Handel and Vivaldi which employ the arpeggio six-four.

Example 2:35a
Examples of the Arpeggio Six-Four Chord

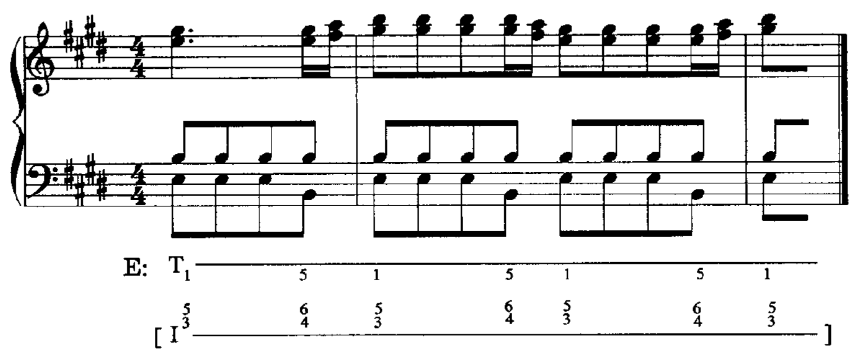


Example 2:35b
Handel-Concerto Grosso



Example 2:35c

Vivaldi- *"La Primavera"* from *The Four Seasons*

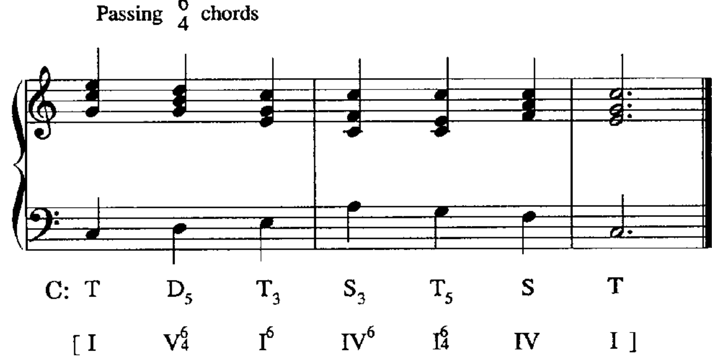


The arpeggio six-four (T_5) [I^6_4] is incorrectly employed in Ex. 2:36 because it is not followed by a more stable tonic-function chord (T_1 or T_3) [I or I^6], but by a chord of a different function.

Example 2:36

Passing Six-Four Chords: The passing six-four chord also occurs between two more-stable consonances (often between a root-position triad and a first-inversion triad with the same function). The bass line both approaches and departs the passing six-four by step, smoothly connecting the less stable six-four with the stronger consonances on either side. Because of this smooth motion in the bass, the passing six-four is perceived to be consonant. Exs. 2:37a-c show how the passing six-four was used in early eighteenth-century music.

Example 2:37a

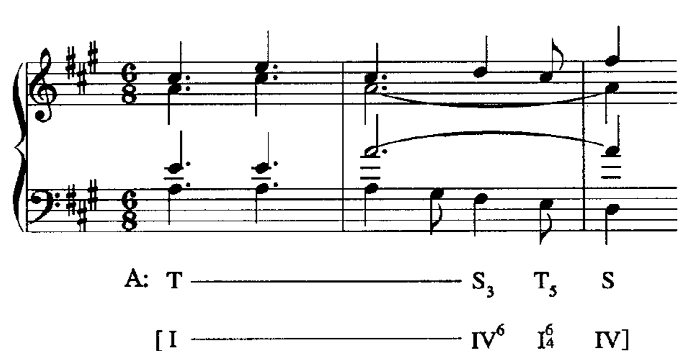


Example 2:37b

Handel-*Xerxes*

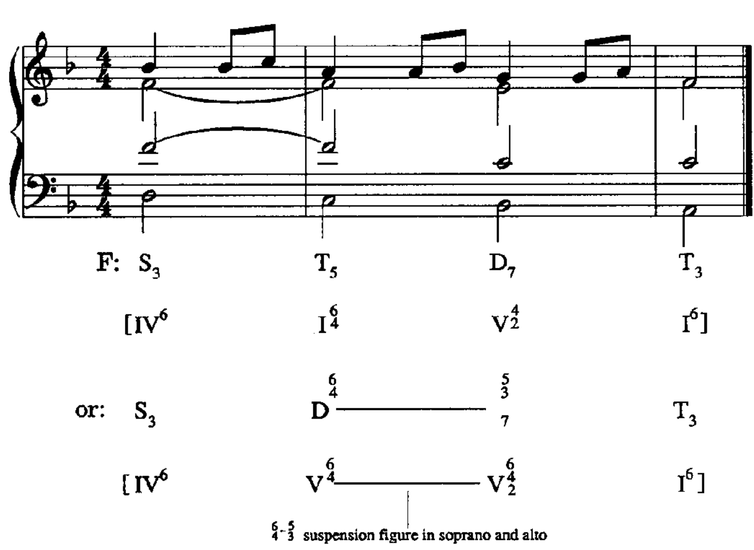
Example 2:37c

Handel-*Xerxes*



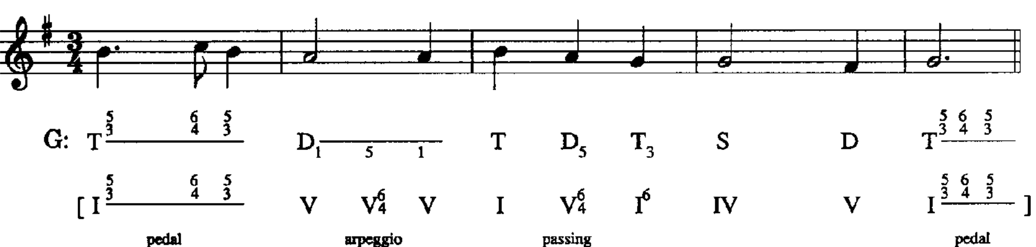
Ex. 2:38 shows the suspension six-four and the passing six-four in combination. This musical structure occurs when a six-four chord is placed in a strong metrical position while the bass approaches and leaves the six-four by step. Because it is possible to consider the second-inversion triad in Ex. 2:38 either as a passing six-four (consonance) or a suspension six-four (dissonance), two separate analyses are provided.

Example 2:38
Telemann-*Tafelmusik*

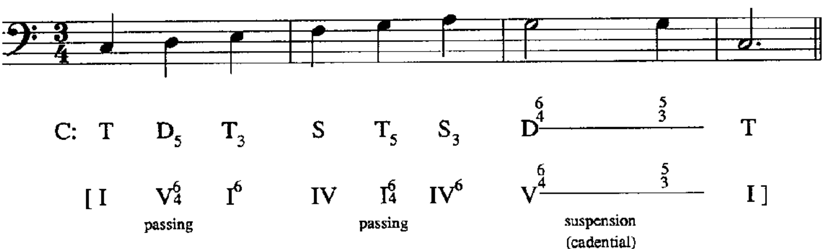


Exercise: Play and write-out: 1) the three lower voices for the given soprano line in Ex. 2:39a; 2) the three upper voices for the given bass line in Ex. 2:39b. Become familiar with the various types of six-four chords which are required to harmonize the examples. Transpose and play your solutions in all major keys.

Example 2:39a



Example 2:39b



In the cadential six-four, the suspension figure ($D^{6\ 5}_{4\ 3}$) [$V^{6\ 5}_{4\ 3}$] appears more often than any of the other six-four constructions.

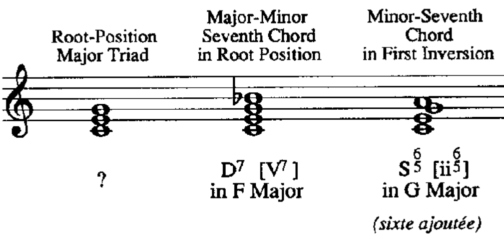
Exercise: Play the following progression in all major keys.

$$\begin{array}{lllll} T & S & D^6_4 & {}^5_3 & \mid T \\ [I & IV & V^6_4 & V^5_3 & \mid I] \end{array}$$

4. Characteristic Dissonances

Although the tonal function of a single root-position major triad is uncertain, when a minor seventh is added above its root the resulting major-minor seventh chord takes on a dominant function. If a major sixth is added above the root of the same triad, however, the resulting minor-seventh chord (first inversion) takes on a subdominant function (Rameau: *sixte ajoutée*). See Ex. 2:40.

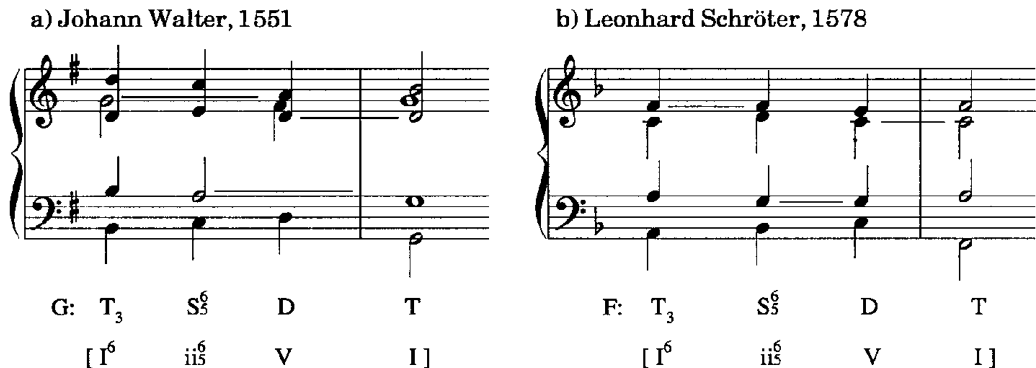
Example 2:40



Harmony texts customarily devote a section to these two dissonant sonorities, but the differences in their origins, voicing considerations, and distinctive features are not usually covered. For that reason, I will devote some time to a discussion of these issues.

Origins of the Added-Sixth Chord: The added-sixth chord (*sixte ajoutée*) is a somewhat older sonority than the dominant-seventh chord. As Ex. 2:41 shows, by 1600 the added-sixth chord had already long been considered an important element in the construction of cadences.

Example 2:41



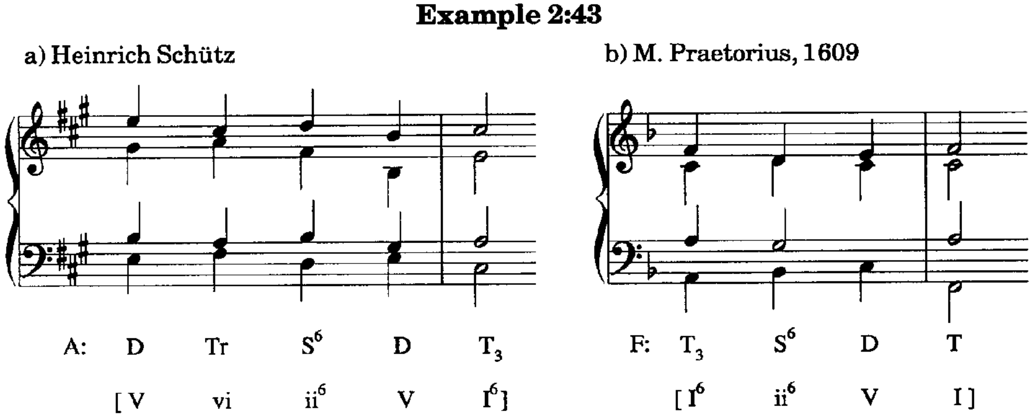
By employing the S^6_5 [ii^6_5] chord, it is possible to construct a basic cadence pattern where all sonorities are smoothly connected by common tones (see Ex. 2:41). This is not possible with root-position primary triads (see p. 29). When used in cadences, the S^6_5 [ii^6_5] is always followed by $D^{6\ 5}_{4\ 3}$ [$V^{6\ 5}_{4\ 3}$] or D [V], but never by T [I].

Exercise: Play the cadence patterns in Ex. 2:42 in all major keys.

Example 2:42

Voicing Considerations in the Added-Sixth Chord: The harmonic implications of the added-sixth chord are nearly identical to those associated with the chord-of-the-sixth. As is shown in Ex. 2:43, the practice of replacing the fifth of a triad with a sixth is quite old, originating from a time when the triad was considered to be a harmonic structure built from either a third and fifth or a third and sixth above a sounding bass tone (see p. 42).

Example 2:43



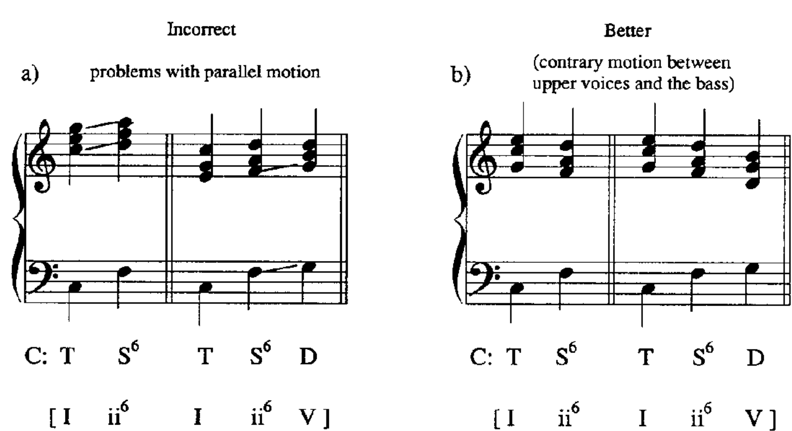
The subdominant chord-of-the-sixth (S^6) [ii^6] was regularly employed during the time of Bach. In four-voice settings, this sonority appears most often with its bass tone doubled. This runs somewhat contrary to the practice ca. 1600, where any chord member in a chord-of-the-sixth could be freely doubled (see p. 26). In music from before the time of Bach, it is better to consider the S^6_5 [ii^6_5] sonority to be a simultaneous sounding of a fifth and sixth above a bass tone, rather than as a triad with an added sixth.

Exercises: The three chord progressions in Ex. 2:44 played a major role in music of both the Baroque and Classical eras. Play these progressions in all keys.

Example 2:44

As is demonstrated in Ex. 2:45a, it is easy for forbidden parallel fifths and octaves to occur in progressions which contain S^6 [ii^6] chords. Problems with parallel fifths and octaves are best avoided by the use of contrary motion between the upper voices and the bass (see Ex. 2:45b). Inversions of the S^6 [other inversions of ii] do not occur in compositions of this period.

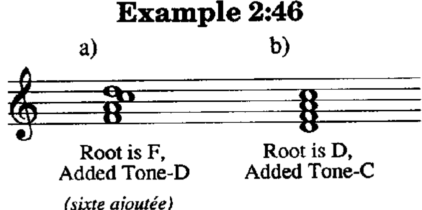
Example 2:45



Distinctive Features of the Added-Sixth Chord: When a minor seventh is added above a root-position major triad, the basic harmonic principle of constructing sonorities in thirds is not disturbed, and the chord root remains the same. The addition of this extra pitch actually makes the harmonic function of the resulting sonority unambiguous. For example, if F is added above the root-position triad G-B-D, G remains the sounding root, but the F provides a dissonant element that clarifies the strong dominant function of the sonority.

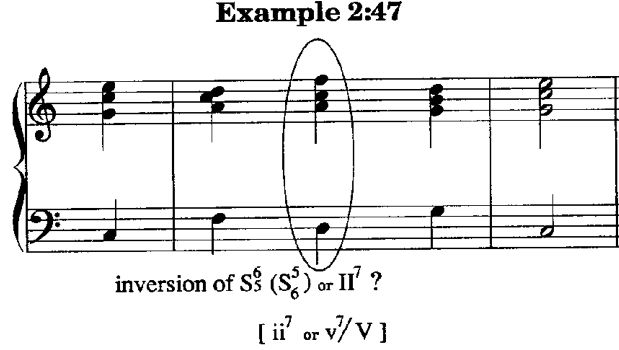
However, adding an extra pitch to a major triad in order to invoke subdominant function actually produces a sonority with functional ambiguity; that is, if we add a major sixth above the root of a root-position major triad, the resulting sonority can be interpreted in two separate ways. Starting with the added-sixth chord in Ex. 2:46a, a root-position minor-seventh chord is formed by restacking the same pitches in thirds (see Ex. 2:46b). The pitch reconfiguration in Ex. 2:46b expresses a completely different harmonic function than is implied by the sonority in Ex. 2:46a. As we have discussed, a root-position minor-seventh chord functions (according to Rameau) similarly to a dominant-seventh chord (see p. 30). Though the sonority in Ex. 2:46b is a minor-seventh chord, like the true dominant-seventh (major-minor seventh), it tends to progress to a chord whose root is a perfect fifth lower. Because of the functional duality associated with the S^6_5, the progression T S^6_5 D T [I ii^6_5 V I] can actually be viewed as a fusion of the cadential progressions 1-4-5-1 and 1-2-5-1 [I-IV-V-I and I- v^7/V -V-I].

Example 2:46



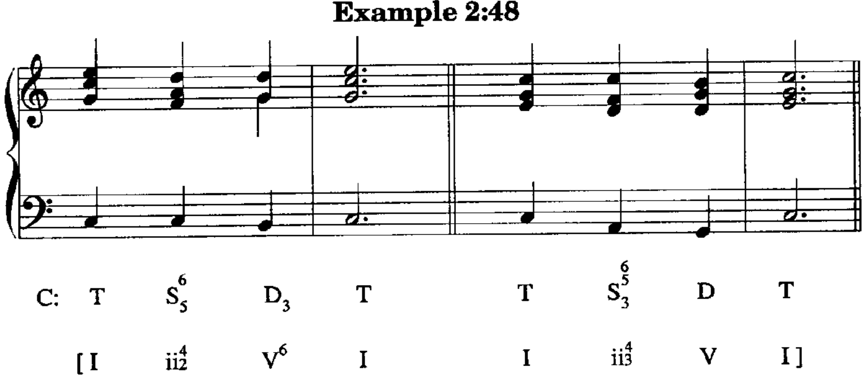
It is only a matter of opinion, whether the circled chord in Ex. 2:47 is an inverted S^6_5 (*sixte ajoutée*) or a *Rameau dominant* [v^7/V], since the roots of the following chords progress downward by perfect fifth twice, from D through the dominant (G) and on to tonic (C).

Example 2:47



Though inversions of the S^6_5 are rare, it is also possible for the third or the fifth to occur in the bass (see Ex. 2:48).

Example 2:48

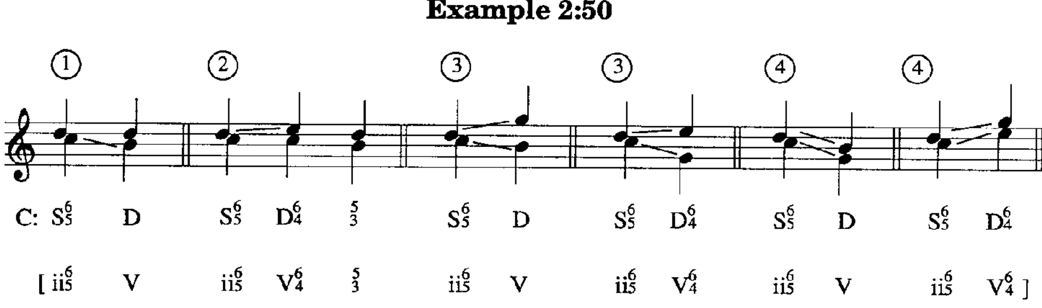


Exercise: In Ex. 2:49, S^6 and S^6_5 chords are somewhat overused in a fashion that has very little in common with actual music literature. Nevertheless, this exercise will provide extra practice in handling these sonorities. Harmonize the melody in four voices, and follow the functional progressions indicated. To gain further practice, write-out the exercise in various keys.

Example 2:49

As is shown in Ex. 2:50, the fifth and sixth above the bass in the S^6_5 tend to act as dissonances which push away from each other. In (1) the sixth (D) remains a common tone, while the fifth (C) moves downward; in (2) the fifth (C) remains a common tone into the D^6_4, while the sixth (D) moves upward; in (3) both fifth and sixth move apart from each other at the same time. Incorrect voice leading will result if both fifth and sixth move in the same direction toward the next chord (4).

Example 2:50

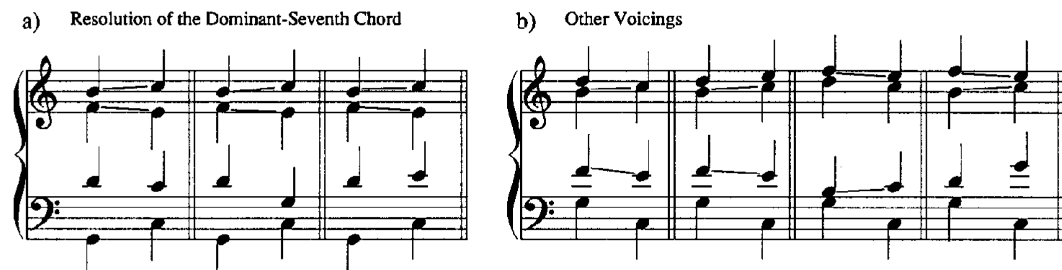


Origins of the Dominant-Seventh Chord: Though harmonic sevenths like those circled in Ex. 2:51a-c occurred in earlier music, the concept of discrete dominant-seventh chords first appeared in the time of Bach.

Example 2:51

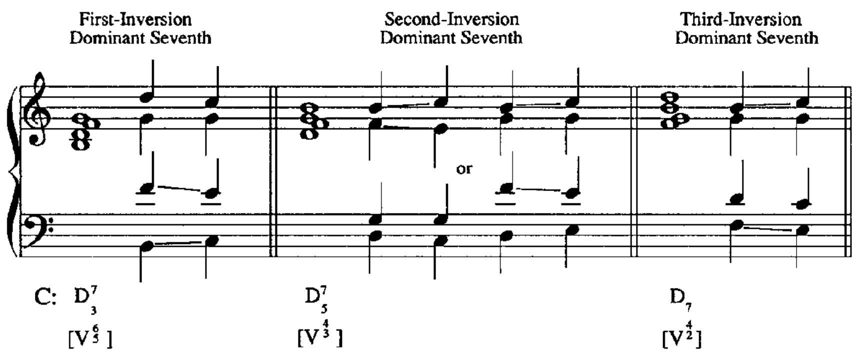
Voicing Considerations in the Dominant-Seventh Chord: Dominant-seventh chords are one of the most important sonority types in the music of the late Baroque. In fact, almost all final cadences in the works of Bach contain dominant-seventh chords. As is demonstrated in Ex. 2:52a-b, it is important that the following two principles of voice leading be observed when resolving dominant-seventh chords: 1) the seventh of a dominant-seventh resolves downward; 2) the leading tone (third of the dominant-seventh) resolves upward. Exceptions to these two rules are certainly possible, but alternative resolutions should be made consciously, and only after careful consideration. The only chord member of a dominant-seventh that may resolve freely is the fifth.

Example 2:52



Exercise: In various keys, write dominant-seventh chords in all possible voicings and then resolve them correctly to the tonic. Remember that the leading-tone (third) should resolve upward and the seventh downward. It is important at the beginning to acquire good self-discipline. Since every one of the four chord tones can serve as the bass note, there are three possible inversions of the dominant-seventh chord in addition to root position (see Ex. 2:53).

Example 2:53



Exercises: Write out and play the following progression in various keys:

$$T\ D_3^7\ T\ D_5^7\ T_3\ D_7\ T_3\ D_5^7\ T\ D^7\ T$$

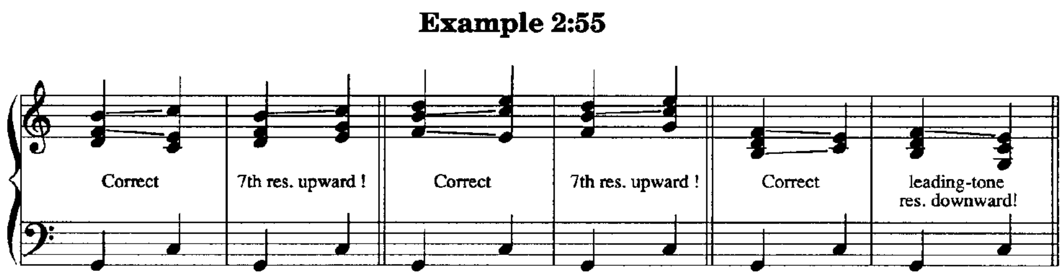
$$[I\ V^6_5\ I\ V^4_3\ I^6\ V^2\ I^6\ V^4_3\ I\ V^7\ I]$$

In music of the Bach-era, the dominant-seventh chord is often motivated, as it was in earlier times, by passing-tone motion. In four voices, harmonize the melody in Ex. 2:54; pay special attention to the passing-sevenths which are indicated by the functional symbols.

Example 2:54

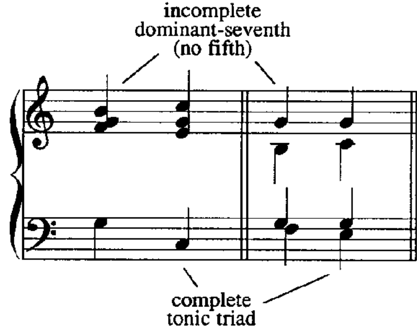
A completely spelled root-position dominant-seventh will normally resolve to an incomplete tonic triad (no fifth). If a complete tonic triad is desired after the dominant-seventh, either the seventh can move upward or the leading-tone downward, as long as these exceptions to regular voice leading occur in an inner voice. Do not break normal voice leading, if either the seventh or the leading-tone occurs in an outer voice. Ex. 2:55 shows that both complete and incomplete tonic chords may follow a dominant-seventh in late-Baroque literature.

Example 2:55



When spelled in four voices, a complete dominant-seventh chord contains no doubled tones. However, the fifth of a dominant-seventh chord may sometimes be omitted. In this case, the root of the chord is generally doubled. A dominant-seventh with a doubled root and no fifth, usually resolves to a complete tonic triad (see Ex. 2:56).

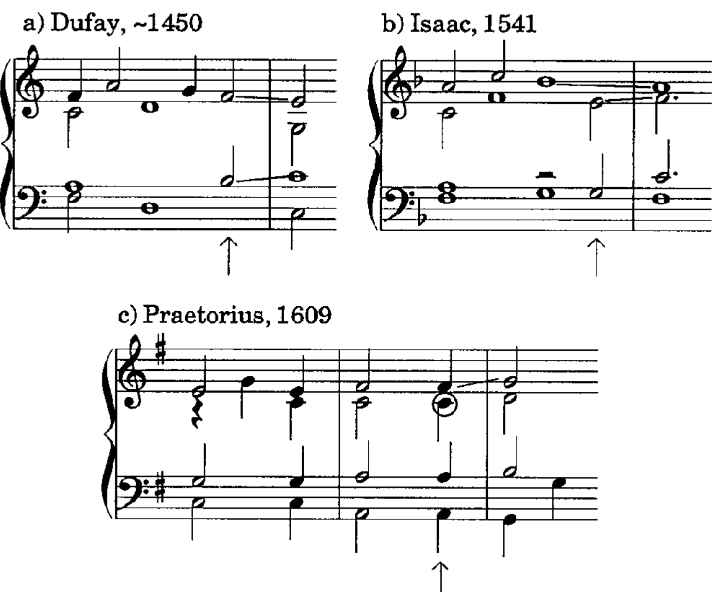
Example 2:56



Distinctive Features of the Dominant-Seventh Chord: It is the simultaneous sounding of the fourth scale degree and the leading-tone that gives the dominant-seventh its characteristic sound. This harmonic tritone was certainly employed in music long before Bach, but in the Baroque era this dissonance became strongly associated with the dominant-seventh chord.

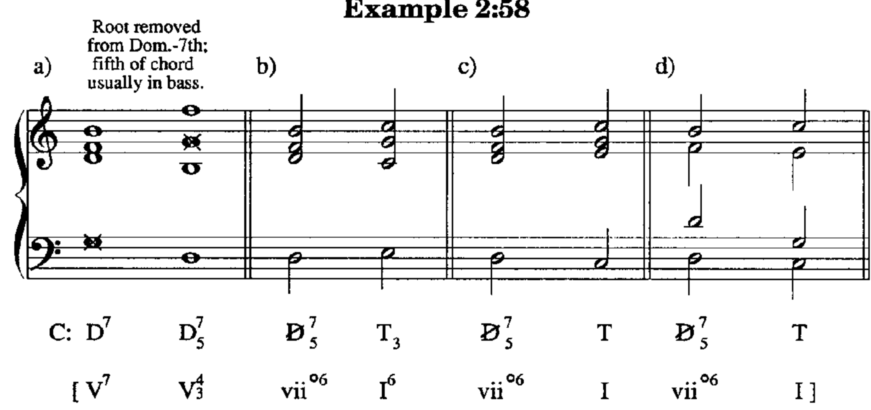
In the fifteenth and sixteenth centuries the chord-of-the-sixth , which contains a tritone, was considered to be consonant in the same way as the first-inversion triads , which do not contain tritones. Examples of these tritone-containing triads can be seen at the arrows in Exs. 2:57a-c. In Ex. 2:57c, notice that only one of the two pitches of the tritone actually resolves; the leading tone resolves upward, but the fourth scale degree (circled note) does not resolve downward.

Example 2:57a-c



Because of the increasing importance placed on the dominant-seventh chord, the leading-tone triad was often viewed during the time of Bach as an incomplete dominant-seventh (i.e., a dominant-seventh chord with an omitted root). We shall call this sonority an *abridged dominant-seventh chord* and label it with the functional symbol $\not{D}^7$ [vii°].[5] Since the $\not{D}^7$ appears most frequently with the fifth of the dominant [third of the vii°] in the bass, the functional symbol $\not{D}^7_5$ [vii°6] will be used for this most common case. Ex. 2:58a shows how the abridged dominant-seventh chord is similar in structure to the dominant-seventh; Exs. 2:58b-d demonstrate several methods of resolving the $\not{D}^7_5$ to tonic.

Example 2:58

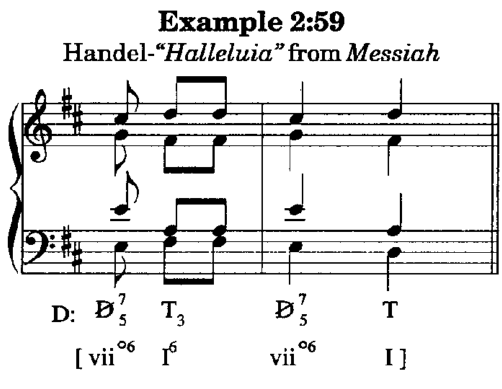


As was mentioned above, the triad B-D-F was considered to be a consonant sonority in earlier music, despite the interval of a tritone between B and F. During the late Baroque, however, both the dominant-seventh and the abridged dominant-seventh were considered to be tension-producing dissonances. This historical change from consonance to dissonance is an interesting example of how musical practices changed over the course of time.

In the time of Bach, abridged dominant-seventh chords resolved either to root-position or first-inversion tonic triads. Ex. 2:59 demonstrates both types of resolutions.

Example 2:59

Handel-*"Halleluia"* from *Messiah*



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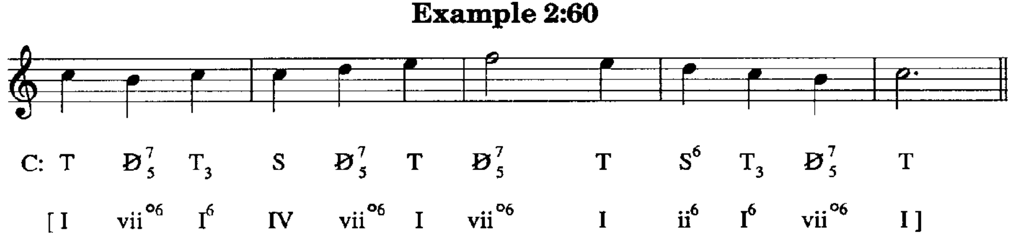
[5] The slash through the dominant symbol ($\not{D}$) indicates that the root tone of the dominant chord is omitted.

The dissonant harmonic tension that is normally present between root and seventh in a complete dominant-seventh is missing in the abridged dominant-seventh. This makes it possible to resolve the seventh of the abridged dominant-seventh [fifth of the vii$^{\circ 6}$] upward to the fifth of the tonic. In four voices, it is usual to double the bass in the Đ$^{7}_{5}$ chord [i.e., the fifth of D/third of the vii$^{\circ 6}$]. The leading-tone [third of D/root of vii$^{\circ 6}$] should never be doubled.

Exercise: Write-out and play the harmonic progression in Ex. 2:60.

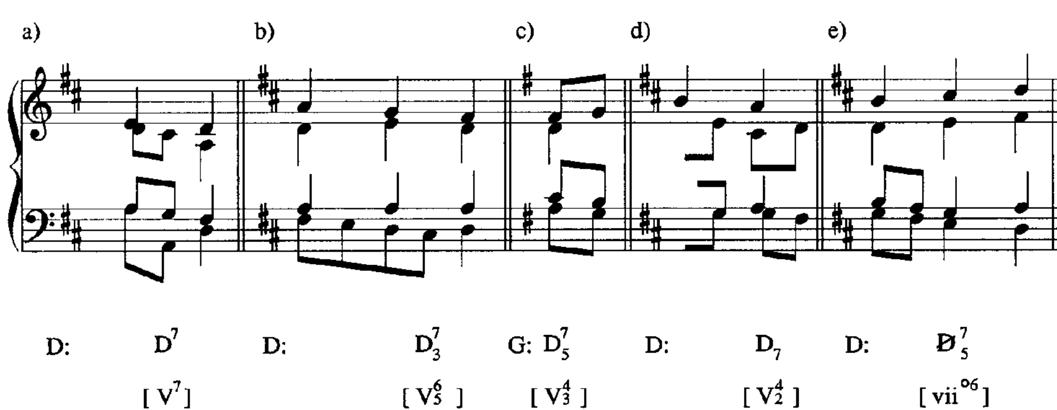
Example 2:60



All four inversions of the full dominant-seventh as well as the abridged dominant-seventh chord (D$^{7}_{5}$) [vii$^{\circ 6}$] are present in Ex. 2: 61a-e.

Example 2:61a-e

Bach- *"Ach mein herzliebes Jesulein"* from *Christmas Oratorio*



One of the most frequently encountered closing gestures in the chorales of Bach is a descending melody line which settles on the root of the final tonic chord. (See Ex. 2:62)

Example 2:62

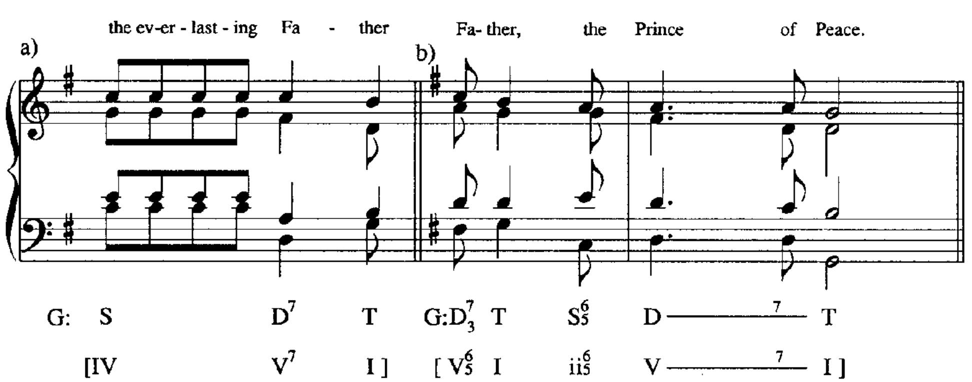
Bach-*Nun preiset alle*

Ex. 2:63a-e shows a number of ways that the S^6_5 [ii^6_5] and D^7 [V^7] chords can be used in final cadences.

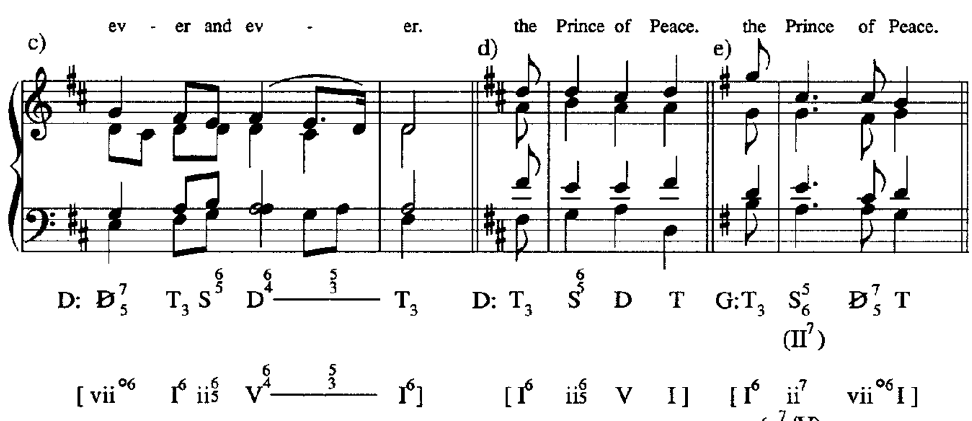
Example 2:63a-e

Handel-Excerpts from *Messiah*

"For Unto Us a Child is Born"

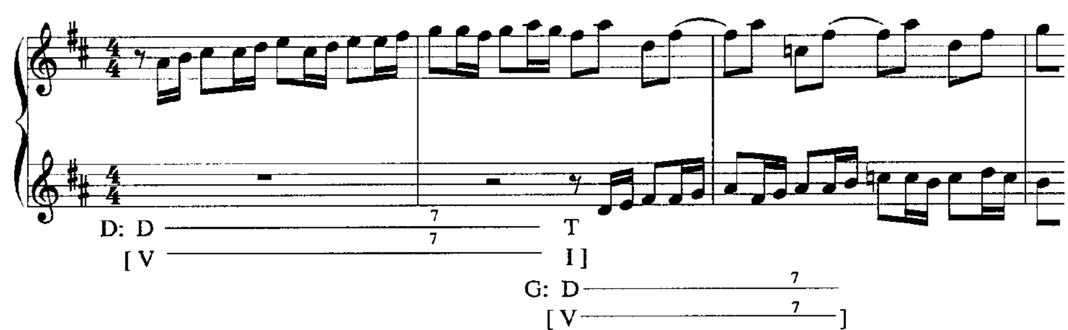


"Hallelujah" *"For Unto Us a Child is Born"*

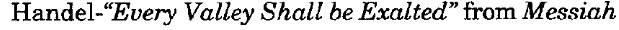


The dominant-seventh chord is not limited either to its role as a strong closing sonority or to its function as a powerful agent for harmonizing melodies. It can also directly generate melodies. Exs. 2:64a-f contain six musical excerpts whose melodic lines were fashioned from the pitches of the dominant-seventh.

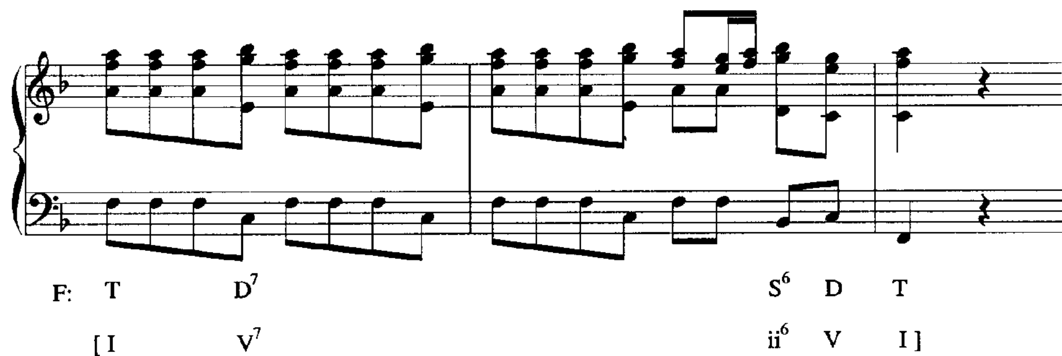
Example 2:64a
Bach-Suite in D-major



Example 2:64b
Handel-*"Every Valley Shall be Exalted"* from *Messiah*

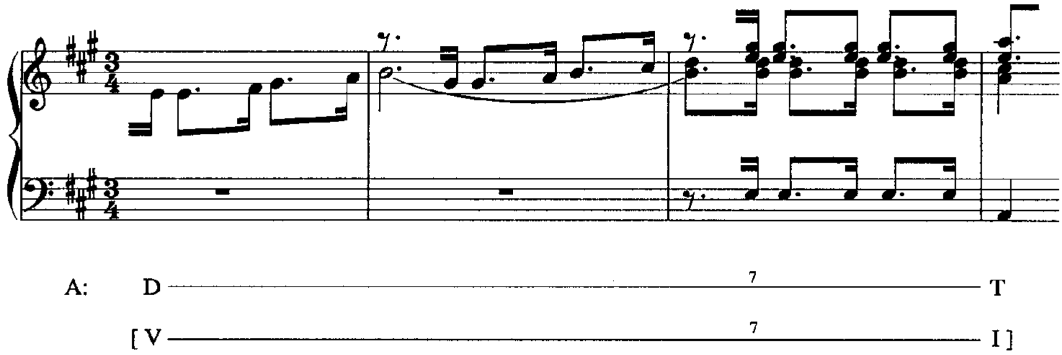


Example 2:64c
Vivaldi-*"L'Autunno"* from *The Four Seasons*



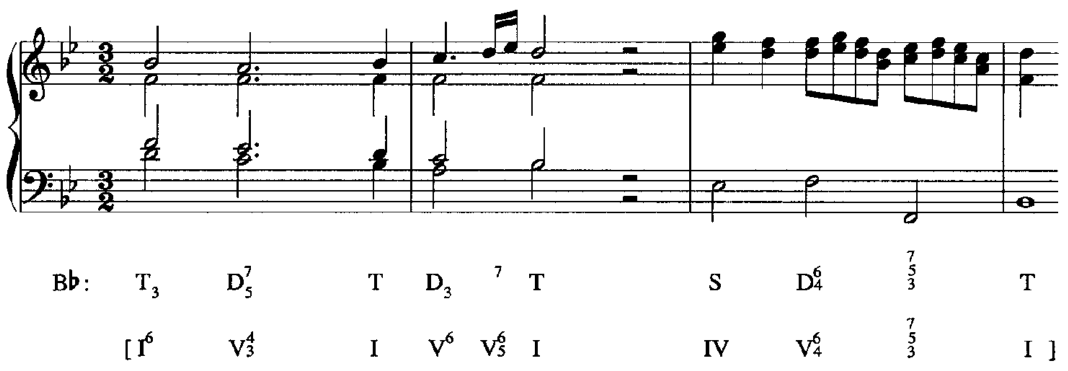
Example 2:64d

Vivaldi-Concerto grosso



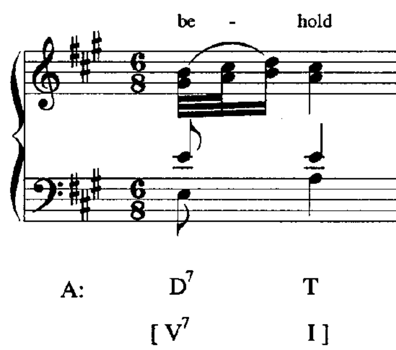
Example 2:64e

Telemann-*Tafelmusik*



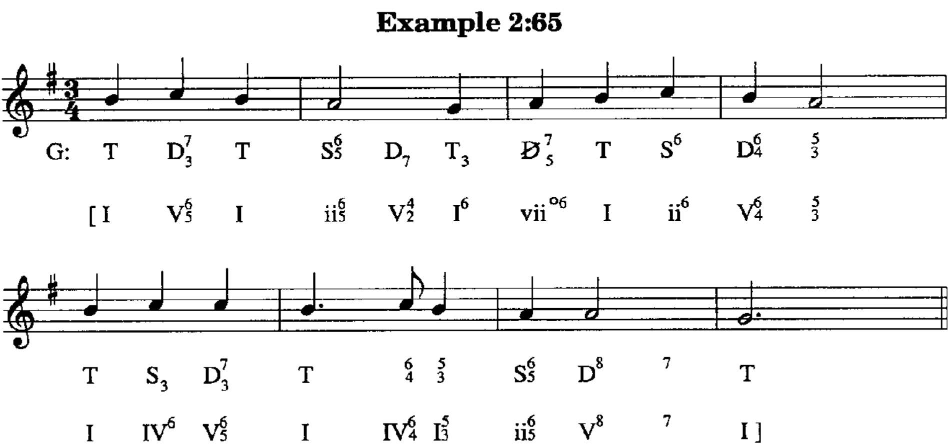
Example 2:64f

Handel-*"O Thou that Tellest Good Tidings to Zion"* (Chorus) from *Messiah*



Exercises: Set Ex. 2:65 in four voices and play your solution at the keyboard. Though the melodic line has only a minimum amount of interest, the suggested chord progression should provide rich harmonic variety.

Example 2:65



Write out the bass line in Ex. 2:66 twice. The first time, harmonize it conservatively, without much change in the tessitura of the upper voices; the second time, set the bass line with as highly expressive a soprano as possible.

Example 2:66

Harmonize the single lines in Ex. 2:67a-f and play-through your solutions.

Example 2:67a

Telemann-Suite for Strings *"La Lyra"*

Example 2:67b

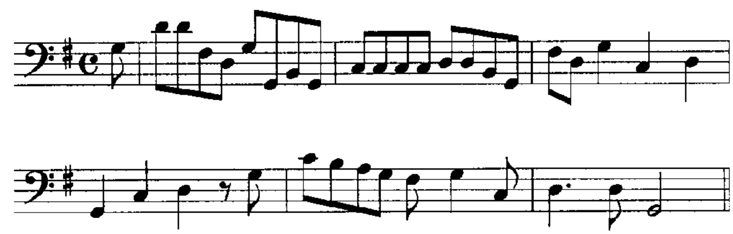
Telemann-Suite for Strings *"La Lyra"*

Example 2:67c

Handel-*"Every Valley Shall be Exalted"* from *Messiah*

Example 2:67d
Handel-*"But Thanks be to God"* from *Messiah*

Example 2:67e
Handel-*"For Unto Us a Child is Born"* from *Messiah*



Example 2:67f
Valentin Rathgeber, 1733

(If there were no hope, I couldn't go on;
since hope alone must always be my comfort.
I sleep and awake, and I do what I wish;
so, indeed, hope is my only aim.)

5. Non-Harmonic Tones

It is possible to create melodic motion in one or more voices without disturbing the underlying harmony. In fact, some melodies are totally constructed from broken chords. In Ex. 2:68, every pitch in the upper voices is actually a chord tone.

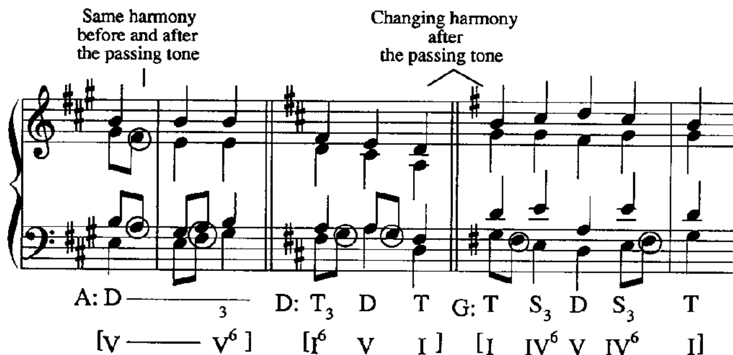
Example 2:68

More often, however, melody notes move freely between the chord members of a sonority or pass-by more quickly than the harmonic changes. In such cases, a melody may contain tones that do not belong to the underlying harmony at any given point. Since it is possible that non-chord tones can actually blur our perception of a harmonic function, it is essential that non-harmonic tones possess strong melodic justification.

Passing tones: A passing tone is the simplest of all the non-harmonic tones. It is always formed by stepwise motion between two chord tones. A passing tone may either lead to a different member of the same chord from which it came, or it may progress to a member of a new chord. A passing tone is always approached and left by step in the same direction, and it always occurs on a weak beat or portion of the beat.

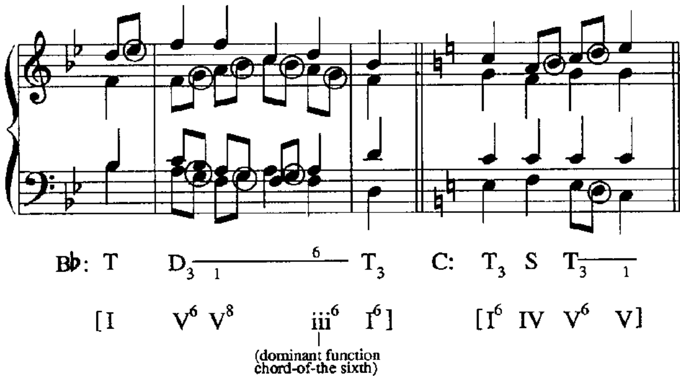
Exs. 2:69 and 2:70 show how Bach employs passing tones (circled notes) in several of his chorale settings.

Example 2:69



Example 2:70

Some passing tones occur between chords of the same function, and some between chords of different functions.

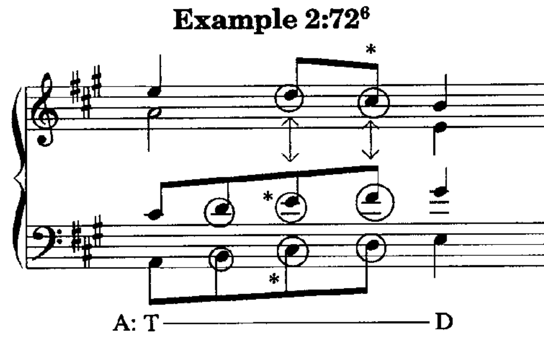


Passing tones may also occur in pairs between two chord tones a fourth apart. Example 2:71 shows how a double passing tone in the alto fills in the distance between the fifth of the chord (D) and the root (G).

Example 2:71

It is also possible to have passing-tone motion in more than one voice at the same time. When this occurs, the passing tones usually move in consonant intervals (thirds or sixths) with each other. Passing tones, however, may sometimes move in dissonant intervals against each other (see arrows in Ex. 2:72)

Example 2:72[6]



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[6] Technically, the three tones at the asterisks (*) are chord tones, but because of their place in the meter between two strong root-position chords, they should be considered part of a large non-harmonic tone complex.

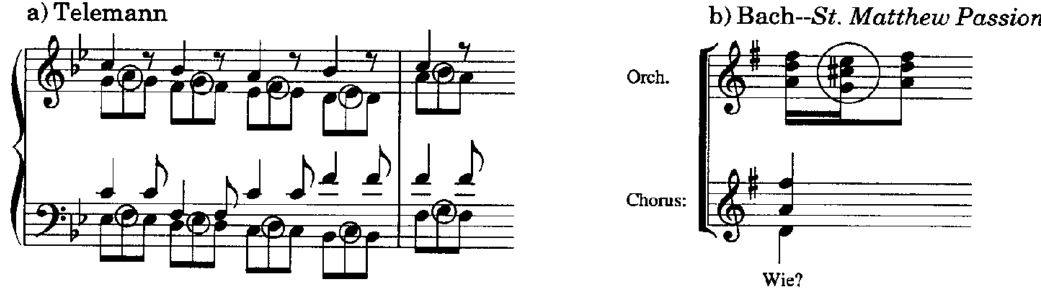
Neighboring Tones: Neighboring tones are produced when a voice moves a single step upward or downward from a chord tone. This dissonant tone then immediately returns to the original starting pitch. Neighboring tones always occur on weak beats or weak portions of the beat. As the circled notes in Ex. 2:73 show, music before the time of Bach favored lower-neighbors, since they are somewhat less conspicuous than upper-neighbors.

Example 2:73

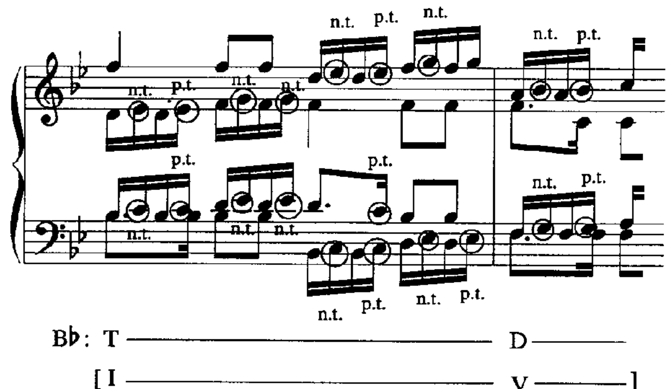
Monteverdi-Mass (1651)

The circled notes in Ex. 2:74a-b demonstrate that both lower- and upper-neighboring tones were freely used during the late-Baroque. Ex. 2:74c contains both neighboring tones and passing tones.

Example 2:74a-c

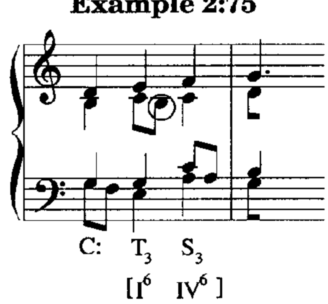


c) Handel--*"The Lord Gave the Word"* from *Messiah*



Most often, neighboring tones are treated as melodic ornaments applied to stationary harmony, but, as Ex. 2:75 shows, the returning consonant pitch may sometimes belong to a new chord.

Example 2:75

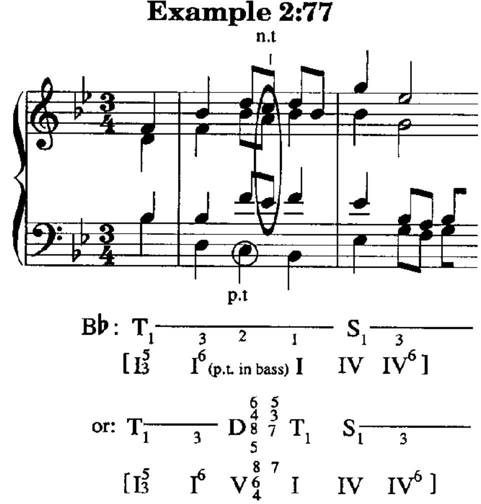


Though neighboring tones are common in *Siciliano* movements, Ex. 2:76 demonstrates a unique juxtaposition of two interacting neighboring tones. The top voice of the keyboard part includes two lower-neighbors (upward arrow), the first of which is introduced at the same time that the flute part returns from its upper-neighbor (downward arrow). Since the dissonant neighbor found in the keyboard occurs on a stronger portion of the beat, it receives slightly more rhythmic stress than the pitch before it or after it. Therefore, this neighboring-tone figure acquires additional weight, and a suspension-like texture occurs between the flute and keyboard parts.

Example 2:76
Bach-*Siciliano* from Flute Sonata

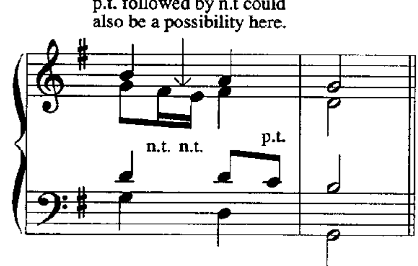
In Ex. 2:77, there are three neighboring tones (n.t.) and a passing tone (p.t.) which occur simultaneously, but in different rhythmic values [the neighboring tones appear in eighth-notes; the passing tone in quarter-notes]. The harmonic sonority formed by the confluence of these non-harmonic tones (second half of beat two) can also be viewed as a C-Eb-A chord ($Ð^7_5$ [vii$^{\circ6}$]), whose appearance is delayed one eighth-note by the action of a triple-suspension figure in the upper voices.

Example 2:77



The sixteenth-note figure in the alto of Ex. 2:78 must either be explained in terms of a double neighboring tone or be considered a foreshadowing of the passing-tone motion that will be established by the tenor voice in the next beat.

Example 2:78

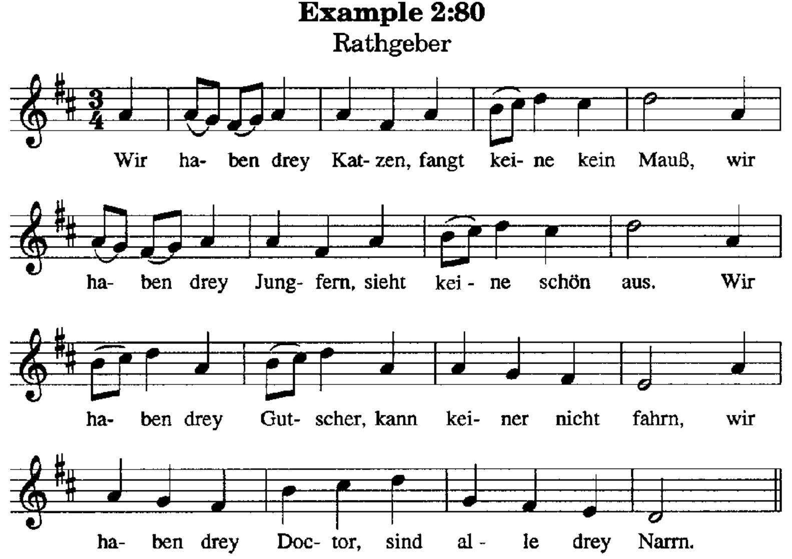


Preparatory Exercises: Add passing tones and neighboring tones to several four-voice settings you have already worked-out. It is quite easy, during your first attempts, for parallel fifths (like those found in Ex. 2:79) to slip into the texture. Try to avoid them by paying close attention to your partwriting. (Although parallel fifths are not completely absent from the works of the great Baroque masters, it would be incorrect to conclude that they regularly and consciously employed them.)

Example 2:79

Exercises with Passing Tones: Harmonize Ex. 2:80 in three or four voices. Provide the lower voices with passing-tone figures, especially in those places in the measure where the melody moves in longer note values.

Example 2:80
Rathgeber



(We have three cats, who can't catch a mouse,
We have three spinsters, who aren't very pretty.
We have three coachmen, who can't drive,
We have three doctors, and all three are fools.)

Exercises with Neighboring Tones: Set the melody in Ex. 2:81 in three or four voices. It should not be difficult to add neighboring tones to the lower voices in those places where there are already returning-note figures in the melody, but it is not necessary to confine yourself only to parallel neighboring tones.

Example 2:81

The bass lines in Ex. 2:82a-b provide a basis for exercises that run the gamut from easy to difficult. Try working with these bass lines the following three ways:

1) Provide functional symbols for the harmonic changes implied by the bass line. Most, but not all of the eighth-notes should be considered non-harmonic tones.

2) Using the bass lines in Ex. 2:82a-b, compose simple pieces for keyboard that maintain three voices in the right hand. To each of these accompanimental textures, invent an active and interesting melody, which should include a number of passing tones and neighboring tones. Be able to sing these melodies, while playing a keyboard accompaniment. Parallel perfect consonances that occur between the melody and the right hand of the keyboard should not be considered incorrect and can be ignored, but make sure to avoid parallel fifths and octaves between the melody and the bass.

3) Harmonize the two bass lines in four voices. Let one of the three upper voices present a nearly regular rhythmic motion (similar in scope to the bass line). This exercise should be written in open score on four staves.

Example 2:82a
Rathgeber

Example 2:82b
Rathgeber

Suspensions: In Chapter One, we discussed the cadential use of the suspended-fourth figure (see pp. 20-2). We also covered both the double suspension ($D^{6\ 5}_{4\ 3}$) [$V^{6\ 5}_{4\ 3}$] and the difference between prepared and freely introduced suspensions in Section Three above (see p.52).

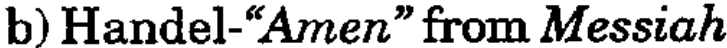
The excerpts in Ex. 2:83a-c contain further examples of these types of suspensions.

Example 2:83a-c

a) model:

C: T S^4 3 T^4 3 $D^{6\ 5}_{4\ 3}$ T^4 3

[I IV^4 3 I^4 3 $V^{6\ 5}_{4\ 3}$ I^4 3]

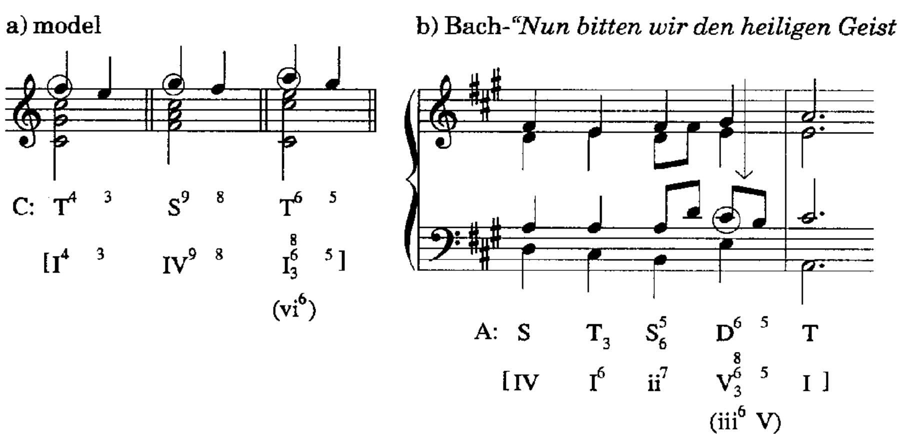


b) Handel-*"Amen"* from *Messiah*

c) Bach-*"Christmas Oratorio*

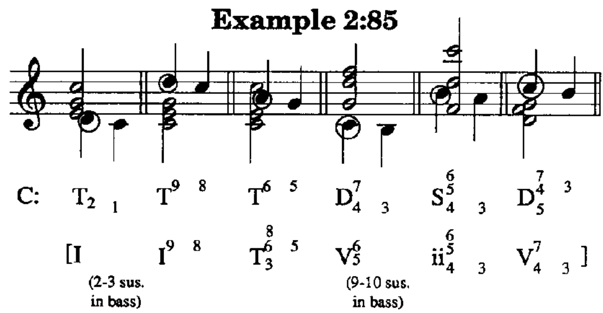
Each of the members of a four-voice root position triad (root, third, fifth and octave) can be rhythmically delayed by the presence of an upper-neighboring tone. Of all of the possibilities, however, the delayed third (4-3 suspension) is the oldest and most important in the late-Baroque. All of these delayed-resolution figures, except one, feature motion from a dissonance to a consonance. Only the 6-5 suspension figure demonstrates motion from one consonance to another. However, in compositions which contain many suspension figures, even the 6-5 figure takes-on a mildly dissonant character. (see Ex. 2:84)

Example 2:84a-b



Ex. 2:85 demonstrates various types of suspensions.

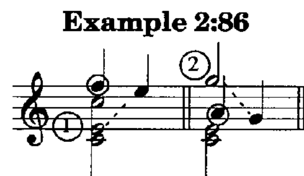
Example 2:85



The dissonant tone of a suspension always appears in a strong metrical position. Therefore, a passing-tone that occurs on a strong beat or portion will be considered a type of suspension (see arrows in Exs. 2:83-4).

In a 4-3 suspension [see (1) in Ex. 2:86] or a 6-5 suspension [see (2) in Ex. 2:86], the resolution tone should not sound in another voice at the same time as the suspended dissonance. This rule should be followed regardless of which member of the triad is doubled.

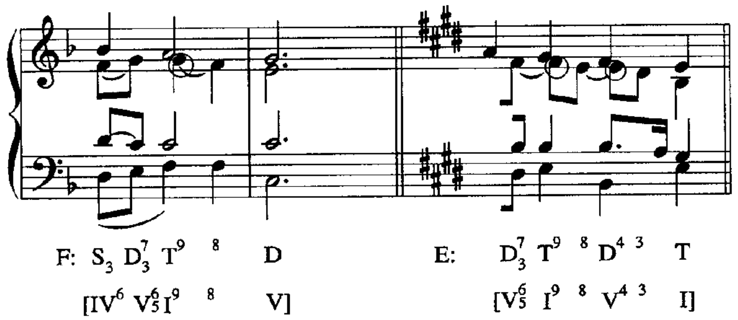
Example 2:86



Exs. 2:87-89 are excerpts from the works of Bach which contain suspension figures.

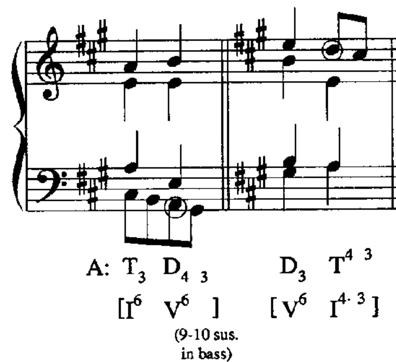
Example 2:87

Suspensions Prepared by Consonances



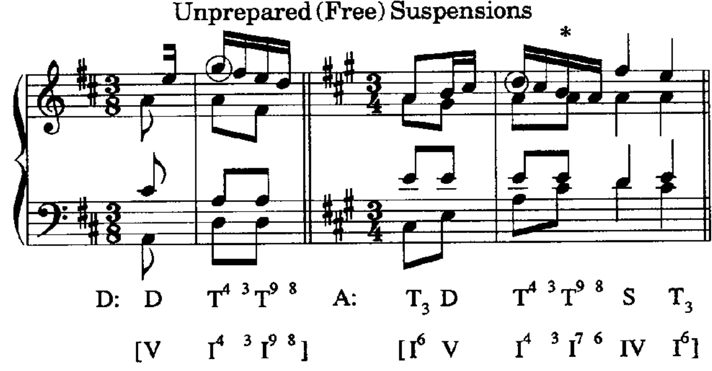
Example 2:88

Suspensions Formed by Accented Passing Tones



Example 2:89

Unprepared (Free) Suspensions



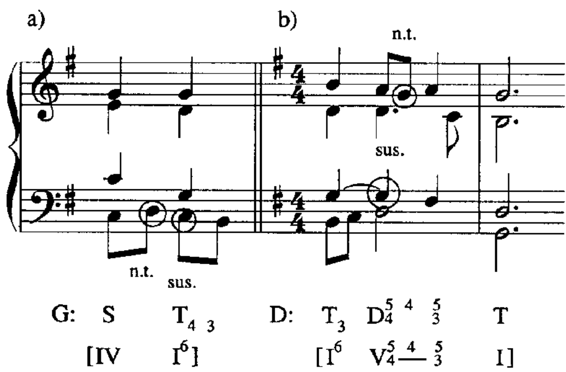
*The downward sixteenth-note passage in the soprano renders correct a suspension formation which is otherwise unconditionally forbidden—the simultaneous sounding of a suspended dissonant tone against the tone of resolution in the same octave.

Example 2:90

The simultaneous sounding of a suspended dissonant tone against the tone of resolution in the same octave makes this suspension-figure incorrect.

Ex. 2:91 demonstrates two rather peculiar suspension figures. In Ex. 2:91a, the resolution pitch of a neighboring-tone figure becomes the dissonant tone of a passing-tone suspension (accented passing tone). In Ex. 2:91b, the dissonant pitch of a neighboring-tone figure appears against a suspension in another voice.

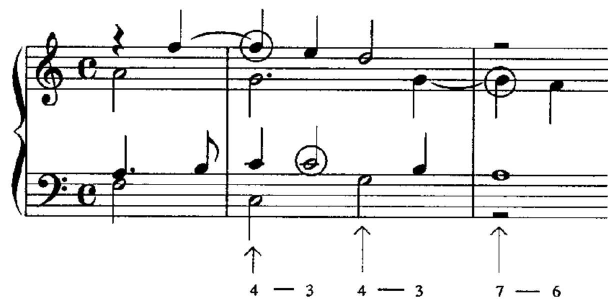
Example 2:91



As we discussed in Chapter One, earlier music employed suspensions as an important means of expression. However, the only suspension figures that were permitted before the time of Bach were those that were both fully prepared and then resolved downward by step (see Ex. 2:92).

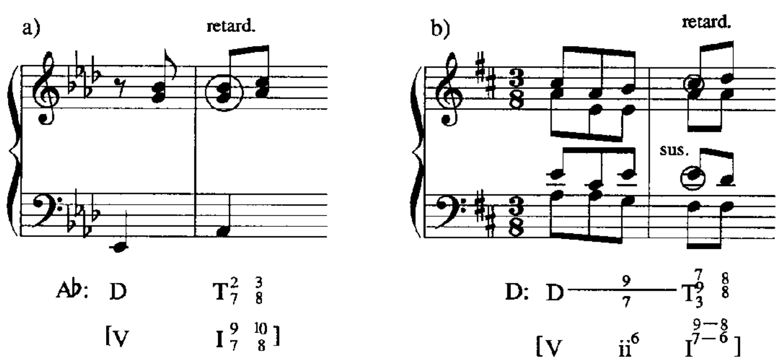
Example 2:92

Palestrina-*Pope Marcellus Mass* (ca. 1563)



The stringent rules applied to suspensions in earlier music became somewhat loosened in the late-Baroque. Ex. 2:93a shows a *retardation* (upward-resolving suspension) that is occasionally found in the works of Bach; Ex. 2:93b demonstrates a simultaneous approach to the tonic by both a suspension and a retardation.

Example 2:93



Exercises: The practice exercises in Exs. 2:94-95 are somewhat artificial, since they are designed to drill all types of suspensions within a short eight-measure period. Remember: In Baroque music literature, the 4-3 suspension is the most frequently employed.

Example 2:94

$$T\ \ D^{4\,3}\ |\ T_{4\,3}\ \ S^{9\,8}\ |\ T^{\overset{6\,5}{4\,3}}\ \ D^{7}_{4\,3}\ |\ T^{9\,8}\ \ D^{\overset{6\,5}{4\,3}}\ |\ T^{4\,3}\ \ T^{7\,8}\ |\ S^{9\,—\,8}_{3}\ \ D^{\overset{6\,5}{7}}\ |\ T$$

$$I\ \ V^{4\,3}\ |\ I^{6}\ \ IV^{9\,8}\ |\ I^{\overset{6\,5}{4\,3}}\ \ V^{\overset{6}{5}}\ |\ I^{9\,8}\ \ V^{\overset{6\,5}{4\,3}}\ |\ I^{4\,3}\ \ I^{7\,8}\ |\ IV^{7\,—\,6}\ \ V^{\overset{7}{6\,5}}\ |\ I$$

↑ unprepared 2-3 sus. in bass

↑ prepared 2-3 sus. in bass

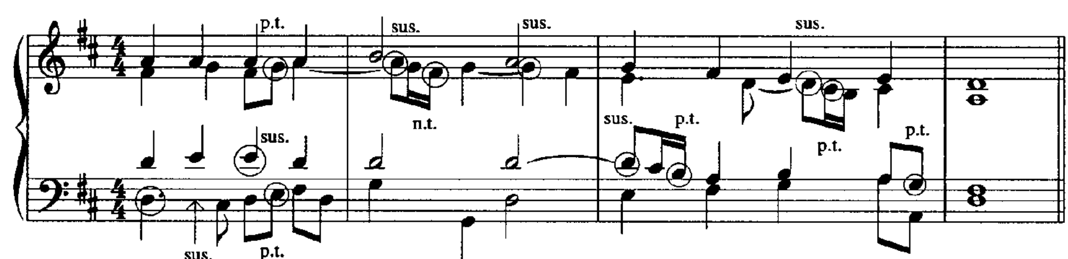
keep common tone

All suspensions marked with an arch and the bass suspensions marked *prepared* should be approached by common tone in the same voice from the previous chord. All other suspensions may be approached freely.

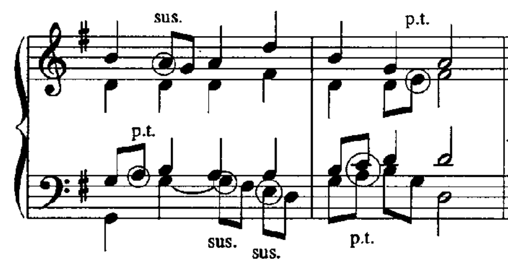
Example 2.95

Before attempting the exercises below, it will be helpful to study the two chorale excerpts in Exs. 2:96a-b. In these examples, all the suspensions, passing tones, and neighboring tones are clearly labeled. Though the style of Bach is characterized by heavy use of non-harmonic devices, such an abundance of non-chord tones is not typical for either Vivaldi or Handel.

Example 2:96a
Bach-*"wir armen Sünder"*

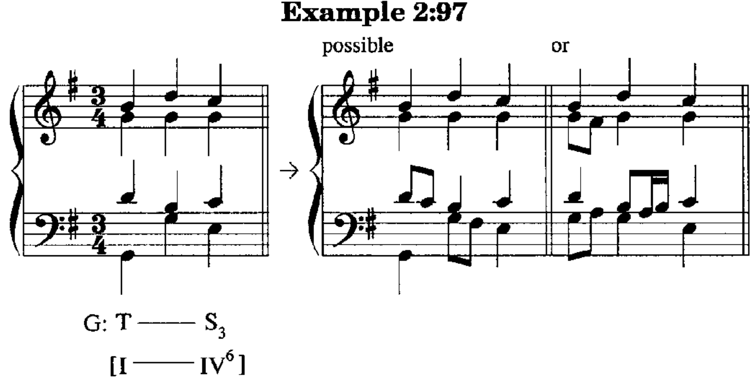


Example 2:96b
Bach-*"Liebster Jesu, wir sind hier"*



Exercise: Harmonize the melodies in Ex. 2:99 in four voices; use as many non-harmonic devices as possible. It is recommended that you make a simple sketch first so that the next tone in each voice provides a possible place for a non-harmonic tone (see Ex. 2:97).

Example 2:97



If you are not satisfied with your first attempt, try harmonizing the melody with a different chord progression (see Ex. 2:98)

Example 2:98

Example 2:99a

anon.-*"Aus meines Herzens Grunde"* from *geistliche Eisleben* (1598)

Example 2:99b
Joachim Neander-*"Unser Herrscher, unser König"* (1680)

Example 2:99c
Johann Rudolph Ahle-*"Liebster Jesu"* (1664)

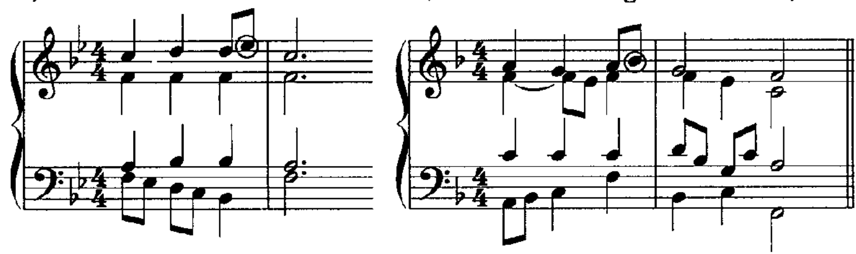
Example 2:99d
Franz Heinrich Meyer-*"Mein Schöpfer, steh bei mir"* (1741, after an old melody)

Escape Tones and Appoggiaturas: Both these non-harmonic devices occur on weak beats or portions of the beat. 1) Escape tones are approached by step from a chord tone (like the approach to a passing tone or neighboring tone). This dissonant neighbor then immediately leaps to a tone of resolution. 2) Appoggiaturas are approached by a leap and are immediately followed by stepwise motion into the resolution tone (like the resolution of passing tone or neighboring tone). Appoggiaturas are extremely rare in the late-Baroque.

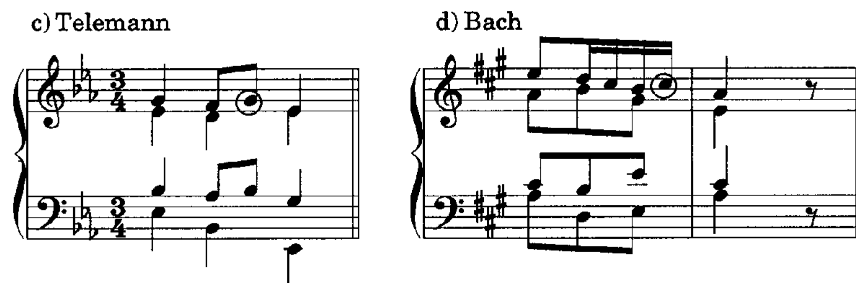
The four excerpts in Ex. 2:100a-d demonstrate the most frequently encountered escape-tone figure; an upper-neighbor followed by a descending leap-of-a-third.

Example 2:100

a) Bach-*"Nun ruhen alle Wälder"* b) Bach-*"O wie selig seid ihr doch, ihr Frommen"*



c) Telemann d) Bach



The appoggiaturas (circled notes) that appear in Ex. 2:101 are actually nothing more than passing tones that are exchanged between the alto and tenor.

Example 2:101

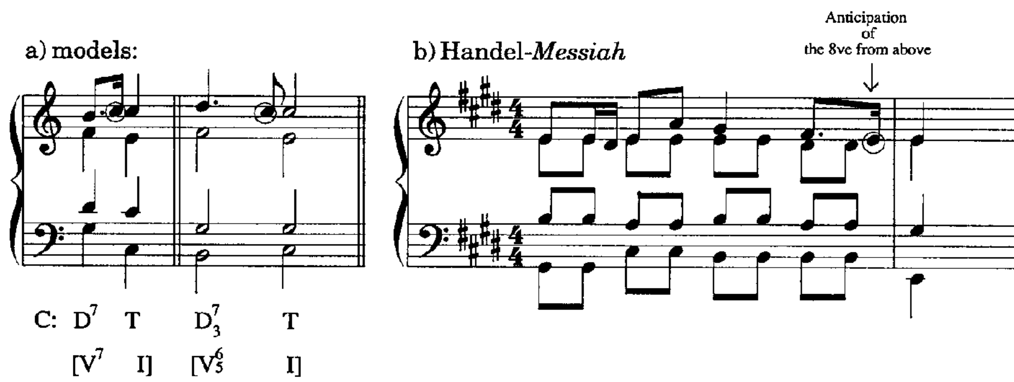
Bach-*"Gottes Sohn ist kommen"*

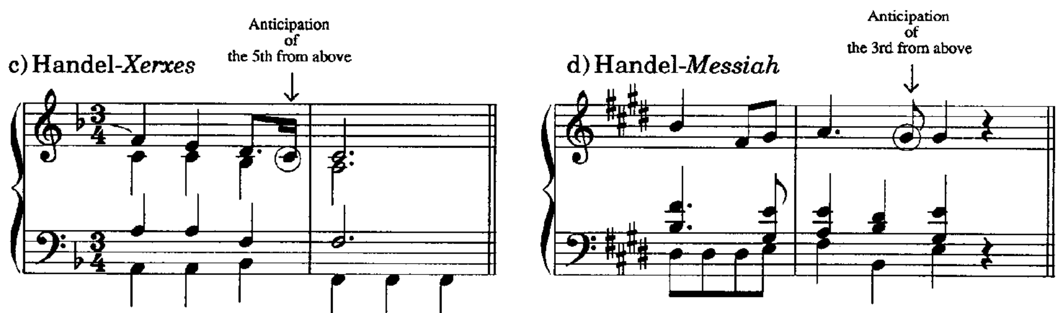
Exercise: Invent a piano accompaniment to the melody in Ex. 2:102 in which you employ no more than two chord changes per measure. Do not write-out this accompaniment, but rather sketch-in only the functional symbols (or Roman numerals), then sing and play the example. The melody itself contains potential passing tones, auxiliaries, a passing-tone suspension [accented passing tone] and an escape tone. Identify and label all of the potential non-harmonic devices contained in the melody before playing it.

Example 2:102
Rathgeber (1733)

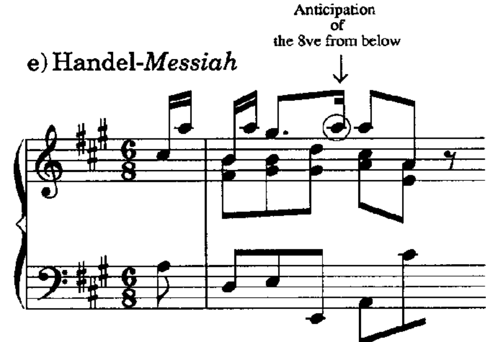
Anticipations: An anticipation is a non-harmonic device that occurs between two chords, where one or two voices sound tones belonging to the second chord (anticipating the upcoming harmonic change). Meanwhile, the other voices maintain the pitches of the first chord. Anticipations always occur on weak beats or portions of the beat (see Ex. 2:103a-e).

Example 2:103 a-e





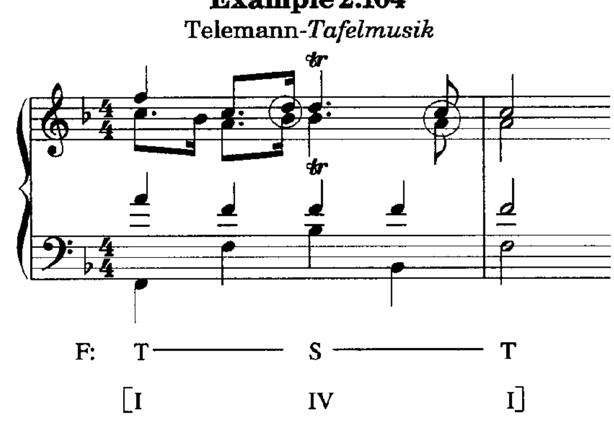
Example 2:103a-e cont.



Ex. 2:104 contains anticipations of both the subdominant and tonic triads.

Example 2:104

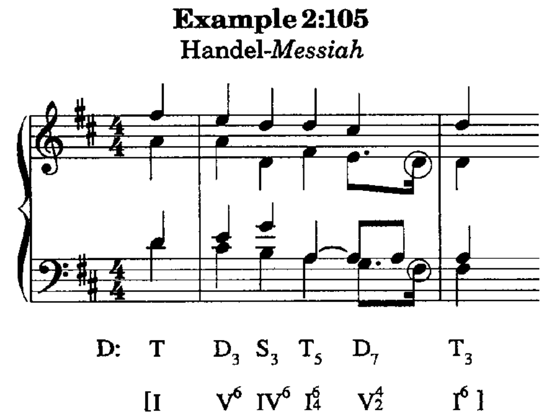
Telemann-*Tafelmusik*



Anticipations most often occur in the melody-carrying voice as it approaches a cadence. Ex. 2:105 contains an example of rare lower-voice anticipations:

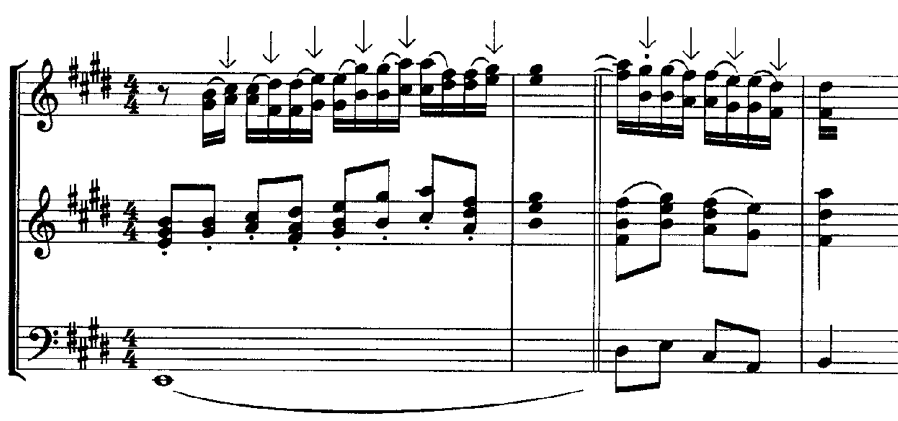
Example 2:105

Handel-*Messiah*



Part One of Bach's *St. Matthew Passion* ends with the chorale arrangement *"O Mensch bewein."* This chorale, constructed entirely from anticipation motives, is probably the only piece of its kind in the literature. (Ex. 2:106 see arrows)

Example 2:106
Bach-*"O Mensch bewein"*



Ex. 2:107 shows a melody by Rathgeber which contains a number of ornamented anticipations. Label the harmonic changes with functional symbols, sing the melody and play an accompaniment on an instrument.

Example 2:107

Exercise: Harmonize the melody in Ex. 2:108 in four voices. This exercise is designed to drill the correct use of escape tones (e.t.) and anticipations (ant.).

Example 2:108

6. Minor Mode

Although Zarlino was the first music theorist to consider both major and minor triads as the basic harmonic elements of multiple-voice music, he viewed the minor triad as a less-stable sonority than the major triad.[7] From Zarlino's time to the present, the minor triad continues to be a source of debate and unresolved difficulties for music theorists.

In the nineteenth century, Helmholz defined the minor triad as a "murky" consonance, derived from composite elements of two major triads whose roots are a minor third apart.[8] Ex. 2:109a shows how the pitch elements from both the C-major and E♭-major triads can be combined to produce a C-minor triad.

Later, both von Oettingen[9] and Riemann[10] based their theories of the minor triad on a dualistic treatment of the intervals which comprise both triad types. According to these theories, a minor triad is actually an intervallic mirror-inversion of a major triad. As Ex. 2:109b shows,

---

[7] Gioseffo Zarlino, *Le Instituzione armoniche* (Venice: 1588).

[8] Hermann Helmholtz, *Lehre von den Tonemfindungen als physiologische Grundlage für die Theorie der Musik* (Braunschweig: 1863); transl. by Alexander John Ellis as *On the Sensations of Tone as a Physiological Basis for the Theory of Music* (London: 1875; reprinted, New York: Dover, 1954).

[9] Arthur Joachim von Oettingen, *Das Harmoniesystem in dualer Entwicklung* (Leipzig: W. Gläser, 1866); rev. as *Das Duale Harmoniesystem* (Leipzig: C.F.W. Siegel, 1913).

[10] Hugo Riemann, *Handbuch der Harmonielehre,* 9th ed. (Leipzig: Breitkopf und Härtel,1921).

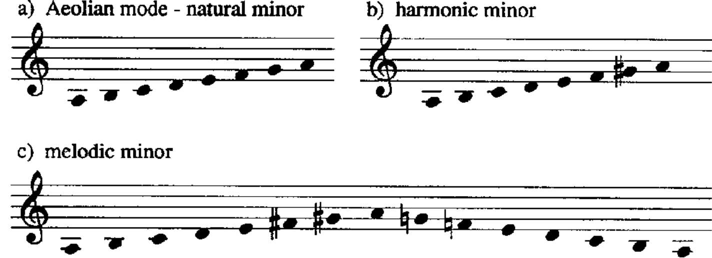
when a major third and minor third, respectively, are stacked upward from the pitch C, a C-major triad is formed. When the same two intervals are stacked downward from C, however, an F-minor triad results.

Though the minor triad and its derivations have been troublesome for theorists, the minor triad has never posed any great problem for composers, who have found the less-stable and more-ambiguous nature of the minor triad to be little more than a slight irritation.

Example 2:109a-b

It is really nonsense to partition the minor mode into three types of minor scales, but since the three minor-scale forms (natural, harmonic, and melodic) are presented and explained in nearly every harmony text, I will follow suit here (see Ex. 2:110).

Example 2:110a-c



There has never been a composition written entirely (for example) in the harmonic minor. Though the major mode clearly consists of pitches related to a single seven-tone (diatonic) scale, the minor mode does not really exist in such a form, but, rather, as a nine-tone complex of pitches (Ex. 2:111). This complex is then available for use in any minor-key composition.

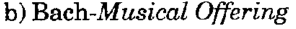
Example 2:111

As is shown in Ex. 2:112a-g, particular minor-key melodic patterns became cliches during the time of Bach. Though these melodic formulas were used again and again, we should not be overly critical. The struggle for originality, which would become characteristic of nineteenth-century music, was quite foreign to music written during the time of Bach. During the Baroque, good themes were considered anonymous and were accessible for use by all composers. Notice that an ascending melodic passage in minor often ends on a minor sixth above the tonic pitch. In order to reconfirm the key center, the leading-tone was then added. For that reason, these two pitches (sixth and leading-tone) frequently appear together in minor-mode compositions. [Although the diminished-seventh interval between these two tones became a cliche, these tones were rarely used in their stepwise form (as an augmented second). In cases where the leading-tone follows the sixth scale-degree by step, the sixth of the scale is generally raised--see pp. 97-9.]

Example 2:112 a-g

All of the excerpts in these examples are transposed to the key of A-minor so that easy comparison among them is possible.

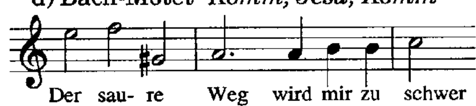
a) Handel-*"And With His Stripes We Are Healed"* from *Messiah*



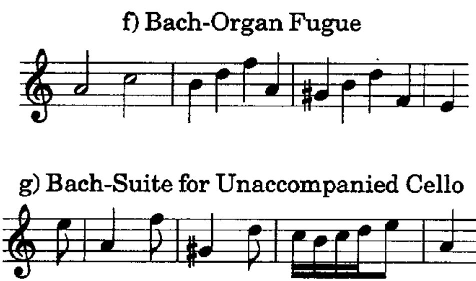
b) Bach-*Musical Offering*

c) Bach-*Well-Tempered Clavier;* Book I.

d) Bach-Motet *"Komm, Jesu, Komm"*

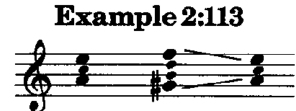


e) Bach-Partita for Unaccompanied Violin



The interval of a diminished seventh, melodically forbidden for centuries, actually became a frequently employed figure during the time of Bach. Ex. 2:113 shows how the two tones of the diminished seventh (and the added thirds in between) provide an axis of melodic and harmonic tension in minor keys.

Example 2:113



Exercise: Compose a series of short examples, similar to those found in Ex. 2:112. Do not try to make your examples sound original, but rather work to achieve a typical representation of the tension-producing diminished seventh by placing nearby the two diminished-fifths which are closely associated with it (Ex. 2:114).

Example 2:114

It is possible to move by step from the tonic in one octave to the tonic in another, but the tones used in the ascent to a higher tonic are slightly different from those used in the descent to a lower tonic. As is shown in Ex. 2:115 (1), the lowered-seventh [G♮] and the lowered-sixth [F♮] are employed when descending; when ascending, as in Ex. 2:115 (2) the raised-sixth scale degree [F♯] must be employed to approach the leading-tone smoothly (raised-seventh degree of the scale-G♯).

The entire minor-mode complex is best represented as shown in Ex. 2:115.

Example 2:115

Certain deviations from these ascending and descending patterns occur in the literature, but they are rare (see Ex. 2:116).

Example 2:116

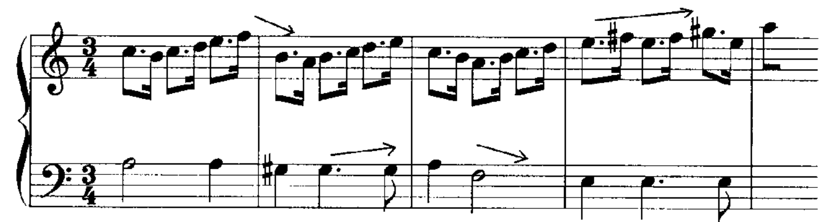
a) Bach-Flute Sonata in E-minor   b) Bach-Flute Sonata in E-major

Ex. 2:117a-c shows typical two- and four-voice melodic patterns which contain the complete minor-mode pitch complex.

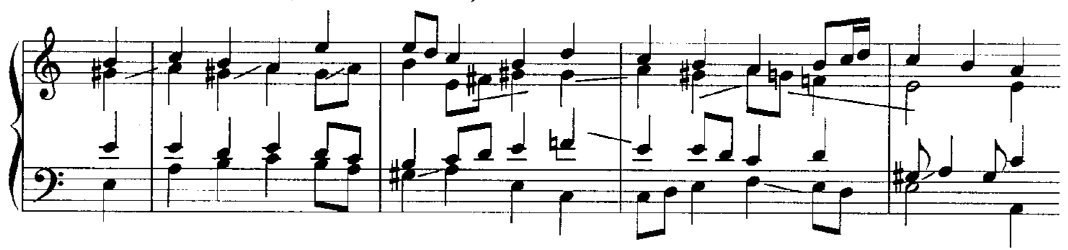
Example 2:117 a-c

a) Vivaldi-Violin Concerto (arranged by Bach as an Organ Concerto)

b) Purcell-Chaconne



c)Bach-*"Ach Gott, vom Himmel sieh' darein"*



Exercises: Compose several vocal and instrumental lines where the entire minor-mode pitch complex is employed. Find several examples in the literature of the time and use them as models.

When dominant harmony is in force, a descent from the leading-tone to the dominant by way of the raised-sixth scale degree is self-explanatory (see Ex. 2:118a-d). Note-for-note harmonization of such descending passages (A-G#-F#-E) should be avoided.

Example 2:118 a-d

a) Bach-*Clavierbüchlein for Anna Magdelene Bach*

b) Bach-*"Hilf, Herr Jesu, laß gelingen"*

a: D^7 t_3 —— $_1$ s_3 —— $_1$ D   a: t —— D —— t

[V^7 i^6 i iv^6 iv V]   [i —— V —— i]

c) Bach-Organ Fantasy

a: D —————— t

[V —————— i]

d) Bach-Organ Fugue

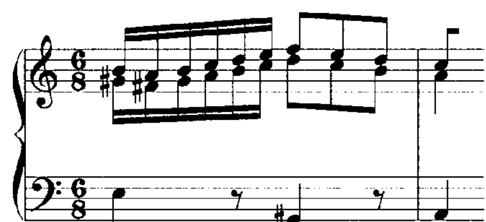
a: t —————— D ————

[i —————— V ————]

It is also important to remember, that only the raised-sixth scale degree is employed when approaching the leading-tone from below (see Ex. 2:119).

Example 2:119

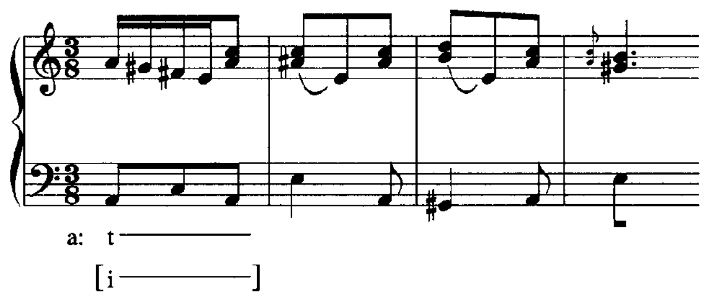
Bach-Flute Sonata in E♭ Major



Ex. 2:120 contains a descending melodic passage that passes from the tonic pitch through both the raised seventh and raised sixth scale degrees. This occurs very rarely in Baroque literature, and passages like this should not be harmonized note-for-note.

Example 2:120

Bach-*"Buß und Reu"* from *St. Matthew Passion*

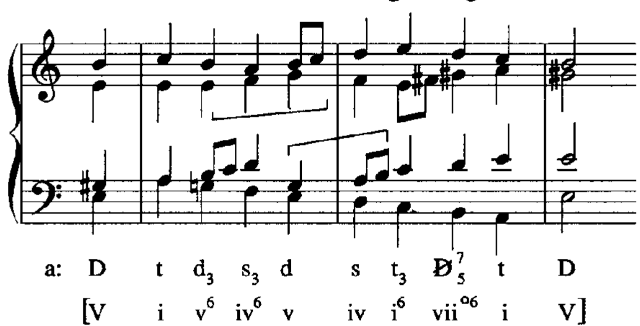


It is also rare to find examples from the time of Bach where an ascending line passes through the lowered-sixth and lowered-seventh scale degrees; this is even true when such passages occur in the inner voices. There are some exceptions to this principle, however (see Ex. 2:121 a-b).

Example 2:121 a-b

a) Bach-Organ Concerto (after Vivaldi)

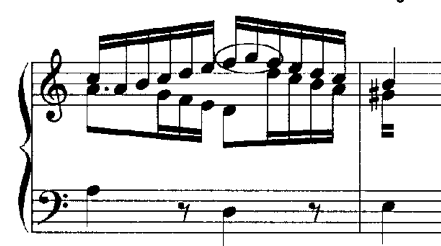
b) Bach-*"Es woll' uns Gott genädig sein"*



Neighboring-tone figures which involve the lowered-sixth and lowered-seventh scale degrees are quite rare (see circled notes in Ex. 2:122a); the neighboring-tone patterns in Ex. 2:122b are more common.

Example 2:122a-b

a) Bach-Flute Sonata in E-Flat Major



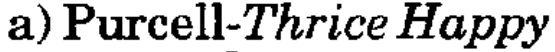
b)

By using the lowered-sixth and lowered-seventh scale degrees in an ascending passage, it is possible to produce a transient secondary key area (tonicization) or a longer-lasting and conclusive new key (modulation). Since the ascending use of lowered-sixth and lowered-seventh tends to confuse or break-down the sense of key feeling, these pitches should be used only when a shift to a new tonal center is desired. (see Ex. 2:123)

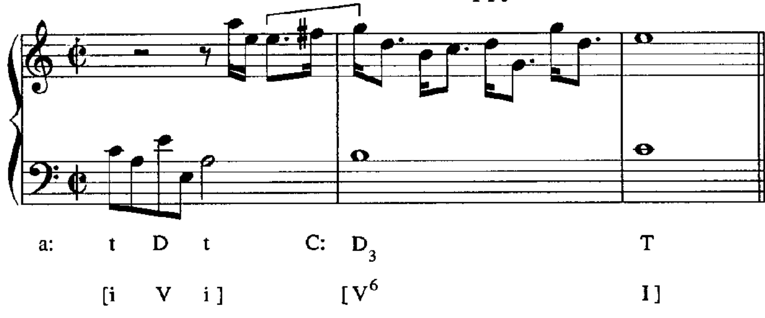
Example 2:123
Handel-Flute Sonata

Ex. 2:124a-e shows how the major composers of the late-Baroque used the lowered-sixth and lowered-seventh scale degrees in ascending passages to create a shift of tonal center.

Example 2:124 a-e

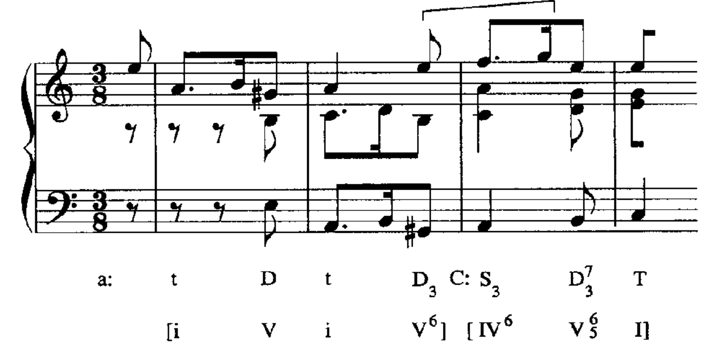


a) Purcell-*Thrice Happy*



b) Vivaldi-Oboe Concerto

c) Handel-*"But Who May Abide the Day of His Coming"* from *Messiah*



d) Bach-Organ Fantasy in B-minor

e) Handel-*"The People that Walked in Darkness"* from *Messiah*

The functional symbol for the minor triad has appeared in several forms since the nineteenth century. Hugo Riemann used the symbol °T,[11] whereas Sigfrid Karg-Elert employed the symbol ⋋—.[12] As early as 1821, Gottfried Weber suggested the concept of using small case letters to represent minor triads (because of their characteristic minor third), and upper case letters to represent major triads (because of their characteristic major third).[13] It was not until 1931, however, that Wilhelm Maler developed the first convincing system of functional letter-symbols.[14] For that reason, I shall closely follow Maler's system in this text. Ex. 2:125 shows how Maler applied upper and lower case letters to all types of the tonic, dominant and subdominant chords in major and minor modes.[15]

Example 2:125

a: t s S d D

[i iv IV v V]

In the late-Baroque all inversions of the dominant-seventh were available in minor, but the subdominant region was especially rich in harmonic variety: s (iv), s^6(ii^{o6}), s^6_5(ii$^{ø6}_5$), S (IV). Ex. 2:126 contains the progression s^6_5 - D^{87} (ii$^{ø6}_5$ - V^{87}) which was especially common in music during the time of Bach (a fact to which every tenor in a chorus can testify).

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[11] Hugo Riemann, *Handbuch der Harmonielehre*, 9th ed. (Leipzig: Breitkopf und Härtel, 1921).

[12] Sigfrid Karg-Elert, *Akustische Tonklang und Funktionsbestimmung* (Leipzig: C.M.F. Rothe, 1930).

[13] Gottfried Weber, *Versuch einer geordneten Theorie der Tonsetzkunst,* three vols. (1817-21); transl. by J.F. Warner as *Attempt at a Systematically Arranged Theory of Musical Composition* (Boston: Wilkins and Carter, 1841-46).

[14] Wilhelm Maler, *Beitrag zur durmolltonalen Harmonielehre* (Munich: F.E.C. Leukart, 1931).

[15] The author labels the minor triad constructed on the fifth scale degree of the minor scale with the letter-symbol d; thus the term: *minor dominant*. Although this terminology is consistent with the concept of the *Rameau dominant* (especially if a minor seventh is added above the root to form a seventh chord—see p. 30), many music theorists, in both English- and German-speaking countries, prefer to limit the use of the term dominant to sonorities which contain the leading-tone.

Example 2:126

S$^6_5$ (ii$^6_5$) was not used in minor keys during the time of Bach. This is probably because the dominant chord (to which the S$^6_5$ normally resolves), would require a doubled third (leading-tone), if standard voice-leading principles followed. Ex. 2:127 shows that the raised third of the subdominant (F♯) forces an upward resolution to the leading-tone (G♯). This problem does not occur in major, since the third of the subdominant chord is not altered from the key signature.[16]

Example 2:127

As shown in Exs. 2:128a-d, the dominant normally resolves directly to the tonic in minor keys. However, the progression D - s$_3$ (V - iv^6) is sometimes substituted for D-T [I-V]. Though rare, the progression D - s (V - iv) is also occasionally encountered, but D - S (V - IV) is consistently avoided.

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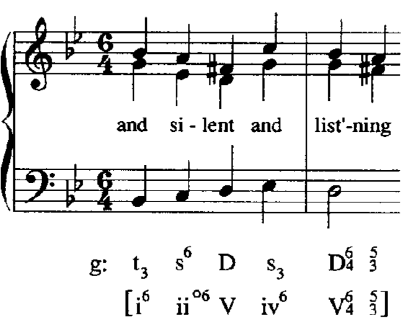
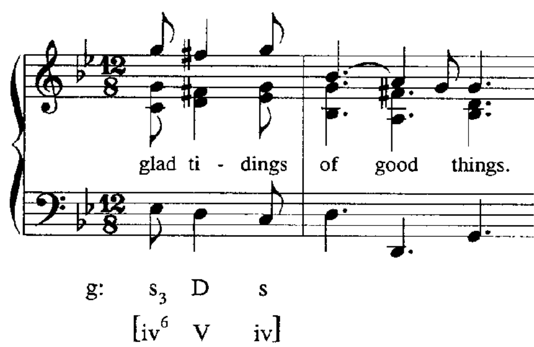
[16] The author seems to be making reference here to the principle that an accidental should normally resolve in the direction of its inflection.

Example 2:128 a-d

a) John Blow-
Ode on the Death of Purcell



b) Handel-*"How Beautiful are the Feet"*
from *Messiah*

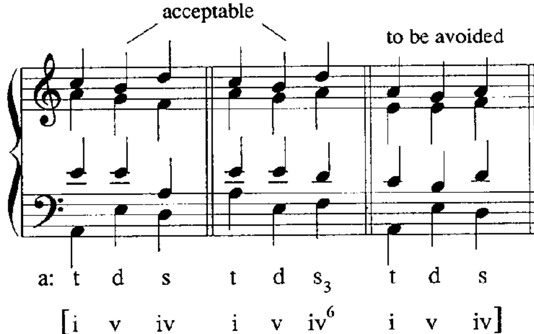


c) Bach-Organ Fugue in F-minor

d) Handel-*"All They That See Him*
Laugh Him to Scorn" from *Messiah*

When progressing away from a minor dominant chord (d) [v], the downward-resolving tendency of the lowered-seventh scale degree (subtonic pitch) must be considered, especially when it appears in the soprano. Ex. 2:129 shows that the progression d-s (v-iv) is not feasible in every possible voicing.

Example 2:129



Ex. 2:130a-b shows the typical Baroque practice of using a descending minor scale in the bass.

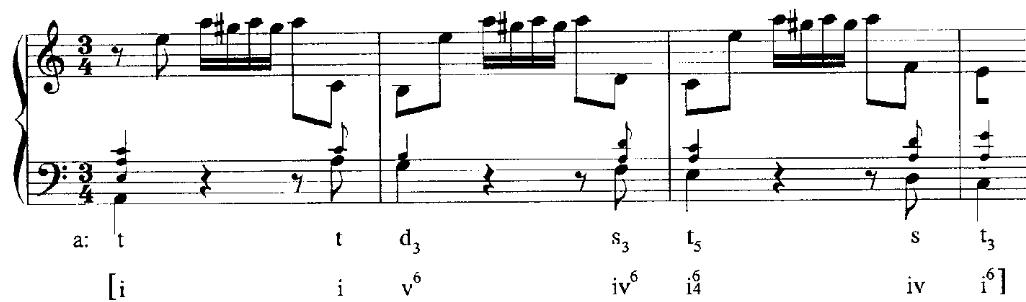
Example 2:130a-b

a) Bach-*"Es woll' uns Gott genädig sein"*

b: D t d3 s3 d s t3 D7/5 t D

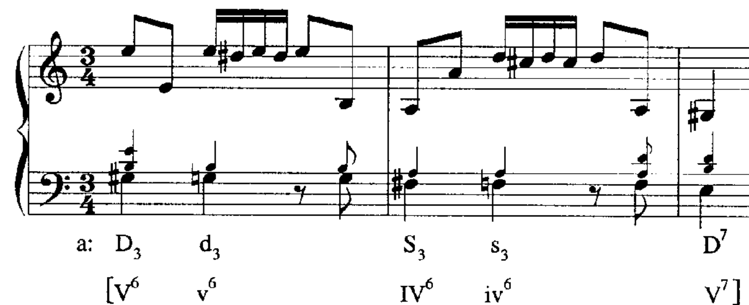
[V i v6 iv6 v iv i6 vii°6 i V]

b) Handel-*"Thou Shalt Break Them"* from *Messiah*



Ex. 2:131 demonstrates another technique frequently employed in the late Baroque—a chromatically descending bass line. (The descending chromatic scale is also important in the music of the nineteenth century, where it often employed to neutralize melodic leading-tone tendencies by providing half-step motion in the opposite direction.)

Example 2:131
Handel-*"Thou Shalt Break Them"* from *Messiah*



Exercise: Play the progressions in Ex. 2:132a-b in all minor keys:

Example 2:132a-b

The following doubling rules were derived from analysis of numerous Bach chorales and excerpts from Handel's *Messiah:* 1) minor triads normally double the root, but it is sometimes possible to double the third; the fifth, however, is rarely doubled. 2) In first-inversion minor triads, the bass (third of the chord) is doubled nearly as often as the root.

Since minor keys are somewhat less-stable than major keys, it is quite typical for minor-key progressions to remain within the key only a short time, before modulating (almost effortlessly) to the relative major.

Exercises: Write out and play four-voice settings of the melodies and bass lines in Ex. 2:133a-j. The brevity of the examples corresponds to Baroque practices.

Example 2:133 a-j

a1)

a2)

a3)

b) Handel-Cantata *"Ach Herr"*

c) Rathgeber

Compensate for the lack of melodic interest with harmonic variety.

d) Rathgeber

e) Handel-*"But Who May Abide"* from *Messiah*

f) Bach-*"Herr, ich habe mißgehandelt"*

g) Chorale Melody

h) Johann Krüger-*"Jesu meine Freude"* (1653)

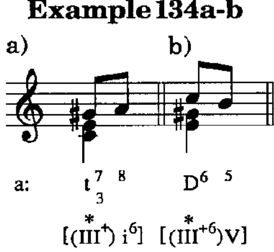
i) The First and Last Sections of a Chorale Melody which Modulates in its Center Section.

j) From a Chorale Setting by Bach

7. Augmented Triads and Neapolitan-Sixth Chords

Augmented Triads: The augmented triad, which can be formed from the pitches of the minor-scale complex, first appeared during the time of Bach.[17] However, it was rarely employed as an independent sonority. Rather, the dissonant tone of the augmented triad was usually treated as a suspension above either dominant or tonic harmony. In Ex. 2:134a-b, to determine whether the augmented triad E-G#-C has tonic function (Ex. 2:134a) or dominant function (Ex. 2:134b), it is first necessary to determine which tone (G# or C) is the dissonance.

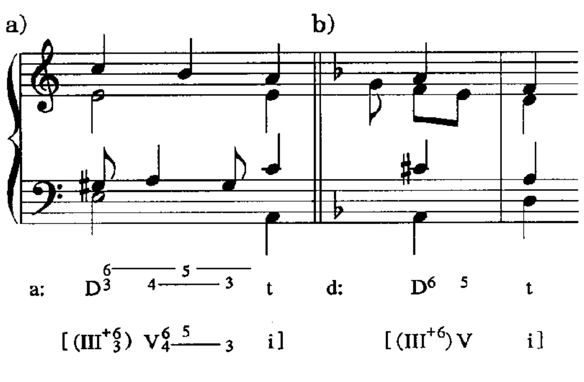
Example 134a-b



*The parentheses ( ) surrounding the Roman-numeral symbol III+ indicate that the augmented triad occurs as a result of suspension figures above dominant or tonic and should not be considered an independent harmonic sonority.

Ex. 2:135a-b shows two spots from Bach chorales that contain suspension-like figures which imply the augmented triad.

Example 2:135a-b



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[17] An augmented triad is formed from the pitches of the minor-scale complex when the triad built on the third scale degree contains the raised-seventh scale degree as the fifth of the chord.

Exercise: Play the progression given in Ex. 2:136 in several minor keys. As was the normal practice in the late-Baroque, the augmented triad does not actually appear as an independent sonority.

Example 2:136

$$t \quad D^{6} \quad {}^{5} \quad t \quad s^{6} \quad | \quad D^{6}_{3} \quad \bar{4} \quad {}^{5}_{-} \quad \bar{3} \quad | \quad t_{3} \quad D\!\!\!/^{7}_{5} \quad t \quad s^{6}_{5} \quad | \quad t^{7}_{3} \quad {}^{8} \quad s^{6}_{5} \quad D \quad | \quad t$$

$$[\mathrm{i} \quad (\mathrm{III}^{+6}) \quad \mathrm{V} \quad \mathrm{i} \quad \mathrm{ii}^{\circ 6} \quad | \quad (\mathrm{III}^{+6}) \quad \mathrm{V}^{6}_{4} \quad {}^{5}_{4} \quad {}^{-}_{3} \quad | \quad \mathrm{i}^{6} \quad \mathrm{vii}^{\circ 6} \quad \mathrm{i} \quad \mathrm{ii}^{\varnothing 6}_{5} \quad | \quad (\mathrm{III}^{+}) \quad \mathrm{i}^{6} \quad \mathrm{ii}^{\varnothing 6}_{5} \quad \mathrm{V} \quad | \quad \mathrm{i}]$$

The Neapolitan-Sixth Chord: In the biblical story, the warrior Jephthah bargained with God to sacrifice the first person from his own household whom he would meet upon returning home, if God would grant to him victory in battle.[18] As fate would have it, the first to greet Jephthah after victory was his beloved only daughter. At the point where father and daughter meet in Giacomo Carissimi's oratorio *Jephte* (publ. 1664) a sonority appears which seems to have been especially saved for this spot (though it is used quite liberally throughout this section of the work). This particular sonority functions as a minor subdominant chord where the interval of a minor sixth above the root is substituted for a perfect fifth [i.e., a minor chord-of-the-sixth with a chromatically lowered sixth]. Since this sonority type was commonly used in operas by composers of the eighteenth-century *Neapolitan School*, it has come to be known as the *Neapolitan-sixth chord* (or often, simply the *Neapolitan*). This sonority type was originally derived from a ♭6-5 suspension-figure which was applied above the root and third of a minor subdominant chord (see the figure labeled s^{n} in Ex. 2:137).

Example 2:137

In the time of Bach, the suspension form of this sonority was regularly replaced with a true Neapolitan-sixth chord. Several possibilities for the use of this sonority (also labeled with the symbol s^{n}) are shown in Ex. 2:138a-d.

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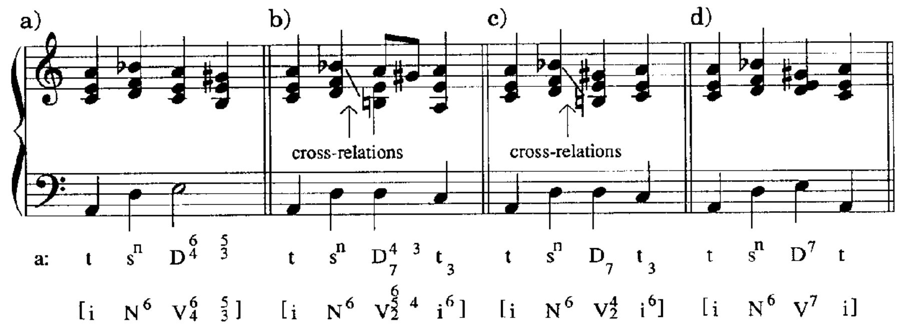
[18] Book of Judges 11:30-40.

Example 2:138a-d

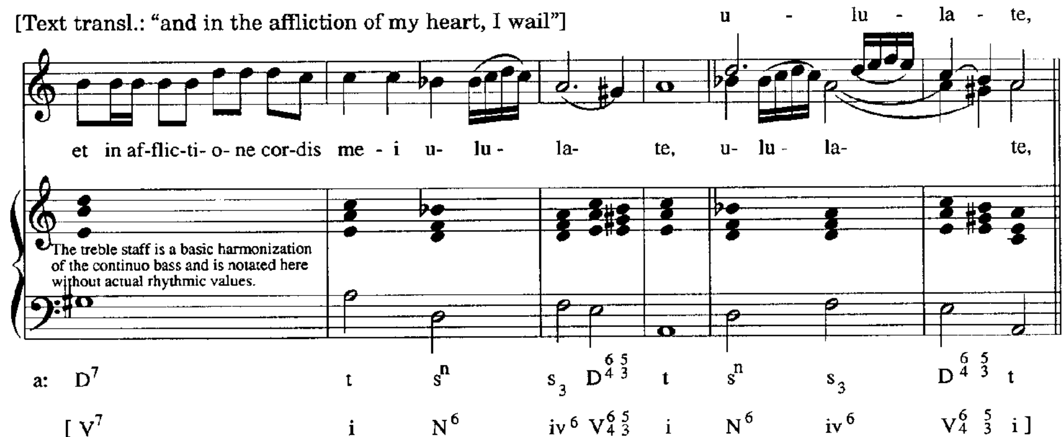


Whether the voice which contains the ♭6 progresses to the next chord by step (the so-called "Phrygian second" —see Ex. 2:138a, soprano) or by diminished third (see Ex. 2:138c, soprano), it should generally resolve downward. Though Baroque practice occasionally deviates from this principle, the normal downward resolution of this voice should predominate. It is also important to remember that the Neapolitan-sixth was reserved, in Baroque music, for the most intense expressions of "lamentation and woe," and in no case should it be considered a simple triadic sonority.

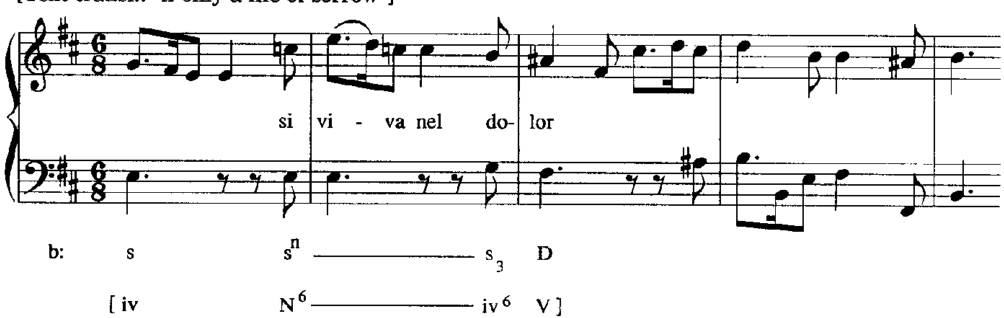
The subdominant pitch (bass voice) is usually doubled in the Neapolitan-sixth. When it progresses directly to the dominant, it is impossible to avoid cross-relations between the two chords. In Ex. 2:138b-c, note the B♭ in the soprano of the s^n and the B♮ in tenor of the following dominant chord. Ex. 2:139a-e contain additional excerpts from period literature which employ the Neapolitan-sixth.

Example 2:139 a-e

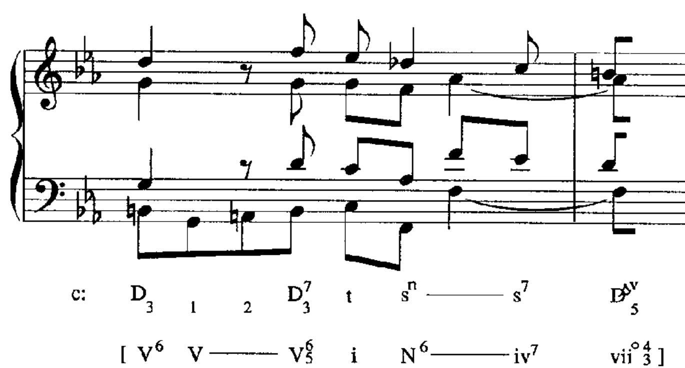
a) Giacomo Carissimi-*Jephte* (~1645)



b) Allesandro Scarlatti (~1700)



c) Bach-*St Matthew Passion*



d) Bach-Organ Passacaglia

e) Bach-*Well-Tempered Clavier*

Exercise: Complete the following four-measure phrase by adding the alto and tenor voices.

[Text Transl.: "Draw on, Draw on grieving year; Draw on with my afflictions! Draw on with my dread!"]
—A. Gryphius

Compose a four-voice setting on the following text; make sure that a Neapolitan-sixth sonority appears at the climax of your setting:

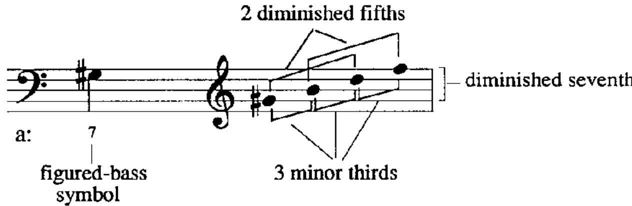
Was jetz und blüt, kann noch für Abend gantz zutretten werden.
Was ist der Erden Saal? Ein herber Thränen-Thal!
Wir Armen! ach wie ist's so bald mit uns gethan! —A. Gryphius

[Text transl.: "What now blooms can be completely trampled down by evening. What is this earthly space? A bitter vale of tears! Poor humans! Alas, how quickly we are undone!"]

8. 9-8 Suspensions Applied to Dominant-Seventh Chords and Leading-Tone Diminished-Seventh Chords

The fully diminished leading-tone seventh chord can be constructed from the pitch materials of the minor-scale complex. Though all composers in the Baroque employed this sonority, it is especially characteristic of the music of J.S. Bach.

Example 2:140



As opposed to the brief figured-bass symbol [^{7}] and the relatively simple Roman-numeral symbol $vii^{\circ 7}$, it is not as easy to design an appropriate functional symbol for the leading-tone diminished-seventh chord.[19] In minor keys, it is often viewed as an *abridged dominant-ninth chord* (dominant-ninth with an omitted root), and for that reason, it is often labeled with the symbols $\not{D}^{9}_{7}$ or D^{v}.[20] The leading-tone diminished-seventh chord, which first appeared in the Baroque, should not yet be termed an *abridged dominant-ninth*, however, since it did not ac-

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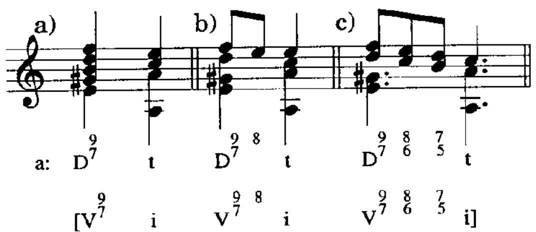
[19] There is also diversity among the authors of English-language harmony texts in the choice of the Roman-numeral symbol for the fully diminished leading-tone seventh chord. Some of the suggested Roman-numeral symbols for this sonority are: $VII^{\circ 7}$-- Edward Aldwell and Carl Schachter, *Harmony and Voice Leading,* 2nd ed. (New York: Harcourt Brace Jovanovich, 1989); $vii^{\circ 7}$--Bruce Benward and Gary White, *Music in Theory and Practice,* 4th ed. (Dubuque, Iowa: W.C. Brown, 1989), and Stefan Kostka and Dorothy Payne, *Tonal Harmony,* 2nd ed. (New York: Alfred Knopf, 1989); vii^{d7}--Paul Harder, *Harmonic Materials in Tonal Music,* 5th ed. (Needham Heights, Mass: Allyn and Bacon, 1985); $V^{\circ 9}$--Walter Piston, *Harmony,* 4th ed., rev. and expanded by Mark Devoto (New York: W.W. Norton, 1978). This translation will employ $vii^{\circ 7}$ since this symbol is the one that this translator regularly uses in teaching, and because it fits with the author's use of upper- and lower-case functional symbols.

[20] The small letter [^{v}] which is applied to functional symbols in German harmony texts is an abbreviation for the word *verminderte*; which is literally translated into English as *diminished.*

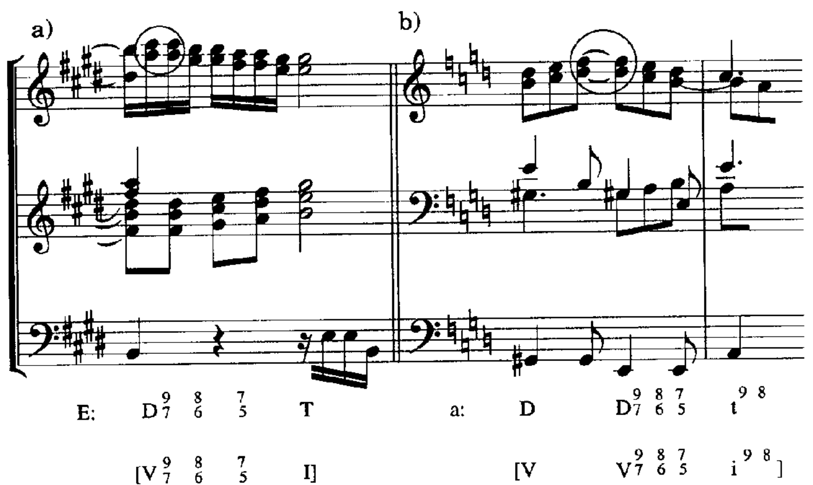
tually appear in its complete form (as a true dominant-ninth chord) during the time of Bach. Ex. 2:141a-c shows three chord resolutions which employ ninths added above dominant-seventh chords. The resolution in Ex. 2:141a was not yet in use during the time of Bach, but the resolutions in Ex. 2:141b and 2:141c were quite common.

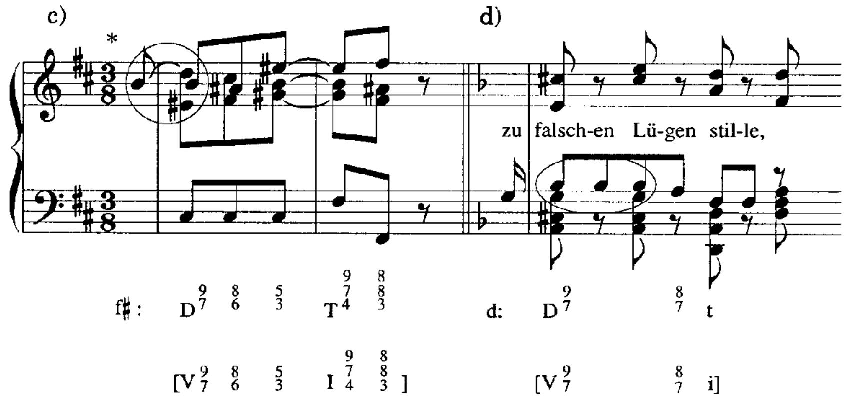
Example 2:141



The 9-8 Suspension Above the Dominant-Seventh Chord: Although the true dominant-ninth chord (Ex. 2:141a) was not yet employed in the Baroque, a melodic figure which strongly implies the dominant-ninth chord regularly appears in the form of a 9-8 suspension above the dominant-seventh chord. Ex. 2:142a-d shows four musical excerpts (in both major and minor keys) which contain such figures. Note that the minor ninth (above the dominant pitch) normally appears in minor keys, whereas the major ninth is most common in major keys.

Example 2:142 a-d
Bach- *St. Matthew Passion*

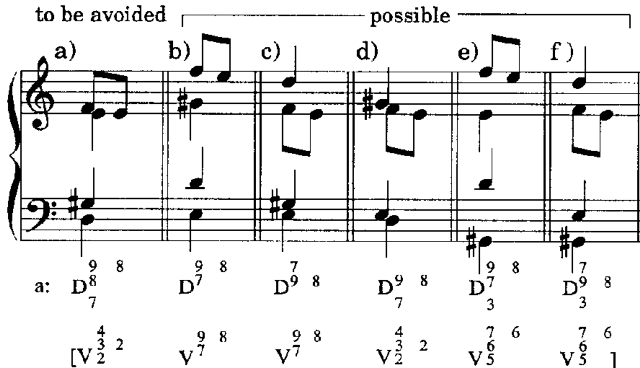




*This 9-8 suspension resolves to an F♯-major triad, even though the key of F♯-minor is implied by use of the minor ninth at the point of the suspension. (See also *Qui tollis* from Bach's Mass in B-minor; measures 4, 6.)

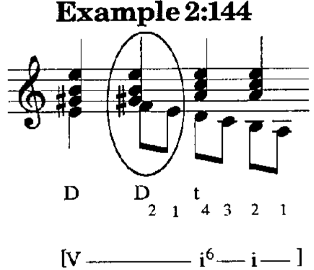
The 9-8 suspension above a dominant-seventh chord requires that the seventh of the chord also be present. In four voices, the fifth of the dominant-seventh is the chord tone that is normally omitted. Furthermore, the suspended-ninth must be at least a ninth above the chord root. For that reason, it is not feasible to voice a 9-8 suspension figure as in Ex. 2:143a; possible configurations are shown in Ex. 2:143b-f.

Example 143a-f



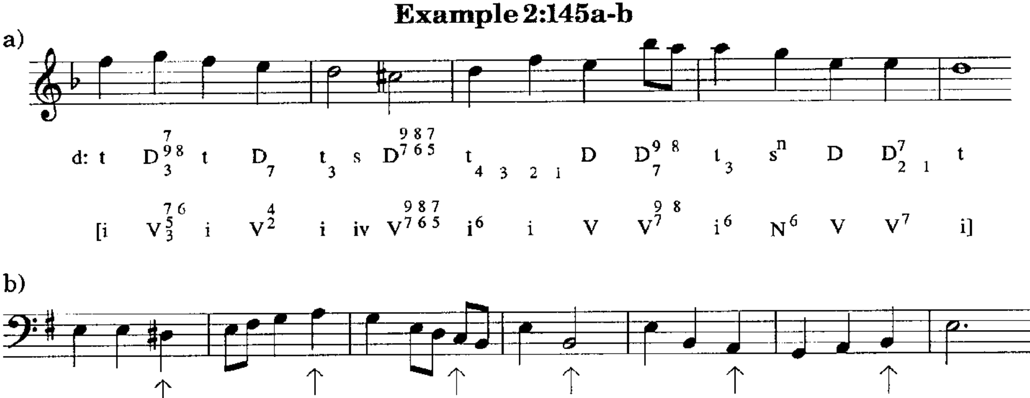
In Ex. 2:143a-f, F♯ could be substituted for F♮. In this case, the tonic triad which follows would normally be A-major rather than A-minor. If the suspension figure occurs in the bass, it will resolve downward and be labeled as a 2-1 suspension (see circled sonority in Ex. 2:144).

Example 2:144



Exercises: In four voices, harmonize the soprano in Ex. 2:145a and the bass in Ex. 2:145b; play your settings at the keyboard.

Example 2:145a-b

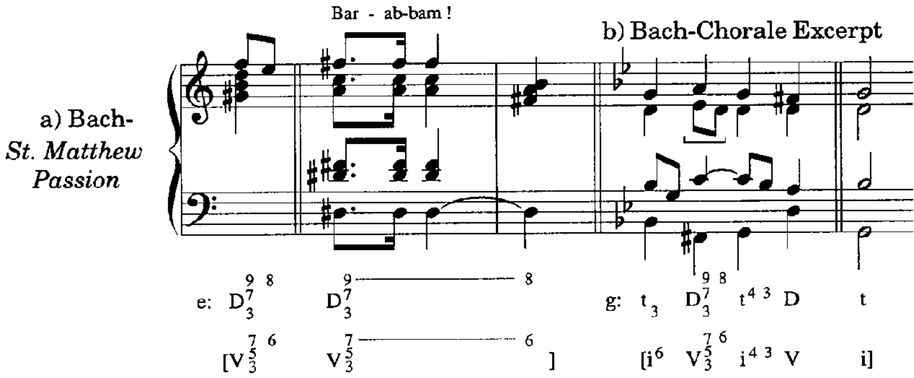


Make sure to employ 9-8 or 2-1 suspension figures at the places marked with arrows.

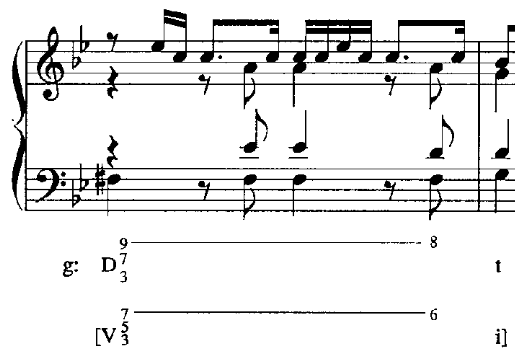
It should be quite evident from the preceding exercises, that the use of too many 9-8 suspensions can create a hackneyed musical texture that is not at all typical of Baroque literature.

The Diminished-Seventh Chord: As is shown in Ex. 2:146a-c, the diminished-seventh chord may also appear as a suspension sonority which resolves to the dominant-seventh chord.

Example 2:146 a-c



c) Bach-Harpsichord Toccata



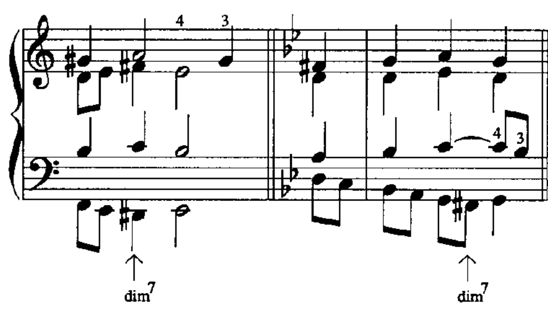
The preceding examples also suggest that the leading-tone diminished-seventh chord is treated as a suspension figure when a change of harmony takes place in the following chord (as in Ex. 2:147).

Example 2:147

Bach does not usually treat the diminished-seventh chord as a suspension figure, however. Instead, he almost always employs it without preparation on a weak beat or portion (those metrical positions where suspensions are normally prepared or resolved). In fact, Bach's diminished-seventh chords often function as harmonically consonant preparations for dissonant suspension figures which follow (see Ex. 2:148a-b).

Example 2:148 a-b

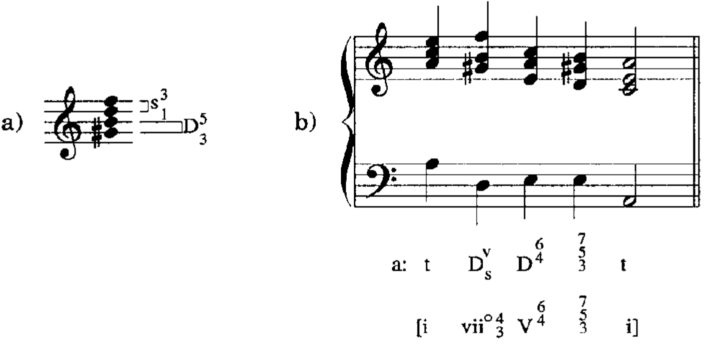
a) Bach-Excerpts from Two Chorales



b) Bach-*Well-Tempered Clavier*, Book II

In Ex. 2:149a, the leading-tone diminished-seventh chord (vii$^{\circ 7}$) is displayed as a mixture of dominant and subdominant harmonic elements. However, most theorists have chosen to explain this sonority only in terms of its dominant function. For that reason, $\not{D}^{9}_{7}$ or D^{v} are the usual functional symbols used to represent it. However, as Ex. 2:149b shows, Wilhelm Maler employs a special symbol (D^{v}_{s}) to represent the mixture of dominant and subdominant tendencies which occur when the subdominant pitch appears in the bass (vii$^{\circ 4}_{3}$). Maler is the only theorist who regularly employs this hybrid symbol to represent a leading-tone diminished-seventh chord (second inversion).

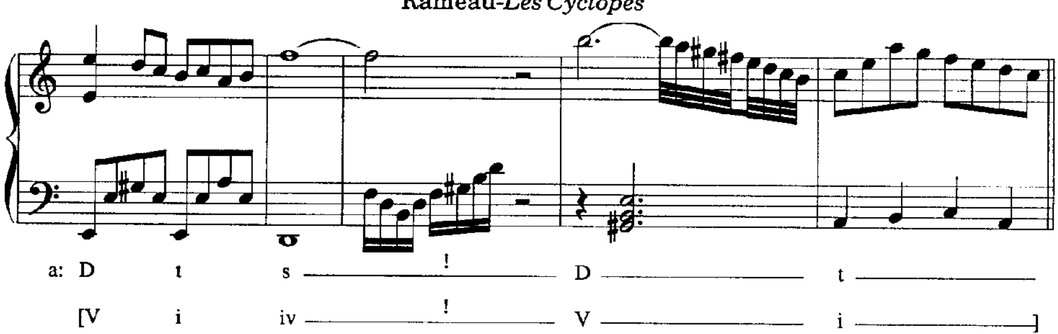
Example 2:149 a-b



D^{v}_{s} indicates that the leading-tone diminished-seventh is basically dominant in function, but with the root of the subdominant triad in the bass. I intend to go a step farther with the subdominant attributes of the leading-tone diminished-seventh chord, however. The third measure in Ex. 2:150 not only shows the influence of the subdominant pitch within the chord itself, but also demonstrates a predominance of subdominant function within the entire measure. In fact, dominant function, which is normally associated with the leading-tone diminished seventh chord, does not occur until the fourth measure of this example.

Example 2:150

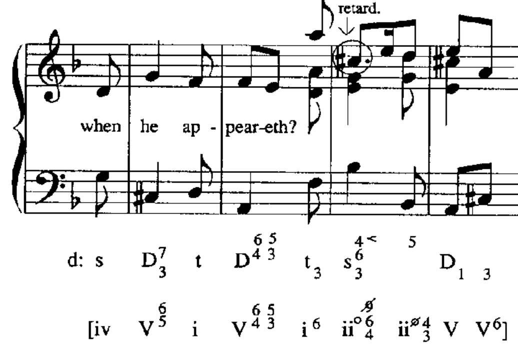
Rameau-*Les Cyclopes*



Subdominant function in the leading-tone diminished-seventh chord is just as clear when the ninth above the dominant (seventh of vii^{o7}) is found in the bass (vii^{o4}_{2}). Ex. 2:151 shows how this third-inversion diminished-seventh chord produces a retardation figure into $s^{6}_{5\,3}$ ($ii^{ø4}_{3}$).

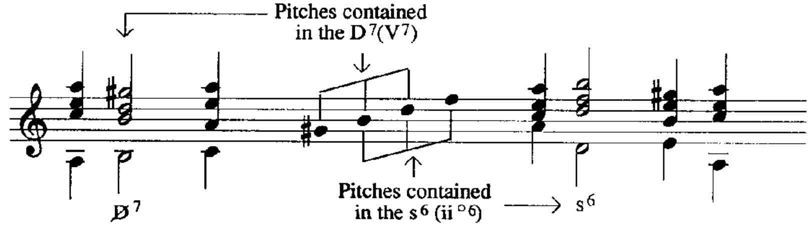
Example 2:151

Handel-*"But Who May Abide the Day of His Coming"* from *Messiah*



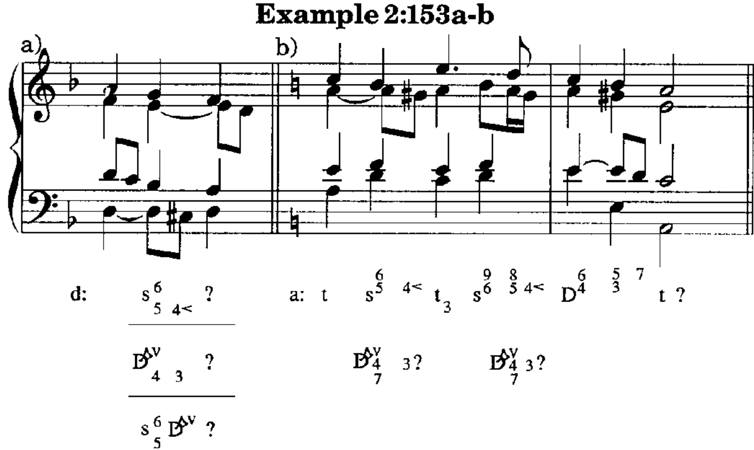
During the time of Bach, the function of the leading-tone diminished-seventh chord was established by the action of its component parts, which belong to both the D^7 (V^7) and the s^6 (ii^{o6}) chords. Of the four pitches of this sonority, three belong to the dominant and three belong to the subdominant (see Ex. 2:152).

Example 2:152



In places like those shown in Ex. 2:153a-b, there is so little analytical difference between an interpretation of the diminished-seventh chord as dominant or as subdominant, that all theoretical argument should end in stalemate.

Example 2:153a-b



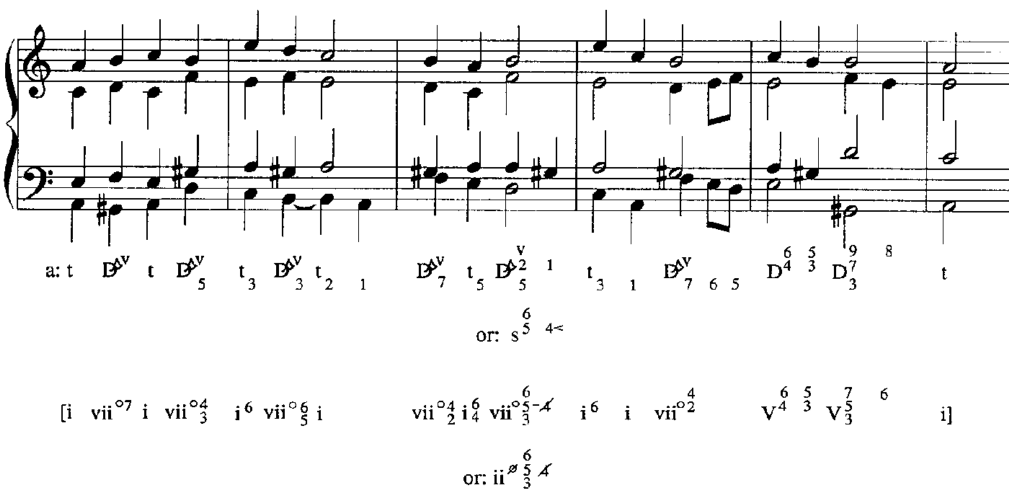
As we have observed, both dominant and subdominant functions come together in the leading-tone diminished-seventh chord. The leading-tone and Phrygian leading-tone motions shown in Ex. 2:154 also support the concept of dual harmonic functions within this sonority.

Example 2:154

We should be particularly careful when interpreting the leading-tone diminished-seventh with our contemporary ears, since we have become accustomed to those neatly stacked sonorities (built in thirds) which are characteristic of the second-half of the nineteenth century. These later diminished-seventh sonorities are almost always considered to be dominant in function). Therefore, we shall label the Baroque leading-tone diminished-seventh with the symbol $Đ^{v}$. ($Đ^{v}$ stands for a mixture of subdominant [Λ] and dominant [D] harmonic tendencies as they occur within the fully diminished-seventh sonority [^{v}].)

In functional harmony, the number-symbols 3, 5, 7, and 9 are customarily used to define the chord factors of the leading-tone diminished-seventh as they appear above the omitted root of a dominant-ninth chord. However, a true dominant-ninth was never employed in its complete form (i.e., with its root) during the time of Bach. Therefore, we shall number the chord factors of the leading-tone diminished-seventh chord from the leading-tone upward with the numbers 1, 3, 5, 7 (see Ex. 2:155). If the third, fifth, or seventh of the diminished-seventh chord is found in the bass, a 3, 5, or 7 should be written at the lower right of the symbol $Đ^{v}$.

Example 2:155



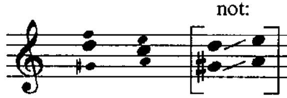
Exercises: After studying the following voice-leading principles, write out and play (in various minor keys) the chord progression in Ex. 2:155.

We have already discussed the correct resolution of both the leading-tone (third) and the seventh of a dominant-seventh chord (see p.64). As is shown in Ex. 2:156, the leading-tone (root) and the seventh of a diminished-seventh chord should normally resolve in the same manner.

Example 2:156

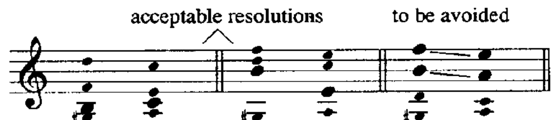
Although Bach occasionally allows hidden fifths in the resolution of a leading-tone diminished-seventh, this kind of voice leading should remain the exception rather than the rule. In order to avoid hidden fifths, the fifth of the chord (subdominant pitch) should also resolve downward by step (as though it were the seventh of the dominant-seventh).

Example 2:157



As is shown in Ex. 2:158, the third of the leading-tone diminished-seventh chord may resolve freely.

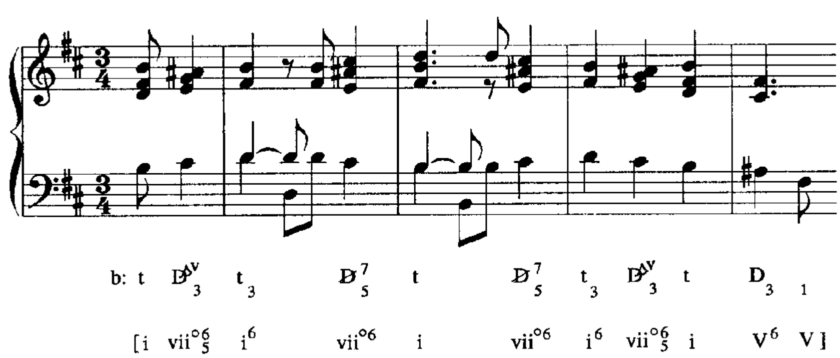
Example 2:158



Ex. 2:159 shows two different ways to resolve the bass voice of the leading-tone diminished-seventh chord. Note that the second of the two produces a set of rare hidden fifths (see measure 4, between the bass and alto).

Example 2:159

Couperin-*L'Ame en peine*



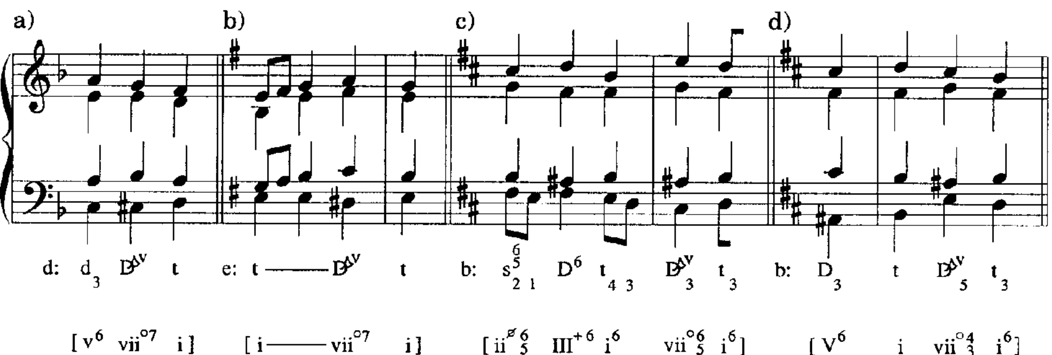
Ex. 2:160 summarizes the standard voice-leading principles associated with leading-tone diminished-seventh chords.

Example 2:160

Exs. 2:161a-d are excerpts from chorale settings which contain leading-tone diminished-seventh chords.

Example 2:161a-d

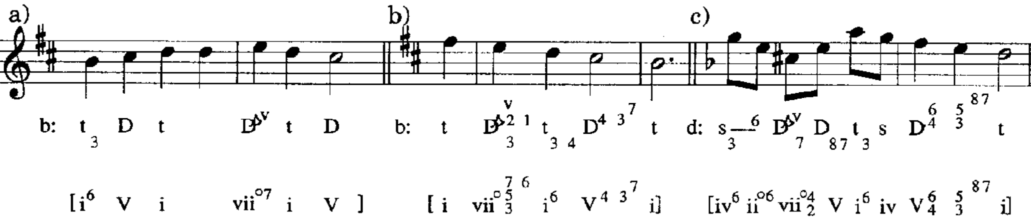
Four Excerpts from the Chorales of Bach



Exercises: 1.) Write out four-voice chorale settings of the melody lines in Ex. 2:162a-c and play your settings at the keyboard in various keys.

Example 2:162a-c

Bach-Three Excerpts from *St. Matthew Passion*



2.) Compose keyboard accompaniments to the melodic excerpts in Ex. 2:163a-e. Follow the harmonic progressions suggested; make sure to sing and play your settings.

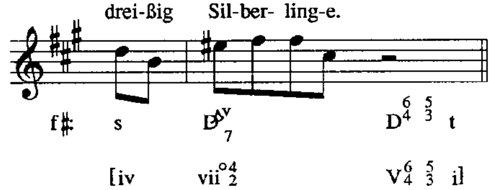
Example 2:163a-e

Bach-*St. Matthew Passion*

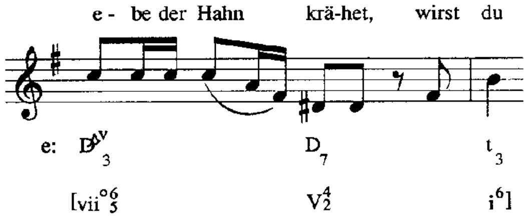
a) Transl. *"he sat down at the head of the table"*

b) Transl. *"with salve to prepare his body for burial"*

c) Transl. *"thirty small pieces of silver"*



d) Transl. *"before the cock crows you will. . ."*

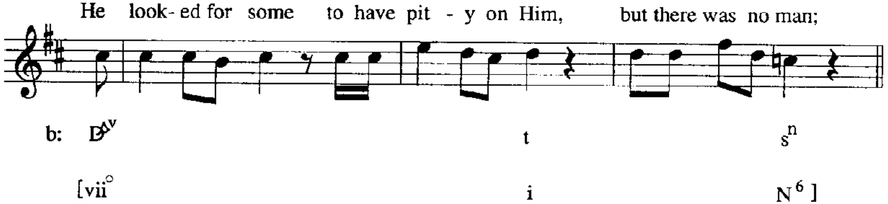


e) Transl. *"there is no comfort, not anyone at all to help"*

Exercises: Follow the same instructions as in 1.) using the materials of Exs. 2:164.

Example 2:164

Handel-*"Thy Rebuke Hath Broken His Heart"* from *Messiah*



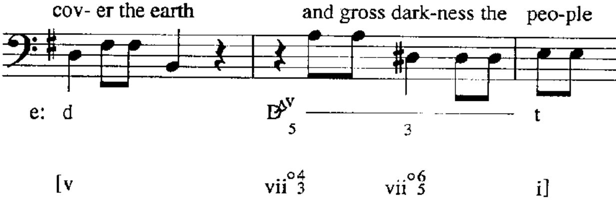
Exercises: Follow the same instructions as in 2.) using the materials of Exs. 2:165-166.

Example 2:165

Handel-*"Surely He Hath Borne Our Griefs"* from *Messiah*

Example 2:166

Handel-*"For Behold, Darkness Shall Cover the Earth"* from *Messiah*

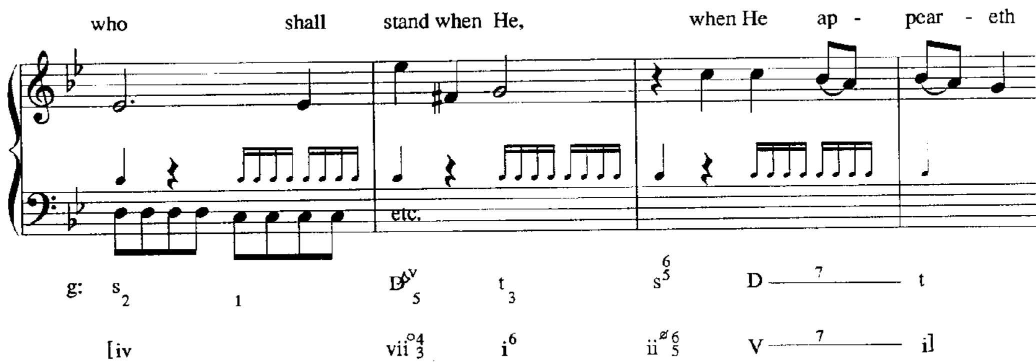


Complete the materials given in Ex. 2:167a-b by composing four-voice settings for an ensemble of stringed instruments.

Example 2:167a-b

a) Telemann-Suite for Strings *"La Lyra"*

b) Handel-*"But Who May Abide the Day of His Coming"* from *Messiah*

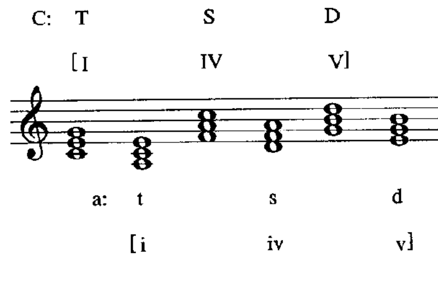


9. Secondary Triads *(Parallelklänge)*[21]

The key of A-minor has the same key signature as C-major. All major- and minor-key pairs that have this relationship are called *relative* keys. The tonic note of a minor key is always a minor third lower than the tonic pitch of its relative-major key. Conversely, the tonic note of a major key is always a minor third higher than the tonic of its relative-minor key. Therefore, the tonic triads of relative keys can also be considered relatives of one another.

Since the tonic chords in a relative major/minor key-pair are considered to be relative chords, it follows that each of the respective primary triads in those two keys (T, t; S, s; D, d) will also be relatives (see Ex. 2:168).

Example 2:168



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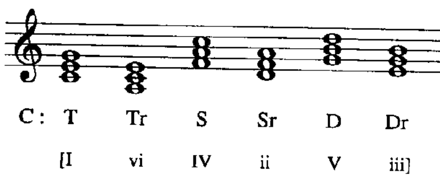
[21] One of the most significant differences in music terminology between German-speaking music theorists and their English-speaking counterparts is found in the term *parallel*. Whereas most German-speaking authors and instructors refer to the pairs of major and minor keys that have the same key signature as *parallel keys*, English-speaking authors and teachers prefer the term *relative* keys. The problem is worsened by the fact that English-speaking theorists use the term *parallel keys* to stand for major and minor key-pairs that are based on the same tonic note (e.g., C-major; c-minor). To avoid as many problems as possible for the reader trained in the Anglo-American system, the German term *parallel* will be changed to *relative* in this translation, and the symbols [P] and [p] will be changed respectively to [R] and [r]. See: Siegmund Levarie, "Harmonic Analysis," *College Music Symposium*, XXVI (1986), pp. 66-76.

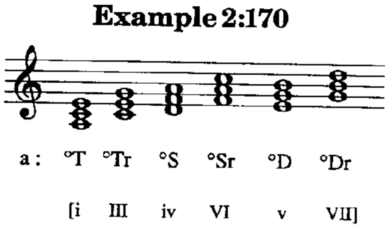
Riemann introduced the terms: *relative tonic* [orig. parallel tonic], *relative subdominant* [orig. parallel subdominant] and *relative dominant* [orig. parallel dominant] for those minor triads, whose roots are, respectively, a third below those of the tonic, subdominant and dominant triads in a major key. This nomenclature, still in use today, employs the symbols found in Ex. 2:169.

Example 2:169



The symbols shown in Ex. 2:170 were employed by Riemann to represent the relative sonorities in minor keys.

Example 2:170

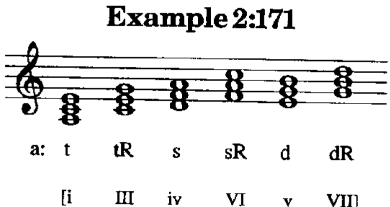


Riemann uses the symbol [°] to indicate minor chord quality; e.g., °T = the minor tonic, °Tr= the minor tonic's relative major.

Wilhelm Maler slightly revised Riemann's symbols so that upper-case letters were used to represent major triads and lower-case letters were used to represent minor-triads.

Ex. 2:171 shows Maler's revision of Riemann's minor-key symbols. We shall employ Maler's revised minor-key symbols in this text.

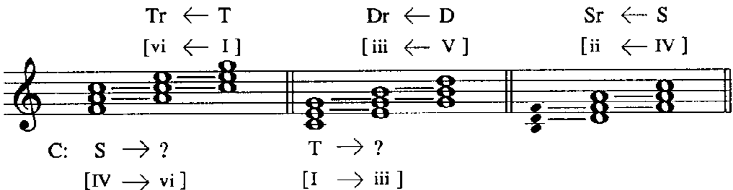
Example 2:171



The symbol tR should be interpreted as the relative major triad [III] of the minor tonic [i].

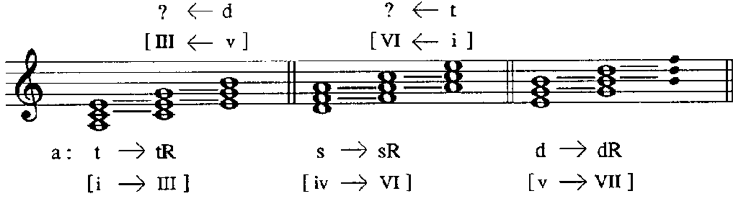
Relative triads have two tones in common with their respective primary triads. This is because the root of a relative triad is a third higher (rel. maj.) or lower (rel. min.) than the root of the primary triad with which it is associated. Riemann showed that two of the three relative triads within a key possess ambiguous functions, since they share two common tones with the primary triad a third higher, and two common tones with the primary triad a third lower. Ex. 2:172 shows how Tr (vi) can also have a relative relationship to S (IV), and how Dr (iii) can have a relative relationship to T(I). Only Sr (ii) shares common tones with only one primary triad (the subdominant), since the leading-tone triad (vii°), a third below, is not a primary triad.

Example 2:172



As Ex. 2:173 shows, in minor keys tR (III) can also have a relative relationship to the minor dominant (v), and sR (VI) to t (i). dR (VII) shares common tones with only one primary triad (the dominant), since the supertonic triad (ii°), a third above, is not a primary triad.

Example 2:173

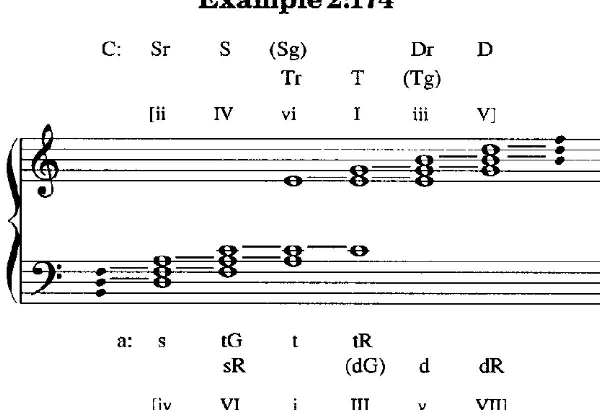


A sonority whose root is related by third to a primary triad, but in the opposite direction from that primary triad's relative, is called a *counter-relative chord (Gegenparallelklang)*. Hermann Grabner is credited with inventing this term.[22] Sometimes such sonorities are also simply called

[22] Hermann Grabner, *Die Funktionstheorie Hugo Riemanns und ihre Bedeutung für praktische Analyse* (Munich: O. Halbreiter, 1923).

counter-chords (Gegenklang). The root of a counter-chord occurs a third above its respective primary triad in major keys and a third below its primary triad in minor keys. Like the relative sonorities, each counter-chord has two pitches in common with its respective primary triad (see Ex. 2:174).

Example 2:174

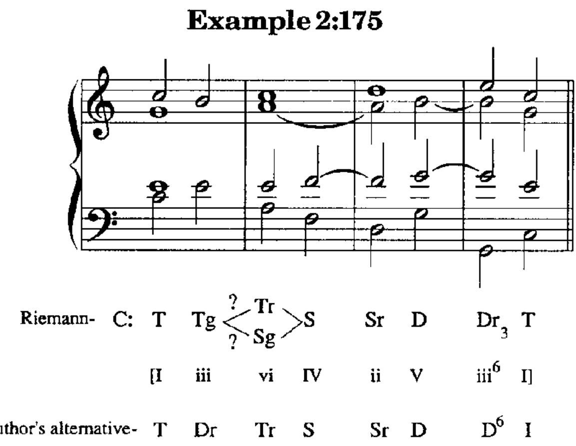


The upper-case G is the symbol used to represent all counter-relative chords in minor, because (like the relatives) the counter-chord of each minor-key primary triad is major in quality (see Ex. 2:174).

Since Riemann, theorists have toiled in vain to determine accurately when a chord should be viewed as a counter-chord and when it should be considered a relative. In an attempt to clarify the tG (VI), Riemann claimed that it functions like "a neighboring sonority to the leading-tone" *(Leittonwechselklang).*

Riemann gave the following example, which is repeated in Ex. 2:175 with Maler's revised functional symbols.

Example 2:175

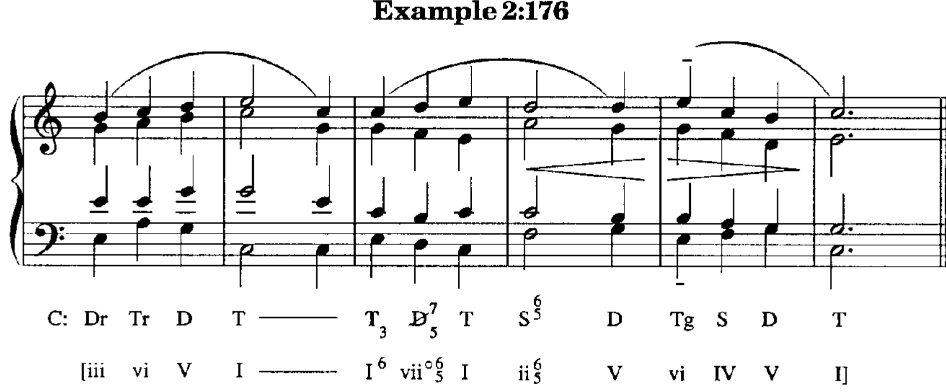


In spite of the two analyses Riemann provides for the third chord in Ex. 2:175, both are far removed from the way this passage is actually perceived. Sg-S-Sr is problematic, since it is unlikely that anyone would hear these three chords as variants of subdominant function. The analysis, T-Tg-Tr also does not describe this progression very well, since the falling perfect fifth between the roots of the second and third chords (E-minor to A-minor) certainly implies a change of harmonic function.

It seems to me that the only interpretation of Ex. 2:175 that makes sense is the functional progression: T-Dr-Tr-S-Sr-D-D^6-T. In other words, though this example was taken directly from Riemann's discourse on counter-chords, I believe that there are no counter-chords present in this example at all. In more-recent studies, this problem has been addressed and fortunately this example now appears in few textbooks.

Ex. 2:176 contains a passage that seems to include a true counter-chord. Note that the triad E-G-B is labelled once as Dr (measure one) and once as Tg (measure five).

Example 2:176



Because counter-chord sonorities are both rare and often functionally ambiguous, all the possible counter-chord sonorities in Ex. 2:174, except the minor-key tG (VI), are shown in parentheses. tG is usually perceived as a clear substitute for t, especially if we consider how frequently it was used as the goal of *deceptive cadences* during the time of Bach.

The Deceptive Cadence: A Baroque-era deceptive cadence occurs directly after a dominant-function sonority. Furthermore, this dominant harmony normally has its third (leading-tone) in the soprano. The deceptive resolution occurs when the dominant sonority fails to resolve to the expected tonic chord at the end of a phrase [although the leading-tone-to-tonic pitch resolution normally does take place].[23] In major keys, instead of the expected tonic chord, Tr (vi) is substituted; in minor keys, the substitute for tonic is tG (VI).

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[23] In Chapter Seven, the author discusses six possible types of the deceptive cadence and the specific voice-leading involved with each (see pp.287-289).

Exercises: The harmonic progressions in Ex. 2:177a-b and 2:178 include deceptive cadences. These examples should be played in various keys, but the progressions should not be played in a mechanical fashion. It is important to hear the final sonority of the deceptive cadence (Tr or tG) as a substitute for the expected tonic chord. The third of the Tr (vi) or tG (VI) should be doubled (see the spots marked [x] in Ex. 2:177a-b and 2:178) in order to avoid forbidden parallel motion between voices and to strengthen the sense of substitution for tonic harmony.

Example 2:177a-b

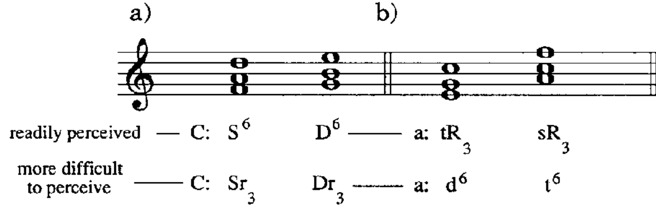
Example 2:178
Bach-*Wir Christenleut'*

With the exception of the doubling associated with the deceptive cadence, relative and counter-relative chords generally follow the same doubling and spacing rules that apply to major and minor root-position and first-inversion primary triads.

Inversions of Secondary Triads: Because major keys are generally more stable than minor, a short-term excursion into the relative-minor area is best accomplished with chords that are strongly defined. In other words, when motion toward the relative minor is desired, it is best to keep in root position those chords that will take on function in the relative-minor key. If these sonorities are employed in inversion, our ears will not as readily accept the shift into the relative-minor area. For example, instead of hearing Sr_3 (in minor), our ear would probably interpret the sonority as S^6 (in the rel. maj.); instead of Dr_3 (in minor), we would likely hear D^6 (in the rel. maj.). When there is a transition from minor to its more-stable relative major, however, the use of inverted chords can be quite convincing.

Ex. 2:179a shows, within the key of C-major, how two first-inversion triads can be interpreted clearly in the tonic key, but only with some difficulty in the relative-minor area. Ex. 2:179b shows, within the key of A-minor, how two first-inversion triads in can be interpreted clearly in the area of the relative major, but only with some difficulty in tonic key.

Example 2:179a-b



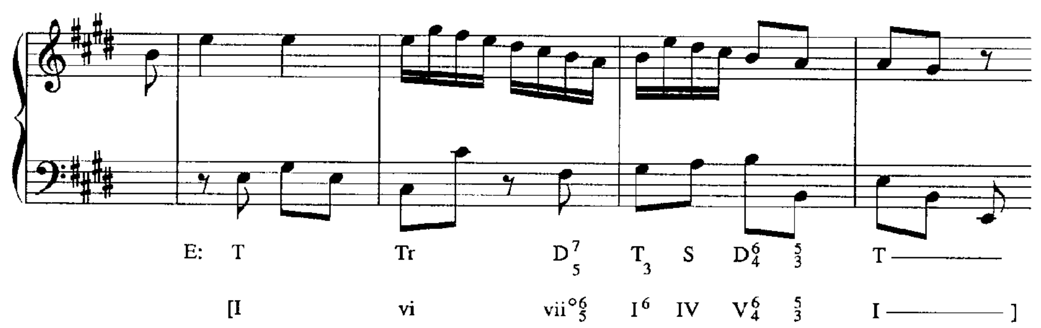
Note: Tr, Sr and Dr are seldom found in first inversion, whereas tR, sR dR are regularly encountered in first inversion.

10. Secondary Triads in Major Keys

An analysis of period literature shows that relative-chords may be inserted between primary triads in either strong or weak metrical positions (see Ex. 2:180a-e). For that reason, many standard harmony textbooks are in error when they claim that secondary triads should be most-regularly employed in weak metrical positions.

Example 2:180 a-e

b) Bach-Flute Sonata in E-major



c) Handel-*"Let all the Angels of God Worship Him"* from Messiah

d) Handel-Cantata

e) Handel-Concerto Grosso

The following chord progression has been constructed from elements that are found in Ex. 2:180a-e. In several keys, write-out and play the following progression in four voices:

T Tr T_3 S | T D Tr D | Dr T S T | Sr T_3 S^{6}_{5} D | T ||

[I vi I^6 IV | I V vi V | iii I IV I | ii I^6 ii^{6}_{5} V | I ||]

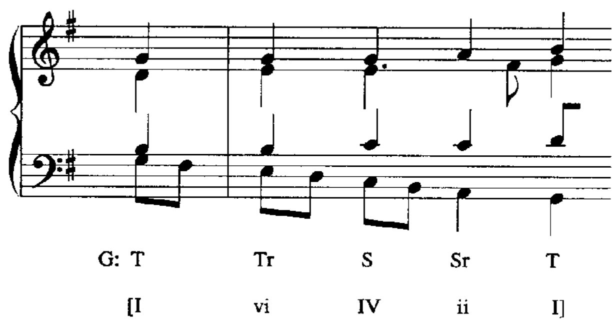
Primary triads and their respective relative-chords often directly follow one another. In such cases, it is usual for the primary triad to come first. During the time of Bach, spots where the relative sonority comes as the first chord of each pair (as in the progression: Tr-T-Sr-S-Dr-D [vi-I-ii-IV-iii-V]) are very rare. The musical excerpts in Ex. 2:181a-d contain harmonies that progress from primary chords to their relatives.

Example 2:181 a-d

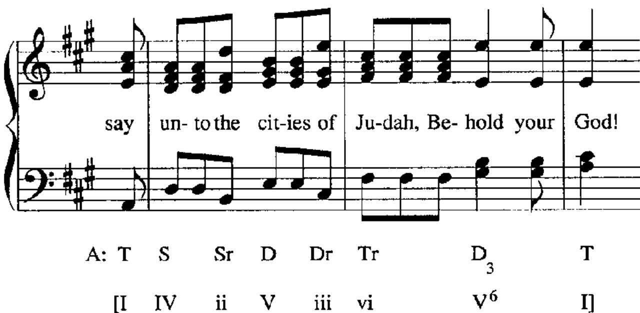
a) Telemann-Suite for Strings

b) Bach-Flute Sonata in A-major

c) Bach-*"Der Tag, der is so freudenreich'*



d) Handel-*"O Thou that Tellest Good Tidings to Zion"* (chorus) from *Messiah*



The following sequences of chords are some of the most important harmonic progressions in the Baroque era. Write out these two basic progressions in various keys and play them at the keyboard.

T Tr | S Sr | D Dr | Tr S^{6}_{5} | D^{6}_{4} $^{5}_{3}$ | T ||

[I vi | IV ii | V iii | vi ii$^{6}_{5}$ | V$^{6}_{4}$ $^{5}_{3}$ | I ||]

T | Tr S | Sr D | T ||

[I | vi IV | ii V | I ||]

Exercises: Invent a two-voice exercise for a melody instrument of your choice and a bass line to be played by the piano; write-in the functional symbols for each harmonic change. If you cannot create both a bass line and a melody at the same time, then first work out the bass line and its harmonic implications before composing the melody.

Two secondary triads will frequently occur in succession. When this is the case, the roots of these chords will usually be related by fourth or fifth. The following four pairs of chords and Exs. 2:182a-c will serve as examples:

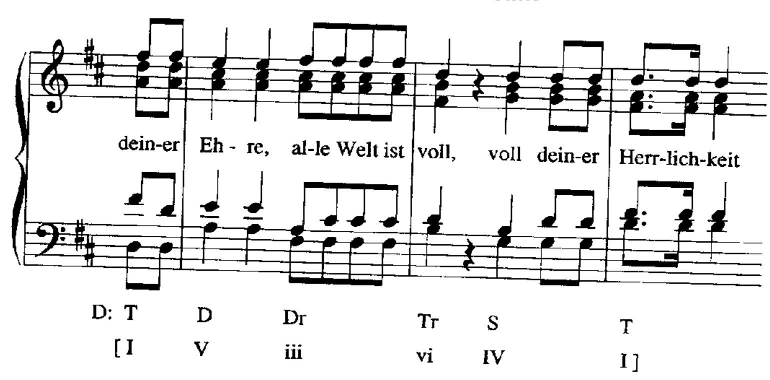
Tr-Sr; Tr-Dr; Sr-Tr; Dr-Tr.
[vi-ii; vi-iii; ii- vi; iii-vi]

Example 2:182 a-c

a) Bach-*"Wachet auf, ruft uns die Stimme"*

b) Bach-Flute Sonata in C-major

c) Handel-*Utrecht Te Deum*

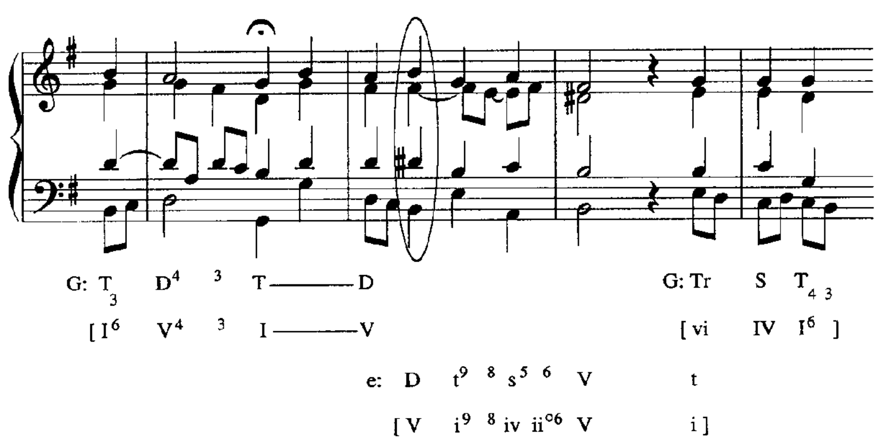


Exercises: Play through the progressions in Ex. 2:182 and then compile all of the elements of these progressions together into one longer progression of your own construction. Compose a four-voice setting of this harmonic progression.

Groups of more than two consecutive secondary triads are rare. This is because such groups tend to weaken a progression's harmonic relationship to the original (major) tonic. Instead, the relative-tonic chord (Tr) is made to sound, if only temporarily, as a new tonic. In such cases, as is shown in Ex. 2:183, the dominant of the relative minor (see circled chord) is regularly substituted for Dr (iii).

Example 2:183

Bach-*"Du großer Schmerzensmann"*



Exercises: Use the bass line in Ex. 2:184 to create several different types of musical settings: 1) a piece for four-part chorus; 2) a piece for piano or harpsichord—three voices in the right hand with the bass line in the left; 3) An obbligato line for any instrument which can then be added to the keyboard setting composed in 2).

Example 2:184

Handel-*"Rejoice greatly, O daughter of Zion"*

Set the melodies in Ex. 2:185a-b for a group of stringed instruments, but notate all the voices on two staves.

Example 2:185 a-b

a) Telemann-Minuet from the Suite for Strings

b1) Telemann-from the First Movement of *"La Lyra"*

b2) Telemann-from the Third Movement of *"La Lyra"*

Exercises: Using a well-known hymn tune such as *Praise to the Lord the Almighty; Praise God, from Whom All Blessings Flow; Come, Thou Almighty King; For the Beauty of the Earth*, etc., compose an expressive four-voice chorale which employs a number of secondary triads.

11. Secondary Triads in Minor Keys

As opposed to major keys, single secondary triads, with the exception of the tonic chord's counter-relative (tG) [VI], rarely occur in minor. However, as the two excerpts in Ex. 2:186 show, secondary triads in minor often appear in groups of two.

Example 2:186 a-b

a) Handel-*"But Thanks be to God"* from *Messiah*

b) Handel-*Utrecht Te Deum*

Exercise: Write out and play the following progressions in various keys:

t dR | tR s^6 | $D^{6\ 5}_{4\ 3}$ | t ||

[i VII | III $ii^{\circ 6}$ | $V^{6\ 5}_{4\ 3}$ | i ||]

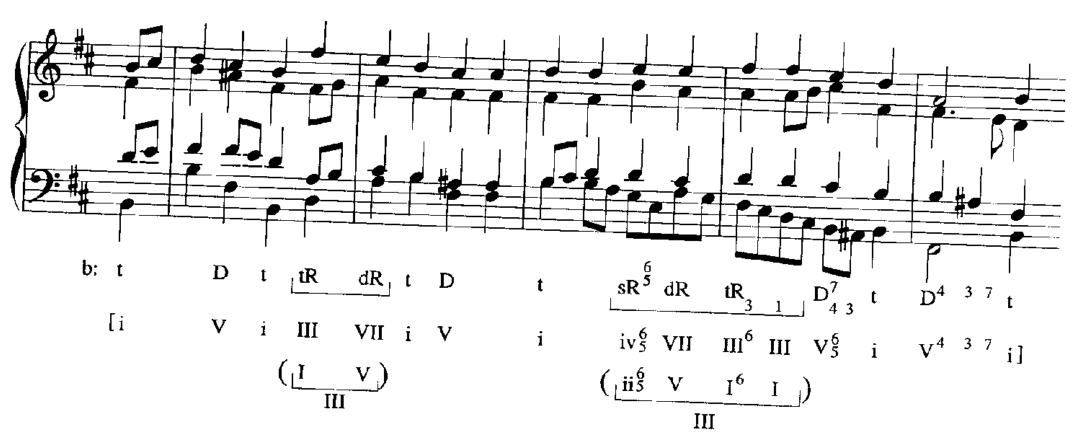
t | sR tR | s t | sR s | D t ||

[i | VI III | iv i | VI iv | V i ||]

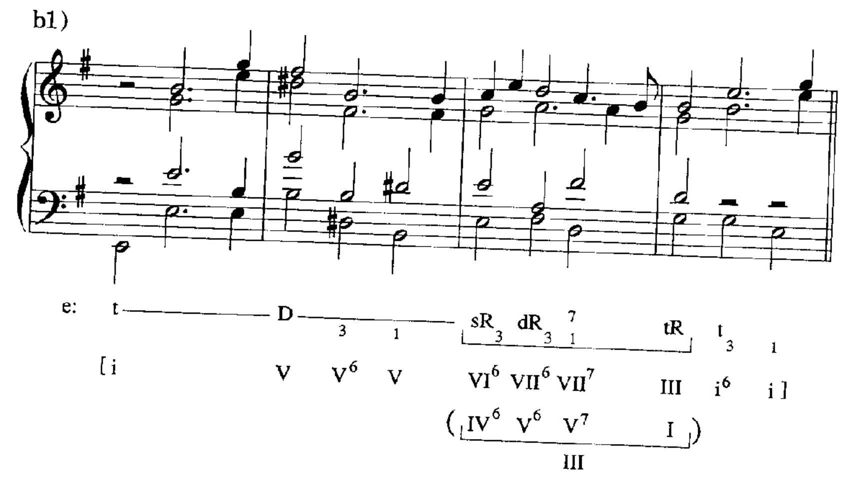
There are numerous examples in the literature where three secondary triads directly follow one another in minor keys (see Ex. 2:187a-c).

Example 2:187 a-c

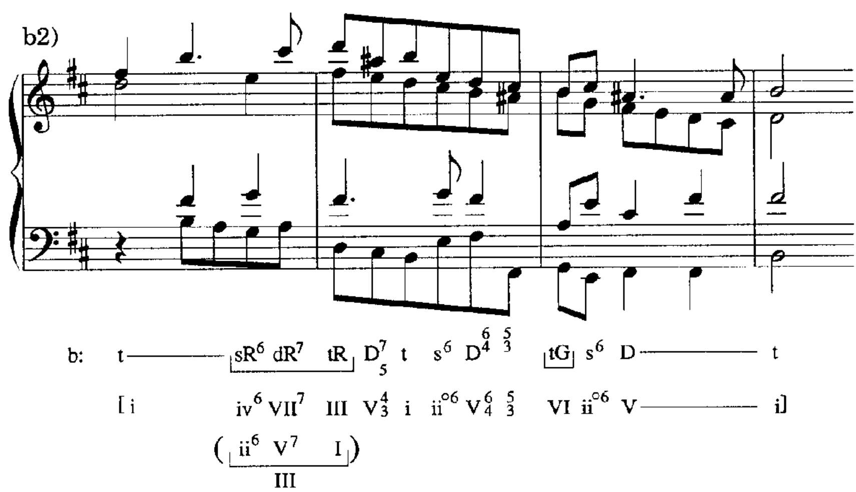
a) Bach-*"Wir Christenleut"*

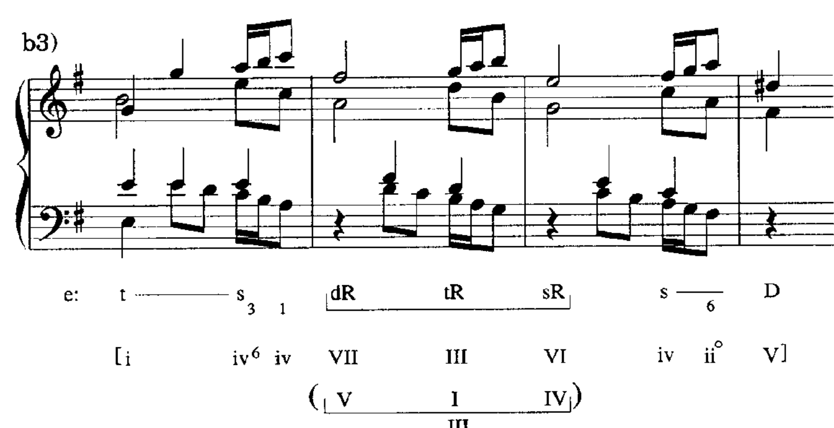


b) Handel-Three Excerpts from the Concerti grossi

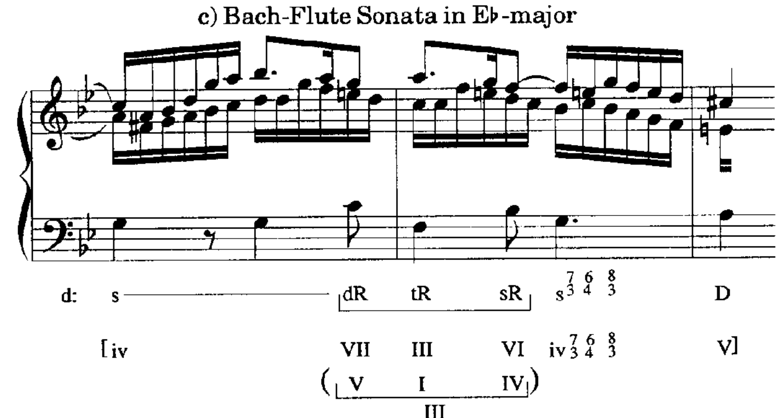


Example 2:187b (cont.)





c) Bach-Flute Sonata in E♭-major



Exercise: The following progression is typically Baroque in its structure. Set it in four voices and play it in various keys.

$$\text{t} \;\big|\; \text{sR} \quad \text{dR} \;\big|\; \text{tR} \quad \text{s}^{6} \;\big|\; \text{D}^{6}_{4} \;\; {}^{5}_{3} \;\big|\; \text{t} \;\big\|$$

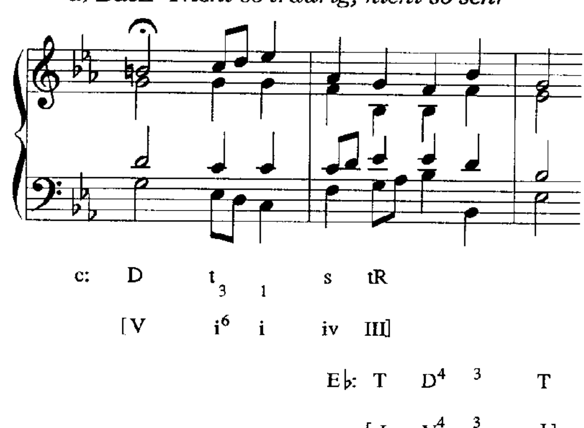
$$[\,\text{i} \;\big|\; \text{VI} \quad \text{VII} \;\big|\; \text{III} \quad \text{ii}^{\circ 6} \;\big|\; \text{V}^{6}_{4} \;\; {}^{5}_{3} \;\big|\; \text{i} \;\big\|\,]$$

Since every ear hears a passage in a slightly different way, it is difficult to be certain where a group of relative chords cease to be secondary triads in minor and when they actually function to establish the relative-major key through tonicization or modulation.

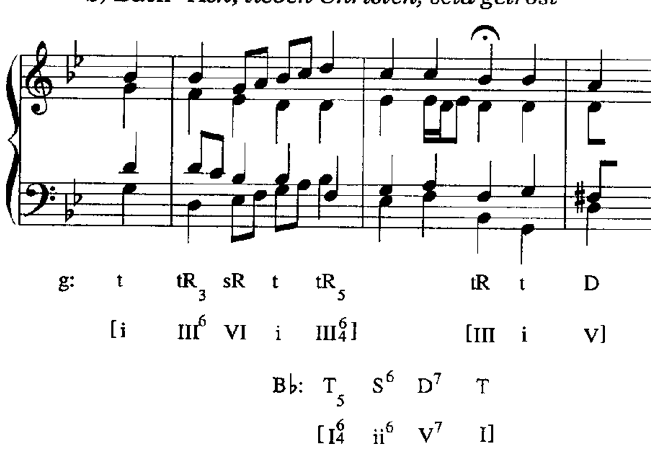
In the following Bach-chorale excerpts (Ex. 2:188a-b), the harmonic progressions in the two closing phrases, with their strong major-mode final cadences, will probably be heard as changes in tonal center.

Example 2:188 a-b

a) Bach-*"Nicht so traurig, nicht so sehr"*



b) Bach-*"Ach, lieben Christen, seid getrost"*



Pieces in minor often pull strongly toward their relative-major keys, while pieces in major mode modulate more frequently to the dominant key than to the relative minor.

Difficult Exercises for Those Especially Interested: The two measure bass line of a Bach trio sonata for organ (Ex. 2:189) can be repeated as the basso-ostinato part of a two-voice chaconne. From this repeating harmonic progression, produce a continuous set of new melodic figures for the upper voices of the chaconne. Begin with longer-note figures and gradually introduce more and more rapid-note patterns.

Example 2:189

For the bass line in Ex. 2:190, choose a harmonic progression, write in the functional symbols and compose a right-hand keyboard part. Make sure to notice the continuous passing-tone motion of the bass line. Try out several different harmonic and melodic possibilities.

Example 2:190

Handel-*"He Trusted in God"* from *Messiah*

The melody in Ex. 2:191 can be harmonized in a number of ways. Work out several possibilities and invent a good vocal-choral bass line. Label each example with correct functional symbols.

Example 2:191

Handel-*"He Trusted in God"* from *Messiah*

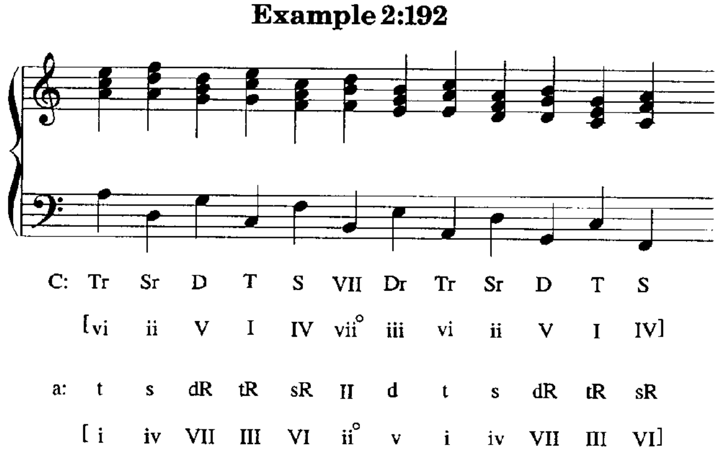
12. Descending-Fifth Sequences in Major and Minor Keys

Sequences of triads and/or seventh chords, whose roots progress by a succession of descending fifths are common in Baroque music. These sequences, which occur both in major and minor, enter at some point into the overall harmonic progression of a composition and then exit at some later point in the harmonic plan. Though Bach and Handel both regularly employed chord sequences in their music, they are especially noticeable in the works of Vivaldi. The only really surprising aspect of the sequence is that the listener is frequently not consciously aware that it is being employed to counterbalance harmonic tension in a work.

When a sequence is established, the listener instinctively relaxes and assumes that certain chords will follow. If the amount of sequence is properly balanced with other types of progression, it can provide a work with both stylistic clarity and a sense of reduced harmonic tension. On the other hand, if too much sequence is used, a passage can be easily become trite.

In the sequence shown in Ex. 2:192, study the function of each chord in both major and minor. Play the sequence through a number of times, choosing different entrance and exit points.

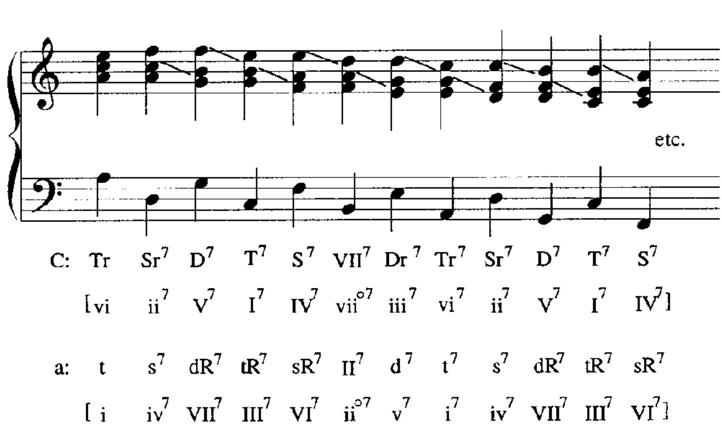
Example 2:192



The unstable root-position diminished triad, which occurs on the seventh scale-degree in major (vii°) and the second scale-degree in minor (ii°), does not present a problem when it occurs within a sequence. Since the bass line proceeds through the sequence by descending fifths, it is absurd to interpret the leading-tone diminished triad as an abridged dominant-seventh (Đ^7). Further, since all the chords of this sequence are in root position, the B-diminished triad in Ex. 2:192 will be allowed to stand, even though the voicing of this chord would ordinarily be considered incorrect.

In the following excerpts from literature (Ex. 2:194a-e), melodically sequenced materials will occur over a single chord change (e), or over two chord changes (a). The excerpts in Ex. 2:194b, c, d contain sequences in which two voices closely imitate one another. In these examples, the melodic materials that initiate the sequence are established in one voice over two chord changes, followed by sequential imitation in a second voice. The excerpts in Ex. 2:194b, c, d also contain seventh-chord harmonic sequences. Ex. 2:193 shows a basic model for the seventh-chord sequence.

Example 2:193



If a harmonic sequence is allowed to continue long enough, the listener cannot keep track of the harmonic function of each chord. For that reason, it makes sense to employ scale-step Roman numerals, rather than to apply functional symbols for long sequences, (e.g.,VI-II-VI-IV-VII...)[24]

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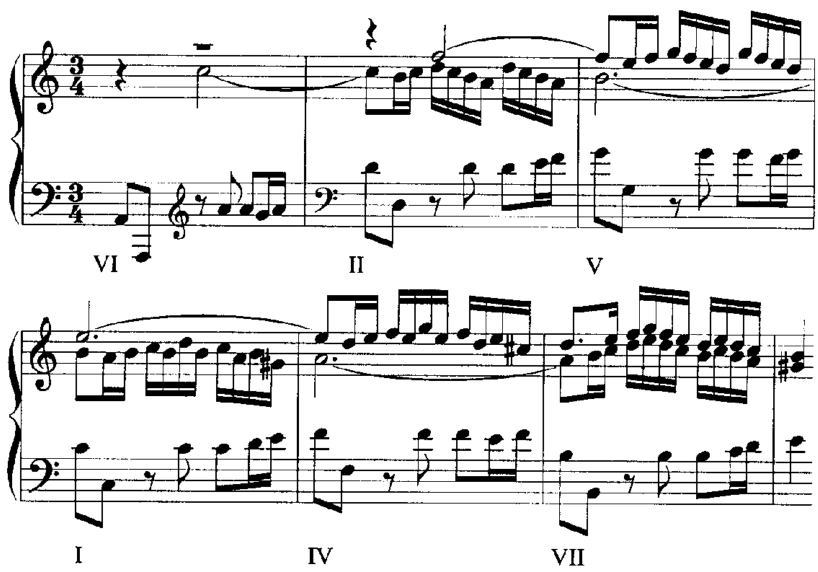
[24] Scale-step Roman numerals are used to denote only the degree of the scale upon which the root occurs. Since these symbols are intended to show only the position of the chord within the key, they are all written in upper case and do not give any direct information about chord quality.

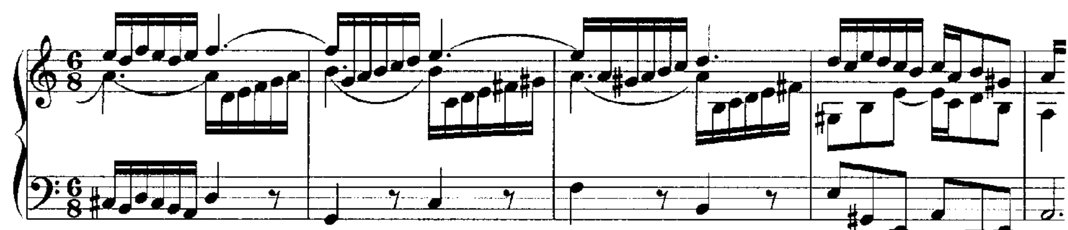
Example 2:194 a-e

a) Bach-Minuet

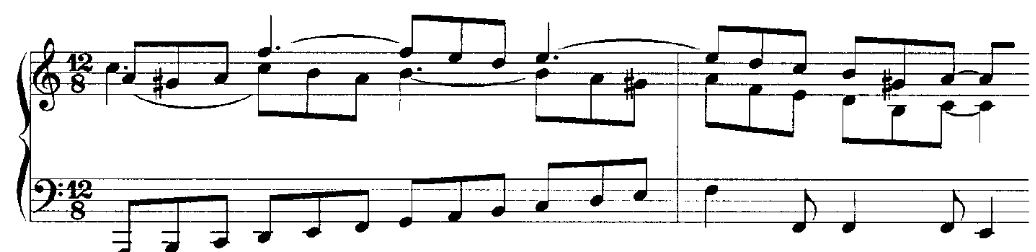
b) Vivaldi-Concerto as arranged by Bach



c) Bach-Flute Sonata in A-major



d) Bach-*St. Matthew Passion*



e-f) Vivaldi-Excerpts from Concerti as arranged by Bach for organ

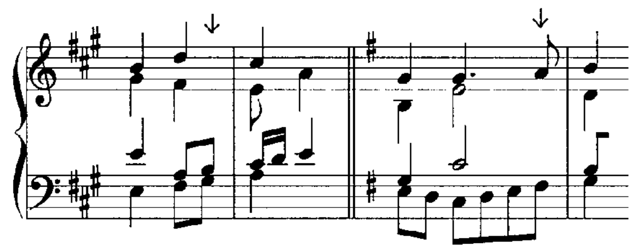
Exercises: Invent progressions in major and minor which include varying lengths of sequence. Compose several examples in three or four voices, and then try to construct a sequential pattern in two voices. Score some of your exercises for chorus, and some for instruments.

Outside its of use in sequence, the diminished-minor seventh chord built on the second scale degree in minor ($ii^{ø7}$ -- e.g., B-D-F-A in A-minor), appears occasionally as an inversion of subdominant harmony: s^5_6 (D-minor triad with an added sixth [B] in the bass). In major keys, the diminished-minor seventh chord occurs on the seventh scale degree ($vii^{ø7}$), but outside of sequences, it only occurs as a passing sonority in the Baroque.

Ex. 2:195 shows two examples of the passing leading-tone seventh chord found in the chorales of Bach (arrows). True diminished-minor leading-tone seventh chords were not actually introduced until the Classical period (see Chapter Three).

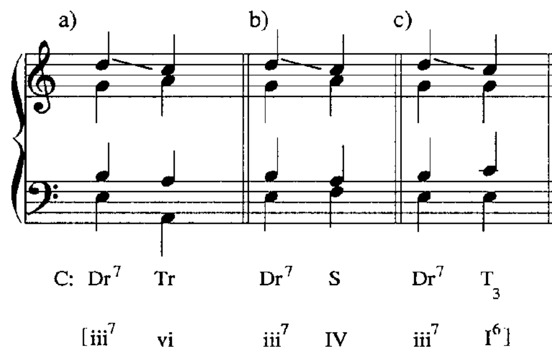
Example 2:195

Bach-Chorale Excerpts



In a sequence of chords whose roots descend by fifths, every triad functions like a dominant to the next chord. This dominant-tonic relationship is further strengthened if the sequence consists of seventh chords. Although not all seventh chords are major-minor sevenths (dominant sevenths), the seventh of all seventh chords should be resolved downward by step (see Ex. 2:196). This principle applies even when a seventh chord resolves to a chord whose root is not a fifth lower (see Ex. 2:196b-c). In cases where no dominant relationship exists, the seventh acts to intensify the harmonic dissonance of a chord before it progresses to the next sonority. In fact, it is only the downward resolution of the seventh which provides a convincing progression from a seventh chord to certain following chords.

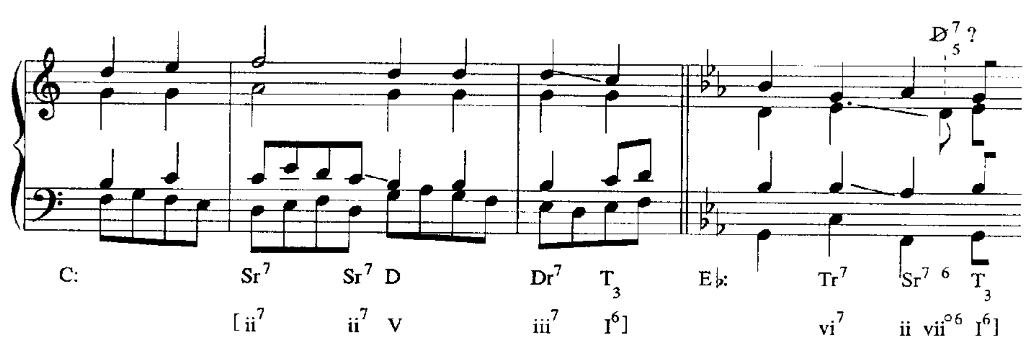
Example 2:196

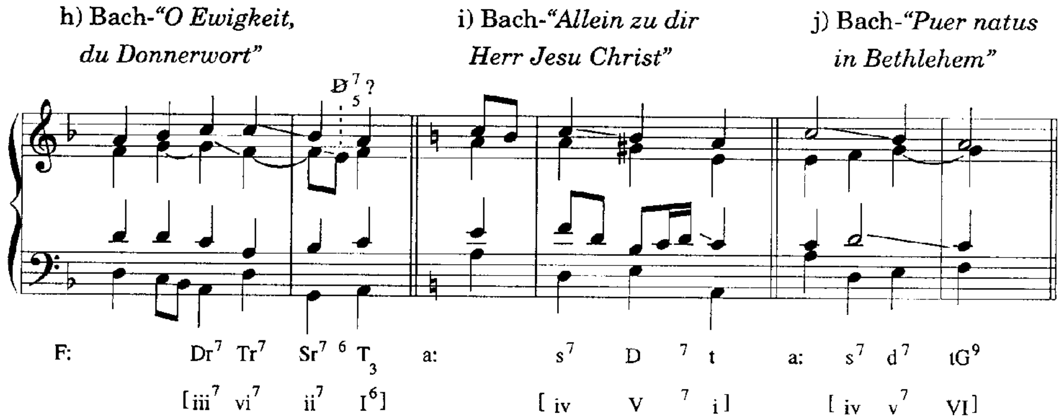


The chorale excerpts in Ex. 2:197 show how Bach treats seventh chords built on various scale degrees.

Example 2:197 a-j

g) Bach-"*Schmücke dich, o liebe Seele*"





Exercise: Write out and play the following two progressions in various keys:

$\mathrm{T}\quad \mathrm{T}_3\quad \mathrm{Sr}^7\quad \mathrm{D}^7_5\quad \mathrm{T}^7\quad \mathrm{S}^7\quad \mathrm{D}_7\quad \mathrm{Dr}^7\quad \mathrm{S}\quad \mathrm{T}\quad \mathrm{Tr}^7\quad \mathrm{Sr}\quad \not{\mathrm{D}}^7_5\quad \mathrm{T}$

$[\mathrm{I}\quad \mathrm{I}^6\quad \mathrm{ii}^7\quad \mathrm{V}^4_3\quad \mathrm{I}^7\quad \mathrm{IV}^7\quad \mathrm{V}^4_2\quad \mathrm{iii}^7\quad \mathrm{IV}\quad \mathrm{I}\quad \mathrm{vi}^7\quad \mathrm{ii}\quad \mathrm{vii}^{\circ 6}\quad \mathrm{I}]$

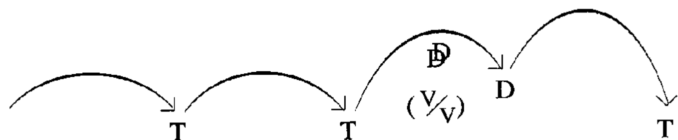
$\mathrm{t}^8\quad \mathrm{t}^7\quad \mathrm{s}\quad \mathrm{sR}^7\quad \mathrm{dR}\quad \mathrm{d}^7\quad \mathrm{tG}\quad \mathrm{s}^7\quad \mathrm{d}_{1\,2}\quad \mathrm{dR}\quad \mathrm{tR}^7\quad \mathrm{s}\quad \mathrm{t}$

$[\mathrm{i}^8\quad \mathrm{i}^7\quad \mathrm{iv}\quad \mathrm{VI}\quad \mathrm{VII}\quad \mathrm{v}^7\quad \mathrm{VI}\quad \mathrm{iv}^7\quad \mathrm{v}\quad \mathrm{VII}\quad \mathrm{III}\quad \mathrm{iv}\quad \mathrm{i}]$

13. Expansion of Tonal Space

The important melodic contour shown in Ex. 2:198 was developed sometime around 1640. This melodic form consists of four phrases. The first phrase, which forms a melodic arch ending on the tonic pitch, is repeated in the second phrase. The third phrase is pushed toward the dominant by means of the dominant's leading-tone. This leading-tone belongs to a dominant-function chord in the key of the dominant. The fourth phrase completes the formal structure by returning to the tonic (the melodic climax often occurs in the fourth phrase). Ex. 199a-c contains complete melodies from the literature of the seventeenth century which exhibit this kind of melodic-harmonic phrase structure.

Example 2:198



Example 2:199 a-c

a) *"O Gott, du frommer Gott"* (1670)

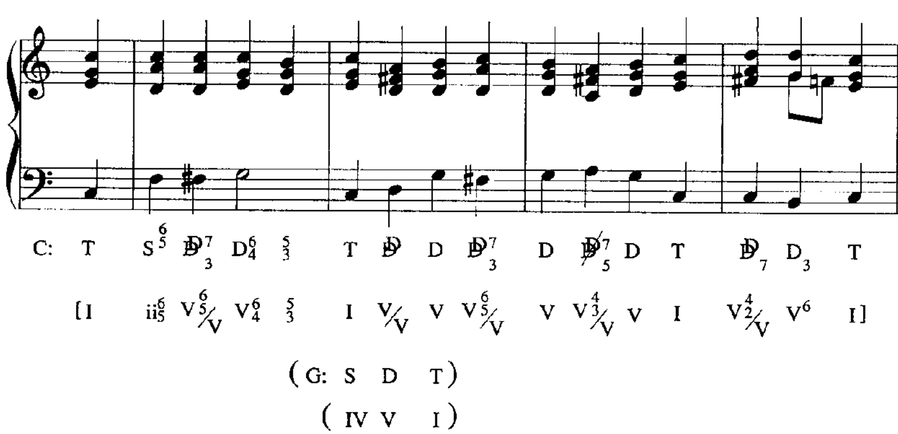
b) *"Straf mich nicht in deinem Zorn"* (1694)

c) *"Nun danket alle Gott"* (1647)

Exercise: Construct a set of your own melodies after the structure of those found in Exs. 2:199a-c. In order to harmonize the melodies in Ex. 2:199 or the ones you invented, it is necessary to employ a chord that will function as the dominant chord of the dominant. The dominant of the dominant *(Wechseldominante)* is a very important sonority, since temporary tonicization of the dominant triad was, for the Baroque and Classical eras, the most common means of expanding the borders of a particular key. All dominant-function triads or seventh chords (in the key of the dominant) may be employed as a dominant of the dominant. The dominant-of-the-dominant chord is labeled with the symbol Đ (V/V).

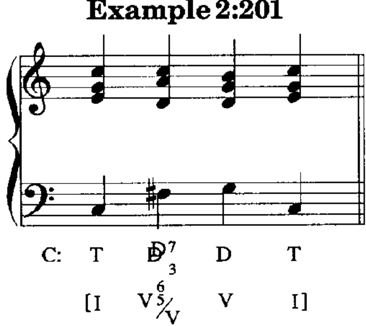
Write out the progression in Ex. 2:200 and play it in various keys.

Example 2:200



As is shown in Ex. 2:200, Đ frequently substitutes for the subdominant chord in a harmonic progression.

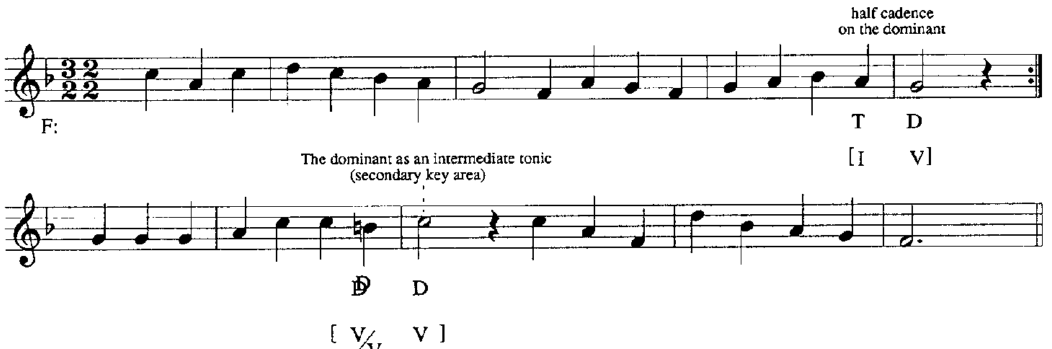
Example 2:201



The differences between a dominant half-cadence and a progression to the dominant through Đ are illustrated in the melodies in Ex. 2:202. Both constructions are regularly employed in the Baroque.

Example 2:202a-b

a) *"O daß ich tausend Zungen hätte"* (1738)



b) *"Ich freu mich in dem Herren"* (1635)

Exercises: Analyze the melodies in Ex. 2:202 and Ex. 2:199 for their harmonic implications, label the harmonic functions, then set the melodies in four voices and play them at the piano. As you study these melodies, make sure to keep in mind that more than just the dominant's leading-tone can be related to the new tonal area. In some cases, an entire section of a phrase may best be analyzed in a secondary-key area. To facilitate analysis of such spots, we will adopt the following procedure: all functional symbols found within parenthesis ( ) will be chords that belong to the key area of the chord which follows. As is shown in Ex. 2:203, several interpretations may be possible for a particular progression, especially when a return to the original tonic area is relatively gradual.

Example 2:203

The two chorale melodies in Ex. 2:204a-b imply tonicization of the dominant even though the leading-tone of the dominant does not appear in the melody itself. When analyzing and labeling the harmonic functions, search for the most convincing spot to apply the D̸. Try out several possibilities and choose the best option.

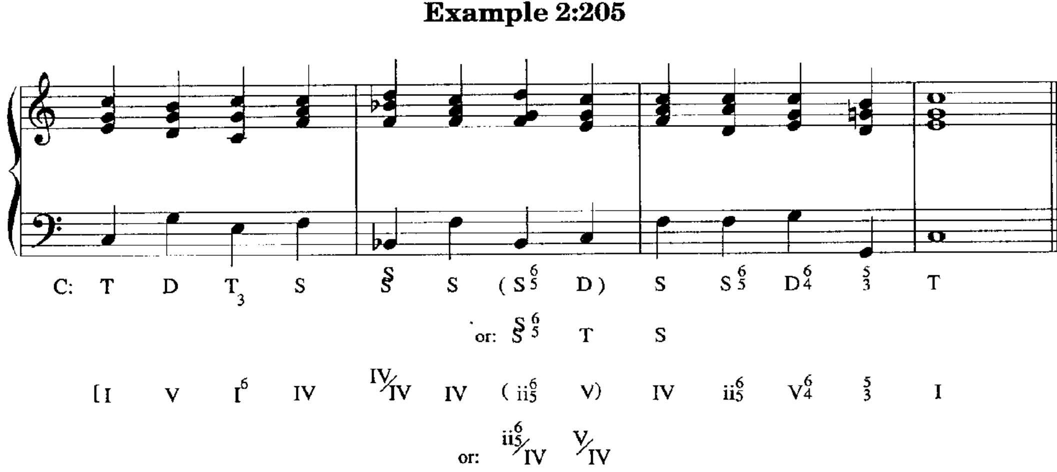
Example 2:204a-b

a) *"Valet will ich dir geben"* (1615)

b) *"Was Gott tut, das ist wohlgetan"* (1681)

It is also possible to use secondary subdominants to reference other tonal areas within a key (see Ex. 2:205). Secondary subdominants occur far less often than secondary dominants, however. The most common of these is the subdominant of the subdominant which will be represented by the symbol $\S$ (IV/IV). The subdominant of the subdominant may also appear in the two following forms: $\S^{6}$(ii^{6}/IV); $\S^{6}_{5}$ (ii$^{6}_{5}$/IV).

Example 2:205



The melody in Ex. 2:206 remains in the subdominant area for so long, that the secondary subdominant area should be labeled in parenthesis.

Example 2:206

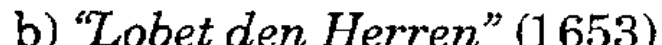
Gastoldi (1591)

Any diatonic chord within a key can be tonicized by applying a respective dominant-function chord. Since the dominant of the dominant is so common, it will receive its own symbol Đ, but all other applied dominants will be labeled with the symbol (D). The parenthesis around the D indicates that the chord will function as a dominant in the key of the following chord. In this way, all diatonic triads within a key can also serve as local centers for longer tonicizations.

The melodies in Ex. 2:207 contain up to three tonicizations per melody in the following harmonic areas: dominant, relative tonic, and the relative subdominant. Label the harmonic functions implied by these melodies, set them in four voices and play them at the keyboard.

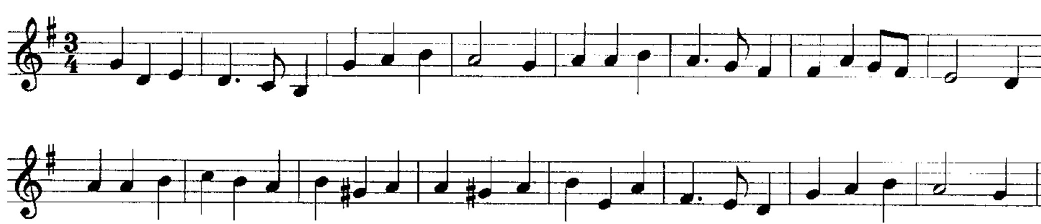
Example 2:207a-d

a) *"Siegesfürste, Ehrenkönig"* (1678)



b) *"Lobet den Herren"* (1653)

c) *"Es jammre, wer nicht glaubt"* (1735)

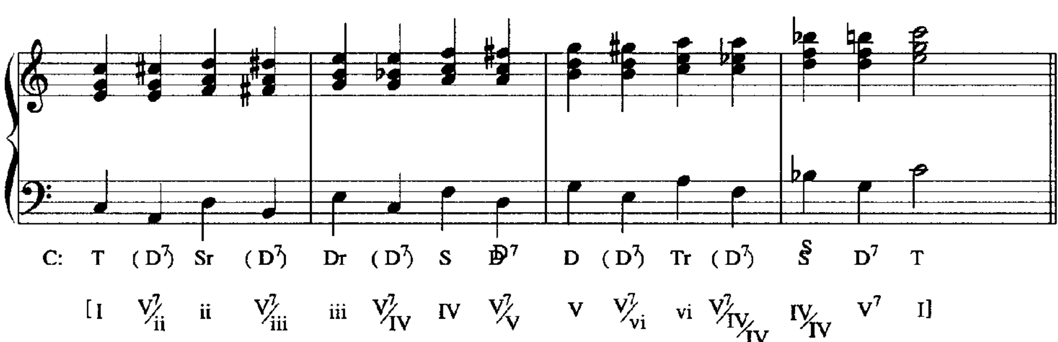


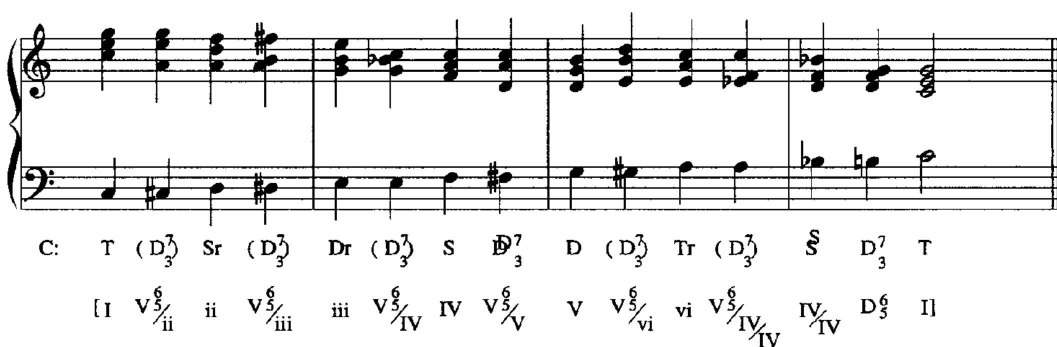
d) "*Jesus, meine Zuversicht*" (1653)

Note that by adding a minor seventh above the root of a tonic chord, the dominant-seventh of the subdominant is formed (D^7) S [V^7/IV].

The chromatic scale appears twice in Ex. 2:208. It appears first in the soprano and later in the bass. This pattern forms a sequence of many leading-tones which makes a number of secondary dominants possible. Although this example may seem somewhat overloaded with secondary dominants, this kind of harmonic construction is quite typical of Bach's style.

Example 2:208a-b

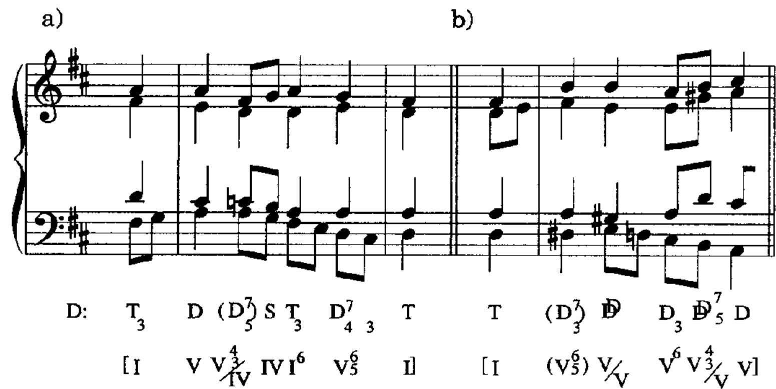


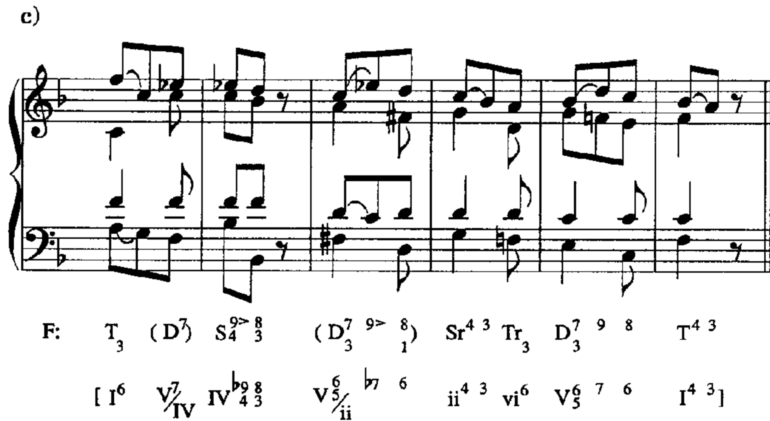


Ex. 2:209a-e contains five excerpts from literature. Ex. 2:209a-c come from Bach's *Christmas Oratorio* and Ex. 2:209d-e from other chorales of Bach. The third secondary dominant in Ex. 2:209e is not employed traditionally; that is, with the goal of the tonicization coming after the secondary dominant. In this case, the tonicized chord comes first. We will label this procedure by using a backward-pointing arrow [e.g., T_{87} Tr ← (D^{87}) S.]

Example 2:209a-e

Bach-Chorale Excerpts

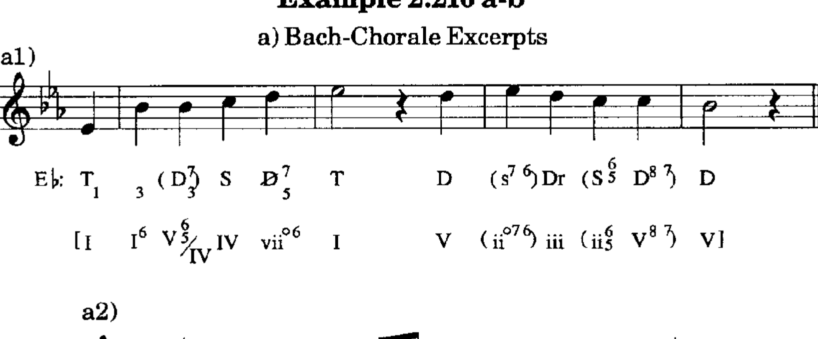


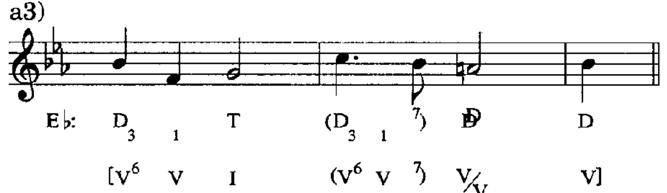


Harmonize the bass lines in Ex. 2:210a-b in four voices and play them at the keyboard. The three excerpts in Ex. 2:210a also demonstrate the use of secondary subdominants in several forms.

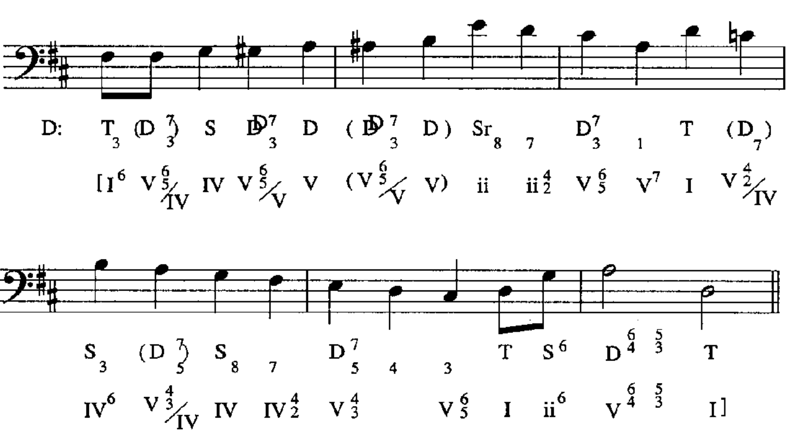
Example 2:210 a-b

a) Bach-Chorale Excerpts



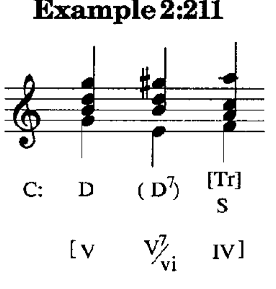


b) Bach-Arioso from D-major Orchestra Suite (bass-line excerpt)



We shall soon discuss harmonic progression in the F-major Prelude from Bach's *Well-Tempered Clavier,* Book I. Before we proceed with our analysis, however, there is one further symbol which needs to be explained. In measure 11 of this prelude, we find a secondary dominant which does not resolve to its goal sonority, but instead to a substitute.[25] In cases like this, it has been the practice, since Riemann, to label the intended harmonic goal of the secondary dominant in square brackets above, with the actual resolution given underneath (see Ex. 2:211).

Example 2:211



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[25] The resolution of such secondary dominants is really similar to the deceptive cadence, where the root of the chord following the dominant is one step above the dominant, rather than a chord whose root is a fifth below.

The F-major Prelude opens with a harmonic progression that abandons the original key before it is even fully established—i.e., (D^7) S $[V^7/IV]$ in the first two measures of the harmonic analysis below. The tonality expands into the area of the relative tonic (until measure 8) by means of several secondary dominants. The harmonic climax is expanded by means of a five-chord descending-fifth sequence which begins on an E-major triad (m. 9, first sonority).

Note that there is no single scale which provides stepwise support for these rapid changes of tonal center. It seems that the A-major, D-major, G-major, C-minor and the tonic (F-major) chords all function like a nested set of secondary dominants which unfold, one at a time, into the subdominant. (The symbol $\not D$, which first appeared in Hugo Distler's harmony text seems to make sense here.[26]) The original tonic is finally and firmly reinstated in measures 17-18.

Bach-Prelude in F-major from *Well-Tempered Clavier*, Book I

Harmonic Analysis (mm. 1-18)

1	2	3	4	5	6
T (D^7) S	D T	$\not D$ D	(D) Tr	D Tr	(D) Tr
[I V^7/IV IV	V I	V/V V	V/vi vi	V vi	V/vi vi

7	8	9	10	11	12
Sr $(\not D^{v})$	Tr S	($\not D\!\!\not D$ $\not D$	D) $\not D$	d (D^7) [S] Sr	(D) Sr
ii vii^{o7}/vi	vi IV	(V/V/V V/V	V) V/V	v V^7/IV ii	V/ii ii

13	14	15	16	17	18
D^7 (D^7)	S^7 ^{6}	D_7 T_3 Tr	Sr D T (D^7)	S D	T S D T
V^7 V^7/IV	IV^7 ii^6	V^4_2 I^6 vi	ii V I V^7/IV	IV V	I IV V I

[26] Hugo Distler, *Funktionelle Harmonielehre* (Kassel and Basel: Bärenreiter, 1941).

14. Secondary Dominants and Secondary Subdominants in Minor

Secondary dominants play a considerably smaller role in minor keys than in major for the following reasons:

1. Because of the nine-tone minor-scale complex, there are more pitches available in minor than in major. This larger number of pitches produces major and minor versions of both the dominant and subdominant triads, and generally provides for greater overall harmonic diversity. Since there is already so much harmonic variety in minor, it is not as important to enlarge the palate of sonorities by means of tonicization.

2. The dominant is the goal of most tonicizations in major, whereas the relative major (tR) [III] is the goal of most tonicizations in minor. Therefore, the dominant of the relative major (dR) [V/III] is the most important secondary dominant in a minor key, not the dominant of the dominant (Đ) [V/V]. [Note: when a seventh is added above the root of the dR, the resulting secondary dominant is best labeled (D^7) tR.] The dominant of the dominant occurs much less frequently in minor than in major.

3. The appearance of the parallel-major area always endangers the harmonic prominence of the minor tonic (t). For this reason, a simple tonicization can easily turn into a full-scale modulation. Since most tonicizations in minor substantially weaken the original tonic, secondary dominants occur much less frequently in minor keys.

4. Major secondary subdominants (S̸) are rarely encountered in minor, because the major triad built on the diatonic seventh scale degree (G-B-D in A-minor) is almost always perceived as the dominant of the relative major—dR [V/III]. However, the minor secondary subdominant s̸ [iv/iv] is occasionally encountered.

The secondary dominants that are most useful in minor are those which support the minor tonic rather than those that endanger its prominence. For that reason the dominant of the subdominant—(D)s [V/iv], the minor tonic with a raised third, is an especially good choice, since it does not does not inordinately pull the harmony away from the domain of the minor tonic.

Ex. 2:212 contains an excerpt from literature in which harmonic expansion is limited to key areas that are closely related to the initial minor tonic.

Example 2:212

Bach-Motet *"Jesu Meine Freude"*

A typical modulation to the relative major (tR) occurs in the first measure of Ex. 2:212. If we consider this change of tonal center to be only a momentary tonicization of the relative major, the harmonic progression below would result [alternate analysis of the first three measures of Ex. 2:212]. This progression is excessively complicated to label in the minor key, and the resulting functional symbols seem very distant from what is actually perceived.

t tR (D^7_3) tR | $(S^6_5$ $D^{8\ 7})$ tR | tR $(Đ^7_5$ D$)$ tR |

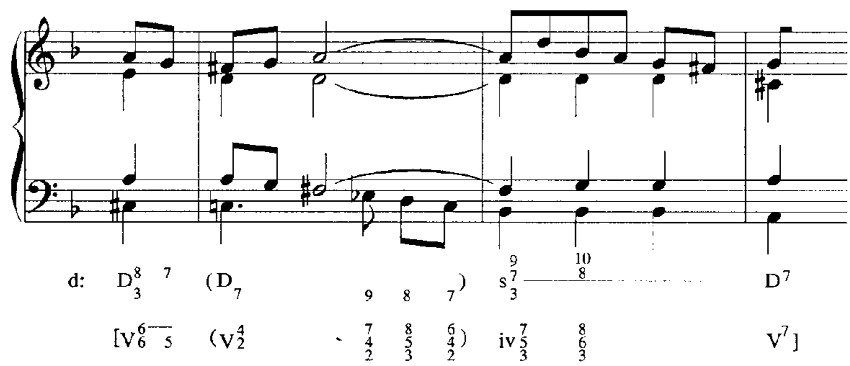
[i III V^6_5/III III | $(ii^6_5$ $V^{8\ 7})$ III | III $(vii^{\circ 6}_{5}$ V$)$ III |]

In the fourth measure of Ex. 2:212 we encounter a rare tonicization of the dominant key (B-minor). [Note that the B-minor chord is provided with a raised third *(Picardy third)* in the cadence on the downbeat of measure 5.] If the F♯-major chord (measure 4, fourth beat) is arbitrarily labeled as the dominant of the dominant in E-minor, the result is not at all what we actually hear. The entrance of this F♯-major chord causes the listener to completely forget the key of E-minor. The F♯-chord is definitely heard here as the dominant of B-minor.

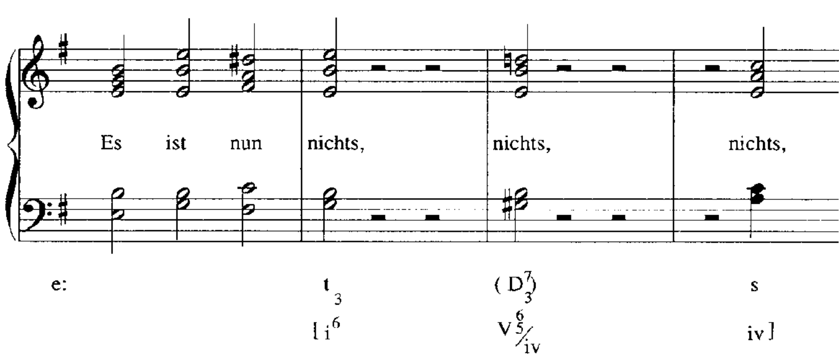
The two excerpts in Ex. 2:213 contain examples of the altered minor tonic (raised third and added minor seventh), which produces the frequently employed dominant-seventh of the subdominant— (D^7)s $[V^7/iv]$.

Example 2:213 a-b

a) Bach-Sarabande



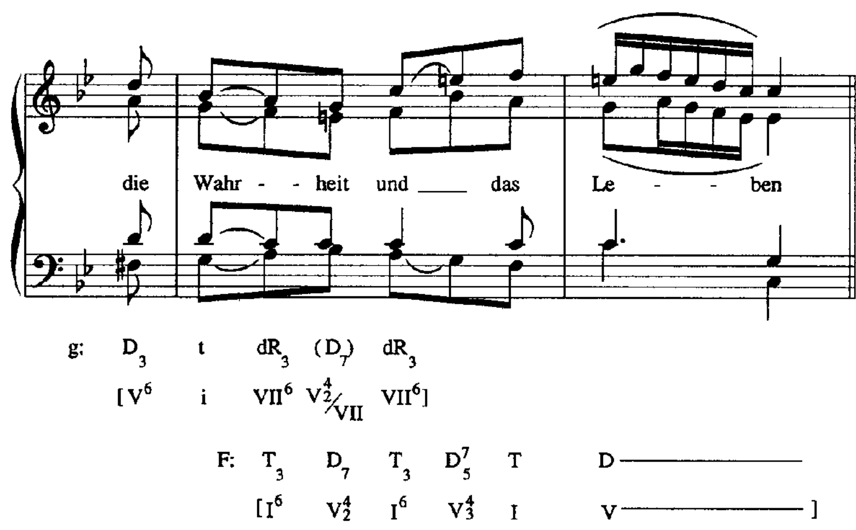
b) Bach-Motet *"Jesu meine Freude"*



Ex. 2:214 shows a typical example of weak tonic-directed tonal force in minor. The dominant of the relative major (dR) pushes the harmony into a secondary dominant—$(D^7)dR_3$ [V^7/VII-VII^6], which then leads the motet away from the tonic key of G-minor. After this, the original tonic key is soon forgotten and it only returns twenty-three measures later.

Example 2:214

Bach-Motet *"Komm, Jesus, komm"*



Exercise: In various keys, write out the following progression in four voices and play at the keyboard:

$$t \quad D^7_3 \quad t \quad (D_7) \quad s_3 \quad t_5 \quad \not{D}^7_3 \quad D \quad t \quad (D_{8 \; 7}) \quad tR_3$$

$$[i \quad V^6_5 \quad i \quad V^7/iv \quad iv^6 \quad i^6_4 \quad V^6_5/V \quad V \quad i \quad V/III \quad V^4_2/III \quad III^6$$

$$s^n \quad D^{6\;5}_{4\;3} \quad t_{8 \; 7} \quad sR \quad (D^7_3) \quad sR \quad s^6_5 \quad \not{D}^7_3 \quad D^{6\;5}_{4\;3} \quad t$$

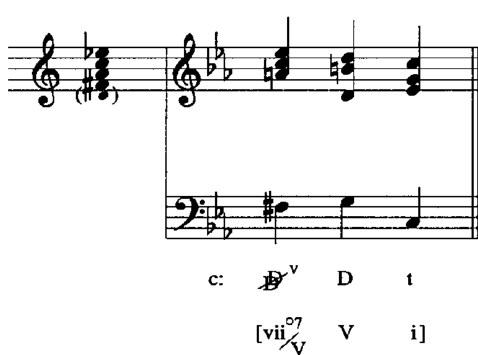
$$N^6 \quad V^{6\;5}_{4\;3} \quad i \quad i^4_2 \quad VI \quad V^6_5/VI \quad VI \quad ii^{ø6}_5 \quad V^6_5/V \quad V^{6\;5}_{4\;3} \quad i]$$

15. The Diminished-Seventh Chord as a Secondary Dominant

The diminished-seventh chord which functions as a dominant of the dominant (vii$^{\circ 7}$/V) is an important chord in minor keys. This abridged dominant-ninth chord (omitted root tone) is traditionally labeled with the symbols Đ$^{9}_{7}$ or Đ^{v}.

The progression in Ex. 2:215 shows how this diminished-seventh sonority is used.

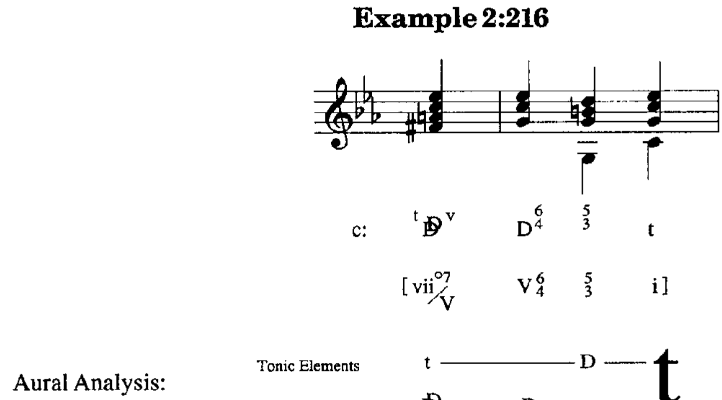
Example 2:215



We are most likely to find examples of the diminished-seventh chord as a dominant of the dominant in the coda of large-scale minor-key compositions. The dual functional role of the diminished-seventh chord, which was discussed in Section 8 of this Chapter, is clearer still when the diminished-seventh is applied to the dominant chord. We labeled the leading-tone diminished-seventh chord with the symbol Đ^{v} (a mixture of dominant and subdominant elements). Certainly, the symbol—(Đ^{v})D [vii$^{\circ 7}$/V] could be used when this sonority functions as a dominant of the dominant. It is better, if we provide a separate symbol that represents the sound content of this sonority, however. In Ex. 2:215, the pitches C and E♭ do not belong to secondary-dominant harmony, but rather to the minor-tonic chord. This diminished-seventh chord actually consists of a mixture of elements from the dominant of the dominant (F♯ and A) and from the minor tonic (C and E♭). For that reason, we will label those diminished-seventh chords which are applied to the dominant with the symbol ^{t}Đ^{v} .

The tonic portion of this diminished-seventh sonority seems to be the stronger of the two elements, particularly if the second-inversion dominant suspension figure (D$^{6}_{4}\,^{5}_{3}$) [V$^{6}_{4}\,^{5}_{3}$] comes between the ^{t}Đ^{v} and its resolution to tonic (see Ex. 2:216).

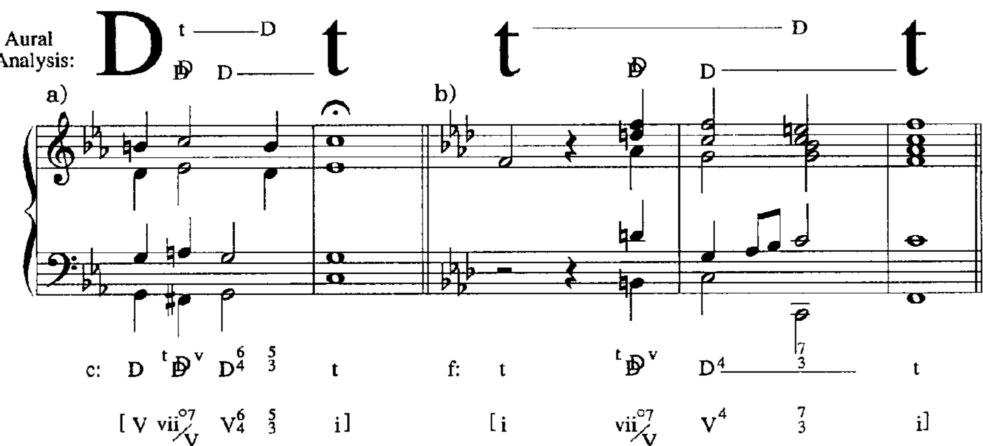
Example 2:216



Ex. 2:216 shows how the two strong tonic elements (C and E♭) in the $^{t}\not{D}^{v}$ pull the leading-tone of the dominant (F♯) upward into the dominant pitch (G) of the six-four suspension chord. Once the progression resolves to the dominant, a triumphant and powerful resolution to the minor tonic confirms the key.

The codas of Bach's large organ works contain numerous examples of progressions featuring the $^{t}\not{D}^{v}$ (see Ex. 2:217a-b).

Example 2:217a-b



The two excerpts from Bach organ works in Ex. 2:218 should be played at the keyboard. Especially note the voice parts marked with ⎴, since they contain clearly defined tonic elements.

Example 2:218 a-b

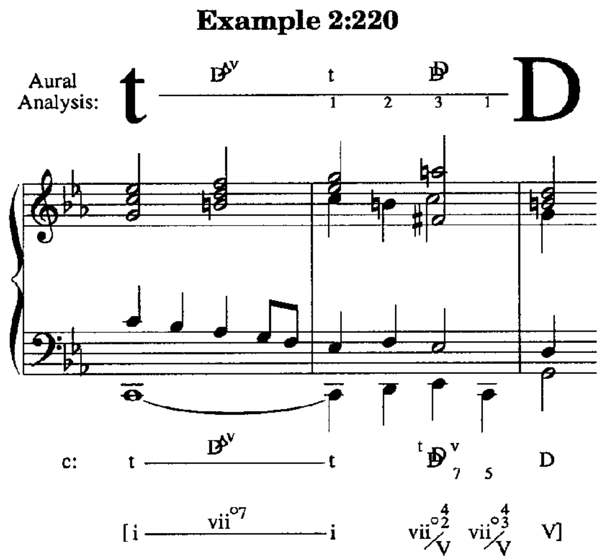
Ex. 2:219 contains a typical example of a dominant half-cadence preceded by ᵗDᵛ.

Example 2:219

Vivaldi-Concerto Grosso for Four Violins in B-minor, op. 3, No. 10; Movement II (end)

Ex. 2:220 shows a rare exchange of position between the tonic and secondary-dominant elements in the ^{t}Ð^{v} chord. Here, Bach places the fifth and seventh of the chord (the tonic elements) in the lower voices, while the third and fifth (secondary-dominant elements) are in the upper voices.

Example 2:220

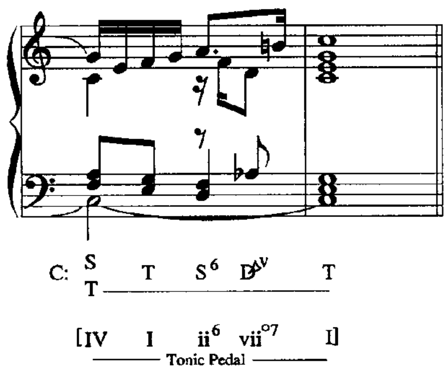


We have discussed the role of the diminished-seventh chord as it resolves to tonic and dominant in minor keys, but the diminished-seventh may also be applied as a secondary dominant to any scale degree in major as well as minor keys.

Ex. 2:221 shows an adventuresome use of the diminished-seventh chord in a major key.

Example 2:221

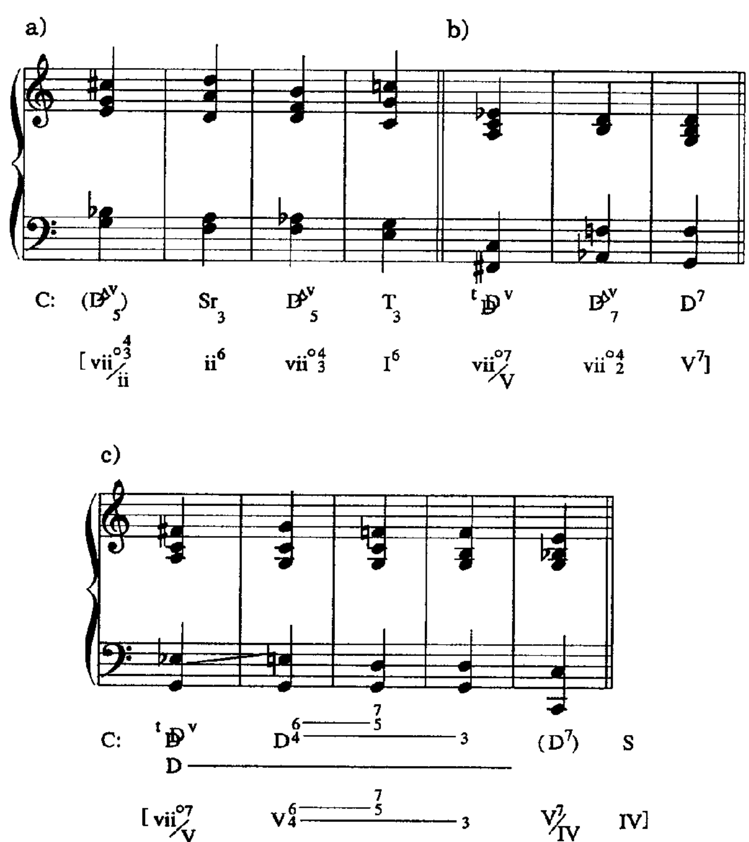
Bach-*Well-Tempered Clavier,* Book II



The harmonic reductions in Ex. 2:222a-b demonstrate how diminished-seventh chords may precede T [I], Sr [ii], and D [V]. It is interesting to note, in Ex. 2:222b, that the bass pitches of two diminished-seventh chords actually frame the dominant pitch (G) with chromatic leading-tone motion from above and below. Ex. 2:222c shows voice leading which is quite rare during the time of Bach, but which became very important in the Classical era. The normal downward resolution of the seventh of the $^{t}\not{D}^{v}$ is delayed by the presence of an intermediate D^{6}_{4} [V^{6}_{4}] suspension figure, but because of the approaching major-key cadence, the E♭ must be first raised to E♮ before the voice can finally resolve downward into the fifth of the dominant.

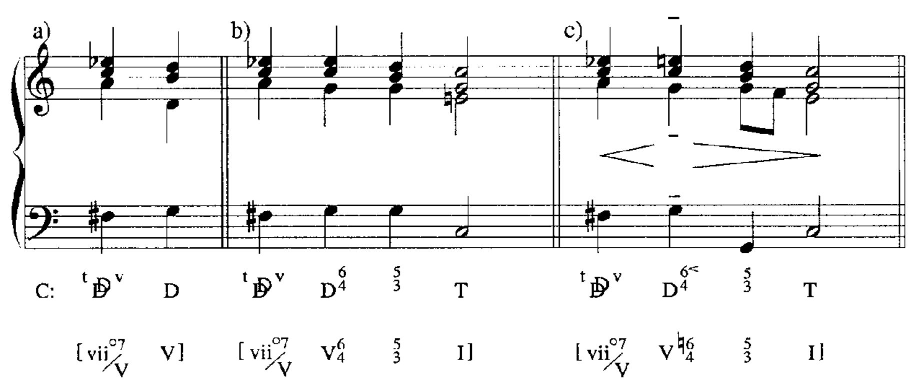
Example 2:222 a-c

Bach-Prelude in C-Major from the *Well-Tempered Clavier,* Book I (harmonic reductions)



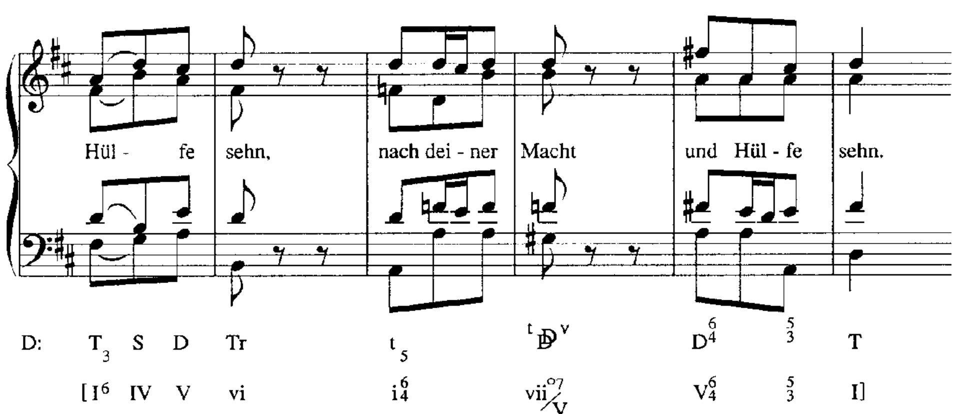
Ex. 2:223 shows: a) the usual practice of resolving the seventh of the $^{t}\not{D}^{v}$ (E♭) directly to the fifth of the dominant chord; b) the frequently employed minor-key delay in proper resolution of the seventh, caused by the insertion of a $D^{6}_{4}\,{}^{5}_{3}$ suspension figure; c) the rare (Baroque-era) upward chromatic motion in the seventh of the $^{t}\not{D}^{v}$ (E♭) into the radiant third of the major tonic (E♮) before resolution to the fifth of the dominant.

Example 2:223a-c



To prove that the kind of chromatic motion shown in Ex. 2:223c has not been interpreted out of context, and to demonstrate that the power of this chromatic figure was known even during Bach's time, Ex. 2:224 presents a clear example of a progression in major mode which employs the $^{t}\not{D}^{v}$.

Example 2:224
Bach-*Christmas Oratorio*

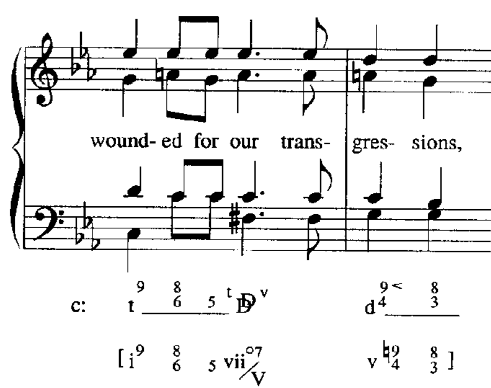


If we wish to correctly imitate the Baroque style, however, it is important not to overuse the diminished-seventh chord.

Notice, in Ex. 2:225, that the diminished-seventh chord is so representative in its expression of the wounds of Christ and human sin, that the sonority is not used for a long while, either before or after this spot.

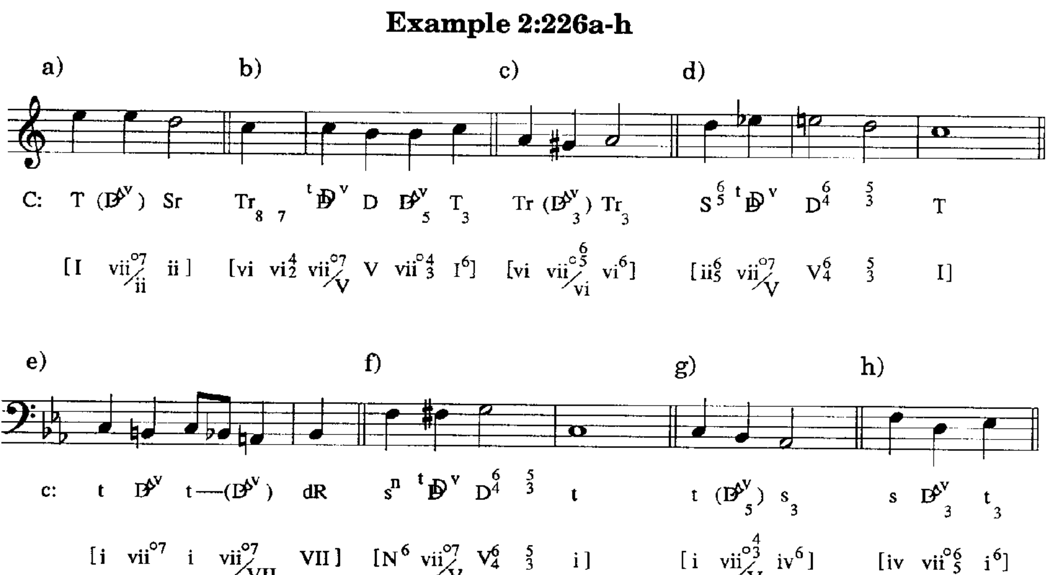
Example 2:225

Handel-*"Surely He Hath Borne Our Griefs"* from *Messiah*



Exercises: Harmonize the short melody and bass lines found in Ex. 2:226. Provide settings in various keys and play them at the keyboard.

Example 2:226a-h



16. Chords Borrowed from the Minor-Mode

As we have discussed, the minor-scale pitch complex provides a pitch inventory that makes possible both major and minor forms of the dominant and subdominant triads (D, d; S, s). Occasionally, members of the minor-key subdominant family (e.g., s, s^6, s^6_5, s^n) [iv, $ii^{\circ 6}$, $ii^{\text{ø}6}_5$, N^6] are borrowed by the parallel-major key [the major key with the same tonic]. Ex. 2:227 shows an example of the minor-key s^6_5 ($ii^{\text{ø}6}_5$) as Bach used it in a major-key chorale.

Example 2:227

Bach-*"Christus der ist mein Leben"*

The traditional theory states, as does Louis-Thuille, that "the seventh scale degree of the natural minor scale" was chromatically raised "in order to maintain the major dominant triad," and that the raised seventh was "from its very origins, an alien element."[27] Such authors then attempt to provide an analogy between the chromatic lowering of the sixth scale degree in major and this theory concerning the raising of the seventh scale degree in minor.

It is often postulated that the lowered third of the subdominant triad in major generates a stronger pull to the dominant because of the upper (Phrygian) leading-tone relationship to the dominant (e.g., A♭→ G in C-major). The strategy of writing textbooks "from simpler to more difficult [concepts]" leads to such unfortunate theses.

Just the opposite is actually the case. The leading-tone is older than the notion of either major or minor, and the raised seventh is more the "midwife of tonal clarity" than an "embellishment" in minor keys. In the time of Bach, minor subdominant sonorities which appear in major-key passages were not held to be colorful enrichments of some simple original structure, but rather were considered rich and full sonorities borrowed from earlier musical style. Ex. 2:228 contains an early example of a minor subdominant chord which occurs in a major-mode passage.

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[27] Rudolph Louis and Ludwig Thuille, *Harmonielehre* (Stuttgart: C. Grüninger, 1906).

Example 2:228

Hassler (1601)

Exercises: Write-out and play the following progressions in various keys:

T | s^{n} T_{3} | S^{6}_{5} $D^{8\ 7}$ | T

[I | N^{6} I^{6} | ii^{6}_{5} $V^{8\ 7}$ | I]

T | (D^{7}) s $\not{D}^{7}_{3}$ | $D^{6\ 5}_{4\ 3}$ T

[I | V^{7}/IV iv V^{6}_{5}/V | $V^{6\ 5}_{4\ 3}$ I]

T | s^{6}_{5} D_{7} | T_{3} D^{7}_{5} | T

[I | $ii^{ø6}_{5}$ V^{4}_{2} | I^{6} V^{4}_{3} | I]

T | s^{6}_{5} $\not{D}^{v}_{5}$ | T_{3}

[I | $ii^{ø6}_{5}$ vii^{o4}_{3} | I^{6}]

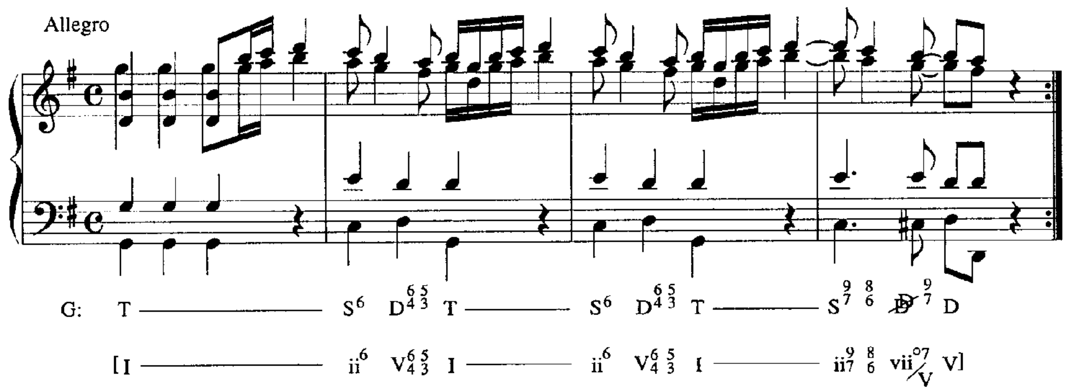
CHAPTER THREE
Harmony between 1770 and 1810 (Haydn-Mozart-Beethoven)

1. Introduction

The style change that took place about 1750 is made clear in the following excerpts (Exs. 3:1-3) from works by Johann Stamitz (1717-1757) and his son, Karl Stamitz (1746-1801):

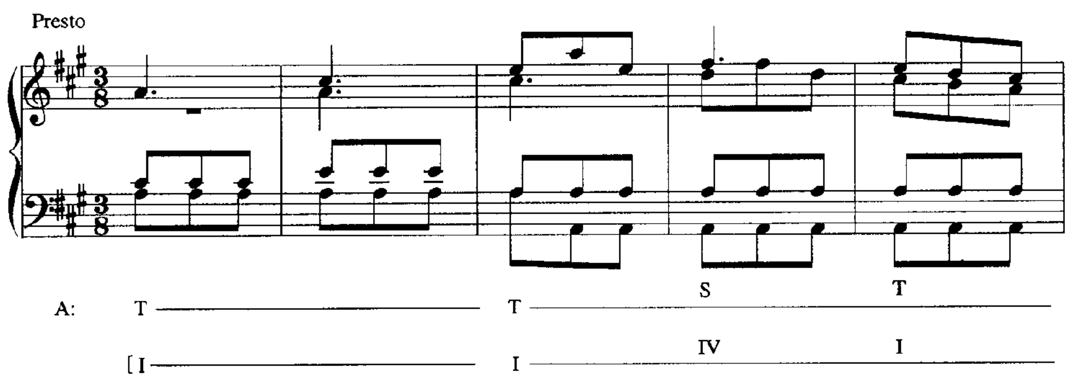
Example 3:1

Johann Stamitz-Symphony in G-major

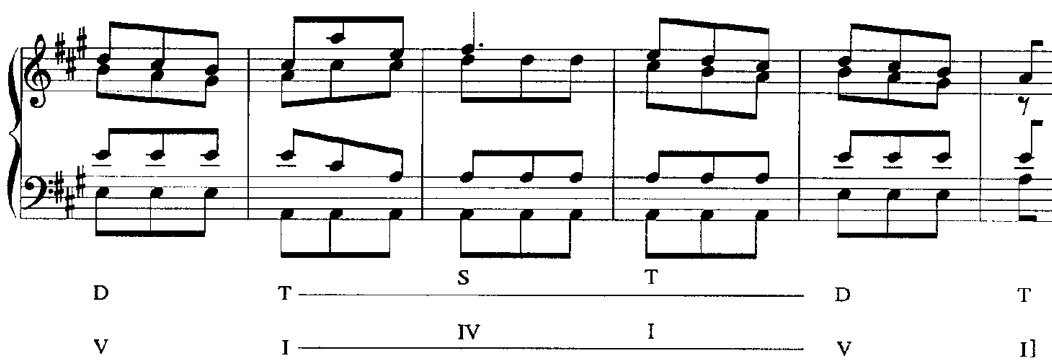


Example 3:2

Johann Stamitz-Symphony in A-major



Example 3:2 (cont.)



Example 3:3

Karl Stamitz, Orchestra Quartet in C-major

1. The musical era which was dominated by four separate voices is over. The melody lines in these examples consist of two voices, moving in parallel thirds with each other, suspended over a simple fundamental bass. The viola part, located between the melody-line pair and the bass is so insignificant that it is hardly appropriate to speak of it as a separate voice. Notice how the viola part regularly doubles the bass line in octaves in Ex. 3:3. In Ex. 3:2, after beginning with some independent character, the viola part degenerates into the pure barbarism of parallel octaves with the cello, except for another feeble attempt at independence in measure seven. (For more examples like these, look at the early string quartets of Haydn!). Those who expect voice leading to be clean and contrapuntally correct have nothing good to say about works like these.

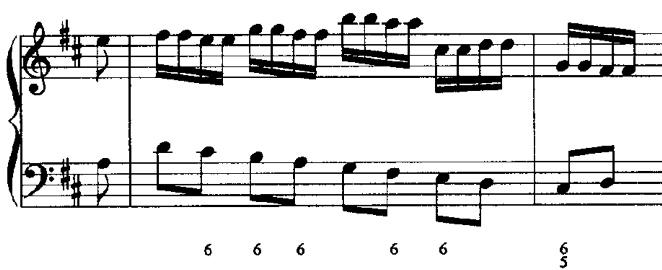
2. In Exs. 3:1-3, the bass lines are limited to the three primary pitches of the key [tonic, subdominant and dominant]. Though it is almost impossible to find places in Bach's music that feature such simple bass lines, it is difficult to find anything but the most rudimentary presentations of tonic, subdominant and dominant in the bass lines of this new musical era. Early Classical music is characterized by a large number of melody pitches which occur over relatively few changes in fundamental bass (this is one of many reasons for the light, graceful quality of early Classical melody). The obvious harmonic simplicity of these melodies makes them easy to comprehend. This lightness and simplicity is found in countless compositions of the time, and once a listener becomes acquainted with several pieces in this style, the same devices appear over and over again in nearly every piece.

3. Along with a new compositional superstructure, a new tempo is also introduced in the early Classical period—the *presto*. Almost every pitch in a flexible Baroque bass part carries a chord change, bringing with it (in today's terminology) a change of harmonic function. Since changes in function need to be perceived by the ear [and then processed by the brain], they require time. For that reason, the number of functional changes per measure [harmonic rhythm] actually determine the tempo at which a melody unfolds.

The eighth-note in the Allegro movement from Bach's Brandenburg Concerto No. 5 (Ex. 3:4) is essentially a longer eighth than that which occurs in the three Stamitz examples (Exs. 3:1-3).

Example 3:4

Bach-*Brandenburg Concerto* No. 5, Allegro



In Ex. 3:5, the harmonic rhythm proceeds at a rate of two chord changes per beat. This harmonic rhythm forces a moderate tempo upon the movement; that is, the relatively frequent change of function tends to produce a sense of harmonic weight. Above all, it was the abandonment of this harmonic weight, produced by the slowing of harmonic rhythm, that created the new, magically light and graceful Classical-era melodic line.

Example 3.5

Bach-*Brandenburg Concerto* No. 5, Allegro

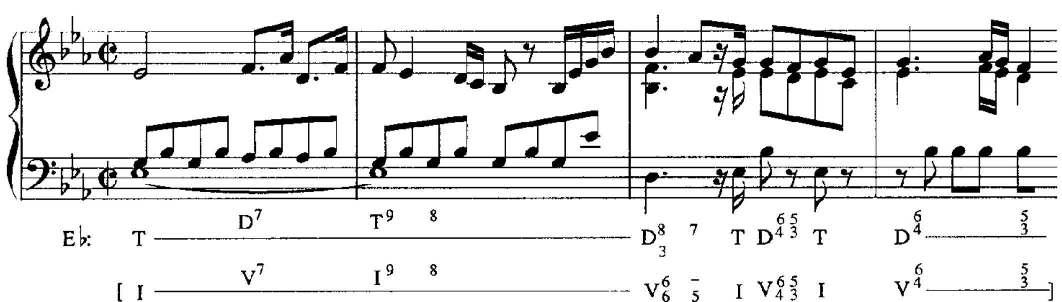
4. Repetition of measures or groups of measures plays an important role in the three Stamitz examples. This kind of repetition is typical for music during the early Classical period. In Ex. 3:1, Measure 3 repeats measure 2; in Ex. 3:2, measures 3-6 are the same as measures 7-10, with the exception of a few minor details. In Ex. 3:3 the viola and cello parts repeat exactly the same materials in the second four measures that they played in the first four. The second violins, which do not enter until measure five, repeat the same material that was introduced by the first violins in measures 1-4, while the first violins continue in the second four measures with a line that is scored a third higher than before.

On one hand, such joyful repetitions of musical materials are courageously uncomplicated textural solutions that reflect simple, slowly changing harmonic progressions. On the other hand, these repetitions provide additional time for the ear to perceive the harmonic changes in the characteristically fast new tempo. The repetition of melodic materials also helps guard against the presentation of too many divergent musical materials in too short a span of time.

We shall now compare the melodies and harmonic settings that appear in Ex. 3:6-7.

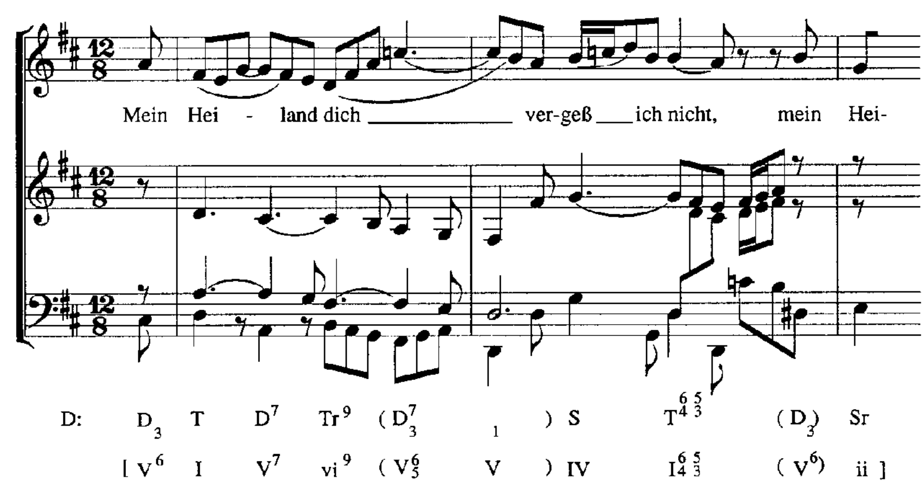
Example 3:6

Mozart-String Quartet K.V. 589, Larghetto



Example 3:7

Bach-*St. Mark Passion*, Aria[1]



The melody in Ex. 3:6 is played by the cello in a high register. The second violin provides a middle-voice accompaniment, while the viola, beginning on a tonic pedal point, provides the most important fundamental bass pitches. The first violin does not play here, since this texture does not require a fourth instrumental voice.

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[1] The musical manuscript for the *St. Mark Passion* is lost. According to Christoph Wolff, the music survives in its original form in Cantatas No. 54 and No. 198, and one movement was revised for use in the *Christmas Oratorio.* The music for the reconstruction in Ex. 3:7 was taken from the alto aria *"Wie starb die Heldin so vernügt" from* Cantata 198 *("Laß Fürstin, laß noch einen Strahl").*

Ex. 3:7 consists of four highly individual voices which form strong dissonances with one another. At the entry of the Tr^9 (vi^9) chord (measure 1, beat 3), the bass line begins a stepwise, descending eighth-note passage (B-A-G-F♯) which is imitated just two eighth-notes later by the top voice of the accompaniment. In Ex. 3:7, Bach develops a rich and varied harmonic texture, whereas Mozart employs only two basic functions (T and D) in Ex. 3:6.

Mozart's melody contains all of its harmonic implications within itself. It is only necessary to sing through the melody in order to know what all of the underlying harmonies must be. Bach does not always choose the harmony most immediately implied by the melody, however. Instead of belonging to tonic harmony, the melody pitch D (Ex. 3:7; measure 1, beat 3) sounds as the third of the submediant chord (Tr). It is also interesting, that the accompaniment is the first to present the tie figure, which becomes an important rhythmic element in the melody.

It is important to understand the secret of artistic simplicity that is hidden in the seemingly rudimental harmony that accompanies Classical-period themes. A chord progression which employs only the three basic functions (T, S, and D) produces music with only minimally interesting harmony. In the Classical period, however, it is not so much the variety of sonorities that is important, rather how each sonority connects to the larger formal structure and the number of actual chord changes that take place within various sections of the form.

Table 3:1 shows the correspondence between the contour of the melody and the number of chord changes per measure in Ex. 3:6.

Table 3.1

Mozart, Larghetto from K.V. 589 (Ex. 3:6)

No. of Chord Changes Per Measure:	2	1	4	1
Melodic Contour:	Middle Range	Low Point	High Point	Descent to Middle Range

Further data on the harmonic phrase structure in the Classical-period are given in Table 3:2.

Table 3.2

Harmonic progressions in nine eight-measure themes from the violin sonatas of Mozart

	1	2	3	4	5	6	7	8
KV 305, 1st Mvt.	T ———	———	———	———	D ———	——— 3	T D^7	T
KV 306, 1st Mvt.	T ———	———	———	———	S_3 T_5	S T_3	S $D^{6\,5\,7}_{4\,3}$	T
KV 301, 1st Mvt.	T ———	———	S	$T_{1\,3}$ S^6	D^7	T S	D^{6}_{4} $^{5}_{3}$	T
KV 376, 3rd Mvt.	T D_7	T_3 ———	——— 1	D^7	T D_7	T_3 ———	1 ——— D^7	T
KV 296, 2nd Mvt.	T S	T ———	———	D^7	T S	T $Ð^7_5$	T_3 S^6 $D^{6\,5\,7}_{4\,3}$	T D^7 T
KV 377, 2nd Mvt.	t	D^7_3	t	$D_{8\,7}$	t_3	s^6	D^7	t
KV 378, 1st Mvt.	T	D^7 ———	———	T	T S D	T ———	$D^{6\,5\,7}_{4\,3}$	T
KV 380, 1st Mvt.	T	$Ð^7_5$	D ———	———	T_3	S	$D^{6\,5\,7\,6\,5\,7}_{4\,3\;\;4\,3}$	T
KV 481, 2nd Mvt.	T D^7_3	T S_3	T_3 S^6_5	D^{6}_{4} $^{5}_{3}$	T D^7_3	T S_3	T_3 S^6 $D^{6\,5\,7}_{4\,3}$	T

1. In seven of the nine examples in Table 3:2, the harmonic changes are more highly concentrated in the consequent phrase than in the antecedent; only two of the nine examples show the same number of chord changes in both the antecedent and consequent phrases; and none of the antecedent phrases is more harmonically active than the consequent phrases. The close connection between harmonic activity and form in Classical-period music is quite evident in these eight-measure periods.

2. Since melodies are almost imperceptibly joined to just a few possible chord changes, harmonic progression in the Classical period became the basis of melodic invention; that is, the listener is unable to separate out the harmonic implications from the melody. At the same time, however, harmonic progressions become the most important structural elements when forming closing cadences. Table 3:2 shows a highly concentrated harmonic activity in the seventh measure of each excerpt! The chord progression T | D_{87} | T_{31} S | $D^{6}_{4}\,^{5}_{3}$ ‖ T | | | | would, therefore, be an unimaginable harmonic pattern for a Classical-era theme. This progression creates a situation where the closing cadence would take place in the center of the period, leaving no room for a harmonic/melodic climax in the consequent phrase.

3. The progression from a root-position subdominant triad to the dominant triad (IV-V), frequently employed in the Baroque, is much less common in the Classical period. The root-position subdominant often progresses to T or $D^{6}_{4}\,^{5}_{3}$, however, and a root-position dominant triad is regularly preceded by S^6 (ii^6) or S^6_5 (ii^6_5).

2. The Form-Generating Role of Harmonic Progressions

The form-generating role of chord progressions can be clearly observed in the first movement of Mozart's *Haffner Symphony* (K.V. 385). Although this magnificent movement does contain several complicated harmonic passages, it employs only a few basic cadence formulas. The following cadence types are employed in the movement: S^6 D^7 T [ii^6 V^7 I]; S^6_5 D^7 T [ii^6_5 V^7 T]; s^6_5 D T [$ii^{\o 6}_5$ V I]; S^6_5 D T [ii^6_5 V I]; T S^6 D T [I ii^6 V I]). Only six S D T full-cadences occur before the beginning of the recapitulation section (measure 125). We shall now discuss how the cadence is used to produce a sense of harmonic closure and articulation between sections of the form.

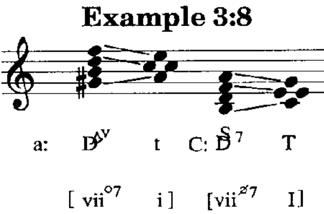
The first full-cadence occurs in measure 13 at the end of the theme. The next cadence is a dominant half-cadence (measure 33) which follows the second statement of the theme. This second statement contains canonic transition materials, which are freely developed from the theme. Following this half-cadence, the main theme enters once more (measure 35), this time freshly orchestrated at a lower dynamic level ***(p)*** and presented in the dominant key (A-major). (Here, in place of a contrasting second theme, Mozart uses Haydn's technique of restating the movement's first theme in a changed physiognomy.) The first hint at a closing cadential gesture is fashioned out of motives from the main theme and confirmed by the appearance of a full-cadence in measure 66. A second closing gesture follows almost immediately, as the oboes and bassoons carry the melodic line into the next full-cadence in measure 74. In a third closing gesture, two similar harmonic progressions are joined together to form one long cadence in measures 80-84 (Tr | Sr_{31}D | T (D) | Sr_{31}D | T) [vi | ii^6 ii^5_3 V | I V/ii | ii^6 ii^5_3 V | I], followed closely by yet another cadence (Tr | Sr_{31}D | T) [vi | ii^6 ii^5_3 V | I] in measures 86-88. Two more full cadences enter in measures 90 and 92 above a pedal-point (A) to close-off the exposition in the dominant key. Past this point, there are no more cadences until measure 125. The harmonically complicated flow of the development section does not contain any key-confirming cadences.

At the beginning of the exposition, the main theme is brought to a close with a full-cadence. This cadence clearly defines and sets-off the main theme from its surroundings. The five following full-cadences tend to break-up the flow of the materials as the end of the exposition approaches [preparation for the following development section]. It is interesting to note that these later full-cadences follow one another more and more closely as the exposition nears its end. By the time of Mozart, cadence formulas are used more to articulate sections or to close-off materials than to carry the burden of harmonic progression within a section.

3. The Leading-Tone Seventh Chord in Major ($\overset{S}{\not D}{}^7$)

Outside of its appearance in harmonic sequences, the leading-tone seventh chord in major keys (vii^{ø7}) was employed only as a passing-chord sonority during the Baroque. By the Classical period, however, this chord carried is own specific function. The half-diminished leading-tone seventh ($\overset{S}{\not D}{}^7$) represents a mixture dominant (D) and subdominant (S) functions, in the same way that the fully diminished seventh-chord in minor ($\overset{s}{\not D}{}^v$) represents a mixture of D and s. Ex. 3:8 shows the similarity between these two sonorities.

Example 3:8

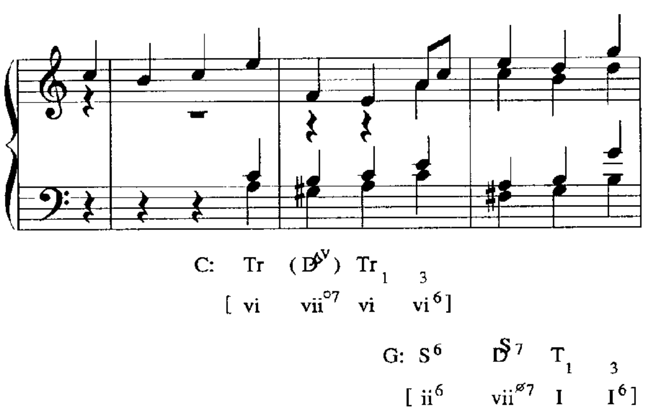


The seventh of a $\overset{S}{\not D}{}^7$ is clearly a true seventh (like the seventh of the $\overset{s}{\not D}{}^v$) and this sonority should not be considered a dominant-ninth chord with an omitted root. It was only first in the Romantic era that the abridged dominant ninth chord was recognized as a discrete sonority (see Chapter Five). Although the Classical period did not generally regard this sonority as an abridged dominant-ninth, it is sometimes possible to understand it as such, in certain musical contexts.

The sequence construction, which occurs in Ex. 3:9, makes clear the similarity of function between $\overset{s}{\not D}{}^v$ in minor and $\overset{S}{\not D}{}^7$ in major.

Example 3.9

Haydn- String Quartet, op. 76 no. 3, Minuet



The $\overset{S}{\not D}{}^7$ (vii^{ø7}) is a very frequently employed chord in the works of Mozart. Ex. 3:10 shows how the Classical-period $\overset{S}{\not D}{}^7$ was typically employed.

Example 3:10

Mozart-Excerpt from *Don Giovanni*

(dialogue between Don Giovanni and Leporello in front of the statue of the Commendatore)

4. Modulation

Before covering the topic of modulation, it is necessary to discuss a few preliminary points. Nearly every Baroque dance-suite movement modulates away from the tonic key, as it approaches the central double bar line. After the central double bar, a second modulation takes place that returns the piece to the original tonic key. Within the opening movement of Bach's

Brandenburg Concerto No. 2, the main thematic material is actually presented on every step of the F-major scale except the leading-tone. In order to accomplish the shifts in tonal center required here, Bach employed a great number of descending-fifth harmonic sequences. In Chapter 2:12 harmonic sequences were not represented as agents of modulation, but rather were considered a means by which the secondary triads of the key could be tonicized.

A modulation-producing sequence, however, might consist of the following progressions of chords: in the direction of increasing flats— a, d, g, c, f, B♭→E♭ or a, d, G, C, F → B♭; in the direction of increasing sharps—a, d, G, C, F, b°, E → A or A, D, G, c♯°, F♯ → B ... etc.[2]

In compositions by Bach, we are not particularly troubled even when the continuo bass line traverses pitch areas that do not belong to the diatonic pitches of the key. Between measures 13 and 17 of the aria *"Blute nur"* from the *St. Matthew Passion,* no less than eleven different major and minor triads occur (B, C, C♯, D, E, F♯, G, A; b, e, a). Considering the strong concentration of varied harmony in the first part of this aria (B-minor), it is meaningless to speak about a modulation in the second part. (This method of establishing tonal-center changes in chorale style was also discussed in Chapter 2:12. Bach employs secondary dominants in such a fluid manner, that it is often difficult to decide whether a real modulation is actually taking place (or a modulation on the way to some third key, etc.), or whether the change in tonal center is only a temporary tonicization within the original key.

In Classical-era works, a particular tonality is confirmed by the presence of simple thematically associated cadence formulas. For that reason, a change of tonal center becomes a much more easily perceived event in Classical compositions, than in the works of Bach. Classical sonatas and symphonies are expressed by means of harmonic/thematic statements and restatements, transitions, and developmental areas. The differences between these three types of materials were not so large or well-defined the Baroque, and they were also increasingly less conspicuous in the Romantic period, because the form-defining power of the simple cadence formula was perceived to be exhausted.

Following the statement of the first theme in a Classical sonata, materials from the established theme are often repeated, developed, loosened and split-apart until they form an anonymous motoric-like texture. This transitional material is given the task of establishing a new key center in preparation for the second theme, which will usually enter in the key of the dominant, if the movement began in major; or the relative major, if the movement began in minor.

The goal-oriented modulations of transitional materials function differently than the modulations that take place in the development section. Modulation within exposition sections create a direct pathway between one strong key area and another, while modulations within development sections tend to shift the tonal center from place to place in order to avoid any strong or lasting implication of key. Since these two kinds of modulation are different in both means and intention, we will discuss them separately in the next two sections.

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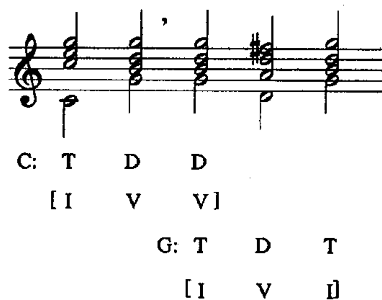
[2] Upper case letters stand for major triads; lower case letters stand for minor triads; lower case letters with ° stand for diminished triads. The arrow points to the goal key of the modulating sequence.

5. Modulation to the Second Theme

Ex. 3:11 contains an example of the simplest, though most infrequently employed, transitional modulation in Classical-period literature. After a dominant half-cadence in the original key and a grand pause, the dominant triad is repeated followed by motion into its own dominant chord (D-major triad). This motion to the new dominant actually produces and stabilizes a shift in key from C-major to G-major.

Example 3:11

Haydn-*Kaiser Quartet,* op. 76, No. 3. (Mvt. I; measures 12-13)



In most cases, the tonicizing Đ simply appears ahead of the dominant in the new key without being prepared by a common chord (see Ex. 3:12).

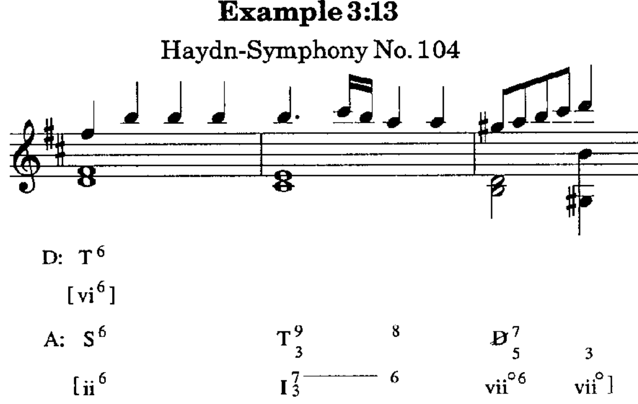
Example 3:12

Mozart-*Jupiter Symphony* K.V. 551 (Mvt. I; measures 35-37)

Modulation to the dominant key can be especially convincing if the approach to the dominant in the new key begins with a T^6 (vi^6) in the original key. Since the T^6 will also be heard as S^6 (ii^6) in the new key, the new dominant is prepared by particularly strong cadential action. Ex. 3:13 contains an excerpt from Haydn's Symphony No. 104, which shows this modulatory process. (Ex. 3:13 shows measures 34-36; or measures 50-53 if the measures of the slow introduction are counted.)

Example 3:13

Haydn-Symphony No. 104



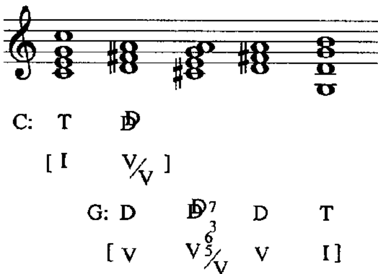
Ex. 3:14 contains a similar modulation.

Example 3:14

Mozart-Piano Sonata in B♭-Major K.V. 333

To change the function of a chord from dominant of the initial key to tonic the new key, it is only necessary to prepare the new tonic by its dominant chord. Often, however, the dominant area of the new key will actually be prolonged for some time (by application of its dominant) before the goal of the modulation is finally reached. Ex. 3:15 demonstrates how this process is accomplished.

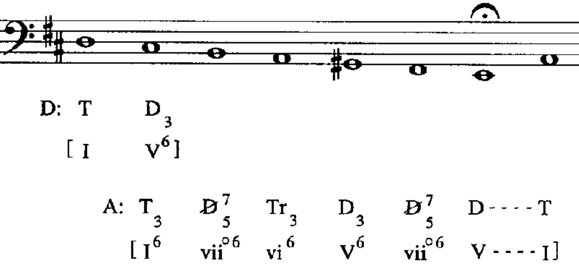
Example 3:15



Ex. 3:16 shows another prolongation of the dominant-area.

Example 3:16

Mozart-*Haffner Symphony* K.V. 385 (Mvt. I; measures 41-48)



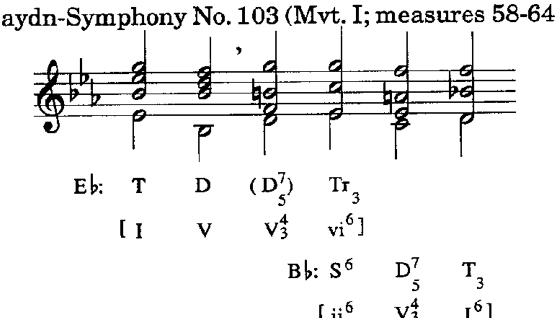
The most frequent Classical-period method of modulating between thematic areas employs the submediant chord (Tr) in the original key. The Tr chord in the old key is common with the supertonic chord (Sr) in the new key. This common chord then resolves to the new tonic through a series of two root movements by descending perfect-fifth (see Ex. 3:17).

Example 3:17

There are actually several different variations of this basic modulation type. At the beginning of Ex. 3:18, the B♭-major triad is heard as a dominant half-cadence, but by the end of the excerpt it is clearly the new tonic. The fourth chord in Ex. 3:18 sounds (temporarily) like Tr_3 (vi^6) in C-minor, because it is immediately preceded by its dominant-seventh chord. In retrospect, however, this chord actually functions as S^6 (ii^6) in the key of B♭-major.

Example 3:18

Haydn-Symphony No. 103 (Mvt. I; measures 58-64)



Exs. 3:19-20 show two more modulations which employ the first-inversion submediant/ subdominant common chords.

Example 3:19

Mozart- *Linz Symphony* K.V. 425 (Mvt. I; beginning in measure 47)

D_3 T_3 Tr $Đ^7_3$ D

[V^6 I^6 vi V^6_5/V V]

D^7_3 T (D^7_3) Sr D^7_3 T

[V^6_5 I (V^6_5) ii V^6_5 I]

Example 3:20

Mozart- Symphony in E♭-major K.V. 543 (Mvt. I; beginning in measure 71).

T ($Đ^v_5$) Tr_3 $Đ_7$

[I (vii^{o4}_{3}) vi^6 V^4_2/V]

S^6 D_7 T_3 $Đ^7_5$ D T

[ii^6 V^4_2 I^6 vii^{o6}_{5}/V V I]

In Ex. 3:21, the harmony actually progresses through the submediant chord (Tr) twice on its way to the dominant key. Once the change of key has been made, however, the dominant of the new key is then further tonicized by two secondary dominants. In a surprising move (!), the minor-tonic triad is substituted for the expected major tonic. This minor tonic functions as a preparation for the minor variation that will soon follow.

Example 3:21

Haydn-Symphony No. 94 (Mvt. I; measures 29-68)

$T \quad Tr \quad \not{D}^7 \quad D \text{———}^7 \; T \quad Tr \quad \not{D}^7_3$

$[\, I \quad vi \quad V^7\!/V \quad V \text{———}^7 \; I \quad vi \quad V^6_5/V \,]$

$D^7_3 \quad T \quad Tr \quad S^6_5 \quad \not{D}^7_3 \quad D \quad \not{D}^7_3 \quad \overset{\frown}{D} \quad t! \quad D \quad T$

$[\, V^6_5 \quad I \quad vi \quad ii^6_5 \quad V^6_5/V \quad V \quad V^6_5/V \quad V \quad i \quad V \quad I \,]$

Once a modulation to the dominant key has been made secure (with the aid of the dominant of the dominant and dominant chords in the new key) the harmony may actually pass again through the original tonic chord without destabilizing the new key. In this case the old tonic will be heard as the subdominant (S) in the new key (see Ex. 3:22).

Example 3:22

Haydn-Symphony No. 102 (Mvt. I; Measure 46-58)

$T \; (D^7_{5\,1}) \; Tr \; (D^7_5) \; Tr_3 \; (D^7_3) \; \not{D}^7_3 \; D$

$[\, I \; (V^4_3 V) \; vi \; (V^4_3) \; vi^6 \; (V^6_5) \; V^6_5/V \; V \,]$

$\|\!: D^7_3 \quad T \quad D^7_5 \quad T_3 :\!\| \; (D^7_3) \quad \overset{!}{S} \quad (\not{D}^V) \quad Sr \quad \not{D} \quad D \quad {}^{\prime}D \quad T$

$[\, \|\!: V^6_5 \quad I \quad V^4_3 \quad I^6 :\!\| \; V^6_5/IV \quad IV \quad vii^{\circ 7}/ii \quad ii \quad V/V \quad V \quad V \quad I \,]$

Ex. 3:23 shows how Beethoven adopted this same modulatory technique.

Example 3:23

Beethoven-Cello Sonata, op. 102; No. 2 (Mvt. I; Measure 18-63)

$T \quad D^7 \quad Tr \quad (D^7) \quad Tr \quad \not{D}^7 \quad D$

$[\, I \quad V^7 \quad vi \quad (V^7) \quad vi \quad V^7/V \quad V \,]$

$Sr \quad D^7 \quad T$

$[\, ii \quad V^7 \quad I \,]$

Although the key at the beginning of the first movement of Haydn's Symphony No. 101 was established by standard cadential procedures, after measure 40, Haydn moves away from this straightforward procedure (see Ex. 3:24). After a dominant half-cadence (fermata), the main theme is restated, but this time it is led into and actually cadences on the supertonic chord (Sr). Finally, Haydn passes the harmony once more through the original tonic chord (T) and then on to the submediant chord (Tr). After this, a conventional modulation to the dominant key follows.

Example 3:24

Haydn-Symphony No. 101 (Mvt. I; after measure 40)

$$\overset{\frown}{D} \;\; (\not{D}^{9v}_{3}) \;\; Sr_{3} \;\; (s\;\; D^{7}) \;\; Sr \overline{\;(D)\;\; Sr\;} D^{7}_{3} \;\; T \overline{\;D^{7}\;} T_{8\;7} \;\; Tr_{8\;7} \;\; \not{D}^{7}_{3}$$

$$[\; V \;\; (vii^{\circ 6}_{5}) \;\; ii^{6} \;\; (iv \;\; V^{7}) \;\; ii \overline{\;(V)\;\; ii\;} V^{6}_{5} \;\; I \overline{\;V^{7}\;} I \;\; vi \;\; V^{6}_{5}/V \;]$$

$$D^{7}_{3} \;\; T \;\; S^{6} \;\; (\not{D}^{7}_{S}) \;\; D \ldots T$$

$$[\; V^{6}_{5} \;\; I \;\; ii^{6} \;\; (vii^{\circ 7}) \;\; V \ldots I \;]$$

The relative instability of minor keys as opposed to major, remains the same for music of the Classical period as it was in previous eras. Because of the lesser stability inherent in minor, it is quite easy to modulate from a minor key (t) to its relative major (tR). This shift of tonal center only requires the presence of a dominant-function chord in the relative major (dR).

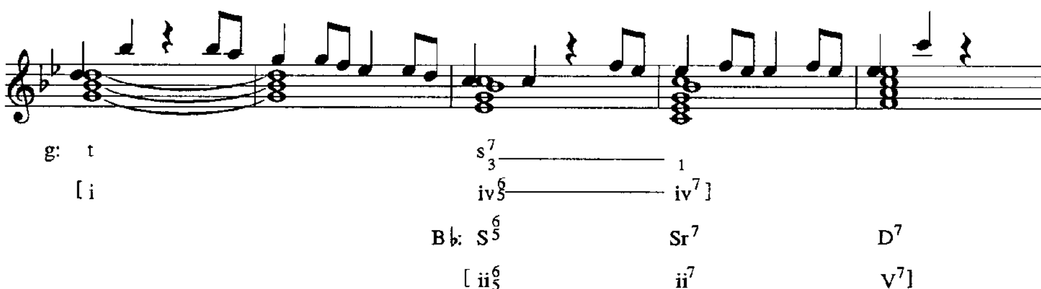
The problem with tonal-center change in minor-key sonatas and symphonies is just the opposite of that encountered in major-key works. In a minor key, it is rather easy to produce a convincing modulation, but it is somewhat difficult to establish a theme that maintains consistent minor-key implications throughout.

The first theme at the opening of Beethoven's Piano Sonata in E-minor, op. 90 shows what can easily befall a minor-key theme. The relative major key (tR) is actually reached after only four measures by way of the progression t-dR-tR. Since such a firm move to the relative major is a goal that should normally be reached after perhaps 40 measures, it is necessary for the composer to modulate back to the original minor key. (It should be noted, however, that Beethoven's goal key in this particular sonata is not the relative major, but rather, as in a number of his minor-key pieces, the minor dominant (B-minor in this sonata).

In Mozart's G-minor Symphony (K.V. 550), the initial statement of the first theme remains within the minor key, but after a dominant half-cadence, the repeat of the thematic materials takes a direct harmonic path to the relative major (see Ex. 3:25).

Example 3:25

Mozart-Symphony in G-minor K.V. 550



As is shown in Ex. 3:26, Mozart chooses a longer modulatory path. Between measures 9 and 22 the harmonic progression moves through the following sequence of chords: F-major, d-minor, A-major (actually A-seventh), D-major, G-major before reaching the new goal tonic (C-major). Notice that the C-dominant-seventh chord which proceeds the F-major triad—(D^7_5) tG [V^4_3/VI] occurs in second inversion so that the root-position C-major triad can appear completely new at the end of this modulatory process.

Example 3:26

Mozart-Piano Sonata in A-minor K.V. 310

a: t $\underline{D^7}$ t (D^7_5) tG s

[i $\underline{V^7}$ i (V^4_3) VI iv]

d: t D^7_5 T

[i V^4_3 I]

C: Đ D^7_3 T Tr S^6 $Đ^7_3$ D $\underline{t\ D\ t}$ D . . . T

[V/V V^6_5 I vi ii^6 V^6_5/V V $\underline{i\ V\ i}$ V . . . I]

In Ex. 3:27, the theme settles in the relative-major (tR) in measure 9 (fermata). In spite of this modulation, repetition of this first theme constructs a large minor-tonic key area. After this repetition, however, the path to a second stable key area follows a very convoluted path through many distantly related triads (d-minor, C-major, a-minor, G-major, a-minor, G-major, e-minor, A-major, B-major, F# major). It is difficult to know before hand that the goal of all this intense harmony activity will be the major dominant (E-major).

Example 3:27

Beethoven-*Kreutzer Sonata* for violin and piano, op. 47

a: $t \quad (S_3 \; D^7_3) \quad tR \quad (D^7_3) \quad s \quad \not{D}^7_3 \quad d \quad \not{D}^7 \quad d_3$

$[\; i \quad (IV^6 \; V^6_5) \quad III \quad (V^6_5) \quad iv \quad V^6_5/V \quad v \quad V^7/V \quad v^6 \;]$

E: $t_3 \quad s \quad \not{D} \quad D \; \|: \; t \quad {}^{t}\not{D}^{v} \quad D \; :\| \; T$

$[\; i^6 \; iv \quad V/V \quad V \; \|: \; i \quad vii^{o7}/V \quad V \; :\| \; I \;]$

6. Modulation within the Development Section

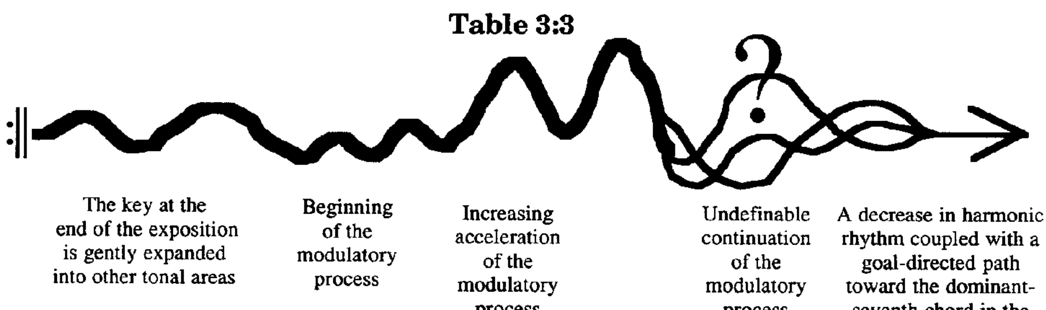
The goal-directed modulatory path into the key area of the second theme needs to be clear and convincing, but modulations that take place within a development section are often surprising and unexpected. In fact, development-section modulations often have no immediately perceived harmonic goals. This is because the development section evolved into a large harmonically unbounded area of a movement, where a composer might freely explore many connections and possibilities. Though the end of a development section is generally marked by the reestablishment of dominant harmony in the main key of the movement, the modulatory path toward this dominant is often indirect and highly convoluted.

The kind of modulation exercises found in most harmony texts do not generally apply to the kind of modulation required by development sections, especially when these assignments read: "modulate (as quickly as possible) from the key of... to..." If we examine the development-section practices of Classical-era composers, however, their self-administered assignment seems to say: "modulate! move freely, and remain for long stretches in areas without a true tonal center."

For that reason there are not many Classical development sections where one or both of the following devices fail to place sweat on the brow of an attentive listener: 1) Rapid successions of key references that create such harmonic confusion that the listener is not sure how to find the way back to the main key; 2) the entrance of unexpected tonal centers which take the listener completely unawares, making it impossible to know at the time just how these events relate to the whole.

To systematically study the art of surprise would be a contradiction in itself. Hundreds of sonatas and symphonies take nearly the same pathway in their exposition sections to the key of the second theme, but every successful development section must be studied as a single case. By looking at many development sections, however, we can acquire some knowledge of the way they are designed. Table 3:3 is a pictorial outline of a typical Classical-era development section.

Table 3:3

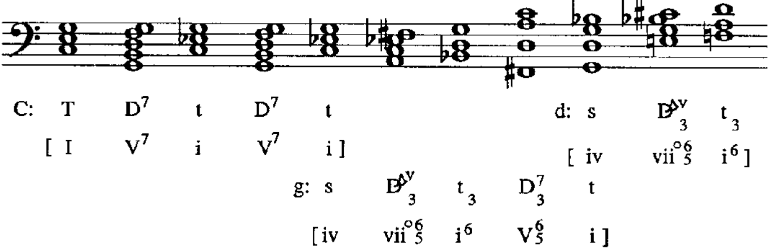


In order to cover the greatest number of modulatory procedures, the examples which follow will be represented in condensed form and only briefly described:

As is shown in Ex. 3:28, an instantaneous change of mode between the tonic-major triad (T) and the tonic-minor triad (t) is facilitated by the fact that both T and t have the same dominant chord. After this basic shift of mode, the tonic chord in C-minor is then functionally reinterpreted as the subdominant in G-minor, etc.

Example 3:28

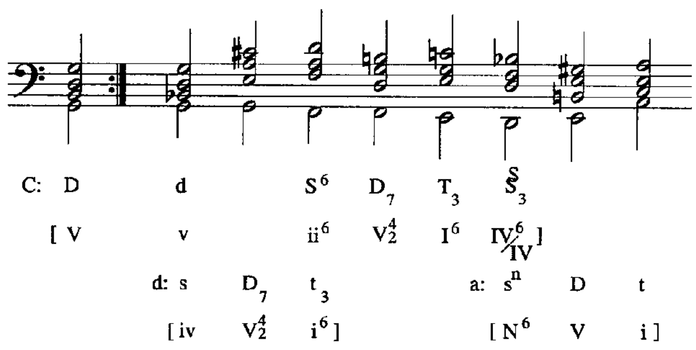
Mozart-Piano Sonata in F-major K.V. 332



Ex. 3:29 contains a modulation that is produced by an abrupt shift of mode—the G-major dominant chord (D) becomes a G-minor chord (d) without any preparation. Near the end of the example, a first-inversion major triad ($\S_3$) [IV^6/IV] in C-major is then reinterpreted as the Neapolitan-sixth chord (s^n) in A-minor.

Example 3:29

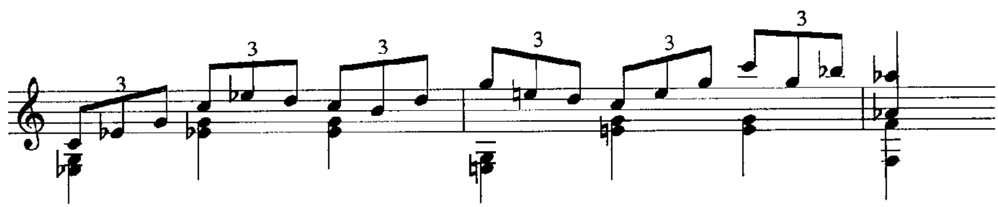
Mozart-Piano Sonata in C-major K.V. 279



In Ex. 3:30, the initial C-minor triad is changed to C-major in the second measure. Shortly afterwards, a B♭ is added to the C-major chord turning it into a dominant-seventh in the key of F-minor.

Example 3:30

Haydn-String Quartet, op. 74, No. 3



When only two tones of a triad are present there can be several possible interpretations of key. In Ex. 3:31, B and D, the third and fifth of the G-major triad, become reinterpreted as the fifth and seventh of a dominant-seventh chord built on E.

Example 3:31

Haydn-String Quartet, op. 76, No. 3

Ex. 3:32 contains a similar reinterpretation. The root (C) and third (E♭) of the C-minor triad becomes reinterpreted as an A♭-major triad with the substitution of A♭ for the expected G.

Example 3:32

Haydn-String Quartet, op. 76, No. 3

After a change of triad quality from E-major to E-minor in Ex. 3:33, the pitches E and G (root and third of the E-minor triad) are juxtaposed against the pitch C, thereby forming a C-major triad.

Example 3:33

Haydn-Symphony No. 104

When sonorities are reduced to only one pitch, the possibilities of harmonic reinterpretation are greater still. In Ex. 3:34 (measure 3), the root of a C-major triad becomes the third of an A♭-major triad. Notice the long rest in the lower voices. (Were these voices allowed to rest so that the first sonority could be forgotten, or just to smoothly bridge-over the two triads?)

Example 3:34

Haydn-Symphony No. 103

There is considerable confusion in Ex. 3:35, where the initial sonority is again reduced to one pitch. The second measure could either be heard as a sequence of the first measure's melodic pattern or the first pitch of measure 2 (B♭) could be heard enharmonically (A♯) as the leading-tone of B. The C in measure 3 proves that the second measure was only part of a chromatic passage and not a tonicization of B. It is still unclear, however, what role the C plays until the end of the third measure, when it becomes the third of an A♭-major triad and then the fifth of an F-minor triad (measure 4).

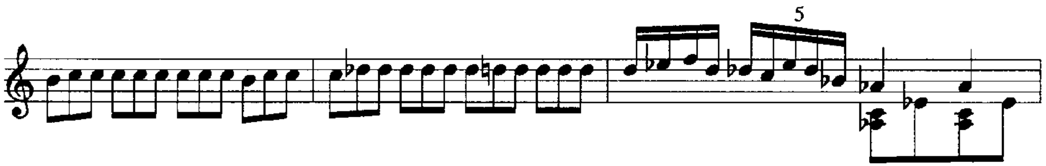
Example 3:35

Haydn-Symphony No. 102

The same kind of confusion is present in Ex. 3:36.

Example 3:36

Beethoven-Rondo in C-major for piano, op. 51, No. 1



There are many examples of unison pitch-modulations in Beethoven, and most of them employ a half-step motive in which the lower of the two pitches functions as the leading-tone in the new key. In Ex. 3:37, all four of the instruments play the exact same line in either the higher or lower octave. (For a further example of unison pitch-modulation, see the first movement of Haydn's Symphony No. 98 in D-major; measures 139-142. Here an ensemble unison produces a modulation to E♭-major by means of the half-step, D-E♭.)

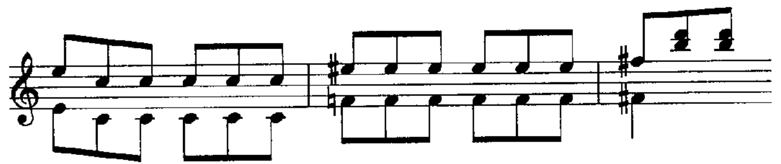
Example 3:37

Beethoven-String Quartet, op. 18, No. 1

The exact moment of a tonal change is often quite imprecise. In fact, the composer must plan ahead for a tonal change, whereas the listener only hears a modulation after the fact. Observe the curious notation in Ex. 3:38. This spot exhibits an interesting lack of smooth linear connection.

Example 3:38

Haydn-Symphony No. 101 (Mvt. I; measure 190)

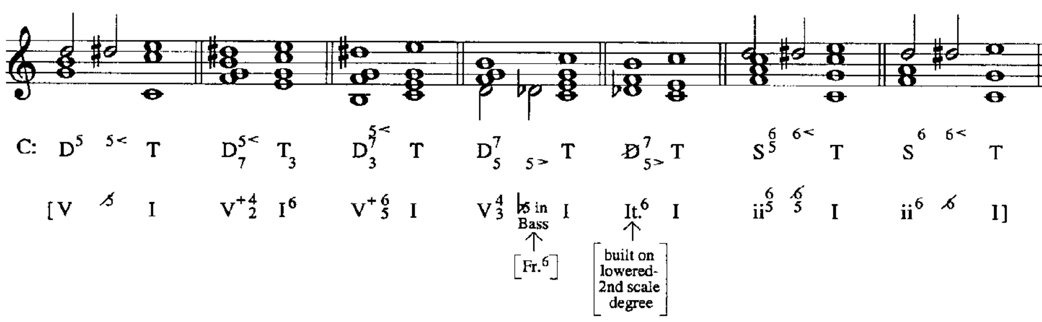


7. Altered Chords

A word of introduction is in order before proceeding with a discussion of the many types of altered chords which appeared in the Classical period. An altered chord is a sonority that has one or more of its voices chromatically raised (<) or lowered (>) as compared to the basic harmonic function from which it is derived.

Ex. 3:39 shows the most important altered chords appearing in the Classical period.

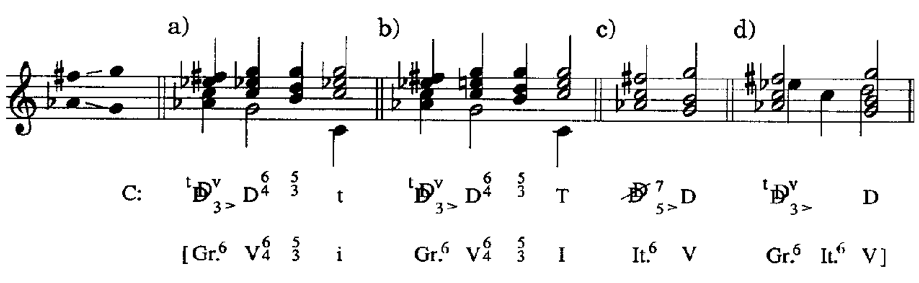
Example 3:39



Altered tones are usually found in the outer voices and generally resolve in the direction of their chromatic inflection.

As is shown in Ex. 3:40, a particularly important alteration was made to the leading-tone diminished-seventh chord of the dominant ($^{t}Đ^{V}$) [vii^{o7}/V]. If the third of this secondary dominant is lowered a half-step, it will produce an upper (Phrygian) leading-tone tone to the dominant pitch. The most remarkable feature of this altered chord is that this upper leading-tone and the leading-tone in the dominant key both occur simultaneously, thus framing the dominant pitch by half-step from above and below. Since the chromatically lowered voice (third) of this sonority often appears in the bass, the interval of an augmented sixth occurs between the bass note and the root of the chord (leading-tone in the dominant key). This altered chord is generally known [in the English speaking countries] as an augmented-sixth chord, regardless of its inversion and whether or not the seventh of the diminished-seventh chord is actually present (as in the $Đ^{7}_{5>}$; see Ex. 3:40c).[3]

Example 3:40a-d



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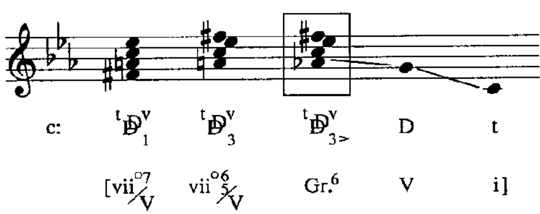
[3]The $^{t}Đ^{V}_{3>}$ is called the German sixth (Gr^{6}) and the $Đ^{7}_{5>}$ is known as the Italian sixth (It^{6}) in English-language harmony texts.

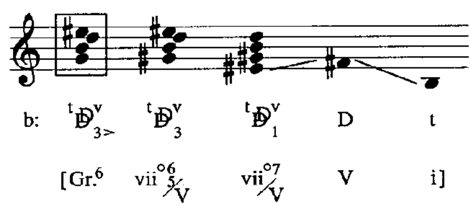
Starting from the ${}^{t}\text{Đ}^{v}$ (vii^{o7}/V), Ex. 3:41 demonstrates the steps involved in deriving a German-sixth chord (${}^{t}\text{Đ}^{v}_{3>}$).

Example 3:41



Starting with the German-sixth chord (${}^{t}\text{Đ}^{v}_{3>}$), the derivation process is reversed for purposes of analysis in Ex. 3:42.

Example 3:42



Note that both $S^{6<}_{5}$ and ${}^{t}\text{Đ}^{v}_{3>}$ sound like dominant-seventh chords.[4]

Since augmented-sixth chords emerge from chromatic changes made to diatonic sonorities, their function is perceived to be similar to the sonorities from which they were derived. For that reason, we generally label an altered chord with the same basic functional symbol that is used for its non-altered counterpart. It is much more difficult for the listener (and certainly the functional symbol becomes questionable), if a so-called altered pitch turns a sonority into a chord that sounds like some other diatonic sonority.

Could the pitch A♭, which functions as the root of the first chord in Ex. 3:43, actually be an altered A♮ in the second chord? Is it also possible, in the second chord, that F♯ might be a chromatically raised F♮? Since multiple possibilities are often encountered in development-section progressions, we should be careful not to jump to conclusions about the correct functional analysis of such sonorities.

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[4] The author refers to the augmented-sixth chords that resolve to the dominant as secondary dominants, though English-language theorists seem to prefer considering them as altered subdominant sonorities. The author's $S^{6<}_{5}$ (F-A-C-D♯ in C-major) refers to the less-frequently employed German-sixth chord built on the fourth scale degree.

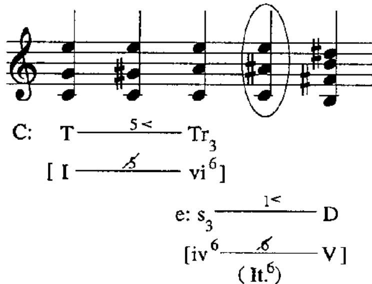
Example 3:43

Haydn-String Quartet, op. 74, No. 3 (Mvt. I; measures 94-96)

Ex. 3:44 is taken from the exposition section of a string-quartet movement (all other examples in this discussion are taken from development sections). Here, the middle voice is allowed to move in between the peaceful outer voices, making it difficult to believe that the final C in the lowest voice is actually an altered tone of an F♯-A♯-C♯-E chord ($\text{Đ}^{7}_{5>}$) [It^{6}].

Example 3:44

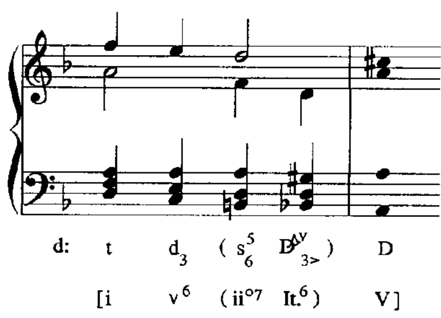
Mozart-String Quartet K.V. 464 (Mvt. I, measures 29-33)



Two passages in the same tessitura (Exs. 3:45-6) show how the dominant's leading-tone diminished-seventh chord with an added upper (Phrygian) leading-tone ($^{t}\text{Đ}^{v}_{3>}$) [Gr^{6}] progresses to the dominant:

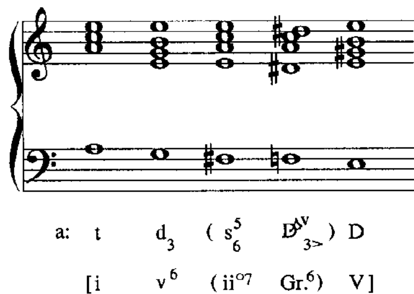
Example 3:45

Mozart-Piano Sonata in F-major K.V. 533



Example 3:46

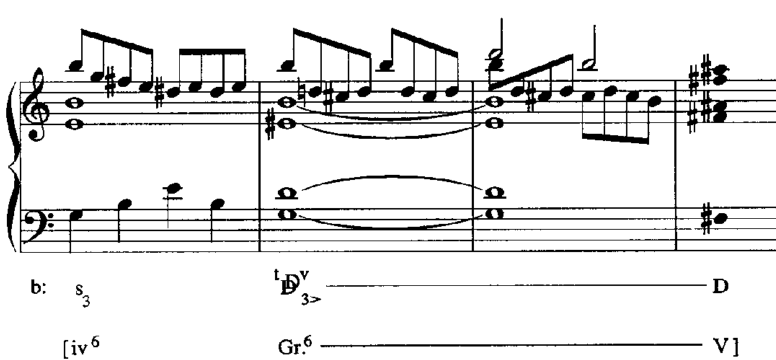
Mozart-Piano Sonata in A-minor K.V. 310



Ex. 3:47 shows a similar resolution to the dominant via the $^{t}\mathbb{D}^{v}_{3>}$ [Gr^6].

Example 3:47

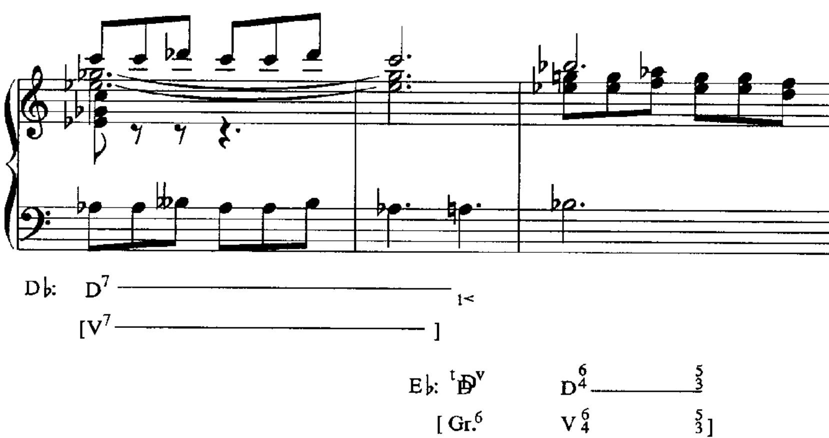
Haydn-Symphony No. 104 (Mvt. I; measures 154-158)



Another altered-chord possibility is shown in Ex. 3:48. The root tone of the dominant-seventh chord in D♭-major is raised, producing a diminished-seventh chord which leads as $^{t}\mathbb{D}^{v}$ (vii^{o7}/V) to E♭-major. The surprise here is perfect, because the same raised half-step in the bass (A♭-B♭♭) was previously just an inconsequential upper-neighbor.

Example 3:48

Haydn-Symphony 103 (Mvt. I; measures 136-138)

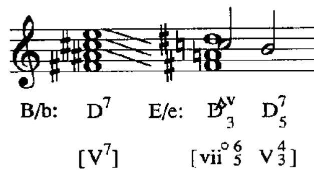


Ex. 3:49 shows another method of changing a dominant-seventh chord into a diminished-seventh. Here, the three upper voices are lowered a half-step while the bass tone remains the same. The function of this diminished-seventh chord is made clear through a further half-step descent (C-B) in the alto, which then produces the dominant-seventh chord in the new key of E-minor. A simplified harmonic reduction of the chromatic alteration which takes place in Ex. 3:49 is shown in Ex. 3:50.

Example 3:49

Mozart-Piano Sonata in D-major K.V. 576

Example 3:50

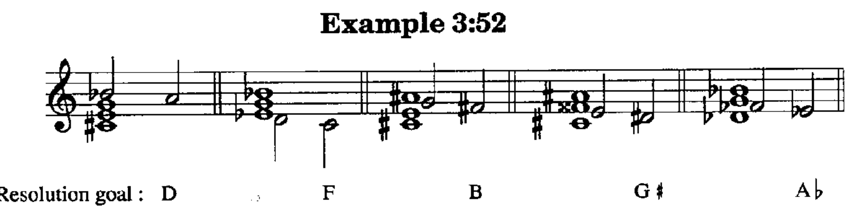


The altered-chord device in Ex. 3:49 works because the diminished-seventh chord is a symmetrical sonority, constructed from three minor thirds (without an actual sounding root). For that reason, any one of the four pitches in a diminished-seventh chord can act as a leading-tone; that is, the composer can choose one of four possible root tones for the following chord of resolution. Classical-period composers generally spelled the diminished-seventh chord so that note which appears as the root of the sonority (the lowest pitch of four stacked thirds) actually functions as the leading-tone to the following chord (see Ex. 3:51). For the listener, however, it is not possible to know before its resolution, which note of a diminished-seventh chord will function as the leading-tone.

Example 3:51

If a composer wishes to help clarify the resolution goal of a diminished-seventh, it is only necessary to lower one of the four pitches a half-step. This procedure creates a dominant-seventh chord, which expresses the goal tonality with less ambiguity (see Ex. 3:52).

Example 3:52

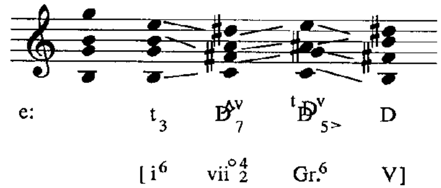


Altered chords within Classical-period development sections often produce functional progressions that are intentionally ambiguous.

The marked connections between chords in Ex. 3:53 are like upper and lower leading-tones.

Example 3:53

Haydn-String Quartet op. 76, No. 3 (measure 61)



Ex. 3:54 also employs this same kind of leading-tone motion between chords. The functional labelling we have chosen here is somewhat contrived, however, because the symbols may not always agree with what is actually perceived. Indeed, we sometimes run the risk of destroying exciting musical events, if we are too concerned with applying the "correct" functional symbols. A listener's analysis of the top voice in Ex. 3:54 might be something like this: "D-C♯-C!, no D-D♭!-C."

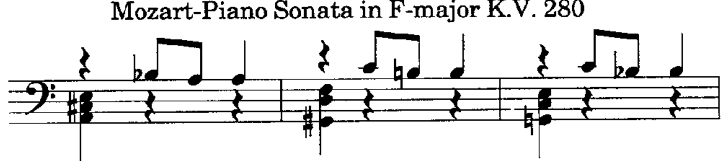
Example 3:54

Mozart-Piano Sonata in F-major K.V. 280

In Ex. 3:55, the listener can be easily lead astray, as well. The diminished-seventh chord, G♯-B-D-F clearly refers back (as vii°7/A) to the A-major triad in the first measure, but considering its resolution to the dominant-seventh chord (C-E-G-B♭) in third measure, the diminished-seventh chord must be enharmonically reinterpreted as B-D-F-A♭ (vii°7/C).

Example 3:55

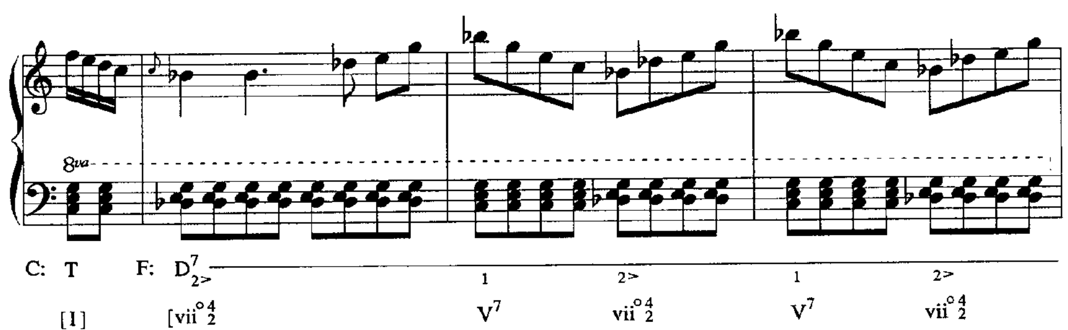
Mozart-Piano Sonata in F-major K.V. 280

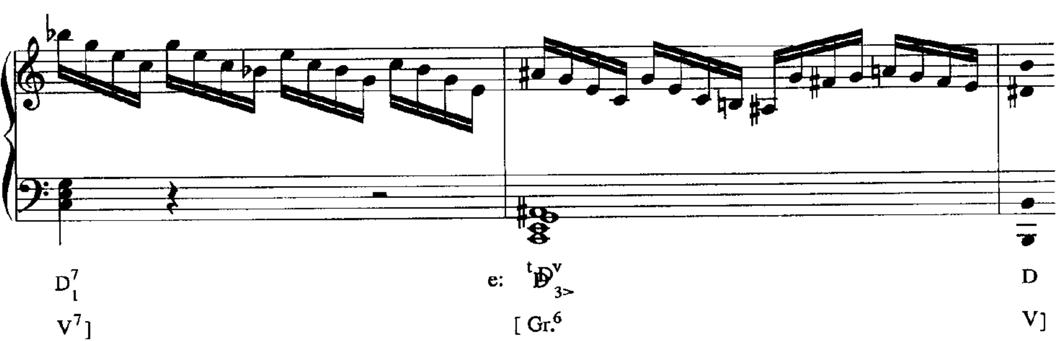


In Ex. 3:56, a C-major triad is followed by a diminished-seventh chord built on the pitch E (vii^{o7}/F). The resolution chord of this sonority (a second-inversion F-major triad) is never reached, however. Instead, the bass note (D♭) of the diminished-seventh chord functions here like a dissonant suspension above the root of the dominant-seventh chord in F-major (C-E-G-B♭). In the fifth complete measure, the pitch B♭ of this dominant-seventh is enharmonically changed to A♯. The sonority then resolves as an augmented-sixth chord (${}^{t}D^{v}_{3>}$) [Gr^6] to the dominant of E-major.

Example 3:56

Mozart-Piano Sonata in A-minor (K.V. 310),

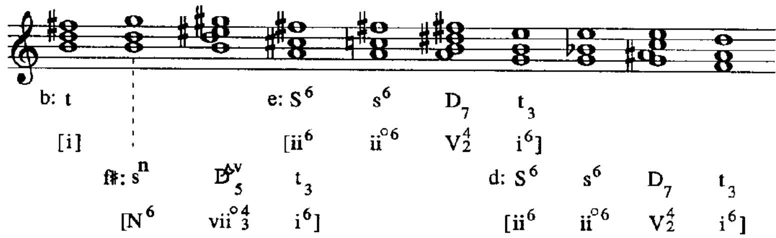




Since a root-position major triad is often too stable to function as a good transitional sonority in a modulating passage, composers often substitute its first-inversion form. An added benefit of the first-inversion major triad is that it can also function as the Neapolitan-sixth chord (s^n) in two other keys (a first-inversion C-major triad is the Neapolitan-sixth chord in the keys of B-major and B-minor). The three condensed harmonic excerpts in Exs. 3:57-59 are extracted from Mozart Piano Sonatas. These excerpts demonstrate leading-tone chromaticism that does not resolve to stable root-position major triads, but rather to their less-stable first-inversions.

Example 3:57

Mozart-Piano Sonata in D-major K.V. 284



Example 3:58

Mozart-Piano Sonata in C-major K.V. 309

Example 3:59

Mozart-Piano Sonata in D-major K.V. 576

8. The Harmony of Slow Introduction Sections

Introduction sections to first movements of large-scale symphonies and sonatas rely on different, though somewhat less complicated, harmonic processes than the thematic and developmental sections which follow. In a slow introduction, the clear-cut harmonic areas of the later-appearing exposition and recapitulation sections are often avoided. For that reason, an introduction section often has more in common with the spirit of the development section, where tonal ambiguity frequently pushes the system of functional analysis to the limits of its ability to clarify harmonic details. In many late-Classical introduction sections, the listener will experience an expression-rich, but non-conclusive harmonic structure; that is, many harmonic doors will be opened, but few will be closed. Introduction sections provide the following movement (and often the entire composition) with a promise of things to come; an enticement to step into the world of the work, but introductions generally forgo the gestures of musical fulfillment and closure. Instead, a slow introduction will give us only a hint of musical weight and a foretaste of events yet to come.

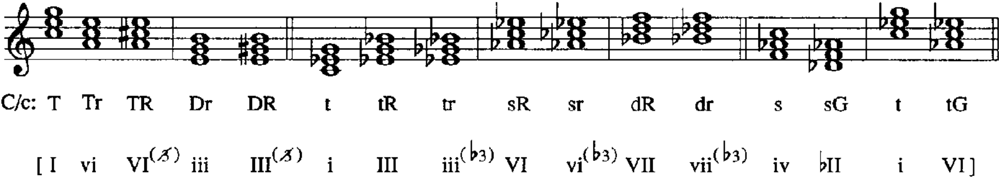
The basic harmonic function of a Classical introduction section is to establish the unquestionable dominance of the work's tonic pitch. Whether in major or minor, slow introductions often present a variety of tonal centers that are either strongly related to or directly controlled by the tonic. This feature gives the introduction section a sense of broad harmonic scope.

Central tonic harmony (whether T [I] or t [i]) and its primary relative-sonority areas (Tr Sr Dr [vi, ii, iii] or tR sR dR [III, VI, VII]) normally dominate introduction sections. In spite of numerous tonicizations, however, auxiliary tonalities in introductions are generally perceived as secondary areas which do not threaten the overriding influence of the main tonic key.

The composer creates this broad sense of harmonic scope within a central tonality by touching upon key areas that are closely related to the tonic (T or t), while avoiding strong cadences in the tonic itself. Once the tonic key has been established at the start of an introduction, strong resolution to tonic is generally avoided until the dominant half-cadence that moves directly into the main body *(allegro)* of the movement. Intermediate cadences within the introduction often rely on pedal-points, half-cadences or deceptive cadences to avoid a sense of closure or finality.

We shall employ the functional symbols established by Wilhelm Maler (Ex. 3:60) in our analyses of introduction-section harmony.

Example 3:60



sG is the major counter-relative of the minor subdominant (♭II or N) [Neapolitan in root position]. Since this description is a relatively long-winded term for such a short symbol, the best way to verbally describe it is: "small s, large G."

Ex. 3:61 contains a harmonic progression found in the introduction section to the first movement of Mozart's *Linz Symphony*.

Example 3:61

Mozart-*Linz Symphony* in C-major K.V. 425

T^6 | D_3 | (D_7) | S_3 | T_5 | S^6 | T_3 t_3 | $Đ^7$ | D^7 |* (D^7) | s |

[I^6 | V^6 | V^4_2/IV | IV^6 | I^6_4 | ii^6 | I^6 i^6 | V^7/V | V^7 | V^7/IV | iv |]

sG | D^7_3 |* t D |* tG | D^7_1 $_3$ T t | D^7_1 $_3$ T t | D ${}^tĐ^v$ | D ||

[♭II | V^6_5 | i V | ♭VI | V^7 V^6_5 I i | V^7 V^6_5 I i | V $vii^{\circ 7}$/V | V ||]

The spots marked with an [*] indicate important places where a resolution to tonic was strongly implied, but avoided. In spite of this local bypassing of the tonic, the controlling influence of the tonic key remains effectively unchallenged.

In Ex. 3:62, the major tonic key (T) is presented and confirmed twice (fermatas), before moving into the dominant area. Following the second double bar, the introduction moves into the minor-tonic area (t).

Example 3:62

Haydn- Symphony No. 102 in B♭-major

$\overset{\frown}{T} + \overline{S} \mid D^7_3 \;\; T \mid S_3 \mid D^{6\;5}_{4\;3} \;\|\; \overset{\frown}{T} \;\|\; (D^7_5 \;\text{—}_3\text{—}_1) \;\; Tr \;\; Đ^7 \mid D \;\|$

$[\, \overset{\frown}{I} \mid IV^6_4 \mid V^6_5 \;\; I \mid IV^6 \mid V^{6\;5}_{4\;3} \;\|\; \overset{\frown}{I} \;\|\; (V^4_3 \;\; V^6_5 \mid V^7) \;\; vi \;\; V^7\!/V \mid V \;\|\,]$

$t \mid D^7_3 \mid (S_3 \;\; Đ^7_5 \mid D) \mid tR_5 \mid D^{9 > 8}_7 \mid {}^tĐ^v \;\|\!: D^{6\;5}_{4\;3} :\!\| \;\; D$

$[\, i \mid V^6_5 \mid (IV^6 \;\; V^4_3\!/V \mid V) \mid III^6_4 \mid V^{\flat 9\;\;8}_7 \mid vii^{\circ 7}\!/V \;\|\!: V^{6\;5}_{4\;3} :\!\| \;\; V\,]$

tR [III — D♭-major] is B♭-minor's relative triad

Many introductions in major-key symphonies begin in the minor-tonic key. This action saves the major-tonic sonority for the start of the following allegro section (see Ex. 3:63).

Example 3:63

Haydn-Symphony No. 101 in D-major

$t + \underline{s} \mid Đ^7_3 \mid \overset{\frown}{D} + + \mid {}^tĐ^v_3 \mid D^{6\;5}_{4\;3} \;\; (Đ^v_3) \mid S \;\; (D^7_5 \mid \overset{*}{T}^{4\;3} \;\; {}^tĐ^v_3 \mid D^{6\;\frac{7}{5}}_{4\;3}) \mid tR \mid$

$[\, i \mid iv \mid V^6_5\!/V \mid \overset{\frown}{V} + + \mid vii^{\circ 6}_{5}\!/V \mid V^{6\;5}_{4\;3} \;\; vii^{\circ 6}_{5}\!/IV \mid IV \;\; (V^4_3 \mid I^{4\;3} \;\; vii^{\circ 6}_{5}\!/V \mid V^{6\;\frac{7}{5}}_{4\;3}) \mid III \mid$

$D^7 \mid t \mid D^7 + \overline{t} \mid D^7 \mid t_3 \;\; (Đ^v) \mid S \;\; {}^tĐ^v \mid D \mid {}^tĐ^v_{3>} \mid D + \|$

$[\, V^7 \mid i \mid V^7 + \overline{i} \mid V^7 \mid i^6 \;\; vii^{\circ}\!/IV \mid IV \;\; vii^{\circ 7}\!/V \mid V \mid Gr.^6 \mid V + \|$

* This T does not refer to the key of D-major. The dotted-line bracket indicates that all these harmonies function in F-major, the relative major (tR). We could have labeled the material within this bracket as (D^7_5) tR^{43} $({}^tĐ^v_3 \; D^{6\;\frac{7}{5}}_{4\;3})$ tR, but it seems to me that one set of parentheses is sufficient to explain this tonal excursion.

Exercises: After this discussion of Classical-period harmony, it is really quite meaningless to require compositional exercises. The invention of thematic materials and developmental harmony are really individual artistic achievements. Copying of the Classical style is of little real benefit in a study like this, and why would we even want to attempt writing in a style that was already brought to its apex by the masters of the eighteenth century? We might consider some exercises that might help us practice developmental techniques, however, since these kinds of exercises deal more with how to handle transitional materials than following a rote formula.

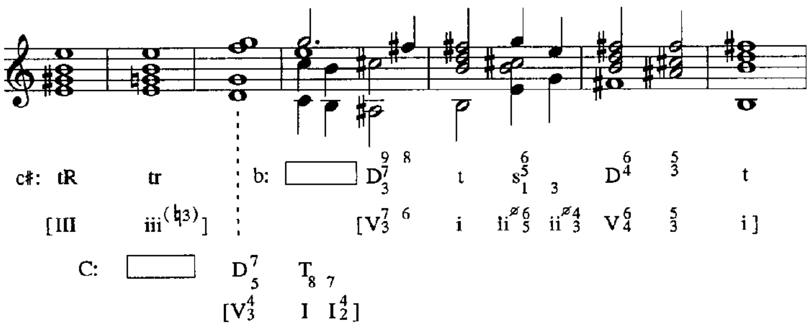
Great value can be gained from the harmonic analysis of Classical works, as long as the harmonic progression is always considered in its appropriate formal context. For that reason, harmonic analysis can be best used as a tool to help confirm certain form-building processes or to complement our understanding of those processes (the uncovering continuing modulatory processes, for example). Harmonic analysis can also be a valuable tool in developing a critical commentary about a work's formal structure. Applying a complete set of functional symbols to an entire Classical movement is not only monotonous, but it also often shows a certain laziness of thought on the part of the analyst. Rather than labeling every harmonic progression, it might be better to answer the following questions:

1) How stable is the harmony of the first thematic area? 2) Is the modulation between the first and second theme area straightforward and goal-directed, or is it confusing and developmental in nature? 3) Is the dominant [or relative major] the most prominent key in the exposition, followed in importance by the tonic (the second theme area and the closing section are usually found in the dominant [or relative major]), or do inserted modulations make the relative weights of the two polar keys less clear? 4) Are there planes of harmonic rest in the development section? If so, where? (They are often found at the beginning and end of the development.) 5) How is the rate of key change established in the development section? 6) Which modulations are unambiguous? Which take place through the action of upper and lower leading-tones, etc.?

A harmonic analysis should include the functional symbols and their attached Arabic numbers (the Arabic numbers contain complete information about specific voice leading). The symbols in Ex. 3:64 state the function of all the chords in the example except for two places (see empty boxes). It is debatable how boldly or tentatively the key center is changed from C♯-minor to C-major, and then from C-major to B-minor. The chord in measure 2 could be considered the Tg (iii) in the key of C and the first chord in measure 4 could be considered the sG (♭II or N) in B-minor. If we fill-in the empty boxes with these respective functions, we will have labeled these pivotal chords in both old and new keys.

Example 3:64

Beethoven-Piano Sonata in C♯-minor, op. 27, No. 2. (Excerpt from Mvt. I)



Although composing a complete movement in the Classical style might prove to be little more than senseless busywork, it may actually be useful to design a modulating harmonic plan and then write-out a slow introduction section. The scope of such an assignment will depend on the length of the introduction, since an introduction of five measures will unfold much differently than one of thirty measures (the latter will require a much more involved harmonic plan than the former). It is especially important that the dominant-seventh chord at the end of the introduction is reached at just the right time.

Those who wish compose an introduction may try sketching-out a piano version, but be sure not to maintain a strict four-voice texture throughout. Another possibility is to write-out the melody and bass voices in such a way that the melody consists of two separate instrumental voices which alternate with one another.

It is interesting to observe the differences that occur between an introduction that follows a preconceived harmonic plan and one that is created more intuitively. Using both methods, compose two introduction sections of about the same length for piano. After having written-out the intuitive version, go back and add the correct functional symbols, then compare the harmonic path with the totally planned-out version.

CHAPTER FOUR
Harmony Between 1800 and 1828 (Beethoven-Schubert)

1. Triads Related by The Interval of a Third

The meaning of the musical term *mediant chord* has not been standardized. Instead there are two separate working definitions of this term commonly in use today. Some analysts consider a mediant chord to be any triad whose root is a major or minor third above or below the root of some other triad. Using this definition, a complete set mediants for a C-major triad would include: A-major/minor, A♭-major/minor, E♭-major/minor and E-major/minor. Other analysts differentiate between the term *diatonic mediant,* a chord relationship like that between T and Tr [I-vi]; T and Tg [I-iii] in major, or between t and tR [i-III]; t and tG [i-VI] in minor, and the term *chromatic mediant,* which refers to all third-related chords that are not diatonic mediants.

I suggest that we avoid the term *mediant* altogether and instead try to determine the precise kind of relationships that the various third-related triads have with each other.

A. Relative/Counter-Relative Sonorities: These third-related chords have two pitches in common with a starting chord. Beginning with a C-major triad (T) [I], these chords are the A-minor triad (Tr) [vi] and E-minor triad (Tg) [iii] ; starting with a C-minor triad (T) [I], they are E♭-major (tR) [III] and A♭-major (tG) [VI].

B. Relative/Counter-Relative Sonorities of the Parallel Chord:[1] These chords have one pitch in common with a starting chord. Beginning with a C-major triad, the two chords in question are related by diatonic third to C-minor (the parallel of C-major). These two chords are A♭-major and E♭-major. Starting with a C-minor triad, the two chords in question are related by diatonic third to C-major (the parallel of C-minor). These two chords are A-minor and E-minor.

C. Parallel Chords of the Relative/Counter-Relative Sonorities: These chords have one pitch in common with a starting sonority. Beginning with a C-major triad, the chords in question are A-major, the parallel major of the relative minor (TR) and E-major, the parallel major of the counter-relative (TG). Starting with a C-minor triad, the chords in question are A♭-minor, the parallel minor of the counter-relative (tg) and E♭-minor, the parallel minor of the relative major (tr).

D. Parallel Sonorities of the Parallel Chord's Relative/Counter-Relative Sonorities: These sonorities have no pitches in common with the starting chord. Beginning with a C-major triad, the chords in question are E♭-minor (tr) and A♭-minor (tg); Starting with a C-minor triad the chords in question are A-major (TR) and E-major (TG).

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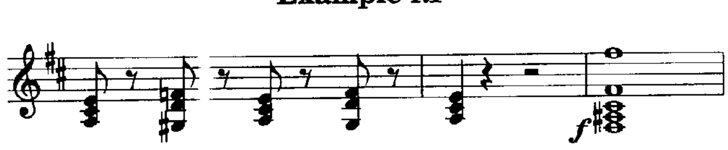
[1] The author explains that Riemann called the parallel major or minor form of a starting triad the *variant chord.* In keeping with standard English-language terminology, the term *parallel chord* will be substituted for the term *variant chord* in this translation.

Earlier we discussed the harmonic system whose chord roots are related by fifth. Now that we have also discussed a system of harmony whose chord roots are related by third, it might seem, that third-related chords should be able to build the same kind of universally useful harmonic structures as fifths. However, third-related chords were used much less frequently in the Romantic era than chords with fifth (dominant) relationships. This makes the occurrence of third-related sonorities a somewhat special practice. Nonetheless, these sonority types became stylistic trademarks of certain composers, who used them in a variety of compositional situations. It should be kept in mind that third-related harmony is not the norm. It is possible to apply a dominant-tonic progression to a harmonization, but third-related harmony must be invented.

During the Baroque, a composer's individual stylistic traits already determined how various harmonic materials would be applied in a composition (descending-fifth sequences in Vivaldi, plagal cadences [S-T] in Handel, and the employment of secondary dominants in Bach). Today, however, it is no longer sufficient to discuss only an individual composer's use of particular materials. Harmony, which at first is just a tool, either grows into a font of inspiration or is considered only a set of formulas that shuns any real invention. Because we wish to discuss harmony in the context of musical invention, it would be absurd for us to examine only single out-of-context progressions. For that reason, we will study third-related harmonies in as many actual compositional situations as possible.

Remote Harmonic Relationships: The development section of the first movement in Mozart's *Haffner Symphony* (K.V. 385), begins in A-major, but the harmony returns to D-major while the bass holds out a long pedal-point on the pitch A. This texture then leads to a half-cadence on A in measure 104 (Ex. 4:1). Directly after the half-cadence is a three-beat grand pause followed by a double surprise. The first surprise is an orchestral tutti marked forte (the previous dynamic was piano) and the second surprise is the new harmony: F♯-major. The keys of A and F♯ are not actually heard as third relations, however. The expected resolution to the third of the D-major tonic triad (after the half-cadence) suddenly becomes the root of the F♯-major triad. This abrupt key change is both distant and averting. The tonal center for the rest of the development remains in F♯, until the section finally empties-out into the recapitulation through a series of descending fifths (B, E, and A, then back to D-major).

Example 4:1



Structurally Motivated Third Relationships: A completely different use of third-related harmony appears twenty-one years later (1803) in Beethoven's Piano Sonata in G-major, op. 3. The first movement begins with an embellished downward-inflected G-major scale, followed by rhythmically accented tonic chords. The cadence at the end of the theme has already modulated to the dominant key (D-major) in preparation for the second-theme. As is shown in Ex. 4:2 this modulation to the dominant takes place by way of the Tr (vi) which acts as a common chord.

Example 4:2

G: T Tr
[I vi]
D: Sr $D^{6\ 5}_{4\ 3}$ T
[ii $V^{6\ 5}_{4\ 3}$ I]

In measure 12, however, the first theme suddenly returns in the surprising key of F-major. F-major is the secondary-subdominant ($\mathbb{S}$) key area of G-major, but the immediate juxtaposition of keys (D-major to F-major) creates the type of third relationship described in **B.** on p. 215 (the relative major of the parallel minor). This new entry of the first theme is an exact transposition in F-major, and the theme ends, once again, with a modulation to its dominant key (this time C-major). This modulation to the dominant is directly followed by another modulation that leads from C-major to G-major. Unison passage work derived from the embellished downward scale, followed by a dominant half-cadence in measure 45 confirms the key of G-major. The theme enters once more (again in G-major), but another modulation is applied and the harmony moves quickly to the key of B (see Ex. 4:3).

Example 4:3

G: T Tr
[I vi]
B/b: s D s_3 $\not{D}^{7}_{5}$ D
[iv V iv^6 $vii^{\circ 6}$/V V]

It is not clear whether Beethoven prepared B-major or B-minor here. The second theme begins in B-major (measure 66), but then is immediately repeated in the key of B-minor. The closing group of the exposition follows a similar ambiguous plan: first B-minor, then B-major, and finally closing in B-minor.

I hear the repeated entry of the first theme in F-major (measure 12) to be just as remote and surprising as the F♯-major chord in the exposition of the *Haffner Symphony* (Ex. 4:1). The question is the role of B-major as it is employed in the second theme of this G-major sonata. Is it a remote or closely related key? After having cadenced in G-major, D-major, F-major and C-major, to what key should Beethoven have modulated after measure 52? The surprising key relationships stated by the first theme's materials allows Beethoven to dispense with the traditional polar key of D-major. Further, these initial key excursions function to prepare our ears for the second theme's new key area.

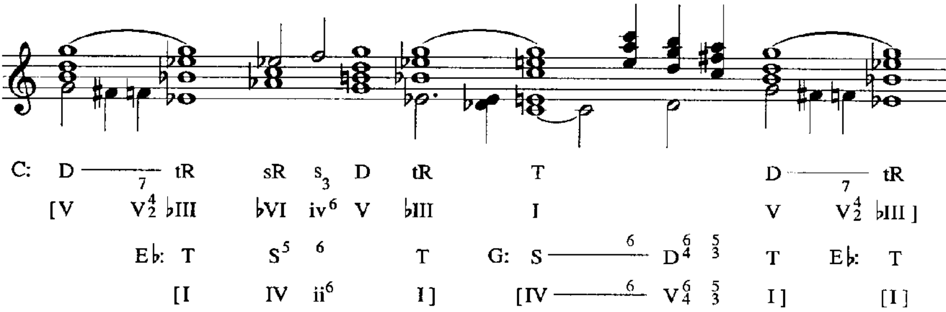
By employing this harmonic plan, Beethoven is able to relate the key of B-major/minor to the key-complex F-C-G-D-major. B-major/minor becomes the key of the second theme as a direct consequence of the modulatory plan used by the composer in the first theme area. Therefore, the third relationship between G-major and B-major is structurally motivated.

Color Change Applied to a Central Pitch (Melody with a Stationary Pitch): The transition to the second theme in the first movement of Schubert's String Quintet in C-major ends with an accented chord passage (tutti) in measures 57-8. The harmony at this spot is dominant, followed by an auxiliary diminished-seventh chord over a pedal-point, returning again to dominant (D$\overset{(\not{D})}{\text{—}}$D). The fundamental harmony is then carried forward by the viola (pizzicato), while the violins provide chordal interjections on the weak beats. The first cello sings in a high register, accompanied predominantly in thirds and sixths by the ribbon-like legato of the second cello. In this melody, which is later repeated by the first violin, there is a noticeably frequent recurrence of the pitch G, which causes it to dominate the texture.

In measures 58-81 (24 measures) the pitch G occurs in the melody for a total of 56 beats (quarter notes). If all of these G's were added together they would total fourteen measures, more than half of the entire melody. Regardless of the limited motion of this melody and the way it depends so highly on a chain of single pitches, many friends of chamber music perceive in this theme a sense of wide space and deep expression. The question is why no one either seems to sense the limited pitch materials or feel a necessity for the passage to move away from this nearly constant central pitch.

In measure 58 the melody pitch G is heard as the doubled root of a G-major triad. This same G, however is heard as the third of an E♭-major triad in measure 60. In measure 65, the pitch G is again heard as the doubled root of a G-major triad after having been preceded by an F-minor chord, which creates a dominant half-cadence in C-minor (the relative minor of E♭). G is heard once more as the third of the E♭-major triad between measures 66-70 and then is harmonized as the fifth of a C-major triad in measure 71. After arriving in C-major (see Ex. 4:4), a further modulation to the dominant of C is applied and G-major is reached again in measure 79. Like it was in the beginning, the melody-pitch G again becomes the third of an E♭-major triad in measure 81.

Example 4:4



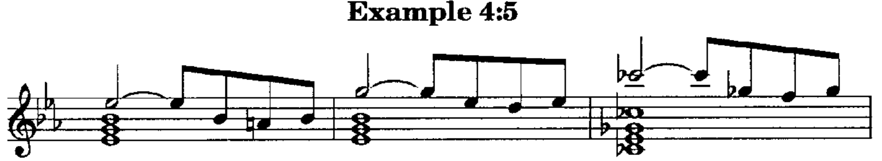
All of the different sonorities that harmonize the often-repeated G are related by third. The simple D-T relationship (i.e., G-major resolving to C major) is not utilized. Though the pitch G is stationary in this melody, it appears in several different colors. It is harmonized as the fifth of the C-major triad, as the root of the G-major triad, and as the sensitive third of the E♭-major triad. Because the pitch G is harmonized with so many third-related sonorities, the listener is given the impression of wide melodic motion, when the actual melodic line is quite limited in scope.

Breakout from Prevailing Harmony; Enrichment of the Tonic Area: Schubert composed Symphony No. 4 when he was only nineteen years old. In spite of the fact that the last movement is in the key of C-minor, there are two modulations in the exposition that start in E♭-Major and end in C♭-Major.

The finale begins with a four-measure introduction, followed by an Allegro melody that is not very different from one Haydn might have written. The harmony is also quite straightforward (the most complex progression that occurs here is s^n-D-tG [N^6-V-VI]). This initial melody is repeated, followed by a modulation to the relative major (E♭-Major). In measure 33 a pleasant connecting melody enters, but the original melody soon returns in the key of C-minor. (Schubert often composes his themes so that they approximate the closed structure of three-part song form [A-B-A].) The first theme group ends in measure 63, followed by transition and modulation (the leading-tone diminished-seventh chord, $\not{D}^{v}$ [vii^{o7}], is employed a number of times as the active sonority in the modulation process). The second theme enters in measure 85. It is more harmonically varied than the first theme group, but there are still no unusual harmonic devices. The closing group begins in measure 129, and is clearly derived from the rhythm of the first theme ♩♪♪♪♩. The closing group consists of four repeated measures (T-T-D-D) [I-I-V-V] in E♭-major, but as this four measure phrase is heard a third time, harmonic catastrophe!—the listener is thrown, without warning, into the remote key of C♭-major. Although this breakout from the

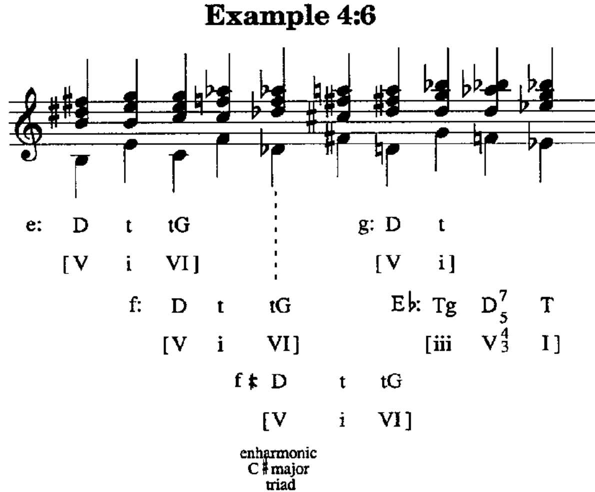
prevailing tonality was not prepared harmonically, it certainly is strongly supported by the motoric eighth-note pattern which increases in intensity throughout the movement, and is always present in at least one voice (see Ex. 4:5).

Example 4:5



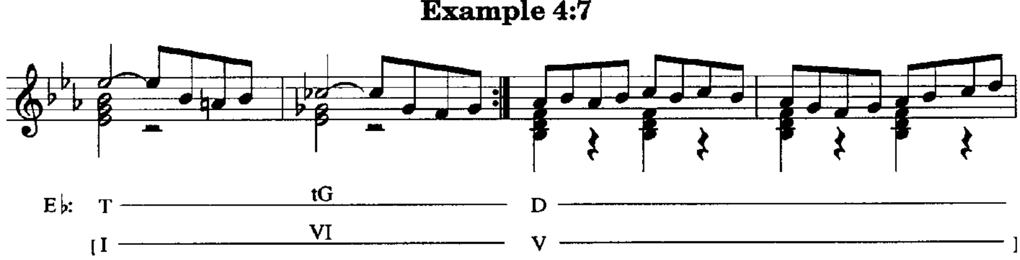
After this surprising key change, the harmony becomes more active. Ascending chromatic scale passages produce the modulation shown in Ex. 4:6.

Example 4:6



The key of E♭-major is reintroduced thirty measures before the end of the exposition, and is confirmed by a cadence. Up to this point in the movement, the winds have shared the melodic passages with the strings. Now, however, the harmonic progression of the closing group is strengthened and clarified by the winds who reinforce the harmony by playing only on strong beats (see Ex. 4:7).

Example 4:7



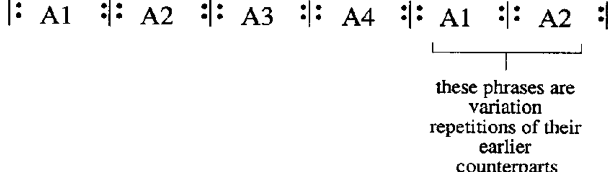
In Ex. 4:7 we also hear again an E♭-major triad followed by a C♭-major triad. This time, however, C♭ does not breakout from E♭-major, but rather, enriches the key of E♭. This is because the common tone (E♭) shared between the two chords occurs in the bass. It is clear, that the key of E♭ is not endangered in the same way that it was earlier when the following C♭-major chord appeared in root position. This time E♭ is confirmed as the tonal center, and the following (inverted) C♭-major chord is only slightly reminiscent of its earlier, more dramatic occurrence.

The Pleasant Surprise of Unanticipated Sonorities: The first movement of Beethoven's Piano Sonata in E♭-major, op. 27, No. 1, is constructed in three-part song form (A-B-A). The A-part of the form consists of six four-measure phrases which are joined together (see Table 4:1). These four-measure groups are either literal or variational repetitions of one another.

Table 4:1

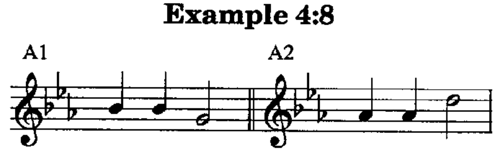
Beethoven-Piano Sonata in E♭-major, op. 27, No. 1

(Diagram of the phrase structure in the first section of Mvt. I)



As is shown in Ex. 4:8, the major connecting element between groups A1 and A2 is a pattern of repeated quarter-notes, which occurs at the beginning of the first measure.

Example 4:8



Group A3 begins with a pickup and carries the repetition of pitch one note further (Ex. 4:9).

Example 4:9

Both the eighth-note pickup and the elongated repetition are carried over to group A4, but a new harmonic connection is introduced. As is shown in Ex. 4:10, the eighth-note pickup (G) functions as the third of the previous E♭-major chord, but it also functions like the fifth of the following C-major chord. C-major, the parallel major of the relative minor, becomes an attractive new harmonic color in the piece.

Example 4:10

Because of the straightforward way in which this harmonic progression is continued, we might be tempted to analyze this C-major chord as a secondary dominant (see Ex. 4:11). This notion should be rejected, however.

Example 4:11

The C-major triad in group A4 is stable, neither seeking resolution to other sonorities nor referencing other tonalities. This concept of stability is further reinforced if we compare the pickup-note figure in group A3 with its counterpart in group A4 (Ex. 4:12).

Example 4:12

The entrance of this C-major chord is breath-taking. No set of functional symbols, whether T-TR [I-III] or T-(D)-Sr [I-V/ii-ii] really clarifies the surprise we hear in this spot. The dramatic change of register at the entrance of C-major chord must also be considered. As Ex. 4:10 shows,

the bright C-major triad enters without registral preparation, after the relatively low register material at the end of A3. The best way of experiencing the surprise, however, is to simply attempt singing the melodic connection between groups A3 and A4 (Ex. 4:13).

Example 4:13

This melodic connection is constructed in such a way, that the listener, who is trying to anticipate what will come next, is taken unawares. The unanticipated entry of the C-major chord and its repetition is a good example of a third-related sonority that produces a sense of pleasant surprise.

Schubert's Progressions around the Circle of Fifths: Until the beginning of the lengthy coda section in the *Largo e mesto* from Beethoven's Piano Sonata in D-major; op. 10, No. 3, the movement stays quite close to the key of D-minor. The first modulation in measure 13 is to C-major (dR) [VII], followed by a move to a-minor (d) [v] in measure 21. The key changes to F-major (tR) [III] in measure 30, and then returns to D-minor (t) [i] in measure 44. Before D-minor is confirmed (measure 60) by a strong cadence, Beethoven briefly tonicizes the key of B♭-major (tG) (VI) in measure 56.

A broader harmonic plan unfolds in the following 23-measure coda, however. As compared with the tonic, the movement's most remote sonority in the circle of fifths (E♭-minor) occurs in measure 67. This measure also contains the lowest sounding pitch in the movement (G♭). Ex. 4:14 contains an excerpt from this spot in the coda.

Example 4:14

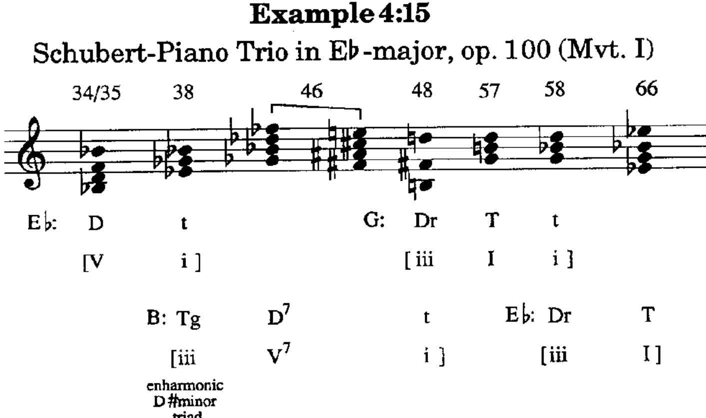
So that the smoothest voice leading will prevail, Beethoven uses an enharmonic F♯ instead of G♭ in the diminished-seventh chord on the downbeat of measure 4. (Beethoven clearly intends the root of this diminished-seventh to be the root of Đ^{v} [vii^{o7}].) In measure 5, however, he spells the seventh of the chord without using an enharmonic equivalent so that the harmonic sequence that follows is correctly notated. The seventh of the applied diminished-seventh chord in the progression (Đ^{v})D$^{6\,5}_{4\,3}$ T [vii^{o7}/V-V$^{6\,5}_{4\,3}$-I], normally resolves downward. However, when the seventh of the diminished-seventh is forced upward, as in measure 4 (because of the enharmonic F♯), composers will often resolve the sonority to D$^{6\,5}_{4\,3}$ [V$^{6\,5}_{4\,3}$] rather than directly to D. This principle is not either uniformly or systematically applied, however.

Composers do not often sequence a progression all the way around the circle of fifths, but rather think of the distance (in fifths) between two keys as straight lines with a low end and high end. In Beethoven's *Largo e mesto,* the low-end E♭-minor (six flats), is a very long distance from the key of A-major (three sharps) at the high end.

Outside of development-section modulations, most Classical-period composers tend to maintain a linear key organization, where the central tonic becomes a rather stable equilibrium-producing element. Schubert, however, often destabilizes the central tonic, even in non-developmental sections. (This aspect of Schubert's music should be regarded as his own personal style and not as a general style of the times.) In Schubert's music, the entire circle of fifths is often completely traversed by far-reaching harmonic means that include many third relationships. Schubert will frequently abandon a particular tonic and launch into one of his complex circular progressions that will end precisely where it started—back on the tonic.

Example 4:15

Schubert-Piano Trio in E♭-major, op. 100 (Mvt. I)



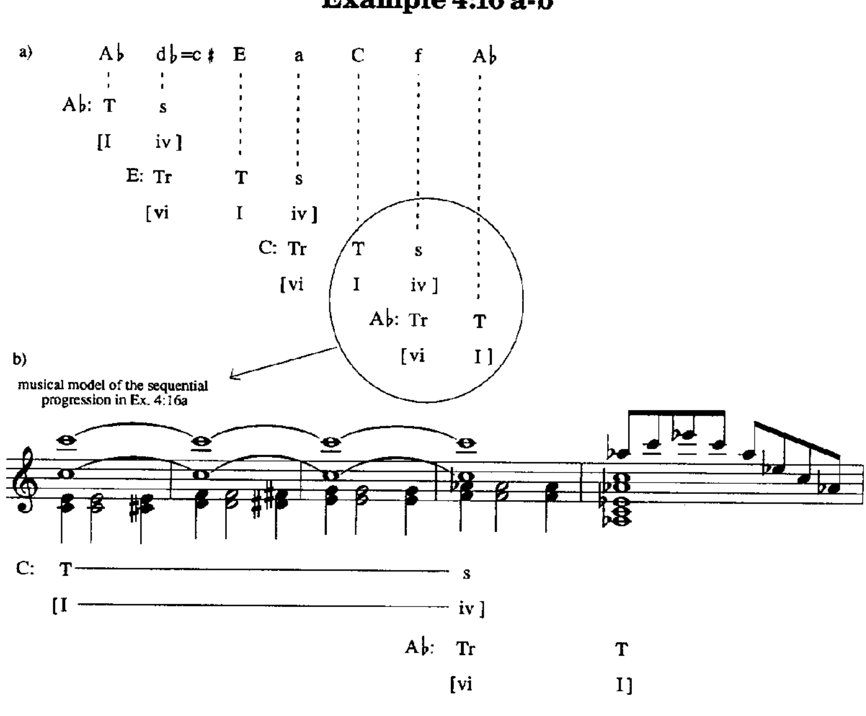
In the piano trio excerpt (Ex. 4:15), a B♭-major chord [measure 34-5] resolves downward by perfect fifth to an E♭-minor triad (a circle-of-fifths jump from 2♭ to 6♭). Within this new key area, a G♭-dominant-seventh chord appears and is enharmonically respelled (measure 46) to form an F♯-seventh (6♭=6♯), which then resolves once more (down by fifth) to a B-minor triad (2♯). Within this new tonality, a G-major triad appears (measure 57), but it is immediately altered to form a G-minor triad (1♯ to 2♭).

What actually happened here? There has been no modulation toward a goal key. In spite of much remote-key tonicization, the original tonic still emerges intact on the other end. In fact, the tonic area is actually revitalized by this process and is preserved a while longer. Earlier composers would have attempted this same harmonic process by tonicizing the closely related chords of the relative key. The difference between these more traditional sojourns in the relative-key area and the harmonic processes observed in Ex. 4:15, is that the controlling force of the tonic is not really challenged by the usual relative-key tonicizations. Such traditional tonicizations do not weaken the influence of tonic, but rather enrich and enlarge the tonic area before the tonic key is confirmed by a cadence.

Schubert's circular progressions produce just the opposite effect. The first movement of the E♭-major Piano Trio begins in the same way that a piece written 70 years before (in the early Classical period) might have begun; with a simple cadence-defined initial theme. After measure 66, however, E♭-major is heard again, but this time as a pleasant and fresh sonority. In this new guise, E♭-major is heard as a floating, independent sonority without any old-fashioned tonic stability. Here in this beautiful and tonally secure (at least at the foreground level) music of Schubert, we can begin to sense a quiet revolution taking place. The concept of tonic as the functional center of tonality is being questioned.

Ex. 4:16a contains a schematic diagram of the same modulatory technique used by Schubert in the first movement of Symphony No. 4 (measures 85-105).

Example 4:16 a-b



Ex. 4:17 contains a schematic diagram of the harmony changes in the development section from the first movement of Schubert's String Quintet in C-major, op. 163, (measures 228-251). Here the circle of fifths becomes traversed one-and-a-half times, starting on a B-major triad and ending on the G-seventh chord (fermata) that leads into the recapitulation section. The major tonic triad becomes altered to form its parallel-minor chord five times within Ex. 4:17. This produces a large three-step downward motion (direction of flats) in the circle of fifths within each tonal area shown (moving from T to t requires the addition of 3 flats). The actual key changes take place in relatively small steps within the circle, however (e.g., t in B-minor = Tr in D-major).

Example 4:17

B: T S D^{6}_{4} $^{7}_{\substack{5\\3}}$ T t

[I IV V^{6}_{4} $^{7}_{\substack{5\\3}}$ I i]

D: Tr S D^{6}_{4} $^{7}_{\substack{5\\3}}$ T t D t

[vi IV V^{6}_{4} $^{7}_{\substack{5\\3}}$ I i V i]

F: Tr D T t

[vi V I i]

A♭ enharmonically notated to G♯

A♭: Tr D T t

[vi V I i]

E: Dr T t D t

[iii I i V i]

C: Tg D^7 (fermata)

[iii V^7]

The development section of the first movement to Schubert's Piano Quintet in A-major, op. 114 *[The Trout]*, contains short melodic planes which enter on intermediate steps as the harmony makes a large single descent around the circle of fifths. At the end of the exposition the key is E-major, but at the beginning of the development section the key is changed to C-major (the counter-relative of the parallel minor in E-major). At this point we will list only the key planes, their beginning measure numbers and the number of flats or sharps in their key signatures (indicating their respective positions in the circle of fifths). In measure 147, C-major (0♭); measure 161, C-minor (3♭); measure 164, E♭-major (3♭). Note that this last plane is of longer

duration than the others and its tonic note is a tritone away from the tonic pitch of the entire work. Measure 185, F-minor (4♭); measure 189, A♭-major (4♭), measure 193, C♭-major (7♭), but enharmonically notated as B-major (5♯). Measure 196, E-minor (1♯); measure 197, C-major (0♯); measure 199, F-minor (4♭); Measure 200, D♭-major (5♭), but enharmonically notated as C♯-major (7♯). Measure 202, F♯-minor (3♯); and measure 203, A-major (3♯). The recapitulation begins in measure 210 in the subdominant key of D-major. Schubert often begins the recapitulation in the subdominant so that the tonic will not be worn out with use through the entire section. The tonic often appears only with the restatement of the second theme in the recapitulation section.

Deceptive Cadences: The first movement of *The Trout Quintet* (measures 104-110) also contains an unusually attractive deceptive cadence created by third relationships (see Ex. 4:18). The ascending passage A-B-B♯-C♯ in the cello is presented in longer note values in the piano part and is shortened to A-B-B♯ (the B♯ is enharmonically spelled as C, here). The sudden pianissimo underscores the unexpected character of this resolution. The modulation from this spot back to E-major (the dominant) employs the German-sixth chord (C-E-G-A♯) in the progression $^{t}\mathbb{D}^{v}_{3>}$ $D^{6}_{4}{}^{5}_{3}$ [Gr^{6}-$V^{6}_{4}{}^{5}_{3}$].

Example 4:18

2. Leading-Tone Relationships

We have already discussed the process of leading-tone modulation in Beethoven's development sections. Though there are many examples of such leading-tone relationships in his late works, not all of them are intended to act as agents of modulation. These devices are also found in Beethoven's exposition and recapitulation sections, where they do not function to abandon a key area, but to enrich it.

At the beginning of the first movement to Beethoven's String Quartet in E-minor; op. 59, No. 2, the main theme is abruptly broken-off with the progression t-D_3 [i-V^6]--see Ex. 4:19. After a grand pause, this same melodic/harmonic figure is repeated, a half-step higher. We should not consider these two motific variants as part of a large harmonic motion from t [i] to sG [♭II], since the F-major chord does not seem to progress further as a representative of subdominant (A) on its way to tonic (E). Rather, the F-major chord appears to enter as a chromatic embellishment of tonic. Notice how this leading-tone chromaticism is continued logically on to F# at the beginning of the viola entrance (after the next grand pause).

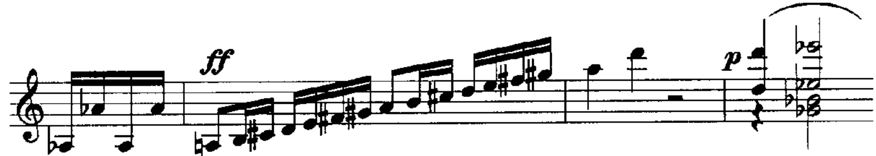
Example 4:19

In the first movement of Beethoven's String Quartet in F-minor, op. 95 *[Quartetto Serioso]*, the cello enters in measure 5 (again after a grand pause) with the theme a half-step higher in the key of G♭-major. In measure 18, a third extension of the theme enters, once again back in the tonic key of F-minor (see Ex. 4:20). This passage references both the original tonic key and its G♭-major variant. As we observed in Ex. 4:19, Ex. 4:20 shows leading-tone motion both into and away from the chromatically raised thematic motive.

Example 4:20

This same kind of chromatic process emerges a number of times later in the movement. For example (measures 38-41), a unison A-major scale emerges from the preceding A♭ [enh. G#]. A-major is then abandoned by an additional leading-tone motion D-E♭ (see Ex. 4:21).

Example 4:21



In the recapitulation of the first movement to Beethoven's Symphony No. 9, the tonic (D-minor) is raised to E♭-major for a short time (see Ex. 4:22).

Example 4:22

A few measures later, the E♭-major area returns to tonic through a unison passage (see Ex. 4:23).

Example 4:23

3. Note-for-Note Chromatic Transformation

At this point, we will take another look at several of the Schubert works covered earlier in our discussion of third relationships.

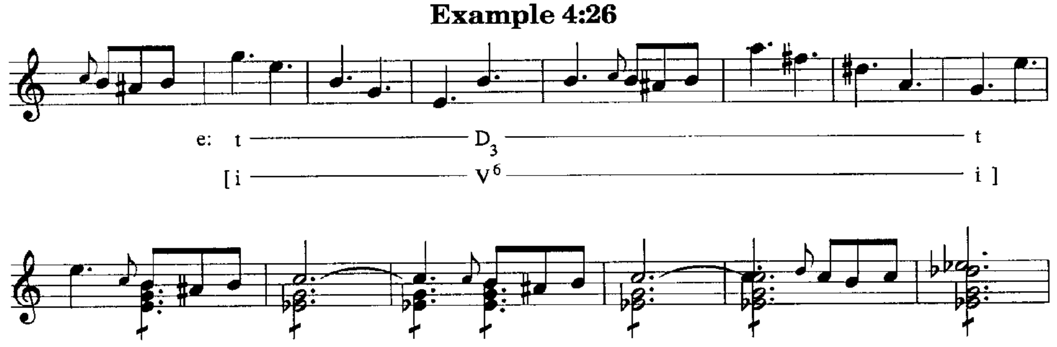
Ex. 4:24 shows another excerpt from the first movement of Schubert's Piano Trio in E♭-major, op. 100 (measures 106-112). In this passage we find a strong dominant-tonic cadence in the key of G♭-major, followed by a chromatic alteration of the tonic chord (chromatically raised root) which creates a root-position diminished triad. This altered sonority does not function like the traditional chromatic passing chord (see Ex. 4:25), but instead the alteration of the root of the tonic chord initiates a further chromatic alteration in the following chord (the fifth of the G♭-major tonic chord is also raised). The constant element in this unpredictable two-step chromatic transformation is the pitch B♭, which functions both as the third of the G♭-major triad and the third of the G-minor triad.

Example 4:24

Example 4:25

Another excerpt from Schubert's Piano Trio, op. 100 (final movement, measures 666-679) is found in Ex. 4:26. Here, a simple melody derived from the main theme passes through an unexpected chromatic transformation. Also of interest, is the fact that the harmony seems to change from t to D_3 [i to V^6] in the "wrong place" (the weak beat of the measure). C, the sixth scale-degree in E-minor (the third of the minor-subdominant), becomes unexpectedly harmonized by a chromatic descent to E♭ in the bass. Once again, the third of the tonic chord (G) becomes the axis of a tonal shift. The melody, in E-minor, does not appear so straightforward, if its preparation is considered. In measure 661, the root of the local tonic chord (E♭) was raised to E♮. At that point, the unexpected tonal area of E-minor is first established. The excerpt in Ex. 4:26 shows only the unexpected chromatic return from E-minor to E♭-major.)

Example 4:26

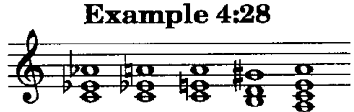


Ex. 4:27 shows a harmonic reduction of a passage in the second movement in Schubert's String Quintet in C-major, op. 163 (measures 47-8).

Example 4:27

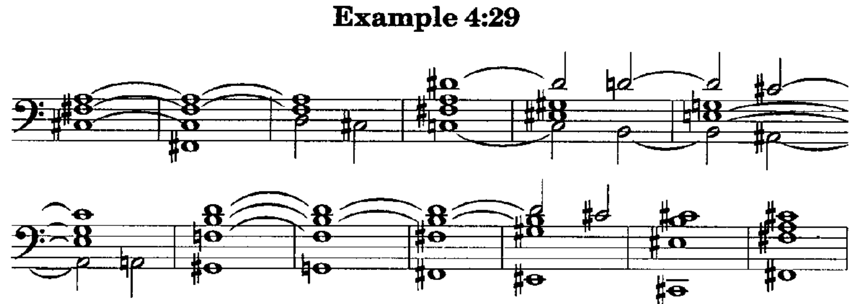
Ex. 4:28 contains a harmonic reduction of a passage in the second movement of Schubert's Piano Quintet in A-major, op. 114 (measures 80-84).

Example 4:28



The beginning of the famous "Wolf's Glen" scene in Carl Maria von Weber's *Der Freischütz* is also well worth studying in terms of this kind of harmonic transformation (see harmonic extract in Ex. 4:29).

Example 4:29



The third relationships in this chapter were all discussed in their respective musical contexts. This is because the employment of chords related by thirds cannot be abstracted into simple rules (like, for example, the resolution of the dominant-seventh chord, whose resolution remains basically the same across all composers and time periods in tonal music). The best analysis of passages containing chords related by third may be quite different from case to case.

The statement, "one applies a dominant-tonic relationship, but one invents a third relationship," does not mean that we should attempt to compose complete pieces in the style of Schubert. Nevertheless, the following assignments may provide extra practice in mastering the remote key relationships we have studied in this chapter.

Because the circle of fifths can be so quickly traversed by these modulatory processes, it is important that we learn to become more consciously aware of the progressions that are taking place. The following practice and ear-training exercises may provide help in understanding and hearing these progressions.

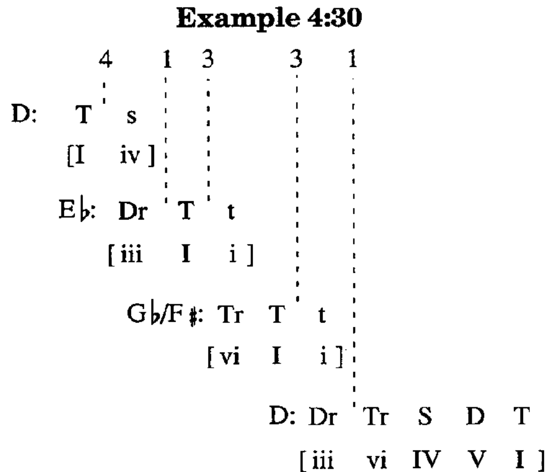
Practice Exercises: Invent your own modulating harmonic progressions between remote keys (for example between the keys of B and E♭) or invent circle-of-fifths modulations (for example, from C to C) that jump a large number of steps around the circle of fifths with each change of sonority (e.g., T-t = 3 steps, T-s= 4 steps). If necessary, you may also use one-step circle progressions such as D-T [V-I] or Dr-T [iii-I], or combine large-step and small-step circle progressions by following these procedures:

1.) At the beginning, move in the direction of your goal key with large-step progressions around the circle of fifths. As you get closer to the goal key, check to see if it is possible to arrive at the goal by a one- or two-step circle progression upward or downward.

2.) Plan a strategy of large- and small-step circle progressions. The descending distance around the circle of fifths, from D back to D again, is twelve steps. Traverse the circle with a step-plan like this: 4+1+3+3+1—the solution to this plan is shown in Ex. 4:30.

After inventing several progressions by the methods above, play them at the keyboard.

Example 4:30



Ear-training: Without the help of an instrument, read through and try to imagine the harmonic changes that occur in the musical examples and harmonic reductions given in this chapter. Can you follow these harmonic progressions in your head? If not, play them at the keyboard and listen carefully to the harmonic changes. Try thinking through the same modulatory patterns, but begin on different sonorities from those shown in the examples. Actively concentrate on your listening skills. Always check your mental imaging of the sounds by playing each progression at the keyboard. Certainly, the most difficult of the modulatory processes to hear are the note-by-note chromatic transformations. I admit that progressions such as those in Ex. 4:31 are difficult for me to hear and that it is necessary for me to practice diligently in order to improve my skill-level.

Example 4:31

In order to practice progressions such as those in Ex. 4:31, I recommend the exercise in Ex. 4:32.

Example 4:32

A constant habit of score study is the best method of discovering and understanding complicated modulatory processes, but you should not limit your analytical inquiry to the works cited in this chapter. These examples are only models of the kinds of modulatory processes which occur in many works.

CHAPTER FIVE
Harmony between 1830 and 1850 (Schumann)

1. Introduction

It was in only the second quarter of nineteenth century that it became customary to hold repeat performances of successful works, that the concept of a "repertoire" music literature came into being, and that a group of artistically aware citizens created a school of modern music criticism (based on a balance between traditional practices and creative innovation). The artistic public of this period was well-acquainted with the works of the Classical period and would soon come to know the great works of J.S. Bach. It was also during this time that traditional masterworks became the standard against which all contemporary compositions were judged. This artistic climate put the nineteenth-century composer in a completely new situation. Not only was it important to write music that was intelligible to a public that had learned the style of Beethoven, but most of all, it was important to become original.

For these reasons, the enriched expressive materials of the new Romantic style did not replace the elements of older formal structures, but rather supplemented them. In harmony, basic cadence formulas continued to define specific tonalities, even though these formulas, already heavily used in earlier works, ran the risk of becoming worn-out and trite. In order to add a cultivated sense of embellishment and charm to these standard harmonic patterns, nineteenth-century composers developed progressions that were either slightly disguised traditional progressions or clever digressions from "tried and true" older formulas. This approach to harmony not only produced a completely new musical style, but also resulted in several new ways of connecting sonorities. Since the music of Robert Schumann contains so many examples of harmonic innovation (although within the bounds of traditional practice), we will devote this chapter to a discussion of some of his more important contributions.

Schumann was an incomparable interpreter of poetry, and had an uncanny ability to musically clarify and intensify various aspects of the poetic texts he adopted for his art songs. Schumann's songs often exhibit a highly creative approach to harmony, but first we will consider his use of more standard harmonic processes.

In spots like the one shown in Ex. 5:1, the traditional cadence seems to celebrate its own imperishable nature. No. 4 from the song cycle *Dichterliebe* [Poet's Love], *'Wenn ich in deine Augen seh'* [When I Look into Your Eyes] begins simply in major with the alternation of the voice part and the piano part. Only in the setting of the fourth line of text (Ex. 5:1), do the voice and piano parts come together. Here, the phrase cadences in the subdominant key with a progression that had been used by composers for over a hundred years.

Example 5:1

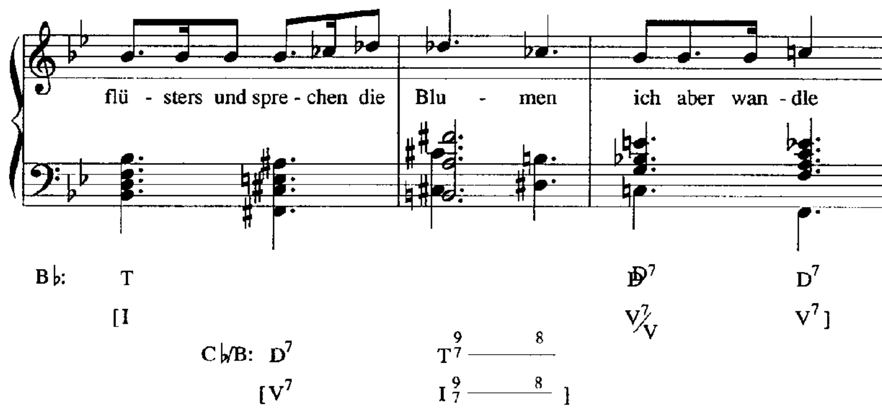
The text in Ex. 5:1, *"So werd ich ganz und gar gesund,"* literally means "therefore will I be completely sound [in body and mind]." Here the word *gesund* (sound or healthy) is harmonized by the old and reliable cadence. This same traditional construction is also employed to express simplicity and purity in No. 3 from *Dichterliebe, "die Feine, die Reine, die Eine"* [the delicate, the pure, the only (loved-one)], and to express loveliness and kindness in the text *"heller Sinn und fester Muth"* [hardy soul and strong courage] from No. 2 of *Frauenliebe und -Leben* [Women's Love and Life].

Schumann does not even use experimental materials when he sets fairy-tale texts. The harmony is simple and clear under the text *"aus alten Märchen"* [from old fairy tales] in the song *uralter Melodei'n* [Ancient Melodies] *(Dichterliebe,* No. 15). Other examples of traditional harmony in Schumann can be found in *das Liedchen das einst die Liebste sang* [The Little Song that the Beloved Once Sang] *(Dichterliebe,* No. 10), and from the Eichendorf song, *der frohe Wandersmann* [The Happy Wanderer], where the lark sings *"aus voller Kehl und frischer Brust"* [out of a lusty throat and vigorous breast].

The fact that Schumann employs such traditional progressions makes the entry of unusual harmonies all the more conspicuous. Before we look at several spots which contain these non-traditional techniques, however, we will discuss Schumann's sense of the dramatic.

Schumann often employs two different musical styles when he sets texts that are spoken by different poetic characters (for example, the singer, as opposed to the birds in *der frohe Wandersmann; Dichterliebe,* No. 12). Though the singer (see Ex. 5:2) wanders *"im Garten herum"* [around the garden] in the key of B♭-major, *"Das Flüsternend sprechen die Blumen"* [the whispering of the flowers] is set a half-step higher in the key of C♭-major. On the way between the two key areas, the root of the B♭ triad becomes the leading tone in C♭. At the return to B♭-major, where the text *"ich aber"* [but I] enters, there is an abrupt half-step shift of root tones between a dominant-seventh constructed on B and another on C.

Example 5:2



This abrupt change of harmony at the point of the shift in voice between the narrator and the flowers appears even more clearly before the next speech of the flowers. As is shown in Ex. 5:3, the B♭-major tonic triad becomes a dominant-seventh chord in third inversion with a raised fifth ($D_7^{5<}$) [V^{+4}_{2}]. The goal pitch of this sonority, however, is not the third of the E♭-major triad (G), but rather turns out to be G the root of a G-major triad. In this spot, the old tonic pitch (B♭) functions like a leading-tone (enh. A♯) to the third (B♮) of the G-major triad.

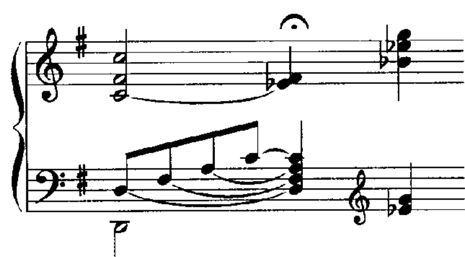
Example 5:3

Perhaps we could interpret Schumann's setting of the line, *"Sei unsrer Schwester nicht böse, du trauriger, blasser Mann"* [Don't be mean to our sister, you sad, pale man] as an act of unexpected consolation; thus, a sudden modulation. In Schumann's song, it is just possible that the encouragement from the flowers does help the man to change his mind, if we consider the piano epilogue. The return to B♭-major is not abrupt, but rather follows a well conceived plan: G-major is altered to G-minor; G-minor becomes Tr [vi], and B♭-major itself is directly approached by a $^{t}\mathcal{D}^{v}_{3>}$ D [Gr^6-V] progression.

Schumann also creatively handles the change of poetic voice in his song on Heine's text, *Ich wandelte unter den Bäumen* [I wander under the trees], op. 23; No. 3. The narrator, who wanders alone in his sorrow, sings in G-major, accompanied by tonic and various forms of dominant-seventh harmony, while the birds sing in E♭-major and are harmonized exclusively by T [I] and S^6_5 [ii^6_5]. Also conspicuous here are the phrases which end on false tonic chords (T_5) [I^6_4], which

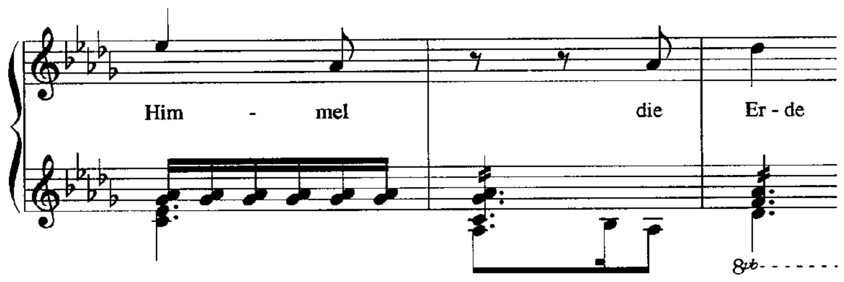
are neither approached nor left according to traditional voice-leading rules. The second-inversion tonic chord produces a hovering, suspended sound, which is certainly inspired by the *"Vöglein in luftiger Höh"* [birds high up in the air]. The speech of the birds is completely unexpected here, especially after the defensive *"Schweigt still"* [be quiet] of the singer. As is shown in Ex. 5:4, an unprecedented harmonic technique appears—the ninth (E♭) of the D^9_7 becomes the new tonic pitch after the fermata chord (more about dominant-ninth sonorities later).

Example 5:4



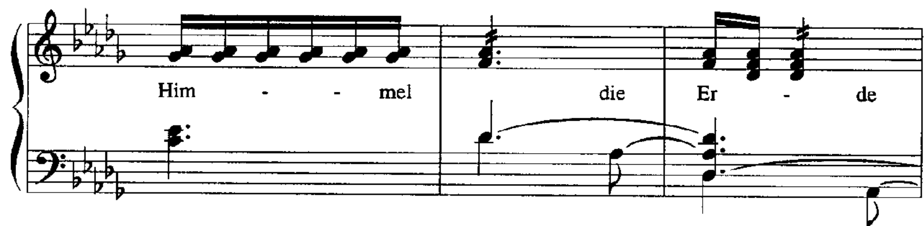
The ears of grain gently wave, the woods lightly rustle and the earth silently kisses the heavens in Schumann's setting of Eichendorf's *Mondnacht* [Moonlit Night]. The tender scene is full of ecstasy, especially in the line, *"es war als hätt"* [it was as it had been]. An interesting, metrically free vocal style is suggested here (especially if the singer pays close attention to the piano part). One of the main principles of traditional harmony is that chords should change on strong beats or beat portions within the meter. If Schumann had followed this rule, the transition to the second line of the text in *Mondnacht* might have looked something like that shown in Ex. 5:5.

Example 5:5



The strong syllable *"Er-"* (from the word, *Erde* [earth]) falls on the downbeat of the third measure in Ex. 5:5. To see how Schumann actually set this passage in *Mondnacht,* see Ex. 5:6. Notice that the tonic chord is already introduced by the piano on a weak beat during a rest in the vocal part. This allows the singer to enter gently without creating a strong metrical accent.

Example 5:6



In similar fashion, the initial entry of the voice in *Mondnacht* is prepared by the piano in such a way that the music literally glides into the singer's opening pitch. The pitch B♭ is hardly noticed when it is added to the ongoing A♭ (in measure two of Ex. 5:7), but it functions to prepare the singer's first note. An enraptured, dream-like harmonic progression also appears in this spot—the octave and the ninth of an A♭ dominant-ninth chord (D^9_7) [V^9] become newly interpreted as the seventh and octave of a B♭ dominant-seventh (D^7) [V^7].

Example 5:7

2. Non-Functional Dominant-Seventh Chord Progressions

It is interesting that those harmonic materials which provide impetus for intensification of expression are coupled with texts that are not necessarily the most dramatic. It is not the outcry of suffering that challenges Schumann to find exotic and highly-expressive harmonies. The line, *"von wildem Schmerzensdrang"* [of wild stressful pain] from *Dichterliebe,* No. 10 requires only s^n $D^{6\,5}_{4\,3}$ t [N^6 $V^{6\,5}_{4\,3}$ i]. A whole new world of sound opens up, however, when the text turns to introspective sentiments like *"bleich und herzeblutened"* [pale and heartbroken]; *"von der Freude weggekehret"* [turning away from all joy]; or when hapless fortune enters the text, as in the line *"du meine Welt"* [you, my world], where beauty is wounded to the death and any solace is unreachable. Chamisso's text from Schumann's song *Was soll ich sagen?* [What should I say?] op. 27; No. 3, reads *"Mein Herz ist wund, du bist so jung und bist so gesund"* [my heart is wounded,

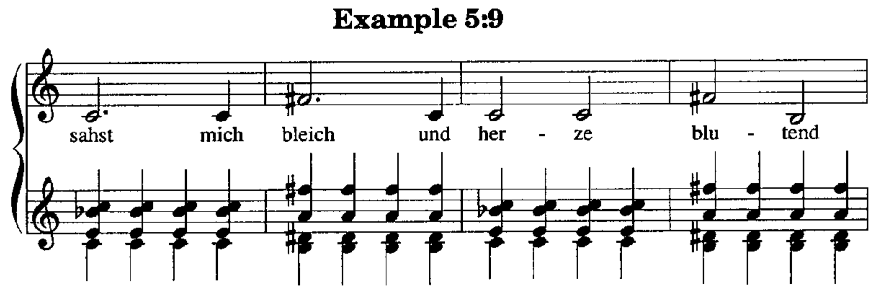
but you are so young, strong and happy]. Schumann takes hold of the words *"so jung"* and creates a moment of rapture-filled harmony to taunt the heart-broken singer (see Ex. 5:8). Immediately after the A-major triad, an F dominant-seventh chord appears, followed by a B dominant-seventh. All three of these sonorities are connected by the common tone A, which is first presented as the stable octave doubling of the root in the A-major chord, then as the sensitive third of the F-seventh, and finally as the seventh of the B-seventh chord.

Example 5:8

The D-major tonic chord is only employed twice in the entire song. All of the harmony, however, is clearly related to tonic through tonicization of other scale degrees in D-major. Only the passage cited in Ex. 5:8 is functionally unclear. If we take the trouble to define the functional relationships between these chords, we must also explain why these same chords do not sound closely related. It is conceivable that F-A-C-D♯ (if F is interpreted as an chromatically altered F♯) could resolve [as a Gr^6] to E-major, but E-major would then sound as dominant. Instead a B-major chord (the dominant of E) follows, making any relationship between the two chords imperceptible.

In his song on Heine's text, *"Warte, warte, wilder Schiffmann"* [Wait, Wait, Wild Sailor], Schumann seems to invent a progression of dominant-seventh chords to produce tonal insecurity. However, the common tones in this progression tend to soften the effect some (see Ex. 5:9).

Example 5:9



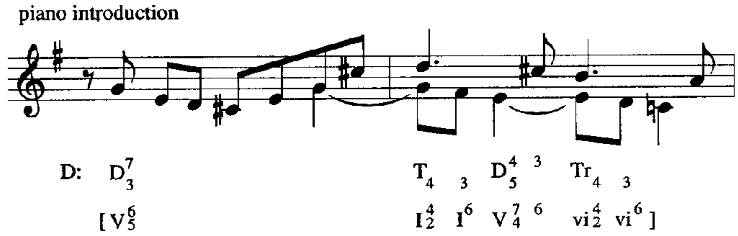
With the song on Kerner's text *"Auf das Trinkglas eines verstorbene Freundes"* [On the Drinking Glass of a Deceased Friend], op. 35; No. 6, Schumann approximates some of the techniques used much later by Debussy. Dominant-seventh chords built on B♭, C, A and F are attached to a large non-functional harmonic plane. The term dominant-seventh has no real functional meaning here. Instead, the major-minor seventh chord is heard only as a harmonic color. Note that all of the sonorities are connected by one or two common tones (see Ex. 5:10).

Example 5:10

3. Thirds Added Below Triads and Seventh Chords

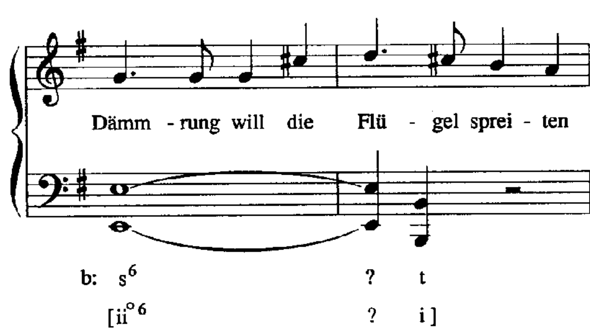
In *Zwielicht* [Twilight], No. 10 from his cycle *Liederkreis,* Schumann creates a sense of harmonic instability a number of times by adding one or more extra thirds below the roots of triads and seventh chords. Adding an extra third below a triad will produce a seventh chord and adding an extra third below a seventh chord will form a ninth chord. The sonorities produced by this process, however, do not always have a single clear harmonic function. In the introduction and in the first and fourth verses of *Zwielicht,* the same treble pitches have markedly different harmonic interpretations. In Ex. 5:11 (from the piano introduction), the opening pitch (G) functions as the seventh of the dominant-seventh chord.

Example 5:11



Ex. 5:12 shows the relationship between the voice part and the bass line of the piano in the first verse. Here, the pitch G is the third of the minor subdominant.

Example 5:12



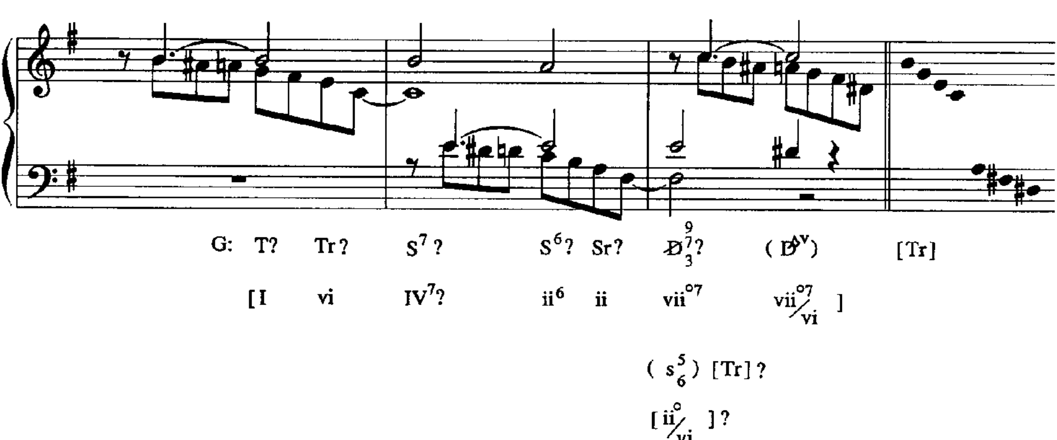
Ex. 5:13 shows the piano accompaniment to the fourth verse (the voice part is identical to that shown in Ex. 5:12) Here, the pitch G functions as the ninth of a dominant-ninth chord.

Example 5:13

Those who are well-acquainted with *Zwielicht* will probably miss the temporary harmonic clarity found in the introduction (Ex. 5:11). Instead, these listeners will probably hear, in the introductory measures, the implication of either one or both of the sonorities that occur in the first and fourth verses.

From the aesthetic impetus found at the beginning of the text *"Mein Herz ist schwer"* [My heart is heavy] in the introduction to *Myrthen*, No. 15, Schumann continually places the bass note of the sonority lower by third, except for the last added-third which is raised an octave (see Ex. 5:14). Later, Brahms borrowed this same technique and further developed it.

Example 5:14



In the material directly following Ex. 5:14, D# is altered to D and then the thirds B, G#, E# are progressively added below.

4. Dominant-Ninth Chords

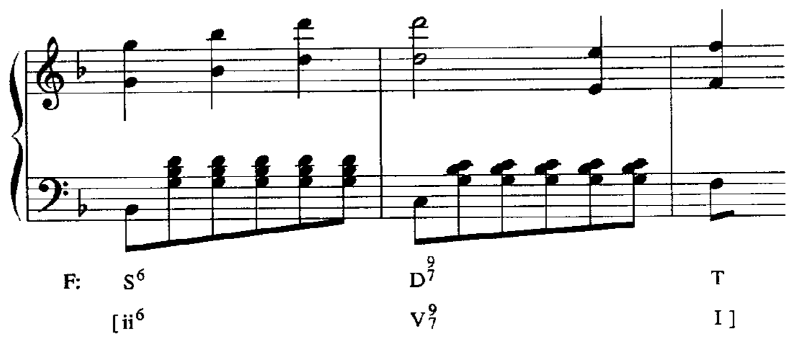
Dominant-ninth chords (D^9_7) [V^9], which occur more frequently with major ninths than minor ninths, play an important role in Schumann's style. During the time of Schumann, this sonority was still considered a fresh new sonority, full of expressive possibilities (it had not yet become hackneyed and overused). We should remember, that music of preceding periods employed the 9-8 suspension figure (most often above dominant harmony). In older music, however, the resolution of the suspension always took place within the sonority itself, whereas Schumann treated the ninth chord as a discrete sonority type, which could progress directly to other chords without internal resolution of the ninth. Exs. 5:15-20 are excerpts from several of Schumann's compositions that contain dominant-ninth chords (some have major ninths and some have minor ninths).

Example 5:15

Schumann-Third Symphony (Mvt. I; measures 31-35)

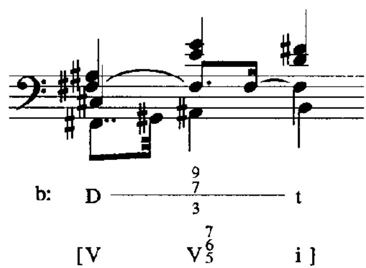
Example 5:16

Schumann-*Abegg Variations* (Theme)



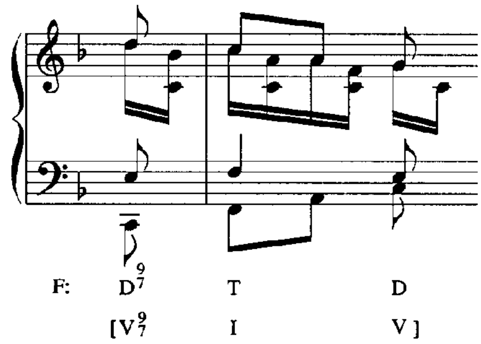
Example 5:17

Schumann-Intermezzi, op. 4, No. 1 (measure 7)



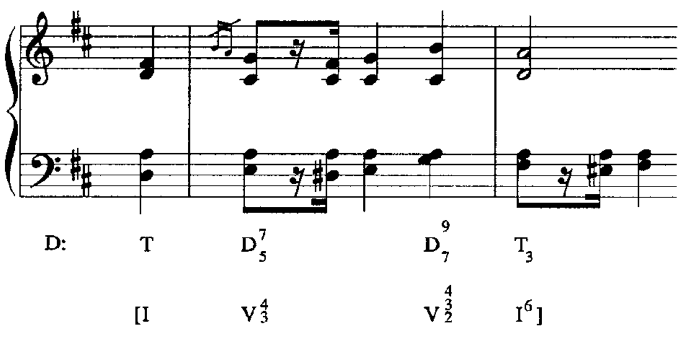
Example 5:18

Schumann-*Kinderszenen,* No. 5 *(Glückes genug)*



Example 5:19

Schumann-*Kinderszenen,* No. 2 *(Kuriose Geschichte)*



Example 5:20

Schumann-*Chamisso Lied (Die rote Hanne)* op. 31, No. 3

The dominant-ninth chord can only resolve properly if a true ninth is formed above the root tone; that is, the pitch that functions as the ninth of the chord must not occur as either a second above or a seventh below the root. Therefore, the D^{7}_{9} [$\mathrm{V}^{7}_{\substack{6\\4\\2}}$] is not possible. In the case of those inversions that are occasionally used, ($D^{\substack{9\\7}}_{3}$, $D^{\substack{9\\7}}_{5}$, and D^{9}_{7}) [$\mathrm{V}^{\substack{7\\6}}_{\substack{4\\3}}$, $\mathrm{V}^{\substack{6\\5}}_{\substack{4\\3}}$ and $\mathrm{V}^{\substack{6\\4}}_{\substack{3\\2}}$], the root must be found low enough in the chord so that the interval of a ninth can occur above it (see Ex. 5:19).

In four-voice texture, it is usual for the dominant-ninth chord to contain the root, third, seventh and ninth (the fifth is omitted). Therefore, the dominant-ninth in second inversion ($D^{\substack{9\\7}}_{5}$) [$\mathrm{V}^{\substack{6\\5}}_{\substack{4\\3}}$] can only be realized in five voices.

5. Abridged Dominant-Ninth Chords

The $\not{D}^{v}$ [$\mathrm{vii}^{\circ 7}$] and $\not{D}^{7}$ [$\mathrm{vii}^{\varnothing 7}$] are actually older sonorities than the true dominant-ninths (D^{9}_{7} or $D^{9>}_{7}$) that we discussed in the last section. During the Bach-era, the sonority B-D-F-A♭ in C-minor ($\not{D}^{v}$) [$\mathrm{vii}^{\circ 7}$] was considered a dominant sonority with an omitted root (G). During the Classical period, the sonority B-D-F-A in C-major ($\not{D}^{7}$) [$\mathrm{vii}^{\varnothing 7}$] was also heard as a dominant sonority with a missing root. In Chapter Two, we discussed the mixed dominant and subdominant functions of the $\not{D}^{v}$ and $\not{D}^{7}$ chords, and for convenience, we labeled the individual voices of these two sonorities 1, 3, 5, and 7 above the leading tone.

Now that true dominant-ninth chords (with major and, less frequently, minor ninths) have been introduced, these same two seventh chords can be interpreted two different ways. Both can still be thought of as they were in the Baroque and Classical periods ($\not{D}^{v}$ and $\not{D}^{7}$), since many simple cadences in the time of Schumann were reminiscent of the past. On the other hand, these two seventh chords may appear in Romantic-era music as incomplete forms of the dominant-ninth chord. This is especially true if these sonorities appear in contexts like those shown in the following musical examples.

In minor keys, Đ^{v} (B-D-F-A♭ in C-minor), can now, in certain instances, be described as a Đ$^{9>}_{7}$. In major keys, the Sr$^{5}_{6}$ [vii^{ø7}] (B-D-F-A in C-major), that we labeled respectively VII^{7} in the Bach era, and Đ^{7} in the Classical period, can now, in certain instances, be described as a Đ$^{9}_{7}$.

I will not suggest simplistically defined rules for choosing the best functional analysis for these sonorities. Each individual case must fit the musical situation and agree with what we actually hear. Later, in our study of Wagner's music, we must take similar pains when attempting a functional analysis, because sometimes a chord will function traditionally and sometimes it will not.

The chord just before the second bar line in Ex. 5:21 clearly functions as subdominant harmony in E♭-major. It is a sequence of the preceding subdominant-to-tonic progression in G♭-major. The pitch D♮ (in the duplet figure) can be explained as a lower-neighbor related to dominant harmony, since it is the leading-tone in E♭-major. The subdominant aspect of the sonority is emphasized in the more important bass-line motion, however. For that reason, I have decided in favor of the Đ$^{v}_{5}$, since Đ$^{9}_{7}$ does not seem to describe the perceived harmonic function.

Example 5:21

Schumann-*Kernerlieder,* op. 35, No. 12

im Blü - ten - bett des Tals

G♭: S T Sr^{5} 4< ← (D)

[IV I ii^{5} vii$^{o4}_{3}$/vi VI$^{♯}$]

E♭: s Đ$^{v}_{5}$ T

[iv vii$^{o4}_{3}$ I]

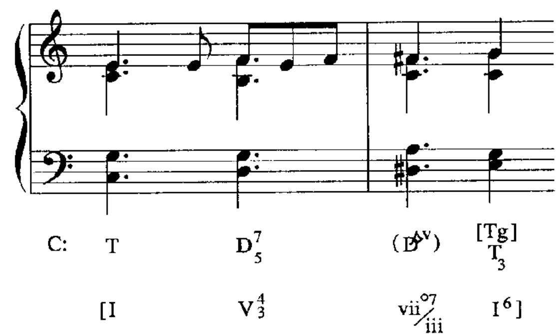
As we discussed previously, Romantic-era composers employed harmonic materials which broadened the scope of harmonic expression without having to invent new sonority types. Schumann and his contemporaries looked for innovative ways of using existing harmonic structures so that the old sonorities appear in completely new contexts. Above all, new harmonic relationships were fashioned out of the diminished-seventh chord.

The third sonority in Ex. 5:22 implies a resolution to E-minor, but it actually resolves to C-major. Although this secondary dominant does not resolve to its expected tonic, since Riemann, it has been the practice to place the expected chord of resolution in square brackets [ ] along with the actual chord of resolution directly below. Notice that the seventh (C) of the diminished-

seventh chord ($\not{D}^{v}$) does not resolve downward in normal fashion, but rather becomes the new tonic as a common tone.

Example 5:22

Schumann-*Chamisso Lieder,* op. 27, No. 5 (beginning)



Ex. 5:23, an excerpt from *Frauenliebe and Leben,* No. 8 (*"Nun hast du mir den ersten Schmerz gethan"* [You have now given me my first grief]) contains two progressions that follow directly on the heels of each other, where two common tones occur between the diminished-seventh chords ($\not{D}^{v}$) and their resolutions. Instead of progressing to the tonic of G-minor, the dominant-ninth chord (D^{9}_{7}) progresses deceptively to G-minor's counter-relative (tG), E♭-major. This progression is then repeated with two small changes; the root (D) of the dominant-ninth chord (D^{9}_{7}) is omitted (forming a $\not{D}^{9}_{7}$), and the deceptive sonority (tg_5) is made minor this time (E♭-minor).

Example 5:23

Schumann-*Frauenliebe and Leben,* No. 8

Because of the parallel construction of the two diminished-seventh progressions in Ex. 5:23, it seems conceivable that the omitted root at the beginning of the third measure is actually supplied by the listener's mind when this passage is heard. For that reason, I suggest that we label this chord as an abridged dominant-ninth chord ($\not{D}^{9}_{7}$) in G-minor.

Since the voice part presents F♯ on the downbeat of measure 3, it is possible that the right hand of the piano in this passage should also be notated with F♯ rather than the enharmonic G♭. Nevertheless, we will consider the piano notation to be correct, since the diminished-seventh chord (A-C-E♭-G♭) actually tonicizes B♭-minor. If we consider this diminished-seventh chord as a dominant-function sonority ($\not{D}^{v}$) in B♭-minor, we can no longer regard it as an abridged dominant-ninth, since no implication of the omitted root of the ninth chord (F) is possible here. In spite of the fact that the third and fifth of the chord are initially withheld, F is strongly established through a cadential six-four figure as dominant in B♭.

In measure 5 (Ex. 5:23), the held-over F in the soprano and bass form the outer-voice framing pitches of a secondary diminished-seventh chord ($^{t}\mathbb{D}^{v}$) which resolves to an F-minor triad. This resolution sounds, at the same time, like a deceptive cadence (out of B-minor) or a double-suspension figure leading to the F-minor tonic (B-C and D-C). Since the voice part ends its phrase on the pitch B, the deceptive cadence interpretation seems to make more sense. In this case, the F♯ in the voice part (measure 3) is absolutely correct; it simply functions as a dominant half-cadence for the singer, but the G♭ in the piano is no less correct, when we consider the approaching resolution to F-minor through B♭-minor.

Working out such analytical complexities certainly does not destroy our basic understanding of functional principles, but when we try to apply the labeling tools of functional harmony to compositional spots like these, it is necessary to proceed along more than one conflicting path at the same time. The problem is that the functional theorist strives to show that all sonorities in such a piece are goal-directed; that is, that particular chords will move in some predictable fashion toward certain other chords, whereas composers such as Schumann were obviously striving to free themselves of goal-oriented harmony. These Romantic-era composers were overtly attempting to explore progressive possibilities of functionless sonorities in a tonic-free space.

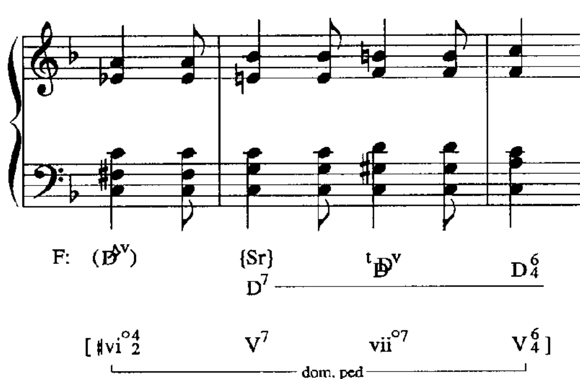
The task of producing several conflicting analyses of a passage also indicates how many chords there are that are actually unpredictable. In this way, a listener can chart out and know ahead of time each step in the harmonic process.

Ex. 5:24 contains a further unpredictable resolution of the diminished-seventh chord ($\not{D}^{v}$). The first diminished-seventh chord in this excerpt progresses onward by means of three ascending half-steps (leading-tone figures) and one common tone. The second diminished-seventh chord progresses ahead by means of two ascending half-steps, one descending whole-step and one common tone. The functional analysis of the second diminished-seventh chord requires thinking of the pitch G♯ as an enharmonic A♭ [so that the primary leading-tone relationship will be B-C rather than G♯-A]. Like Schumann, many composers frequently resolve diminished-seventh chords to D^{6}_{4} (instead of the root position dominant) because of smooth voice-

leading considerations. Furthermore, they do not seem to be bothered by instability of the D^6_4 sonority. Note that the dominant-seventh chord is also resolved in a non-traditional manner by means of two ascending half-steps, one ascending whole-step and a common tone (pedal-point) in the bass.

Example 5:24

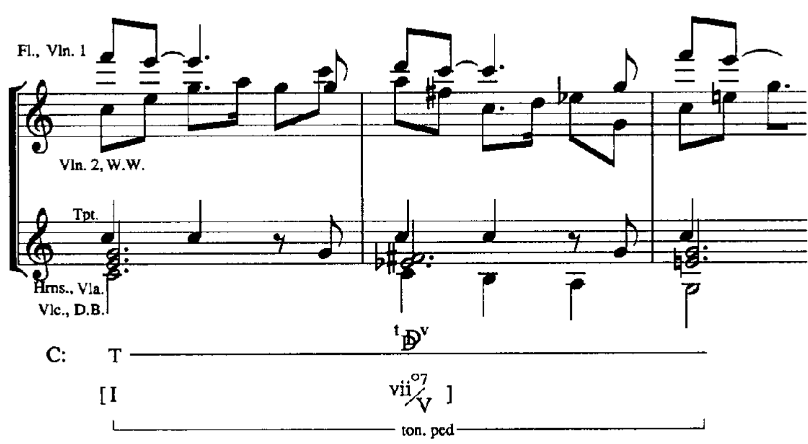
Schumann-*Abegg Variations* (finale)



In Ex. 5:25, the low strings, flutes and trumpet remain on tonic harmony. The horns and violas play auxiliary notes (D♯ [enharmonically spelled as E♭] and F♯) to the pitches E and G. The only real change in harmonic function is produced by the melody-line, which is carried by the winds and the second violins.

Example 5:25

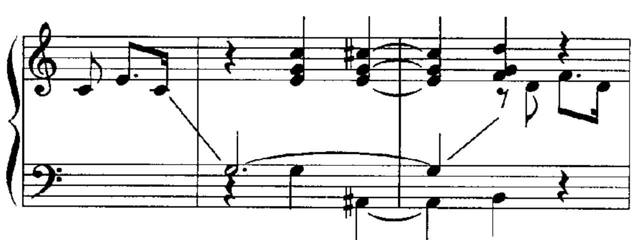
Schumann-Symphony No. 3 (Mvt. II; measures 108-110)



If the diminished-seventh chord in the second measure of Ex. 5:26 is enharmonically re-spelled to C#-E-G-B♭ (from the notated A#-C#-E-G), the resulting analysis, (Đ^{v}) Sr, is not at all convincing, since vii^{o7}/ii deceptively resolves, not to ii, but rather to V$^{6}_{5}$. As C# is generated from the chromatic motion of the top voice and A# is only an altered (raised) neighboring tone that is approached by leap, the analysis T$\frac{1<}{5\,6<}$ D$^{7}_{3}$ makes more sense here.

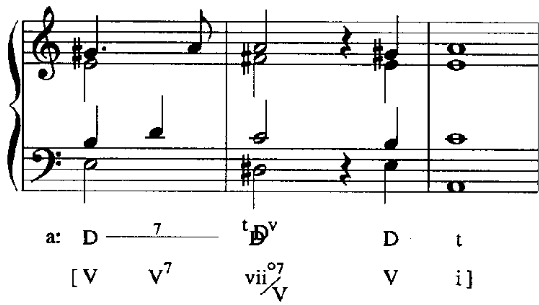
Example 5:26

Schumann-Third Symphony (Mvt. II; measures 115-117)



The diminished-seventh applied to the dominant (^{t}Đ^{v}) was also employed in deceptive-cadences during the time of Schumann, but the use of diminished-seventh chords as the goal sonority of a deceptive-cadence became even more significant in the musical era which followed (Wagner). Ex. 5:27 contains a model harmonization of a deceptive cadence utilizing the diminished-seventh chord.

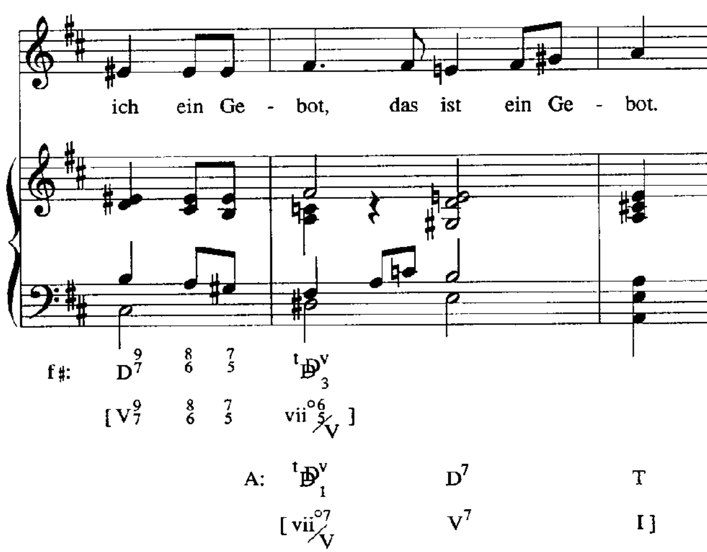
Example 5:27



Ex. 5:28 shows a double-deceptive cadence. When the diminished-seventh chord on the downbeat of measure 2 is reached, the sonority is perceived as B#-D#-F#-A (^{t}Đ^{v}) [vii^{o7}/V] in F#-minor (tonic in F#-minor was the expected chord after the dominant harmony in measure 1). At this point, however, the composer enharmonically spells the diminished-seventh chord D#-F#-A-C and its function is reinterpreted as a ^{t}Đ^{v} [vii^{o7}/V] in A-major.

Example 5:28

Schumann-*Chamisso Lieder,* op. 27, No. 3



It is possible to produce even greater levels of deception by moving directly from one diminished-seventh chord to another. This type of progression is found as early as the *Largo e mesto* movement of Beethoven's Piano Sonata; op. 10, No. 3 (see the two harmonic reductions in Ex. 5:29). Since both the progressions are possible, one, or respectively, two voices move to their expected resolution tones while all other voices resolve deceptively.

Example 5:29

Schumann also frequently employs the subdominant as a goal for his deceptive cadences. *Kind im Einschlummern* [The Slumbering Child] from *Kinderszenen* contains an example of this construction in minor mode (D^7 $s_{\overline{5\ 1}}$) [V^6 iv^6_4 iv], and the closing phrase of No. 11 from the *Kerner Lieder*, op. 35 (*"sie lassen mich nicht ruhn"*)[they don't give me any rest] contains a major-mode example (D^7 S_3 D^7_3 $\frac{D^7-T}{T}$) [V^6 IV^6 V^6_5 $\frac{D^7-T}{\text{ton. ped.}}$].

6. Freedom from Tonic

At the beginning of the chapter, we discussed the importance of the Classical-period cadence as it was employed the Romantic era. In the last measures of Schumann's great C-major Fantasy, op. 17, the Classical cadence is presented in a fascinating way (see Ex. 5:30).

Example 5:30

Though the harmonic reduction in Ex. 5:30 has a certain relationship to the traditional progression T-(D^7) Sr D T [I V^7/ii ii V I], it is not sufficient to simply consider the middle chord to be the relative-subdominant chord with a lowered root and fifth (Sr) [♭II]. The pitch D♭ is not just a chromatically altered D♮ here, but it is also enharmonic with the preceding leading-tone (C♯). In fact, the middle chord in this progression could actually be enharmonically spelled C♯-E♯-G♯. A better functional label, but one that is not totally clear without some interpretation, is T (D^7) $^{[Sr]}_{sG}$ D^7 T.[1] (Wilhelm Maler called this type of sG sonority an "independent Neapolitan" and labeled the sonority sN.)

I am inclined to label sonorities as precisely as possible according to both their sound and historical application. Since this altered chord functions similarly to an s^6 (ii^{o6}), where the chromatically-lowered supertonic pitch forms a sighing (Phrygian) upper leading-tone to the tonic, and since (in C-major) this sonority is a firmly built root-position triad on D♭, I prefer the designation sG.

This harmonic progression implies both a reliance on and a freedom from the tonic. We also experience a freedom from the tonic in the weighty first movement of Schumann's Fantasy, op. 17. The movement opens with a sorrowful dominant-ninth chord (D^9_7). The ninth is dropped and the dominant seventh (D^7) only first appears after seven measures, before resolving to Tr (vi) in measure 13. The tonal center soon modulates to the dominant of G-major through a secondary diminished-seventh sonority ($^{(}\!D\!\!\!/^{v}$ $D^{6\ 5}_{4\ 3}$) [vii^{o7}/V $V^{6\ 5}_{4\ 3}$]. In measure 17, an added third below the tonic G, produces a bi-polarity of key between G-major and E-minor. Finally, the goal tonic of G-major is reached in measure 19, but is then quickly dislodged by the same tension-producing D^9_7 that was heard at the beginning. Only in measure 27 does the tension lessen as the dominant-seventh chord is reached, but the half cadence in measure 28 is approached with $D^{9}_{1}{}^{7>}$ and $D\!\!\!/^{9}_{5}{}^{7>}$.

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[1] The symbols (D^7) $^{[Sr]}_{sG}$ imply that the normal harmonic goal of the secondary-dominant sonority [V^7/ii] would have been the relative-subdominant chord [ii], but that the subdominant counter-relative (sG) [ii^o], borrowed from the parallel minor, is substituted in the progression. This functional label still does not explain the lowered root tone, however. Perhaps it would be better to label this sonority $sG_{1>}$.

A single lowered-supertonic pitch (A♭) introduces the following section. Here an opening modulation is facilitated by an enharmonic change of the underlying sonority (instead of D-F-A♭-B, the chord is now spelled F-A♭-C-D). $\not{D}^{\substack{9\\7}}_{5}$ leads to D^{7}_{5} in the new key of E♭ (measure 33). As is shown in Ex. 5:31, thirds are then progressively added below the root of this new tonality and E♭ becomes increasingly destabilized.

Example 5:31

measure 33	measure 34	measure 35	measure 36
G	G	G	
E♭	E♭	E♭	E♭
	C	C	C
		A	A
			F♯

In measure 37, the key of G-minor is established, but is also eroded by the same kind of lower added-third structures. D-minor becomes the new tonal center in measure 41, but in measure 52, this tonality is also abandoned by a deceptive resolution to a chord with an added lower third (B♭). From measure 62, F-major becomes the new tonal center, but the tonic chord is changed in measure 73 to a dominant-seventh which begins yet another modulation. The goal of this modulation is D-major, the parallel major of the relative minor of F-major (measure 82). D-major, however, is also abandoned after the fermata. In measure 97, after a chromatic modulation, the harmony settles (surprisingly) on the dominant-seventh of C-major. Following this, the first major section of this movement closes open-ended in C-major, after one further tonicization. The middle section of the movement begins in G-minor, which turns into G-major after only four measures. G-major becomes the dominant of C-minor. . . etc.

The dominant-ninth chord is really quite straightforward, if we do not consider the refinement (discussed above) of being able to construct them by adding extra thirds below the roots of already sounding triads and seventh chords. If we do consider this new technique, however, the dominant-ninth adds an extra measure of fresh and vital harmonic tension to the "old and trusted" dominant, while actually thwarting the traditional resolution of dominant to the tonic. The important issue here, is that tonic is showing signs of losing its control over the tonality. In such cases as the Schumann's Fantasy, op. 17, harmonic tension is maintained and even increased, but there are only trace amounts of harmonic relaxation. Up to this point, such relaxation was viewed as the necessary counterbalance for preserving a solid sense of key center.

We must not forget the large number of traditional cadences and tonally secure harmonic planes in Schumann's music, but it should be clear, for movements of passionate expression, that tonic-controlled harmonic planes are no longer absolutely necessary. Secure tonal space still has illuminating power in Schumann's music (see the majestic beginning of the Fantasy's second movement), but firm tonality is no longer required for all types of musical expression.

Our discussion here was not intended to produce a general overview of the harmonic materials and techniques found in the songs of Schumann. Instead, our examination has been limited to several musical expressions which seem closely motivated by the text. Certainly different kinds of harmonic materials will be required to represent other expressive sentiments. For the present, however, this short study of continuous modulation will be sufficient.

It is clear that this kind of (tonic-free) harmonic invention brought the golden age of the sonata to an end. Beethoven's sorrowful Piano Sonata in F-minor, op. 57 *[Appassionata]* comes to mind, with its great tonal planes in the exposition (F-minor; A♭-major/minor) and recapitulation (F-minor, -major, -minor). These stable outer sections frame a wildly-modulating and unstable development section. In Schumann, however, this kind of modulatory activity also occurs in the exposition section, causing destabilization of motific materials and other important interrelationships.

The intrusion of such developmental tendencies into all sections of a movement cancels out the very essence of the sonata principle, with its exposition, development and recapitulation. The contrast between stable and unstable, and closed and open no longer has the same form-building role in this new kind of structure. This new approach is called *continuous development* or *developmental variation*, and many composers from Brahms to Mahler employed it in their music. It was the desire to loosen tonality that caused the birth and continuation of this new kind of formal structure.

Exercises: Select and analyze a number of Schumann songs with piano accompaniment. Test out, confirm, fill-in and correct the arguments discussed in this chapter. Try to determine whether the composer's writing style is altered by specific words or lines in the text, or whether his style seems to be motivated more by the general expressive mood of the poetry.

Become acquainted with the delightful sounds of harmonic progressions that contain functionally-free dominant-seventh chords, by playing such progressions at the piano. These progressions should not be planned out, but rather freely improvised (e.g., The seventh of this chord will remain the same and become the third of the next chord; the third and fifth of this chord will now become the fifth and seventh of the next chord, etc.)

Write out in piano-staff format, progressions which employ dominant-ninth chords. Make sure to utilize all possible inversions of the ninth chords. Experiment with and freely change the harmonic density of your settings from three voices to six voices. Play your progressions at the keyboard.

Invent short melodies which exploit the enhanced tension provided by the newly introduced dominant-ninth chord; harmonize these melodies (Ex. 5:32 contains two examples) and play your settings.

Example 5:32

Write out and play several examples that modulate by means of adding of thirds below the root of an already sounding sonority (see Ex. 5:33 for an example).

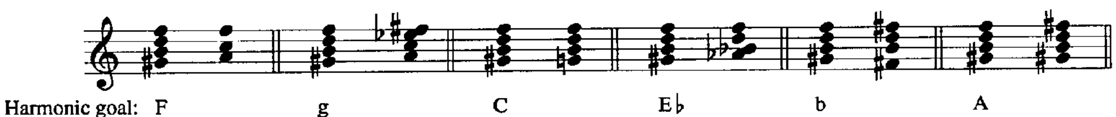
Example 5:33

The most obvious goal of the progression in Ex. 5:33 is E-major, but if the C in the last chord is reinterpreted as a B♯ (see the first chord of Ex. 5:34), it is possible to modulate to F♯-minor by way of the following progression:

Example 5:34

Try out as many possible modulating resolutions of a single diminished-seventh chord as you can (see Ex. 5:35).

Example 5:35



Invent and play a number of progressions, where the ᵗĐᵛ [vii°7/V] functions as a deceptive cadence. For example, t s$^{6}_{5}$ D ᵗĐᵛ D$^{6}_{4}$ $^{5}_{3}$ t [i ii$^{ø6}_{5}$ vii°7/V V$^{6}_{4}$ $^{5}_{3}$ i], where [D$^{6}_{4}$ $^{5}_{3}$ t] can belong to several different keys depending upon how the diminished-seventh chord is resolved.

CHAPTER SIX
Harmony in Opera (1600-1900)

1. The Wide Paintbrush

A poster which attempts to catch the eye of the passer-by is different in form and color than a miniature to which a viewer voluntarily comes for careful study. In an opera, audiences must share their attention between music, plot, staging, costumes, lighting, etc. Perhaps only between twenty and eighty percent of our attention can actually be focused on the music at any given point in an opera, whereas we may approach one-hundred percent concentration in a concert. For that reason, the music of opera must be much more obvious and direct than that which appears, for example, in a string quartet.

In the same way that a painted stage flat, measuring some twenty meters by ten meters, requires a different size paintbrush than a water color of fifty centimeters by seventy centimeters, a musical form lasting from two to four hours demands harmonic changes that are farther apart than those found in concert works with a duration of twenty minutes.

One passage in Bizet's *Carmen* and another in Verdi's *Aïda* demonstrate the necessarily larger-than-life musical style of the opera, which would be far too exaggerated, indiscreet, penetrating, and primitive for a concert-hall work.

The third act of *Carmen* opens in a wild mountainous region. After two octaves are played, a four-measure phrase in C-minor begins (see Ex. 6:1)

Example 6:1

In the third measure of this opening phrase the key changes to E♭-major. This four-measure phrase is then repeated, but the second time through, the fourth measure modulates back to C-minor. This is followed by another repetition of both phrases, (presented in a new instrumentation), followed by a ten-measure variant of the two phrases. After the variant, the gypsy chorus enters, singing *"Écoutez, campagnon, écoutez"* (listen, comrades, listen). Underneath the chorus, both phrases occur twice more in the orchestral accompaniment. The same eight measures appear five times in one short number! There are few examples of music for the concert hall that contain so many direct repetitions of a single melody.

As the actors climb down the dangerous slope, they sing *"prends garde de faire un faux pas"* (beware of making a false step). The difficulty of the downward climb is underscored by Bizet's harmonization (see Ex. 6:2). The melodic line gradually descends one octave, but no single step is secure in this passage. Notice that every second chord is an augmented triad. Since the augmented triad has no sounding root, it creates instability that motivates the climbers to take helping hands as they carefully descend. This ingenious type of musical parody is typical of opera.

Example 6:2

In the second scene of the fourth act in *Aïda,* Radames hears from Amneris that Aïda still lives, though her father has been killed. The underlying dramatic events are musically portrayed by gradually ascending chromatic harmony that becomes more tonally ambiguous with each beat (see Ex. 6:3)

Example 6:3

Since the fifth of the middle chord in Ex. 6:3 is framed by half-steps on either side, it is impossible to determine whether an E♭-minor triad or a first-inversion C♭-major chord is the actual goal sonority of this progression. Is the pitch E♭ the root or the third, or first one and then the other? This passage contains no ordinary ascending sequence, since each voice of the three-voice pattern changes at different times. In one spot a single voice takes four measures to move, another time, three measures; and there are numerous times where a complete measure is required. Since the voices do not ascend simultaneously, a great variety of chord types are produced and juxtaposed (see Ex. 6:4).

Example 6:4

After a toilsome struggle, the passage finally arrives in B-major (see Ex. 6:5).

Example 6:5

Radames sings *"Gli dei l'adducano salva alle patrie mura"* (May the gods guide her safely to the walls of her homeland). After this, the librettist, well-familiar with the requirements of the genre, supplies the crucial text between Radames and Amneris which seals Radames' fate. So typical of operatic overstatement, Radames is asked and refuses to reject Aïda three times before condemning himself to death in the fourth couplet:

Amneris: . . .*ma, s'io ti salva, giurami che più non la vedrai.*
[. . . but, if I save you, swear never to see her again.]

Radames: *Nol posso!*
[I cannot!)]

A.: *A lei rinunzia per sempre e tu vivrai!*
[Renounce her forever and you shall live!]

R.: *Nol posso!*
[I cannot!]

A.: *Ancouna volta: a lei rinuncia.*
[Answer once more: renounce her.]

R.: *É vano.*
[It is useless.]

A.: *Morir vuoi dunque, insano?*
[You wish to die then, madman?]

R.: *Pronto a morir son già.*
[I am ready to die.]

Ex 6:6 contains a harmonic reduction of the materials used to accompany the four text couplets shown above (one measure per couplet in this reduction). The first two measures of the reduction contain identical harmonic patterns (the second measure is a sequence of the first). The first measure begins with an open octave proceeding directly into a dominant-seventh chord (third inversion). The correctly resolved seventh of this chord does not move to the third of the expected tonic, however, but rather to the root of another dominant-seventh chord. The third of this new dominant-seventh (third chord of the measure) is then taken over at the beginning of the second measure as another empty octave, which becomes the root of the next dominant-seventh, etc.

The third couplet of the text is harmonized by four sonorities rather than three. Here the top voice ascends three chromatic half-steps rather than only one as in the previous two measures. In addition, there are three surprising harmonic resolutions (!) in the third measure, as opposed to two in the second and only one in the first.

The last measure contains a standard cadence in C-minor, motivated by the text of the fourth couplet, where Radames adamantly refuses to reject Aïda, and is prepared to die.

Example 6:6

Both passages in this scene from *Aïda,* as different as they are, employ the same kind of undefined tonality (which pitch is tonic?) as well as the same type of sequentially ascending chromatic materials. These harmonic techniques are especially well-suited to opera because they function to build harmonic tension over long periods of time.

2. Stable and Unstable Harmony in Arias and Scenes

We shall now consider two excerpts from Mozart's *Don Giovanni.*

The first is Don Ottavio's aria, No. 10b, *"Dalla sua pace."* This aria is in *da capo* form with an extended reprise; it confirms an expression of unchanged feelings. A friend is singing here, who deserves trust and confidence. The first section (part A) of *"Dalla sua pace"* remains close to G-major, throughout. The second section (part B) begins in G-minor, moves through B♭-major and then surprisingly modulates to the key of B-minor. Finally, the extended reprise (38 measures in length) returns to and remains close to the key of G-major until the end. Although this aria has an insignificant and unstable center section, the outside harmonic framework is constructed from from the solid and reliable G-major.

The second excerpt is the accompanied recitative, No. 2, which has a completely different type of structure. In this recitative, Donna Anna and Don Ottavio discover the body of the Commendatore. Ex. 6:7, gives the complete text of this scene. In this example, clear tonal centers are labeled, modulations to closely related keys are marked with an arrow (→), and modulations to distant and unexpected keys are marked with a crooked arrow (/\/→); passages where the tonality is ambiguous or unclear are marked with a question mark (?).

Example 6:7

Orchestra — Donna Anna: *Ma qual mai s'offre, o dei, spettacolo funesto agli occhi miei!*
[O ye gods, what a horrible sight appears before my eyes!]

Key Scheme: G → c

Orchestra — D.A.: *Il Padre . . .* *padre mio. . .* *mio caro padre . . .*
[Father . . . my father . . . my dear father . . .]

→ f

Don Ottavio: *Signore! . . .* D.A.: *Ah, l'assassino mei trucidò. Quel sangue . . . quella pìage. . . quel volto . . .*
[My lord! . . . Ah, I will kill the assassin.] [Such blood . . . such a wound . . . such a (tortured) face. . .]

∿→ A♭ → C → D → E →

---

tinto e coperto del color di morte . . . Orchestra D.A.: *Ei non respira più! fredde le membre! . . .*
[the grotesque pallor of death . . .] [He no longer breaths! his limbs are cold! . . .]

F♯ → b → G → C → d

Padre mio! . . . *caro padre! . . .* *padre amato! . . .* *Io manco . . .* *io moro . . .*
[My father! . . . dear father! . . . beloved father! . . . I faint . . . I die . . .]

? ∿→ E♭ ∿→ d ∿→ a

D. O.: *Ah, soccorrete, amici, il mio tesoro! Cercatemi . . . recatemi . . . qualche odor . . . qualche spirto . . .*
[Ah, friends come to the aid of my beloved! Seek out . . . and bring . . . something fragrant . . . something to revive the spirit . . .]

→ e → C?

Ah, non tardate . . . Donn' Anna! . . . sposa! . . . amica! . . . Il duolo estremo la meschinella uccide. . .
[Ah, don't delay . . . Donna Anna! . . . my betrothed! . . . my beloved!. . .] [Such intense grief has killed her . . .]

→ G? → a? → a! → C → c

D.A.: *Ahi! . . .* D.O.: *Già rinviene . . .* *Datele nuovi aiuti . . .* D.A.: *Padre mio . . .*
[Ah! . . . She's reviving already . . . She needs more help . . .] [My father . . .]

→ g

D.O.: *Celate, allontanate agli occhi suoi quell'oggetto d'orrore.* Anima mia. . . *consolati . . .* *fa core . . .*
[Quickly, take away this object of horror from her sight.] [O my soul . . . be consoled . . . take courage . . .]

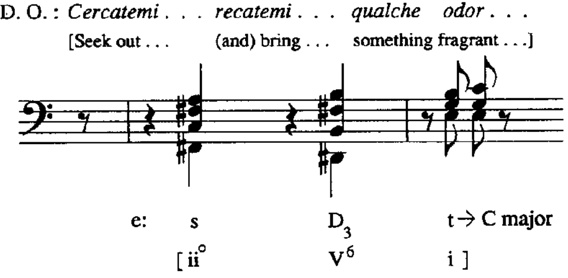
→ a ∿→ d

How much Donna Anna is affected by the frightful happening is indicated by the brief amount of time that her part remains in any single key area. On the other hand, Ottavio's commands, such as *"Ah, soccorrete, amici. . ."* or *"Celate, allontanate. . . ,"* and his matter-of-fact comments such as *"Il duolo estremo. . .,"* betray an air of superiority and emotional distance, represented here by long sections of tonal stability. Mozart instinctively set the climax of tonal confusion at the point where Donna Anna exclaims, *". . .padre amato!. . . Io manco. . .io moro."*

The three short orchestral interludes in the recitative also remain harmonically open-ended. The first two end with dominant half-cadences, and the third with a deceptive cadence (G-major as the counter tonic (tG) [VI] in B-minor). The orchestral accompaniment tends to neutralize even the smallest cadential gestures by quickly reinterpreting every resolution to tonic as the starting point of a new modulation. Ex. 6:8-9 contain examples of this technique.

Example 6:8

Example 6:9



The duet in No. 2, which is preceded by the accompanied recitative we just discussed, is an example of a middle ground between the stable harmony observed in No. 10b and the and unstable harmony of the recitative. This duet begins with a large amount of harmonic activity, but the piece ends with a harmonically stable closing section. The hectic modulation at the beginning finds its motivation in hate, confusion, error, mourning, comfort and oaths of revenge. On the other hand, it is Donna Anna and Ottavio's steadfast resolve in swearing revenge, and the grieving unity of two surviving lovers that motivates the stable harmonic plane at the end.

3. The Downward-Resolving Leading-Tone in Italian Music

A number of theories concerning the resolution tendencies of specific pitches within the scale *(Skalenenergie)* have appeared in pedagogical and theoretical treatises. These theories attempt to interpret the stability or instability of pitches as they are ordered within the scale, and attempt to determine the resolution tendency of each unstable pitch. These ideas, which belong to the history of Western thought, claim to be based on long-standing compositional/historical traditions, but also assume that tonal music has always complied with certain "inviolate" principles.

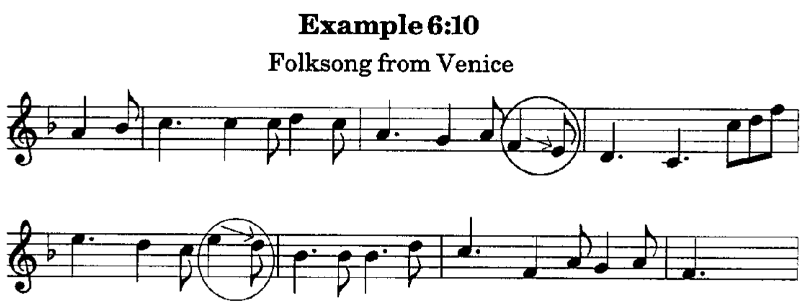
According to such theories, the pitches C, E, and G are the static pitches, which give the key of C-major a sense of stability and center. D and A are the so-called "neutral pitches," since they may resolve either upward or downward by whole-step. F and B are "dynamic pitches," where B always demands resolution upward to C; and F downward to E. (It is interesting that the customary upward-step which connects the subdominant and dominant [e.g., F-G in the bass] actually runs counter to nature, if one follows the arguments of tendency-tone theorists!) In fact, a strict interpretation of tendency-tone theories would so greatly restrict the possibilities of harmonic progression, that many commonly used chord progressions would be unavailable. Such notions, concocted from a purely melodic and major-mode world, have created serious misunderstandings about actual musical practices.

The disciples of these theories have attempted to show that the most disappointing musical results always occur when tendency-tone rules are broken. These theorists often support their arguments by citing examples of downward-resolving leading-tones from certain badly conceived and second-rate pieces composed in the nineteenth century. Whenever discrepancies between actual musical practice and tendency-tone principles arise, these individuals are quick to apply their objective criteria in order to criticize any piece that transgresses the rule. Only a limited acquaintance with music literature can foster such a gross misunderstanding, since the descending leading-tone has a very old and glorious tradition.

Exs. 6:10-12 show examples of the downward-resolving leading-tone in old Italian folksongs.

Example 6:10

Folksong from Venice

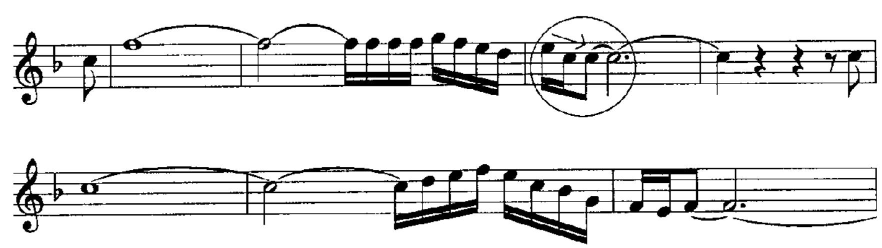


Example 6:11

Folksong from Tuscany

Example 6:12

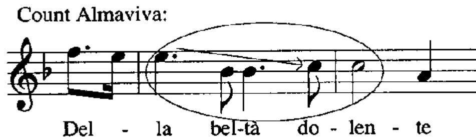
Folksong from Abruzzi



Though seldom found in other genres, first-rate Italian opera also employs many downward-resolving leading-tones. Exs. 6:13-15 show excerpts from the operas of Rossini and Verdi.

Example 6:13

Rossini-*The Barber of Seville,* No. 19

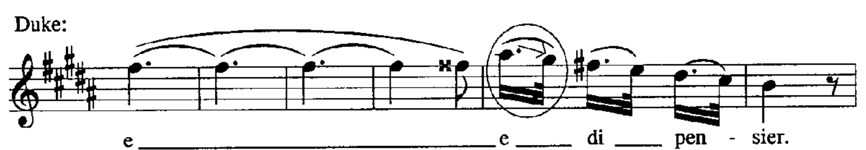


Example 6:14

Verdi-*Rigoletto,* No. 11

Example 6:15

Verdi-*Rigoletto,* No. 10

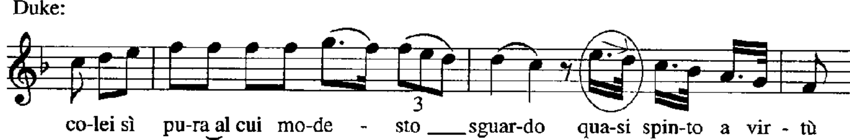


The use of descending leading-tones in nineteenth-century Italian opera can be traced to a few basic melodic patterns, which almost always accompany expressions of sadness. Typical examples are found in songs about unfortunate love, longing, and homesickness.

Examples 6:16-20 contain additional examples of downward-resolving leading-tones in the operas of Verdi and Bizet.

Example 6:16

Verdi-*Rigoletto,* No. 7



Example 6:17

Verdi-*Rigoletto,* No. 8

Example 6:18

Verdi-*Aïda,* No. 6

Example 6:19

Verdi-*Aïda,* No. 12

Example 6:20

Bizet-*Carmen,* No. 6

Also see two pieces by Ludwig van Beethoven: *"Strahlt dein Bildnis"* from *Adelaide* and *"Was ein liebend Herz geweiht"* from *An die ferne Geliebte.*

It is little wonder that mediocre composers sought to use these agents of intense expression, even if they did not have the suitable talent to use them tastefully. The fact that the downward-resolving leading-tone has been somewhat misused in lesser works does not take away from the expressive power that it has produced in the hands of great operatic composers.

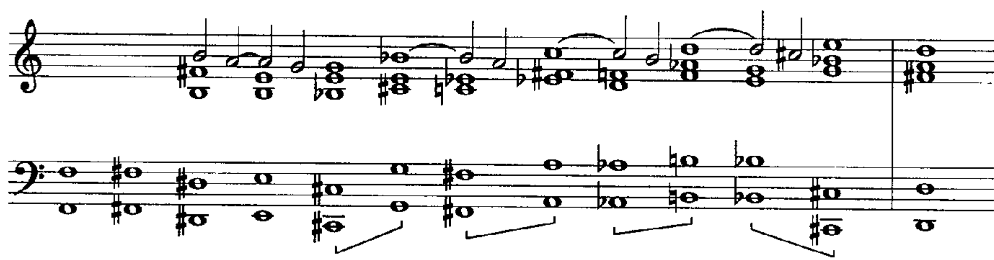
4. Impending Danger

It is impossible to know the expressive content of an operatic excerpt by studying only its musical materials. We can only begin to have some idea about the building of musical expression in a particular scene, if we know what happens before and after; that is, it is necessary to know whether a particular musical texture is treated as preparation, development, transition or a stark contrast to its surrounding materials. A sense of impending danger can be best recognized in operatic music, when a listener brings previous listening experiences to a performance. It is highly unlikely that the composer, by purely musical means, could find all of the right combinations of musical elements to communicate the precise emotional impact required of an operatic scene. In fact, even before the composer can begin to work, the right course must be established. It is the librettist's task to supply the composer with concrete elements of plot so that the later choice of musical materials might best reflect the action.

At this point, we will consider two excerpts from the final scene of the first act (No. 10) of Beethoven's *Fidelio;* the prisoners' chorus, *"O welche Lust in freier Luft"* [Oh, what joy in fresh air], and the tenor solo with chorus *"Wir sollen mit Vertrauen auf Gottes Hilfe bauen"* [We shall put our trust in God's help]. These two simple excerpts are constructed in early Classical-period harmony and appear, respectively in B♭-major and G-major. During this scene, the prisoners enjoy a few moments outside their cells in the prison yard. Following these two spots, a modulation takes place which ends on a half-cadence in F-major and an empty-octave F is sustained (cello and bass). At this point in the score, the stage direction reads: "An officer on the wall appears and then moves off into the distance again." The open-octave F then descends chromatically to F♯, producing a sense of tonal insecurity that mirrors the prisoners' insecurities

as they stand in the prison yard. Directly after this sustained F♯, an oppressive harmonic texture is introduced. This section, constructed from a closed plane of diminished-seventh chords, leads nowhere (mirroring the hopeless condition of the prisoners). Above the diminished-seventh chords the prisoners' chorus sings *"Seid leise. . . wir sind belauscht"* [Quiet, we are being overheard]. Ex. 6:21 contains a harmonic reduction of this simple twenty-two measure segment.

Example 6:21

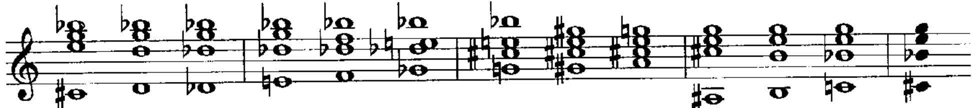


It is not the four diminished-seventh chords (transposed by half-step) that are at the heart of the matter here, but rather the contrast between this harmonic texture and what came before. Beethoven's harmonization of the second prisoner's solo is very clever (see Ex. 6:22). In both phrases of this melody, the prisoner recites on one pitch until the underlying diminished-seventh chord is changed. At the point where the chord changes, the melody line drops a half-step.

Example 6:22

The trombones are used in only two scenes in Mozart's *Don Giovanni*—the cemetery scene (Act II, recitative after No. 21c) and in the banquet-scene finale (No. 24). Il Commendatore appears in both spots, as the speaking statue and as the executor of judgement, respectively. These excerpts from *Don Giovanni* employ a number of highly expressive diminished-seventh chords, whose resolutions are not predictable. As is shown in Ex. 6:23, Mozart uses a compositional model that is found again and again in Classical- and Romantic-period works. This model consists of a chromatically ascending bass-line harmonized by a repeated three-chord figure consisting of a diminished-seventh chord, a second-inversion minor triad and a dominant-seventh chord. Although the tonal center is impossible to define in this repeated progression, the pitches are all located in the same basic register. Notice that once the pattern has begun, the starting sonority is reached again after the progression moves through twelve chords. Naturally, this progression can be entered or abandoned at any point.

Example 6:23



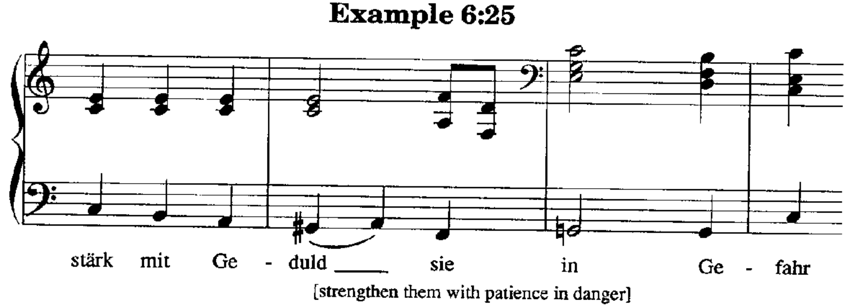
In the second act of *Don Giovanni,* Mozart succeeds in characterizing the other-worldly nature of Il Commendatore even better than make-up, costume and lighting. At first, the singing of the ghostly Il Commendatore is rather peaceful (a recitation on one pitch, supported by changing harmony). However, in the finale, at the point where Il Commendatore makes his terrifying counter-invitation to Don Giovanni (see Ex. 6:24), the chromatic and slowly rising voice part is not traditionally harmonized. The voice part here is not just the melody, but it also functions as the bass-line of the harmonic progression (both at the same time?). Simply put, the orchestra bass and the voice part move in parallel octaves with each other.

Example 6:24

Example 6:24 cont.

Occasionally in operatic arias, the bass voice will double the orchestra bass and clearly leave the melody line to the upper instruments. Ex. 6:25 contains an excerpt from Sarastro's aria *"O Isis und Osiris"* from Mozart's *The Magic Flute,* where such a technique is employed.

Example 6:25



It is very different with the excerpt in Ex. 6:24. Since the tessitura of the voice part is so high, it does not really function as the bass line. Further, there is no real melodic material supplied by the orchestra (as was the case in Ex. 6:25). Only the harmony shifts as Il Commendatore sings. As it is in the Chinese fable of the spirits, where the vixens recognize that they have no shadow, the very soullessness of the sounds in Ex. 6:24, without a real top and bottom or any earthly weight, musically represent the other-worldly existence of Il Commendatore.

As one plays and sings the excerpt in Ex. 6:24 a number of times, and as the ear becomes more accustomed to the materials, this material becomes more and more frightening. It actually seems to abandon the Classical style altogether. Not until one-hundred years later, in the music of Debussy, are sonorities treated like this on a regular basis. In Ex. 6:24, functional harmony is literally replaced by sonorities that do not differentiate between harmonic and melodic elements. Instead, we find only harmonic colors which are bordered by the top and bottom pitches of each sonority.

5. Resolution of Conflict

It is obvious, that the willfulness of a hero or the strength of a powerful intruder can be musically expressed by choices of sonorities and connections between chords that are not anchored in a specific key. However, freedom from tonality can also be an important agent of expression in scenes dealing with deliverance or resolution of conflict. If tonally distant sonorities are effortlessly juxtaposed, or if a voice part gently counteracts the tendency to resolve a suspension according to traditional principles of resolution, then a door into another world is opened—music on the threshold of death.

In the final measures of Monteverdi's *Combattimento,* Clorinda, mortally wounded by her lover, sings of the eternal peace that awaits her. Notice that the 4-3 suspension figure in the last two measures of Ex. 6:26 fails to resolve, perhaps expressing her deliverance from earthly existence.

Example 6:26

Near the end of Verdi's *Aïda,* we reach the scene where Aïda has been sealed in the underground tomb with her lover, Radames. By 1870, when this opera was composed, the chromatic-third relationships between sonorities such as those found in Ex. 6:27 were no longer considered unusual. To measure the true impact of this spot, however, we must consider the preceding musical materials. Just before we reach this excerpt, Radames sings "*Morir! Sì pura e bella!*" (to die is so pure and beautiful!) and Aïda begins her cantilena, "*Vedi? Di morte l'angelo.*" (Do you see?: the angel of death). Both these sections are folksong-like in character and are harmonized with simple and functional Classical-period sonorities. Directly after this straightforward simplicity, we hear the spot in Ex. 6:27 with its chromatic third-related triads.

Example 6:27

6. Dramatic Climax

Emotional climaxes, such as the expression of deep sorrow, entreaty, cursing or hate are planned out ahead of time by the opera librettist. Climax spots are carefully spaced and separated from one another in order to avoid an imbalance of strong emotion and to limit wear and tear on those musical materials that are used as agents of such expressions. Writing an effective operatic climax has always been challenging to composers, and climax sections often push a composer's creativity to the outer limits of a style period's conventions.

Two climax spots in Beethoven's *Fidelio* and two in Verdi's *Aïda* employ similar harmonic materials, but the two composers demonstrate completely different approaches. Beethoven's voice parts tend to be highly expressive, whereas Verdi's parts are more singable. The problem with Beethoven's approach is that his melodies are so expressive that they often nearly overstep the bounds of what is technically possible. Though Verdi's vocal style is eminently more singable, it is often somewhat anonymous in its beauty and in danger of seeming emotionally neutral.

The technical difficulties encountered in Beethoven's vocal lines lend themselves well to certain kinds of climax situations, however. At the beginning of the second act of *Fidelio,* Beethoven uses the unaccompanied voice as a medium of strong expression. In this scene, Florestan is in jail. His monologue begins with the words *"Gott welch Dunkel hier"* [God, how dark it is here]. With great sorrow, Florestan humbly places his fate in the hands of God. As is shown in Ex. 6:28, Beethoven turns to a quasi-atonal texture in order to musically represent the deep sorrow expressed here. The underlying harmony features two D-tG [V-♭VI] deceptive cadences, which are stated one after the other. This harmony becomes extraordinarily expressive, when we consider the simple harmonic texture that both precedes and follows it.

Example 6:28

[I will not complain of the amount of sorrow; I shall remain steadfast by Thee!]

Ich mur-re nicht das Maß der Lei - den steht bei dir!

E: D tG

[V ♭VI]

E: D —7— tG

[V V⁷ ♭VI]

Verdi's handling of climax is quite different. Near the end of the second act in *Aïda,* Amonasro implores the Egyptian king to have mercy on the prisoners. Amonsaro's F-major melody, however, seems oblivious to the rising level of harmonic expression in the orchestra. The intensity of the melody is derived primarily from the beauty of its melodic construction (see Ex. 6:29).

Example 6:29

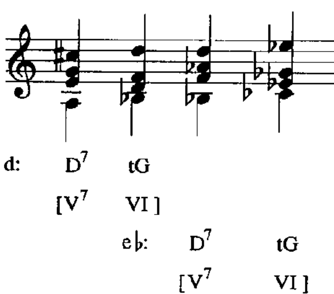
[But thou; o king, thou mighty lord]

Ma tu, Re, tu si - gno - re pos - sen - te

The orchestra part, however employs highly expressive sonorities, and the style of this accompaniment is both surprising, and engaging. The harmony passes immediately from an F-major triad, to an E-major triad and on to a B♭-dominant-seventh chord. Indeed, these sonorities produce a large amount of tension below the tonally stable F-major melody. The melody pitch E (leading-tone) moves directly to the octave F, but this F is immediately heard as the fifth of a dominant-seventh chord [G# is enharmonically A♭]. The overall harmonic progression of the excerpt can be interpreted as a variation on T $\mathrm{S}^{6<}_{5}$ T [I-Gr^{6} (on fourth scale degree)-I], however. When the $\mathrm{S}^{6<}_{5}$ is first heard on the third beat of the second measure, the subdominant pitch (B♭) has not yet been reached by the chromatic bass voice [the voice with the F pedal point is disregarded here] and the sonority's third (D) is also delayed by a suspended-fourth (E) in the next-highest voice. The fifth (F) of the $\mathrm{S}^{6<}_{5}$ chord enters only as the top-most voice resolves upward into beat four. Even though each voice of this sonority resolves to expected chord tones ($\mathrm{S}^{\begin{smallmatrix}4 & 5\\ 6< & -\\ 4 & 3\end{smallmatrix}}_{1<1}$), the actual sound on beat three is that of a surprising and dissonant E-major six-four chord suspended above a tonic pedal.

In the judgement scene in the last act of *Aïda,* Amneris seeks to lighten Radames' sentence, but is strongly opposed by Ramphis and the priests, who proclaim Radames guilty *("È traditor! È traditor! Morrà")* [Traitor! Traitor! Death!]. This excerpt (see Ex. 6:31b) contains an interesting harmonic construction that runs parallel to what we have already observed in *Fidelio* (Ex. 6:28); that is, a double deceptive cadence (D^{7} tG) [V^{7} - ♭VI] above a rising chromatic bass line. Ex. 6:30 contains a model of this progression.

Example 6:30



Compared with the spot in *Fidelio* (Ex. 6:28), the double deceptive-cadence pattern which occurs in this excerpt from *Aïda* is almost hidden in the outer voices of a simple A-major harmonic framework (compare Ex. 6:31a with Ex. 6:30). The excerpt from *Aïda* (Ex. 6:31b) is characterized by lovely and smooth voice-leading in both the voice part and the instrumental accompaniment.

Example 6:31a-b

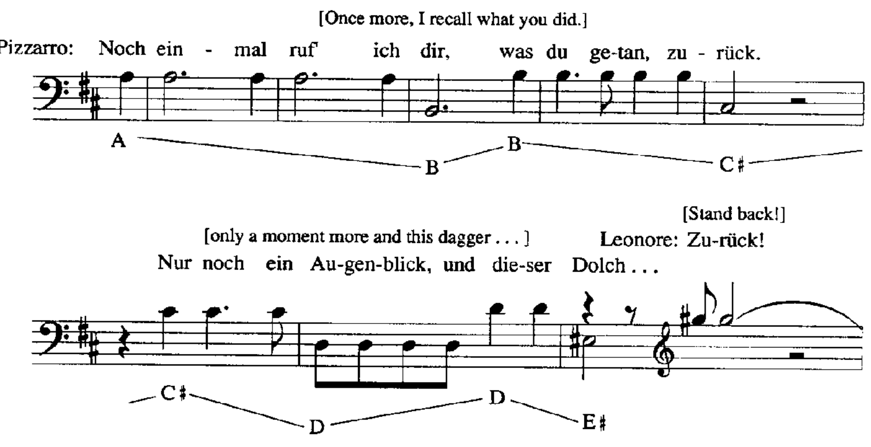
At the beginning of the quartet (No. 14) from the second act of *Fidelio,* a bewildering musical texture accompanies the hateful Pizaro, who makes it known that he intends to murder Florestan (*"Er soll es wissen, wer ihm sein stolzes Herz zerfleischt . . Pizarro . . . steht nun as Rächer hier.")* [He shall know, who will tear his proud heart to pieces. . .Pizaro. . . stands here now as the avenger]. Beethoven renounces all melodic beauty in this spot; Ex. 6:32 shows the extreme chromaticism of Pizaro's melody in measures 23-37. [Note: some of the pitches in Ex. 6:32 are the enharmonic equivalents of those found in Beethoven's score.] These melody pitches are derived from the often-used three-chord progression we discussed earlier, consisting of a second-inversion minor triad, a dominant-seventh and a diminished-seventh chord over a chromatically ascending bass line (see Ex. 6:33)

Example 6:32

Example 6:33

While the same text continues, the musical texture suddenly changes to a harmless and floating D-major plane, characteristic of opera buffa. Even Florestan's *"Ein Mörder steht vor mir"* [a murderer stands before me] is harmonized with a standard cadence formula. This change of style can be explained by an examination of what lies ahead in the scene. In measure 60 (about twenty-five measures after this dramatic simplification of style), the following stage direction is written in the score: "Leonore rushes in with a penetrating scream and covers Florestan with her body." The entire plot of the opera has been building toward this heroic moment and it was necessary for Beethoven to provide this spot with an appropriate harmonic climax. If the earlier chromatic texture had not been changed, it is likely that there would not have been enough contrast to make Leonore's entrance truly climactic. Ex. 6:34 shows how Beethoven creates musical climax at Leonore's entrance. In an instant, at the end of Pizaro's line, a conventional A-major sequence is interrupted. Instead of progressing to the expected E as the root of an E-major triad, the melody line is propelled into E#, which functions as the third of the C#-major triad.

Example 6:34



Directly following Leonore's entrance, another stable tonal plane is established which provides contrast with the next unexpected climax in measure 68 (see Ex. 6:35). The F# in the voice part, which first appears as the root of an F#-minor triad, is suddenly reinterpreted as the leading-tone (third of the dominant-seventh chord) in G-major. At this point the full quartet (Leonore, Florestan, Pizaro and Rocco) enters and remains in G-major for nine measures, up to next climax point where Leonore is instructed again to "cover the body of her husband." Here, she sings *"Tot erst sein Weib"* [first kill his wife]. At this spot the key suddenly changes from G-major to E♭-major (T tG) [I-♭VI].

Example 6:35

The prevailing musical style during the time of Beethoven was somewhat reserved and allowed only brief climax points and sections of raised emotion. Prolonged ecstatic planes were only first incorporated into the music of Wagner and Mahler. (One wonders what caused the extreme turnabout in the music of Webern, where musical climaxes are often relegated to a single pitch.)

When climax points in Classical-period opera follow closely on the heels of one another (as in the scene from *Fidelio* above), the composer must drastically lower the musical intensity in the interludes between climaxes. No listener actually perceives this lessening of tension, however, and only the surprising climax moments are actually remembered.

After studying this entire scene from *Fidelio,* it seems that Beethoven was showing some moderation in deference to Classical-period conventions.

7. Large-Form Disposition of Tonality

The harmonic plan for a full hour of music is present in the introduction of the first act of Wagner's *Lohengrin*. It is also clear, however, that Wagner fashioned this harmonic plan during the time that he was at work on the libretto.

The introduction begins with an opening processional in the key of A-major, which modulates after only four measures to D-major, and after another four measures to C-major. On the first C-major chord, Wagner indicates that "the curtain rises." After four measures of stable C-major harmony, four on-stage trumpets play the king's fanfare (see Ex. 6:36).

Example 6:36

After this, we hear additional pure C-major triads in the announcement of the army herald (*"Heinrich, der Deutschen König kam zur Statt"*) [Henry, the German King has come to the city], and then in the answering choir of the Brabant citizens (*"Willkommen, König, in Brabant"*) [Welcome to Brabant, King]. Once more the four on-stage trumpets sound the fanfare in C-major. As King Henry turns to address the citizens of Brabant, the pitch E serves as a pivot tone for a modulation from C-major to the key of E-major.

Many keys (between E-major and A♭-minor) are employed during the king's portrayal of "Drangsal's Message" and the "Hungarian Rage." However, C-major is only used when the plight of the realm is suggested (the spot where the text reads *"Was deutsches Land heißt"*) [What the German Country means]. A C-major triad also accompanies the scene where the Saxons and Thuringians hail the German realm (*"Wohlauf! Für deutschen Reiches Ehr!"*) [Raise a Cheer for the German Realm, Hail!].

Friedrich Telramund is called forth by the king to report on the fate of the children (Elsa and Gottfried) of the deceased Duke of Brabant. This causes much disorder and an impassioned response which draws attention completely away from the initial theme of the king's visit. This shift in focus is also reflected in Wagner's harmonic scheme which moves away from C-major (by way of a passing-tone C♭ —see Ex. 6:37).

Example 6:37

Telramund's portrayal of Ostrud and the action against Elsa are extensively, but by no means exclusively, represented by the key of B♭ (the key sequence E♭-major, D♭-major, E♭-minor, A♭-minor, . . . F♭-major also occurs here); B-major and E-major also come in contact with each other for a short time in this section. When Wagner passes through tonal areas in no sharps or flats (here and in the further course of the act), the avoidance of the C-major triad should not necessarily be considered part of his overall harmonic strategy. The keys of A-minor, F-major, G-major, D-minor, E-minor are simply repeated.

In the fiery dawn, all the men are influenced by Telramund's charges. The words, *"Ha, schwer Schuld zeiht Telramund!"* [Ha, Telramund is establishing great guilt!] are set in the key of E♭-minor. The king's subsequent order to bring the defendants forward so that court may begin, closes with the text *"Gott laß mich weise sein"* [God give me wisdom]. This text is harmonized in the closely related key of A♭-major. Following this, it is only with the greatest difficulty that the king's fanfare returns, forcing a modulation back to the key of C-major (see Ex. 6:38).

Example 6:38

The C-major triad actually provides a harmonic framework in Wagner's setting of the following lines (a C-major triad occurs on each of the italicized words below, and begins and/or ends each musical phrase):

Heerrufer: *"Soll* hier nach Recht und Macht Gericht gehalten sein?"
[Herald: *Should* not court be held here in accordance with justice and authority?]

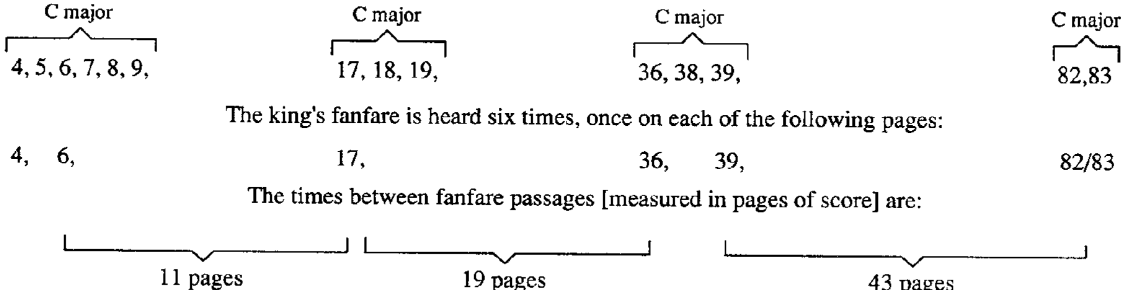
König: *Nicht* eh'r soll bergen mich der Schild, bis ich gerichtet streng und *mild.*
[King: I shall *not* remove my standard, until I have judged with strength and *compassion.*]

Alle Männer: *Nicht* eh'r zur Scheide kehr' das Schwert, bis ihm durch Urteil Recht *gewährt.*
[All the Men: The sword shall *not* be returned to the scabbard until justice is *guaranteed.*]

After the first quarter of the act has passed, Elsa's representative harmonic area is established in the key of A♭-major, and Lohengrin's harmonic area becomes A-major. In the finale of the act, after his victory, Lohengrin's key area is raised to B♭-major. The key of C-major enters only two more times in the act. The first time, when the king calls to the assembled company twice to ask who is willing to fight for Elsa; and the second time, when he signals for the commencement of a duel which will confirm the will of God.

In the first act of *Lohengrin*, C-major is handled as a *Leitmotif* (portraying the Germanic essence, the King, the Realm, Imperial German Honor, Justice, etc.). C-major is also a harmonic agent that helps to pace the dramatic action of the first act. At the beginning of the act, the interval of time between C-major sections is relatively short, but as the act progresses, the time between the C-major sections continually increases. For its time, this harmonic technique would have been quite surprising, since composers of the period [ca. 1850] were not yet accustomed to grounding musical form and structure strictly on psychological principles. (In the rondo movements of this era, however, we can observe a tendency for composers to continuously lengthen the contrasting couplets during the course of the piece. This technique also produces the same harmonic effect—the lengthening of time between occurrences of a primary key.)

In my edition of the piano-vocal score, the first act of *Lohengrin* begins on page 4 and ends on page 106. C-major is employed in the following groups of pages:



Certainly, counting pages between these entries is not a very accurate method of measuring elapsed time between events, since score pages contain various number of measures. Counting the actual measures, however, would also be inaccurate, since tempo is frequently changed throughout the course of the act. Actual performance time would probably be the best unit of measure, but again, every performance runs at a different pace. My intention here is to simply show a tendency toward continuous elongation of time between particular harmonic events and nothing more.

CHAPTER SEVEN
Harmony between 1857 and 1882 (Wagner)

1. Introduction

With the composition of the first act of *Tristan and Isolde* in 1857, Richard Wagner initiated harmonic developments that even surpassed what Brahms attempted twenty-five years later in his Four Piano Pieces, op. 119 (1892). The second volume of Liszt's piano cycle *Années de pèlerinage* (1837-1839) also contains music where standard functional harmony no longer really applies. In fact, it was not a very long step between *Années de pèlerinage* and Liszt's nearly atonal piano compositions such as *La lugubre gondola* (1882). When we consider that this same period also produced Donizetti's *Don Pasquale* (1842), Humperdinck's *Hänsel und Gretel* (1892), Dvořák's E-minor Symphony *["From the New World"]* (1893), and the symphonies of Tchaikovsky, we can hardly call the highly chromatic compositions of Brahms, Liszt, and Wagner representative of the period.

In the Classical era, the same harmonic materials were more or less universally employed. For that reason, Classical composers often put their best creative efforts into constructing distinctive melodies. This was not so with the music of Wagner and Liszt. With these two composers, linear concerns seem to recede into the background. Wagner's unending melodies are not particularly original and sound almost anonymous in character. Instead, Wagner spent his best compositional efforts developing a new approach to harmony, from which he invented an unprecedented and inimitable personal style (although this personal triumph spawned a host of unbearable imitators).

In this chapter, we shall not discuss the prevailing currents of style in the mid- to late-nineteenth century. Rather, we shall take a closer look at some of Wagner's most important harmonic achievements.

2. Cadences in Atonal Space

In Ex. 7:1, thirty measures from the third scene in the first act of *Tristan and Isolde* are reduced to their basic harmonic elements.

Example 7:1

In measures 14-15, D_7^{898} [V^{232}] resolves to a sonority based on tonic (C) in measure 19. A minor seventh (B♭) is added to this chord of resolution, however, turning it into a secondary dominant which does not resolve to its expected tonic (F-major). In the following measure (20), the raised root of this seventh chord leads toward D-minor, but instead, a deceptive cadence to B♭-major is substituted (22). A D-minor chord appears on the downbeat of the next measure (23), but it only functions as a passing sonority. The rising chromatic bass line (F♯) leads toward G-minor, but a sixth (E) is added to the chord on the downbeat of measure 24, thereby pulling the harmony toward D-minor. The following two chords then anticipate D-minor even more strongly with the progression $^{t}\mathbb{D}^{v}$ D [vii$^{\circ7}$/V-V].

The expected resolution to tonic in measure 27 is foiled, however, by means of another deceptive cadence to B♭-major. In measure 28, the previous measure's B♭-major chord is made minor, and again, a sixth is added above the bass. This added-sixth sonority functions as s$^6_5$ [ii$^{ø6}_5$] in F-minor. The following diminished-seventh chord Đ$^{v}_{5}$ [vii$^{o4}_3$] in F-minor becomes resolved, instead, as the enharmonic Đ$^{v}_{7}$ [vii$^{o4}_2$] in D-major (the D♭ in the former is resolved as though it were a C♯). A seventh (C♮) is added to the expected D-major chord on the second beat of measure 29, however. This dominant-seventh sonority functions as DD [V/V] in C-major, and is followed in measures 30 and 32 by two cadential suspension-figures D$^6_4$ $^5_3$ [V$^6_4$ $^5_3$]. The resolution of the second D$^6_4$ $^5_3$ is followed by a deceptive cadence to an A♭-major triad (tG) [♭VI] in measure 33. In measure 34, however, a third is added below the A♭, which changes the sonority to F-minor. The dominant chord in F-minor (measure 34, second beat) is, once again, made minor with an added sixth (measure 35, downbeat), and becomes another s$^6_5$ [ii$^{ø6}_5$], but this time in G-minor.

The passage from measure 34 to 38 is actually a harmonic sequence of the passage from measure 27 to 31, but the unexpected resolution chord in measure 38 is D-minor [rather than C-major, which was the goal in measure 31]. Though the D-minor area is prolonged over seven measures, it is made unstable by twice adding a third below the tonic (B♭ in measure 39; G♯ in measure 40) and by the change to D-major in measure 41. Even though the D-minor triad returns in measure 42, it possesses little of its tonic character, since the F in the bass takes part in a chromatic descent. Another minor seventh (G) is added above the dominant pitch (A) in measure 44, forming a dominant-seventh chord which then abandons the key of D by deceptively resolving to a dominant-seventh chord [third inversion] in the key of E.

The introduction and first act of *Tristan and Isolde* contain key signatures with 4♭, 3♭, 2♭, 1♭, 0♭/♯, 1♯, 2♯, 3♯. Though the act begins in D-minor and ends in C-major, a controlling tonality is not recognizable. The one-flat key signature of the excerpt we discussed (Ex. 7:1) extends from measure 1 to measure 65 of the third scene. Directly after the excerpt in Ex. 7:1, there is a short and clear section in D-major, followed, in measure 66, by a one-sharp key signature. In the next instant, however, D♭ is reached as the goal of an A♭ dominant-seventh chord. This D♭ is then enharmonically reinterpreted as C♯, the third of a first-inversion A-major chord. . . etc.

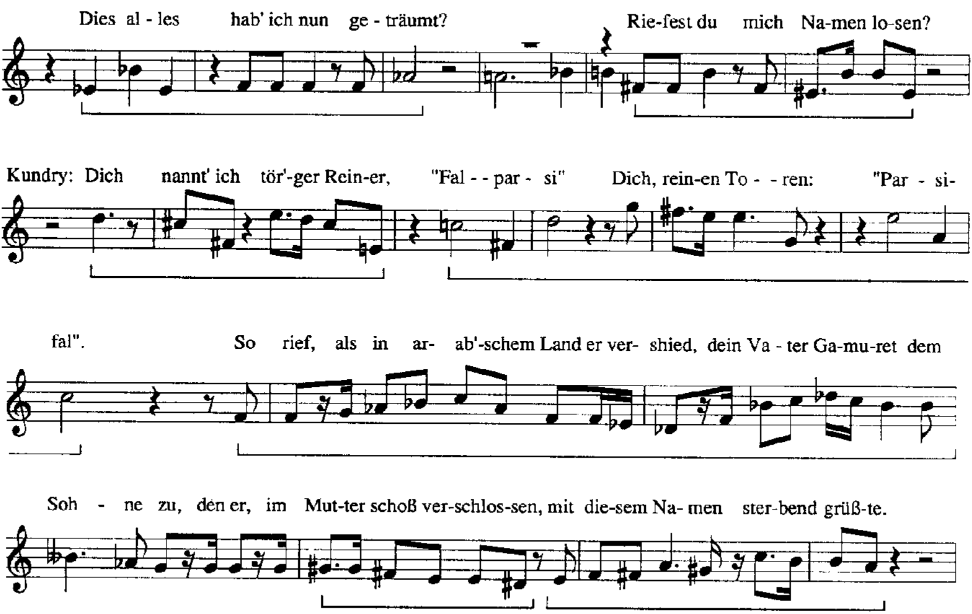
The cadence and modulatory agents contained in Ex. 7:1 are not new. They are simply Classical-period techniques which were used in development sections, between tonally stable expositions and recapitulations. In the case of Classical-period opera, these devices are common in the recitatives or in the transitional materials between stable harmonic planes within arias. Though the details of Classical voice-leading are still in force, the music of Wagner is conceived in a large, centerless, and tonic-free tonal space. (This is the same tendency we observed in the music of Schumann!—see Chapter Five.)

Exercises: Check the rest of the third scene from *Tristan und Isolde* for: a) cadences which actually reach their tonic; b) cadences, which deceptively resolve to tonalities that are diatonically related to a central tonic (so that a broad tonic-area plane can be prolonged and solidified).

3. Setting the Text to Music

Ex. 7 :2 contains an excerpt from the second act of *Parsifal* (the scene directly following the disappearance of the flower girl).

Example 7:2



Wagner seems to connect the words within his text phrases by placing them together (melodically) in the same tonal area. The converse is also true; changes of key center in Wagner's melodies seem to be motivated by changes from one text phrase to the next. In Ex. 7:2, Wagner actually joins his text phrases together in a patchwork of short key-unified melodic phrases (see brackets). If we consider the orchestra part alone, however, clear tonal implications are much more elusive. This marriage of tonal melodies to less tonally centered accompaniments is successful because the melodies are constructed from pitches that are harmonically ambiguous. This pitch ambiguity then provides Wagner with room for various harmonic interpretations.

When Wagner's short melodic segments are not separated by rests, the new tonal area in the following phrase is often carefully introduced by a leading-tone figure. Leading-tone connections provide a convincing transition between key areas and help maintain the singable character of the melody.

Wagner's melodic setting of Klingsor's first words in the second act of *Parsifal* are shown in Ex. 7:3. Here, five key areas are introduced by direct leading-tone motion (see arrows).

Example 7:3

Exercises: In order to better understand the value of leading-tone connections in the construction of such melodies, compose several melodic lines where the key implication changes internally. The transition between tonal centers should be accomplished with and without the use of leading-tone figures. (Remember: such an exercise must be considered only a study of Wagner's compositional technique. Creating yet another piece in this style will simply result in just one more Wagner imitation—a fruitless waste of effort!)

Ex. 7:4 shows a convincing melody that employs leading-tone motion from C-major to D♭-major. The voicing here is smooth and singable.

Ex. 7:5 implies the same key changes as Ex. 7:4, but without leading-tone motion. This melody is a far less convincing and much more difficult to sing.

Example 7:4

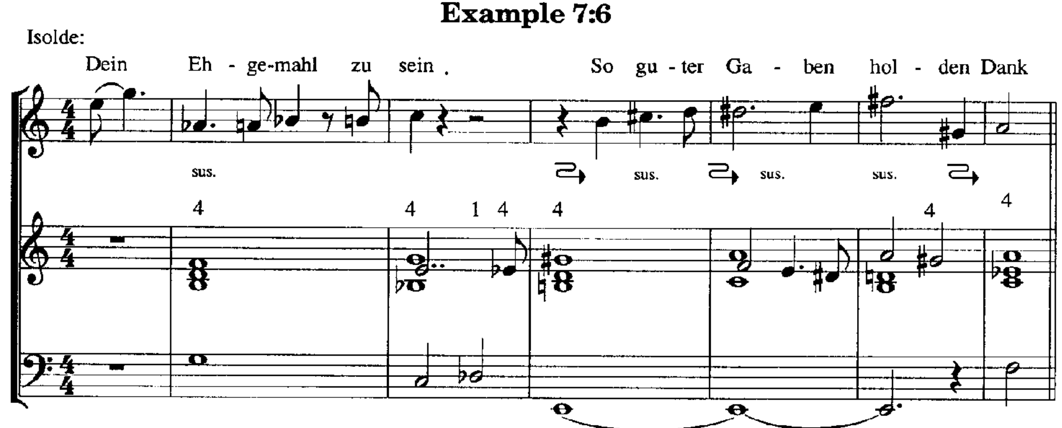
Example 7:5

4. Wagner's Functionally Free Four-Tone Sonorities

We shall now discuss harmonic vocabulary in Wagner's late works. To accomplish this we will examine two excerpts from *Tristan und Isolde* (1865) and two from *Parsifal* (1882).

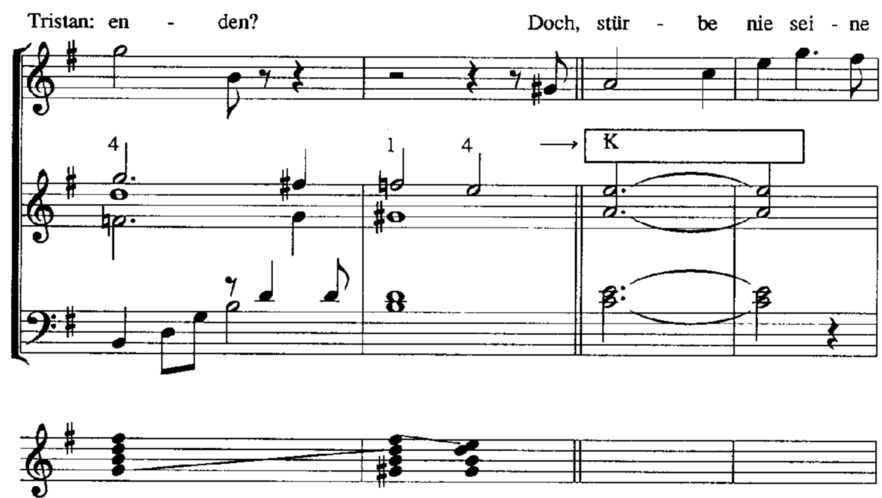
Ex. 7:6 is an excerpt from the scene five in the first act of *Tristan und Isolde* (Isolde hands Tristan the atoning drink).

Example 7:6

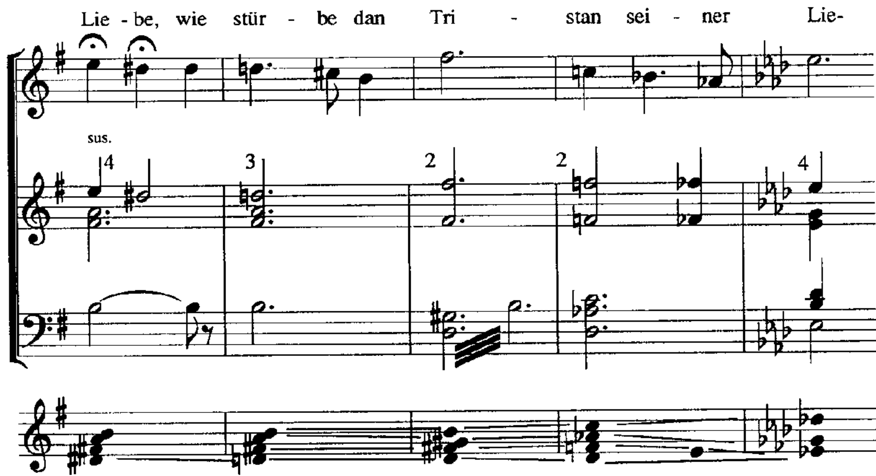


Ex. 7:7 is an excerpt from scene two in the second act of *Tristan und Isolde* (between Brangäne's *"Einsam wachend in der Nacht"* and her *"Habet Acht! Schon weicht dem Tag die Nacht"*).

Example 7:7



Example 7:7 cont.



Ex. 7:8 is an excerpt from the beginning of the second act in *Parsifal* (Kundry's first entrance).

Example 7:8

Kundry:

Ach! Ach! Tie - fe Nacht... Wahn-sinn... Oh!

sus. 2 K? 2 K? 2

Ach! Jam-mer!

Wut... Schlaf... Schlaf... tie - fer Schlaf...

2 1 2 1 sus. 1 sus. 4 sus. sus. 4 sus.

Ex. 7:9 is also from *Parsifal;* a few measures later than the excerpt in Ex. 7:8.

Example 7:9

I. The few consonant sonorities [major/minor triads] that occur in Exs. 7:6-9 are marked with the symbol K *(Konsonante Klänge).* The only consonance of relatively long duration is the first-inversion A-minor triad found in Ex. 7:7. This triadic sonority is employed here to provide resolution stability for the dominant chord which occurs in the previous measure. The other three clearly defined consonances appear in Ex. 7:9, where they are maintained for the duration of only an eighth-note. In the measure 3 of Ex. 7:9, both consonances come about as a result of passing motion. These transitional consonances are treated in the same manner that would have been traditionally reserved for passing dissonances. Only the consonance on the last triplet eighth-note in measure 1 of Ex. 7:9 functions as the resolution of previous dissonance.

In a world of such highly unstable sonorities, the ear must revise its concept of the six-four chord. Except when employed in a traditional manner (as in the penultimate measure of Ex. 7:8),[1] a second-inversion triad is perceived as a relatively consonant sonority (see spots marked K? in Ex. 7:8)

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[1] Although this second-inversion triad actually fails to resolve in its traditional fashion in the penultimate measure of Ex. 7:8, the listener will often hear this sonority as part of a standard cadence formula at first.

II. Wagner conspicuously avoids the strongest dissonances (minor seconds and major sevenths) in the four-tone sonorities that have become hallmark of his style. As is shown in Ex. 7:10, these harmonic structures are constructed from stacks of thirds. These thirds will generally be minor thirds, however. (Not more than one of the three intervals will be a major third).

Example 7:10

The sonority number that will be used in the music examples:	1	2	3	4
possible harmonic functions:	$\not{D}^{v}$	s^{5}_{6}	S^{5}_{6}	D^{7}
	[vii^{o7}]	[ii^{ø7}]	[ii^{7}]	[V^{7}]
> =minor third	$\not{D}^{9>}_{7}$	$\not{D}^{9}_{7}$	t^{7}	
⊐ =major third	[vii^{o7}]	[vii^{ø7}]	[i^{7}]	
		$^{S}_{D}{}^{7}$	s^{7}	
		[vii^{ø7}]	[iv^{7}]	
			Tr^{7}	
			[vi^{7}]	

Every chromatic modification (⁄) in Ex. 7:10, leads from one chord group to the next. All four of these sonority types may also appear in inversion, assuming that the concept of inversion really applies in this music. Which pitch in chord-groups 1, 2 and 3 actually functions as the root? In group 1 sonorities, the way the chord is notated usually decides which tone will serve as root [since this sonority type is symmetrically constructed from minor thirds], but frequently the chord root cannot be determined until the resolution sonority is reached and the voice-leading analyzed. In chord-groups 2 and 3 there can even be contradictory interpretations with regard to what pitch functions as the root. In fact, three different pitches could serve as the functional root in these groups (the pitch B as the root of the diminished-minor seventh chord in group 2, or the minor-seventh chord in group 3; D as the root of a s^{6}_{5} [ii$^{ø6}_{5}$] in group 2 or S^{6}_{5} [ii$^{6}_{5}$] in group 3; or G, the omitted root of an implied ninth chord in both groups 2 and 3).

The voice-leading connections between these four sonority types are dominated by common tones and leading-tone relationships. The voice-leading relationships between these sonorities, charted in Ex. 7:7 [see staff below the example], are representative of chord connections that are generally found in Wagner's music. It should be noted, however, that it is impossible to directly connect these sonorities without leading-tone motion. The two pitches inside the interval of a minor third can be reached by leading-tone relationship from one of the two outside pitches, and since these four sonority types contain, at most, only one major third, there is only one pitch (in the middle of that interval) that cannot be reached by leading-tone motion from the two outside pitches.

To avoid oversimplification, however, I caution against putting too much faith in either of the following theories: a) Wagner was strongly attracted to these four-tone sonorities, and because of this affinity, his music became characterized by leading-tone motion (since leading-tones are necessary to connect these sonorities together); b) Wagner desired to connect his harmonies with leading-tones, so he chose this group of four-tone sonorities (because they smoothly connect to one another by means of leading-tones).

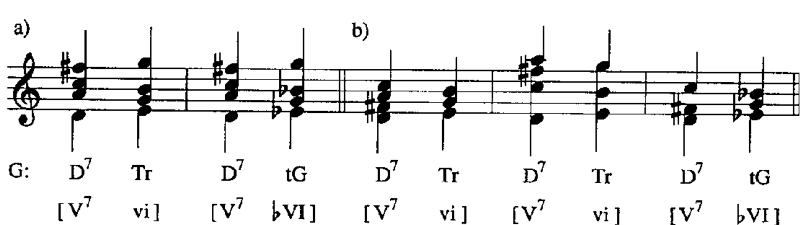
III. All four of the sonorities in Ex. 7:10 are borrowed from the chord vocabulary of Classical and Romantic music, and are (apart from the consonant sonorities) the most important carriers functional harmony. The changed role that these chords took on in Wagner's music can be attributed to the way that they progress and resolve; that is, even when D^7 [V^7], S^6_5 [ii^6_5], s^6_5 [$ii^{ø6}_5$] or $\not{D}^{v}$ [vii^{o7}] resolve, they seldom really disappear from the texture. Furthermore, of the four sonority types, only the dominant-seventh chord provides a definite resolution expectation [resolution to its tonic]. The resolutions of the three other sonorities are much more ambiguous.

Although the dominant-seventh chord has the most definite resolution expectation of the four sonority types, Wagner often uses its traditional function as a foil for deceptive resolution. Deceptive cadences are defined differently in various texts, so I will attempt to summarize the topic one more time in a systematic way.

1. In its most narrow definition, a deceptive cadence consists of a dominant function chord which progresses directly to a chord that functions as a tonic substitute (Tr [vi] or tG [VI]). Further, the leading tone must move to tonic in the upper-most voice (see Ex. 7:11a).

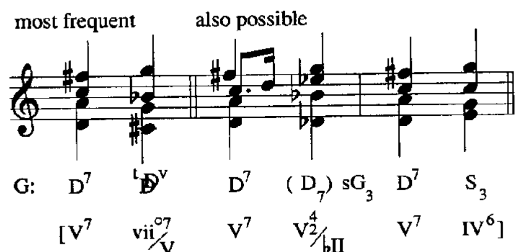
2. Another definition calls for the same functional progression as in definition 1., but requires that the leading-tone move to tonic in one of the three lower voices (see Ex. 7:11b).

Example 7:11a-b



3. A further possibility is for the leading-tone to move to tonic in the upper-most voice (as in definition 1.), but that the chord of resolution may be any chord that includes the tonic pitch (see Ex. 7:12).

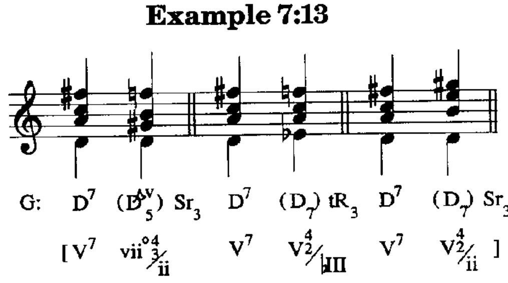
Example 7:12



4. This variation requires that the leading-tone moves to tonic in one of the lower three voices, while the harmonic progression retains the same stipulations as definition 3.

5. This definition presents the deceptive cadence in only the broadest sense. These would be cadences that progress from the dominant, but where no tonic pitch is present in the chord of resolution (see Ex. 7:13).

Example 7:13



6. The most remote variation of definition 5. above. This type of deceptive cadence requires that the leading-tone not resolve at all, but actually be retained as a common tone in the chord of resolution (see Ex. 7:14).

Example 7:14

The resolution chords in definitions 4., 5., and 6. are not really substitutes for the tonic, and although they may surprise the listener, they are not true deceptive cadences. The progressions that provide the strongest substitution for a final cadence occur in definitions 1. and 3. (the

resolution chord in definition 2. is somewhat less convincing). It is musical context that really decides how a chord progression will be perceived, and it should not be assumed that every D^7-T progression is a closing gesture. In fact, deceptive cadences can only be considered truly deceptive if they are sparingly employed.

In Wagner's late works, the transitory tonic had become the norm, and the established tonic, the exception. In fact, there is only one [relatively] standard cadence in Exs. 7:6-9—the progression D^7_5 t_3 [V^6_5-i^6] occurs in the second and third measures of Ex. 7:7. Here, the arrow (→) indicates a direct dominant-tonic relationship. In contrast, there are five strong deceptive cadences in the excerpts from definitions 1. and 3. (see Exs. 7:6 and 7:9; the bent arrow [⥱] indicates that the dominant resolves to a strong tonic substitute). All other dominant-seventh resolutions in Exs. 7:6-9 employ the more broadly interpreted deceptive cadences (covered in definitions 2., 4., 5., and 6.).

The so-called "deceptive cadence" (in all of its forms) appears so frequently in the music of Wagner, that it is hardly deceptive any longer. Furthermore, the four-tone sonority constructed from a major triad with an added minor seventh (Ex. 7:10; chord-group 4) only rarely carries a true dominant function. For that reason, we should only refer to it as a dominant-seventh chord when it clearly functions in that manner. We must not assume that the later music of Wagner belongs to the same ordered harmonic tradition that we have been studying. In fact, Wagner often took great pains to avoid connections that might harmonically ground his music in traditional key centers. What on the surface appears to be a string of deceptive resolutions turns out to be an intentional avoidance of the traditional key implications associated with functional harmony. Therefore, it is best to recognize that the avoidance of tonic harmony in late Wagner is not the exception, but actually the norm. Personally (and here every reader must come to an independent decision), I do not consider any of the resolutions contained in Exs. 7:6-9 to actually be deceptive cadences.

Now that we have discussed Wagner's use of the major-minor seventh chord, we will turn our attention to the other four-tone sonorities. In measure 2 of Ex. 7:6, a diminished-seventh chord is formed by half-step motion and then is abandoned by half-step motion in a different voice. A diminished-seventh chord (G♯-B-D-F) is also implied in measure 8 of Ex. 7:8. In a traditional resolution, the G♯ would move upward; both the D and F would move downward. Here, however, only the D resolves traditionally (down to C♯), while the F remains a common tone and the G♯ leads downward to G♮. In measure 10 of Ex. 7:8, the C♯ would normally resolve upward, and the G and B♭ downward. Here, the C♯ resolves traditionally, while G moves upward to G♯ and the B♭ moves upward to B♮.

When we analyze the progressions that lead away from the group 2 or group 3 sonorities, it can be observed that the sonority types from these two groups are seldom treated as s^6_5 [$ii^{ø6}_5$], S^6_5 [ii^6_5], or $Đ^7$ [$vii^{ø7}$] chords. Instead, the tendency tones of these standard sonorities are often led astray. The chord in measure 2 of Ex. 7:8 can either be considered D-F-A♭-C ($Đ^7$ [$vii^{ø7}$] in E♭-major), or F-A♭-C-D (s^6_5 [$ii^{ø6}_5$] in C-major/minor).

It also might be possible to consider a further enharmonic spelling of this chord (E♯-G♯-B-D). In this case, we could conjure up some functional magic and attempt to analyze this sonority in F♯-major ($Đ^{v}$ [vii^{o7}] with a raised fifth), but do the mental gymnastics involved with producing a symbol like $Đ_{7}^{v\,5<}$ [vii$^{o6\sharp}_{\,4\,2}$] really help clarify the function this sonority?

IV. In earlier music, these four sonority types always maintained their respective functional properties. Wagner, however, employs them as totally free sonorities, where individual voices no longer follow their customary resolution tendencies. Furthermore, the dissonant pitches of these sonorities are no longer representative of the dominant or subdominant poles of functional harmony.

Generally, all four of these sonority types contain mild dissonances. When stronger dissonances are applied to these sonorities (i.e., major sevenths, minor ninths or minor seconds), they always resolve to intervals with a milder degree of dissonance.

Suspension and retardation figures are labeled [sus.] in Exs. 7:6-9. In the first measure of Ex. 7:6, the minor ninth G-A♭ (between the bass part and the voice) is resolved when the A♭ ascends to A♮. The following melody pitch (B♭) continues upward to B♮ after entering as a strong dissonance against the B♮ in the accompaniment.

In the fourth measure of Ex. 7:6, the D♯ and F enter as strong dissonances against the bass pitch E, and both resolve to E.

In the five last measures of Ex. 7:8, there are a number of strong dissonances that occur in the top voice of the accompaniment. These dissonances either resolve downward (a major seventh to a minor seventh, or a major ninth to a minor ninth), or upward (a minor ninth to a major ninth, or major seventh to an octave).

We can still speak of these strongly dissonant suspensions in a traditional sense, even if the resolution direction no longer abides by the customary rules. Although the use of these figures tends to confuse the underlying harmony, stepwise suspension resolutions suggest a traditional type of voice leading. Some will argue that Wagner does not always lessen the dissonance as one chord resolves into the next. This can be countered by argument that since the time of Bach such chord progressions have been employed (e.g., sequences of seventh chords around the circle of fifths). On one hand, we can admit that Wagner's stepwise suspension resolutions are actually part of a very old tradition, and on the other, it is clear that these figures are not traditional suspensions at all.

V. In the second measure of Ex. 7:6, E and B♭ (third and seventh of the C dominant-seventh chord) are not resolved according to their customary tendencies. First, the most stable pitch of the chord, the bass-note C, moves away in a suspension-like fashion to D♭. Following this, the E moves to E♭ on the last eighth-note of the measure, forming a dominant-seventh chord in third inversion (D♭-E♭-G-B♭). At this point, the dissonant pitch D♭ is heard as the fundamental bass tone of a suspension figure. The D♭ demonstrates its stability by a large downward leap, while the three consonant tones (upper voices) progress by leading-tone relationships to the next

sonority. In the third from the last measure in Ex. 7:8, the root of the dominant-seventh chord resolves downward by step. In the first measure of Ex. 7:7, between F and G♯, the G♮ in the middle voice (last quarter-note of the bar) sounds like a passing tone, even though it appears to be the root of the G-major triad.

It is not totally accurate to say that both consonant and dissonant pitches of a chord are now treated alike, however. Can we actually determine which pitches are consonant and which are dissonant in such compositions? The previous distinction between the root tone and added pitches disappears in this music. None of these chords acts like a consonant sonority with added dissonances; that is with fixed characteristics of resolution. Instead, these Wagnerian chords are unified sonorities constructed from four equally entitled and equally treated pitches which are no longer connected to a root tone.

VI. Traditionally, the leading-tone of a dominant-seventh chord eventually resolves to the tonic pitch and the seventh resolves downward to the third above the tonic. This creates the stable interval of a third. The dissonant second produced by the sixth and the fifth of an S^6_5 [ii^6_5] also resolves traditionally to the interval of a third, but one of the two pitches will remain common, while the other will move up or down by second (as in the progressions S^6_5-D [ii^6_5-D] or S^6_5-D^6_4 [ii^6_5-V^6_4]). Nearly all of the individual tones in these sonorities are active, but they do not clearly imply the goal of their resolutions. It is only after the resolution has taken place that we can know which pitch of a four-tone sonority was actually intended to function as the leading-tone. In Wagner's music, the voice-leading path cannot always be predicted with certainty and the resolution tendencies of a sonority cannot be confirmed until it has progressed to the next chord. The listener [grounded in traditional harmony] actually hears such spots twice. At first, the standard function of these sonorities will suggest a particular forward resolution, but the resolution path that Wagner actually chooses forces the listener to reinterpret (after the fact) the harmonic function of the first chord. In other words, we cannot engage in an "active synthesis" of Wagner's music in the same way that we can while listening to Beethoven.[2]

With sequence figures, the situation is completely changed. As they did in earlier music, sequences play a major role in Wagner's compositions. In fact, sequences actually help the listener make sense out of the many complicated harmonic connections. (See the in the descending minor-third sequence in Ex. 7:8 [compare measures 3-4 with 5-6; 7-8], and the descending perfect-fifth sequence at the beginning of Ex. 7:9 .)

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[2] This new listening aesthetic is discussed in Heinrich Besseler, "Das musikalische Hören der Neuzeit," *Abhandlungen der Sächische Akademie der Wissenschaften,* CIV (1959).

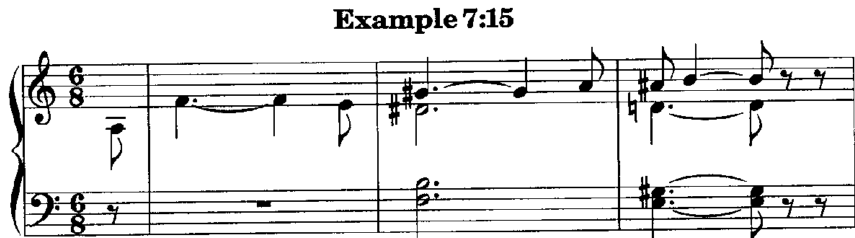
Sequence figures actually provide Wagner's music with moments of harmonic predictability. This is also true for passages where a *Leitmotif* is repeated, providing that the repetitions are not harmonized differently. Wagner's use of the sequence and the *Leitmotif* actually returns to the listener some sense of musical predictability that these revolutionary harmonic connections take away. Taken separately, Wagner's harmony may appear totally confusing, and the repetition of a *Leitmotif* may seem intolerably boring; the former is overly complicated and the latter too primitive. Taken together, however, the free harmonic connections and interminable motific repetitions in late Wagner can be viewed as structural counterbalances to one another. As has always been true, the secret of great artistry always lies somewhere in the balance between too much that is expected and too much that is unpredictable.

5. The Tristan Chord

One of the seven chapters in Ernst Kurth's extensive work *Romantische Harmonik und ihre Krise in Wagners Tristan* [Romantic Harmony and its Crisis in Wagner's Tristan] is entitled *The First Chord.*[3] Numerous other authors refer to the initial sonority of this epoch-making music drama as the *Tristan Chord,* and frequently describe it as yet another harmonic invention of the late-Romantic period. It is my belief, that Kurth's analysis of this sonority is best judged by the individual reader in comparison to other views, and therefore, we will devote this section to some of the more important and interesting published analyses of this colorful harmonic structure.

Ex. 7:15 contains the first three measures of the orchestral introduction to *Tristan and Isolde.*

Example 7:15



We shall begin Kurth's analysis:

The basic harmonic progression of the first cadence in the Prelude consists of a B^7 chord moving to an E^7 chord. Therefore, this cadence actually concludes on the dominant, since the final chord in this passage is the dominant-seventh in A-minor (the key of the Prelude). This two-chord progression is also embellished with several chromatic alterations and non-harmonic tones. These are: 1) the alteration of the fifth of the B^7 chord from F♯ to F♮ in order to produce

[3] Ernst Kurth, *Romantische Harmonik und ihre Krise in Wagners Tristan* (Bern: P. Haupt, 1920).

a higher level of tension as the bass moves into the E of the final chord; 2) the dissonant G# at the beginning of the motive in the soprano, which functions as an upward-resolving suspension to the pitch A; 3) a second upward-resolving suspension on the pitch A#, which appears in the soprano just before the harmony resolves into the phrase's final E^7 chord. (Generally speaking, the voice-leading in this passage (Ex. 7:15) progresses by chromatic half-steps. D# also moves to D♮ in the alto.)

The next analysis we shall consider is from *Harmonielehre* [Study of Harmony] by Rudolf Louis and Ludwig Thuille.[4] As is shown in Ex. 7:16, Louis and Thuille understood the G# in the top voice to be an unprepared, chromatically upward-resolving suspension to A. Rather than hearing the sonority in this measure as an altered dominant of the dominant (as does Kurth), or even as a chromatically altered diminished-seventh chord on the seventh scale degree of A-minor [vii$^{\circ 6\sharp}_{\substack{4\\2}}$], Louis and Thuille regard this sonority as a chromatically altered diminished-seventh chord built on the second scale degree [ii$^{\circ 6\sharp}_{\substack{4\\3}}$]. In other words, they consider this pre-dominant sonority to possess subdominant function rather than dominant function.

Example 7:16

In his treatise *Lehrbuch der musikalischen Harmonik,* [Textbook of Musical Harmony], Karl Mayrberger claims that the first sonority in the Prelude to *Tristan* actually possesses bitonal properties (the pitch F is diatonic to A-minor and D# is diatonic to E-minor); that is, Mayrberger considers this harmonic event to be an altered chord which functions simultaneously in two minor keys.[5] Though it may seem, at first, that this altered chord possesses specific functions in both A-minor or E-minor, upon closer inspection, it becomes clear that it really has no pure function in either key. Therefore, Mayrberger postulates that the best analysis of this sonority is one that treats the chord as a simultaneous representative of both keys.

In an article from his four-volume treatise, *Das Geheimnis der Form bei Richard Wagner* [The Secret of Form in Richard Wagner], Alfred Lorenz attempts to clarify the harmonic progression at the beginning of the Prelude by providing a model that actually condenses the two-measure harmonic sequences into single measures (see Ex. 7:17).[6] Lorenz further simplifies the texture by changing the meter of his study model to 4/4 from the original 12/8. He also removes

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[4] Rudolf Louis and Ludwig Thuille, *Harmonielehre* (Stuttgart: C. Grüninger, 1906).

[5] Karl Mayrberger, *Lehrbuch der musikalischen Harmonik* (Pressburg: G. Heckenast, 1878).

[6] Alfred Lorenz, *Das Geheimnis der Form bei Richard Wagner,* vol. 2 (Berlin: M. Hesse, 1924).

all of the suspensions and embellishments from the original so that only the basic harmonic structure remains. The condensed measures in Lorenz's model show each cadence ending on the weak beat of the measure. (This same reduction technique, as I was to discover later, was also used in the work of Johannes Schreyer.[7] Schreyer, however, placed the barlines in his model differently, showing the dynamic accent of each motific statement in the middle of the measure [with the resolution chord falling on the downbeat of the bar].)

Example 7:17

Horst Scharschuch, in his *Gesamtanalyse der Harmonik von Richard Wagners Musikdrama Tristan und Isolde* [Complete Analysis of the Harmony of Richard Wagner's Music Drama Tristan and Isolde],[8] views the opening measures of the Prelude (Ex. 7:15) as follows:

The first measure consists of a minor-tonic pickup-note (A) followed by a suspension (F) that is maintained for five eighth-notes before resolving downward by half-step to the fifth (E). The soprano pitch G# in the second measure becomes a suspended leading-tone in A-minor. Upon resolution to the pitch A, the soprano then becomes a member of the $\not{D}^{7}_{5>}$ chord [V^4_3/V with a lowered fifth]. This secondary-dominant resolves directly into D^7 [V^7] (measure 3). The sonority at the beginning of measure 2 (F-B-D#-G#), frequently called the *Tristan Chord*, appears to be constructed similarly to a traditional minor subdominant chord (with an added sixth above a minor triad—*sixte ajoutée*—S^6_5 [ii^6_5]). This similarity of structure is easier to see, if the bass pitch (F) is changed to its enharmonic equivalent (E#); the result (G#-B-D#-E#) clearly has the same harmonic structure as a *sixte ajoutée,* but it does not function the same here.[9]

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[7] Johannes Schreyer, *Von Bach bis Wagner* (Dresden: Holze und Pahl, 1903).

[8] Horst Scharschuch, *Gesamtanalyse der Harmonik von Richard Wagners Musikdrama Tristan und Isolde* (Regensburg: G. Bosse, 1963).

[9] This six-five sonority, as it is enharmonically spelled by Scharschuch, would have subdominant function in the key of D#-major (a tritone removed from Wagner's prevailing tonality of A-minor). Scharschuch is not dealing with function here, however, but only pointing out the connection between the component structures of the *Tristan chord* and the traditional *sixte ajoutée.*

During the course of *Tristan und Isolde*, however, this motific pattern enters so frequently, and the ear becomes accustomed to the dissonant suspension figure that the pitch G# is no longer really perceived as a dissonant upward-resolving suspension to A. Instead, the listener hears the G# as belonging to a complex independent sonority which also includes the pitches F, B, and D#. This structure (related to the E-major triad) contains elements of both harmonic stability and instability at the same time; that is, the pitches G# and B can be heard as the third and fifth of the E-major triad, while F and D# appear to seek resolution, respectively, as the upper and lower leading-tones to the root (E). Throughout the opera, however, the D# does not resolve upward to E (as expected), but rather downward to D♮. Further, this non-traditional leading-tone resolution moves in dissonant parallel sevenths with the bass (D# [enh.E♭] -D♮ [alto] against F-E [bass]).

From this analytical standpoint, we can easily comprehend how the pitch G# changes function. At first, it is heard as a [relatively active] suspended pitch which seeks resolution upward by half-step to A. After this melodic/harmonic structure is repeated a number of times, however, the G# can be perceived as the [relatively stable] third of the double leading-tone sonority described above. This chord delays and weakens the cadential process and our perception of harmonic function becomes somewhat clouded, because this complex sonority (basically dominant in function) replaces a more directly tonicizing secondary dominant.

Taken in isolation, the harmonic progression found in Ex. 7:15 appears to be t DD^7 D^7 [I-V^7/V-V^7] in A-minor. In the context of further repetition, however, the minor-tonic triad seems to progress to this unstable double leading-tone sonority (with dominant function in A-minor), which then resolves to the dominant-seventh chord in measure 3.

Certainly, Scharschuch's analysis would require the invention of several specific symbols and some explanation in order for his observations to be generally understood and accepted by those trained in traditional functional harmony. Other possible analyses of the *Tristan Chord* have been put forward by both Kistler[10] and Jadassohn.[11]

Kistler considers the this sonority to be an altered chord built on the seventh scale degree of A-minor (G#-B-D-F), where the fifth (D) is chromatically raised to D#. In this interpretation, G# is considered a chord tone and not a suspension. Jadassohn constructs this sonority on the seventh scale degree of F# minor (E#-G#-B-D#) [where the pitch F is enharmonically spelled as an E#]. It is interesting to note, that every one of the four melody pitches (G#, A, A#, and B) is considered, in Jadassohn's view, to be a member of a different functional sonority.

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[10] Cyrill Kistler, *Harmonielehre* (Munich: W. Schmid, 1879; rev. 1902).

[11] Salomon Jadassohn, *Harmonielehre* (Leipzig: 1883; 7th ed., 1903), transl. by Theodore Baker as *A Manual of Harmony* (New York: G. Schirmer, 1893).

To summarize, the first chord in the Prelude has been considered a VII chord [$\text{vii}^{\circ 6\sharp}_{\;\,4\;2}$] in A-minor (Kistler); a VII chord [$\text{vii}^{\circ 6\sharp}_{\;\,4\;2}$] in F#-minor (Jadassohn); a subdominant function (Louis-Thuille); a dominant-function sonority with added double leading-tones (Scharschuch); and a secondary dominant (Kurth), labelled with our modern functional symbols as $\not{D}^{6\;7}_{5\;>}$ $D^{7}_{4<5}$ [i.e., V^6_4 /V constructed above a lowered fifth with a dissonant upward-resolving suspension. This sonority then resolves to V^7/V, by way of a half-step retardation in the soprano].[12]

If we consider Wagner's frequently employed four-tone sonorities (see Ex. 7:10), the first five eighth-notes belong to a group-2 sonority (Ex. 7:15, measure 2). The sixth eighth-note in the measure (soprano) and the first eighth-note of measure 3 are chromatic passing tones which smoothly proceed to the final chord in the phrase—a group-4 sonority.

It is also worth mentioning, that Kurth recognized a perceivable reduction in harmonic tension as the *"First Chord"* in the Prelude resolves to the final sonority of the phrase. The goal harmony of this phrase is frequently (and sometimes, thoughtlessly) considered to be the dominant, because: 1) the chord is a major-minor seventh chord [Ex. 7:10; group 4]; and 2) because it is preceded by secondary-dominant harmony. Kurth departs from this tradition, however, since he holds that such seventh-chord sonorities should be considered, in this new context, "chords of reduced harmonic tension." Earlier, only consonant triads could assume the function of a chord of resolution.

6. Expressive Suspension Figures in Wagner's Late Works

It is pointless to functionally analyze many spots in Wagner's late works. Tonal centers are often so quickly prepared and abandoned, that traditional functional analysis becomes a waste of time. One must not forget, however, that there are a number of long stretches in the late works of Wagner, even in *Tristan* itself, where the harmonic connections are still simple and straightforward. In such places, Wagner avoids harmonic monotony by applying artistically refined suspension figures (many of which enter without preparation).

There is an example near the end of the third scene of the first act in *Tristan*. Brangäne prepares to recommend *"den hersten Trank"* [the magnificent drink]. While she comes near flattering and embracing Isolde, the accompanying musical interlude creates a simple tonal background (see Ex. 7:18).

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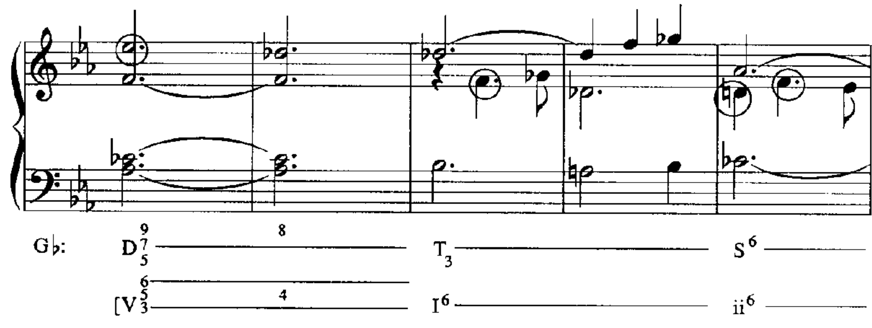
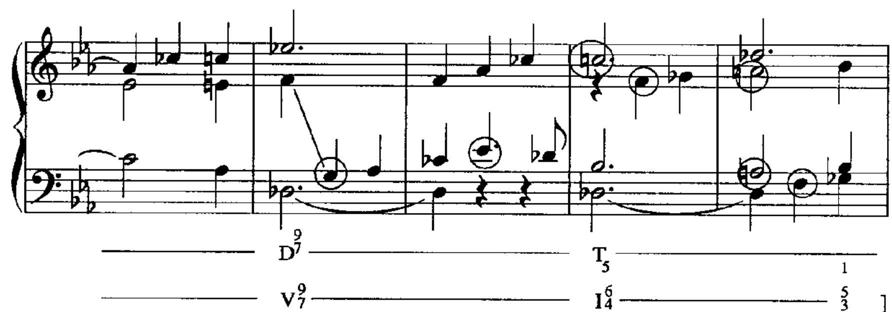
[12] Many English-language harmony texts consider the *Tristan chord* to be a *French Augmented-Sixth* chord (with a suspended G#) built on the sixth scale degree of A-minor. This Fr^6 sonority then resolves traditionally to the dominant-seventh (even Beethoven sonatas contain examples of augmented-sixth chords whose lower leading-tones are resolved downward by half-step in order to progress smoothly into the following dominant-seventh chord). The Fr^6 interpretation is not much different than Kurth's, if we remember that an augmented-sixth chord is often considered, among German music theorists, as an altered secondary dominant.

Example 7:18





All the suspension figures in Ex. 7:18 are circled. The pitch F in the third measure (alto) should also be considered an unprepared suspension rather than a member of the Dr [iii] chord. The $\not{D}^{v}$ in the fourth measure (bass) is a lower neighboring-tone figure, but since it occurs on the strong beat it sounds like a suspension. There is a problem with this analysis, however, since the $\not{D}^{v}$ also forms an altered dominant chord (raised fifth in the bass). If we choose the latter of the two analyses, the circled F in the soprano would also be a chord tone. It seems to me, however, that the regular harmonic flow of two measures per function argues strongly enough for a tonic interpretation here.

In Ex. 7:18 (measure 5), the fifth of the subdominant is approached by both upper-and lower-resolving suspensions, but the resolution pitch itself is withheld until the last eighth-note of the measure. Theoretically, it would be possible to interpret the pitches in this measure as the diminished-seventh chord D-F-A♭-C♭, or better yet, its enharmonically spelled version F-A♭-C♭-E♭♭, which would function as $\not{D}^{v}_{5}$ [vii$^{ø6}_{5}$] in G♭-major. If the latter analysis were adopted, however, the balance of regular two-measure harmonic changes would again be upset.

The listener will have two contradictory reactions to places where musical sections based on simple cadence formulas join other sections based on the distant harmonic progressions made possible by Wagner's four-tone sonorities:

1) Though the harmonic connections between sonorities may be distant in some places, juxtaposition of passages constructed from straightforward cadence formulas underscores the

view that distant chordal associations are nothing more than extensions of the same traditional harmonic procedures. Although complex harmonic relationships may push the limits of tonality to its very outer fringes, these relationships can still be understood functionally.

2) Sections based on simple progressions emphasize just how far removed the world of tonality is from the world of atonality. The great contrast provided by sections containing complex harmonic progression indicates that such harmonic procedures are no longer suited to functional analysis.

7. A Model for Analysis of Passages in Wagner's Late Works

When the standard connections of functional harmony no longer apply, how are we to discuss the harmonic events that take place in a passage? I suggest a comprehensive analysis of such passages, but I caution the reader in advance against trying to find recurring patterns of harmonic progression.

The fundamental harmonic progression $\mathrm{T}\ \mathrm{S}^{6}_{5}\ \not\mathrm{D}^{7}_{3}\ \mathrm{D}^{6\ 5}_{4\ 3}\ \mathrm{T}$ $[\mathrm{I}\text{-}\mathrm{ii}^{6}_{5}\text{-}\mathrm{V}^{6}_{5}/\mathrm{V}\text{-}\mathrm{V}^{6\ 5}_{4\ 3}\text{-}\mathrm{I}]$ is employed thousands of times in musical literature. This practical and straightforward chord progression is not only used to harmonize musical phrases, but it can also be considered an abstract progression, upon which larger units of musical form can be constructed. For example, the two longer progressions below can both be reduced to the same basic harmonic function as the progression given above:

$$\mathrm{T}\quad \mathrm{S}^{6}_{5}\quad \mathrm{T}\quad \mathrm{D}^{7}\quad \mathrm{T}\quad \mathrm{D}_{7}\quad \mathrm{T}_{3}\quad \mathrm{D}^{7}_{5}\quad \mathrm{T}$$

$$[\mathrm{I}\quad \mathrm{ii}^{6}_{5}\quad \mathrm{I}\quad \mathrm{V}^{7}\quad \mathrm{I}\quad \mathrm{V}^{4}_{2}\quad \mathrm{I}^{6}\quad \mathrm{V}^{4}_{3}\quad \mathrm{I}]$$

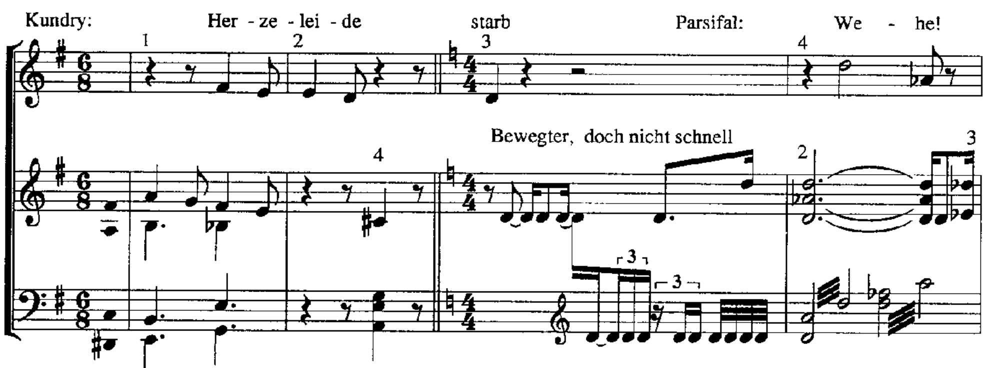
$$\mathrm{T}\quad \mathrm{S}^{6}_{5}\quad \not\mathrm{D}^{7}_{3}\quad \mathrm{D}^{6\ 5}_{4\ 3}{}_{7}\quad (\mathrm{D}^{7}_{3})\quad \mathrm{S}\quad \not\mathrm{D}^{7}_{3}\quad \mathrm{D}\quad (\mathrm{D}^{7}_{3})\quad \mathrm{Tr}\quad \mathrm{S}^{6}\quad \mathrm{D}^{8\ 7}\quad \mathrm{T}$$

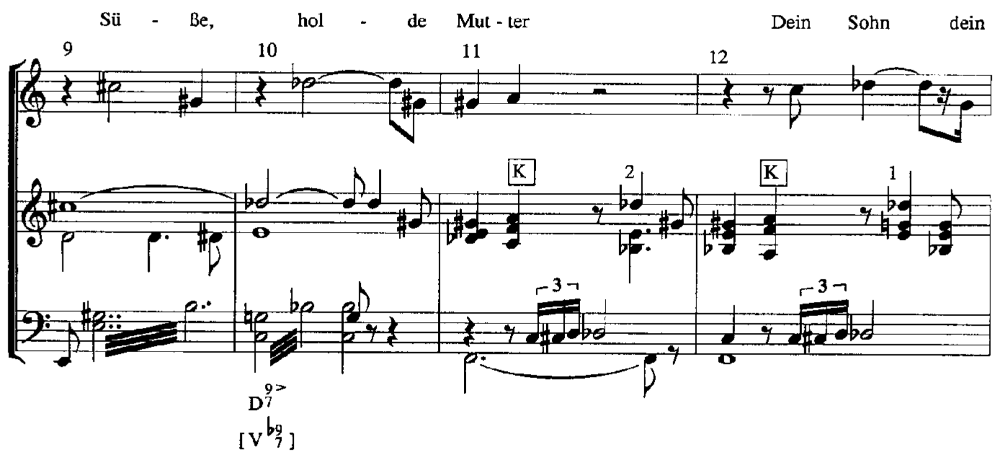
$$[\mathrm{I}\quad \mathrm{ii}^{6}_{5}\quad \mathrm{V}^{6}_{5}/\mathrm{V}\quad \mathrm{V}^{6\ 5\ 4}_{4\ 3\ 2}\quad \mathrm{V}^{6}_{5}/\mathrm{IV}\quad \mathrm{IV}\quad \mathrm{V}^{6}_{5}/\mathrm{V}\quad \mathrm{V}\quad \mathrm{V}^{6}_{5}/\mathrm{vi}\quad \mathrm{vi}\quad \mathrm{ii}^{6}\quad \mathrm{V}^{8\ 7}\quad \mathrm{I}]$$

With Wagner, however, many harmonic progressions are used only once. These [disposable] progressions are highly dependent on text and/or the particular dramatic situation; they are not abstract or generic patterns like the basic progression above, and they do not generally build similar kinds of background progressions.

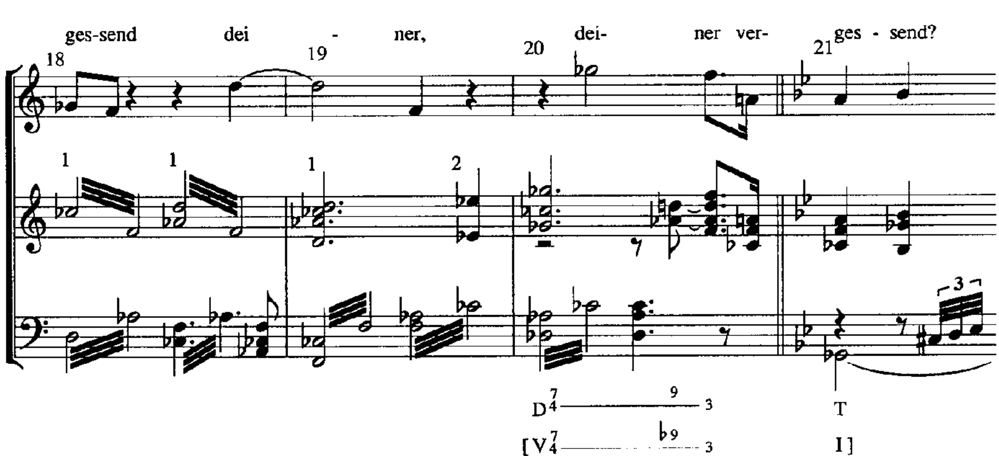
At this point, I shall attempt to provide a comprehensive analysis of a twenty-four measure section from the second act of *Parsifal* (see Ex. 7:19).

Example 7:19

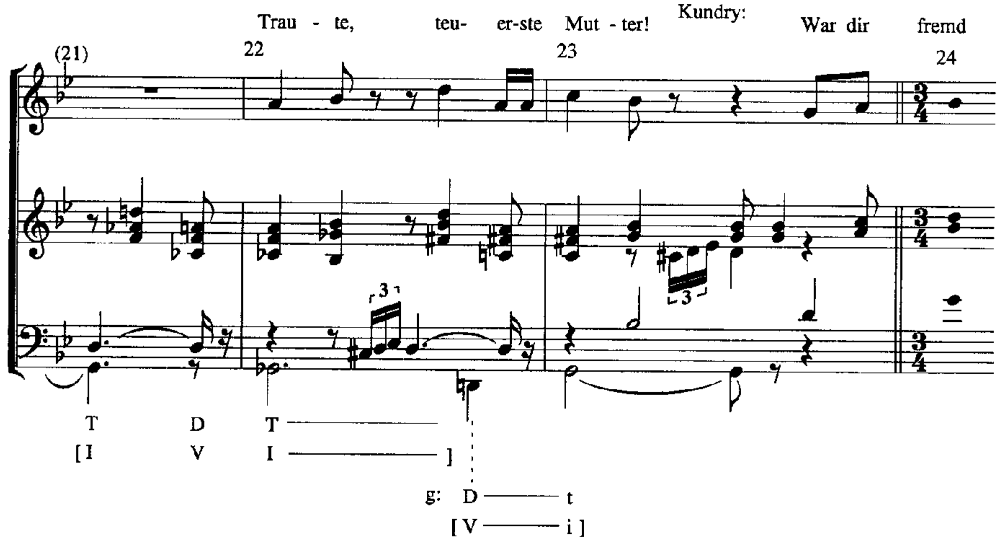




Example 7:19 cont.



Example 7:19 cont.



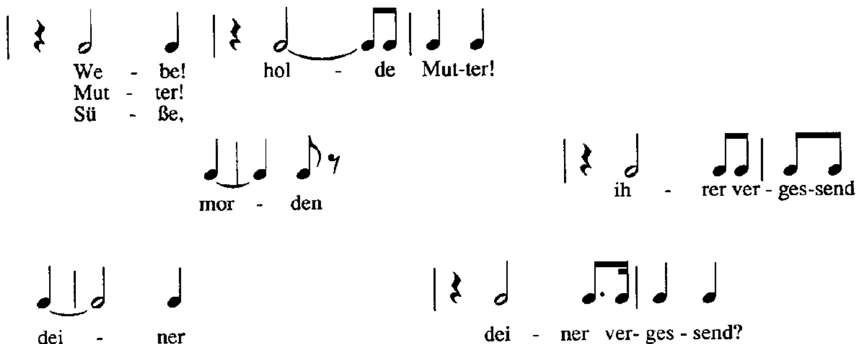
In this scene, Parsifal experiences guilt over the death of his mother as Kundry gives his speech; Parsifal sinks down at Kundry's feet. In Wagner's score, the stage direction reads that Parsifal is "frightfully concerned" and "painfully overwhelmed." Wagner clearly reflects these emotions in the musical setting of these twenty-two highly expressive measures. The melodic contour of the solo-voice part is very different than the folk-like G-major melody to which Kundry sang in the preceding section. Ex. 7:20 shows the Siciliano-like texture of Kundry's voice part.

Example 7:20

As Kundry's speech continues, the tonality is increasingly expanded and the rhythmic texture is intensified. Nevertheless, the speech is brought to an end (Ex. 7:19, measures 1-2) with a straightforward tonal cadence $(\not{D}^{V})$ $Sr^{5\flat}_{13}$ D^7 T [vii^{o7}/ii ii$^{6}_{5\flat}$ V^7 I]. This clear-cut cadential gesture at the end of Kundry's speech strongly contrasts with Parsifal's subsequent emotional outburst.

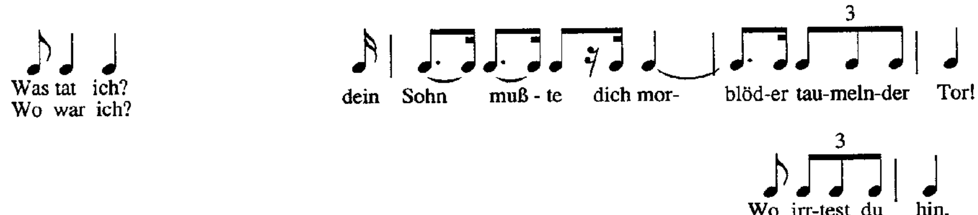
After many agitated rhythmic changes, Parsifal's line is brought to a close with a strongly affected single shriek. These rhythmic changes are actually variations on a recurring two-pitch syncopated motive. Ex. 7:21 shows the various rhythmic configurations of this motive in this excerpt.

Example 7:21



The rhythmic figures that are not connected to the patterned variation (Ex. 7:21) are related to one another in similar fashion (see Ex. 7:22).

Example 7:22



The implied tonal centers in the voice part are changed with increasing speed and abandon. Some of the drastic tonal changes that take place toward the end of the excerpt are produced through Wagner's characteristic use of leading-tones. There are even more places, however, where the tonality is abruptly changed, without the benefit of leading-tone motion (see Ex. 7:23).

Example 7:23

The beginning only appears simple. There are several pitches that are restated after intervening materials, but these repeated pitches do not sound alike, since the chords to which they belong keep changing in the orchestral accompaniment. The tonic-pitch D in the upper voice of the accompaniment (Ex. 7:19, measure 3) leaps an octave higher, but is then reinterpreted as a *sixte ajoutée* above the bass-pitch F (measure 4). In the same way, the A♭ in measure 4 functions as a minor third above F, but its appearance in measure 5 functions as the diminished-seventh above B, etc.

As is shown in Ex. 7:24, Wagner gives the voice part the same kind of pitch reinterpretation.

Example 7:24

Here, C♯ functions as the unresolved dissonant sixth of a 6-5 suspension applied to an E^{7} chord. In the next measure C♯ is changed to its enharmonic equivalent D♭, which functions as a minor ninth above C. The pitch D, which is clearly tonic at the opening cadence in Ex. 7:19 (final note of Kundry's speech), becomes suddenly energized by active rhythmic texture. (This technique anticipates the twentieth century.) In measure 4, the D can then be considered the root of $\not{\mathrm{D}}^{7}_{3}$ [$\mathrm{vii}^{\varnothing 6}_{5}$] in E♭-major or the *sixte ajoutée* of the s^{6}_{5} [$\mathrm{ii}^{\varnothing 6}_{5}$] in C-minor. With this sonority (measure 4), a section of four-tone sonorities begins which cannot be interpreted functionally (above each of the four-tone sonorities, the group number of the chord is given (see Ex. 7:10).

Wagner's musical materials abandon the domain of functional harmony no later than measure 5 in Ex. 7:19. The group-2 sonority in this measure could be considered either as s^{6}_{5} ($\mathrm{ii}^{\varnothing 6}_{5}$) in E♭-minor [the functional-system root of this *sixte ajoutée* is the subdominant-pitch A♭]; or as a $\not{\mathrm{D}}^{7}_{3}$ [$\mathrm{vii}^{\varnothing 6}_{5}$] in G♭-major. Further, because the sonority in measure 4 can be considered an s^{6}_{5} [$\mathrm{ii}^{\varnothing 6}_{5}$] in C-minor [see discussion in previous paragraph], it is also possible to view the sonority in measure 5 as a leading-tone diminished-seventh chord in C-minor (with an unresolved 4-3 suspension above the root, thus: $\not{\mathrm{D}}^{v\,4(3)}_{5}$ [$\mathrm{vii}^{o7-(6)}_{\,4\,3}$ — figured-bass notation would consider this a 7-6 suspension, since the fifth of the chord is in the bass and suspensions are generally measured above the bass]. Although the sonority in measure 5 has possible functions in E♭-minor, G♭-major or C-minor, it resolves instead to E^{9}_{7} in measure 6 (the E^{9}_{7} is a dominant-function sonority in A-minor, but it also fails to resolve traditionally). The ear, at this point, has little choice, but to abandon any further attempt to follow a functional path.

Chords from sonority-group 2 seem to regularly accompany those measures where the voice part enters with its transient syncopated motive. Neither harmonic structures in measure 6 and 9 belong to a four-tone sonority group, however. Instead, these sonorities possess specific functional implications; the sonority in measure 6 appears to be a D^{9}_{7} [V^{9}], and the chord in measure 9 sounds, at first, like a D^{7}_{6-5} [V^{7}_{6-5}].

Note that Wagner resolves the sonorities in measures 6 and 9 by moving an unexpected voice. In measure 6, it is not the dissonant seventh and ninth that resolve, but rather the root (it is lead downward from E to D). Though the suspended-sixth (C♯) in measure 9 does not resolve, its resolution pitch (B) is allowed to sound simultaneously in another voice; this B then resolves downward to B♭ in the next measure, thereby neutralizing the dominant-function cadential tendency of the D). A similar process occurs in measures 14-15. The sonority in measure 14 can be considered an $s^{7\,6}_{5\,-}$ [$ii^{ø7\,6}_{\;5\,-}$] in F-minor. Its functional continuation becomes impossible because of the descent from G to G♭ in measure 15. Measure 15 is actually the first step in a descending harmonic sequence that continues in measures 16 and 17.

The functional sonority in measure 6 contains a strongly dissonant minor ninth, but this dissonance is made somewhat less intrusive by the fact that the sonority is built in thirds. The sound of the major seventh (E-D♯) in measure 9 (part of a five-tone sonority) actually produces a stronger dissonant sound than the minor ninth in measure 6. The dissonance at the end of measure 9 then leads to another strongly dissonant five-tone sonority in measure 10. This climax of harmonic tension is then contrasted by the entrance of the major triad in measure 11 (K). The contrast between consonance and dissonance is made even stronger by the three-tone suspension sonority that directly precedes the major triad (note that this three-way suspension also contains the strong dissonant interval—E-F). In measure 10, the voice part repeats the same motive heard in measure 9 (C♯-[enh.D♭]-G♯), but harmonic tension is increased by the change in the underlying harmony. To the listener, the voice-part motive in measure 10 sounds as though it should be D♭-A♭ (→G), but this implied voice-leading is thwarted in measure 11 (see Ex. 7:25). Measures 9-11 are literally packed full of events that produce the excerpt's harmonic climax.

Example 7:25

In measures 11-13, the cadence on the F-major triad is repeated, and then repeated again (the second time to F-minor). Thus, the pitch F acts like a tonic in this area of Ex. 7:19 (notice that an F pedal-point is maintained throughout measures 11-12). Ex. 7:26 shows the implied harmonic progression in these three measures.

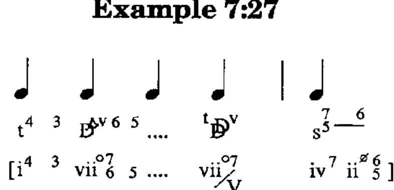
Example 7:26

$D^{\substack{9>\\7\\5<}}$ T $D^{\substack{9>\\7\\5<}}$ T $D^{\substack{9>\\7}}$ t^{4}
T ————————————

[$V^{\substack{\flat 9\\7\\5}}$ I $V^{\substack{\flat 9\\7\\5}}$ I $V^{\flat 9}_{7}$ I^{4}]
———— ton. ped ————

In passages where a tonal center is heard, every chord will be closely related so that the basic key center is maintained. This kind of harmonic structure is evident throughout in measure 13 (see Ex. 7:27).

Example 7:27



Only the third quarter-note of the measure implies a function in D-minor, and the listener can easily pass over this single out-of-key reference. It is clear that the tonic (F), that begins the measure, is still tonic at the end of the bar.) The connected materials in the following passage neutralize the effect of the *sixte ajoutée* on the downbeat of measure 14, and we again enter tonally free space until measure 20, where a D^9_7-T [V^9-I] cadence creates a short tonal region in G♭-major. (Here, the minor ninth is found only in the orchestral accompaniment; the pitch D should be enharmonically considered as E♭♭.)

The key of G♭-major is somewhat questionable in measure 21, however. The cello part already implies dominant function in G, and two measures later the entire orchestra is pulled into G-minor. (The pitch D in measure 21 is heard as a minor ninth above D♭ [the dominant of G♭]. D should, therefore, be considered an enharmonic E♭♭. In measure 22, however, the D in the voice part clearly belongs to the dominant chord in G!)

It appears that the cello part in measure 21 was carelessly notated with a C♯ rather than a D♭.

Example 7:28

The rest at the end of the cello part in measures 21-22 is very important. In measure 22, D establishes itself as the goal pitch and is no longer considered only a melodic upper-neighboring tone to D♭ or the ninth of a dominant-ninth sonority. Although the D in the cello part at the end of measure 22 clearly functions as the dominant in G, the cello D in measure 21 implies dominant of G above a G♭ tonic. This spot is an extraordinary example of bitonality.

Exercises: a) Write progressions of sonorities which employ only Wagner's four-tone sonorities and label each chord according to its type (1, 2, 3, or 4 see Ex. 7:10). As in Ex. 7:29, notate your progressions on a single staff so that the connection between sonorities can be easily seen. Mark all common tones with [—], all leading-tone relationships with [╱] and all connections of a major second with [╱╱].

Example 7:29

b) Extract a short section from one of Wagner's late works and then produce (in single-staff reduction) a harmonic variation of the original. Be sure to justify all non-leading-tone motion and strive to disguise individual sonorities by applying various suspension figures and delayed-resolution techniques. Pay special attention to textual implications when creating your variation. (See Ex. 7:30 for a model.)

Example 7:30

c) Produce exercises similar to those in b), but use two-stave systems for your work. At your own discretion, include functional dominant-seventh or -ninth chords followed by resolution to single major or minor triads. It is not necessary to limit yourself to a four-voice texture throughout. A pitch may continue ahead in two directions at the same time, requiring additional voices, or a voice may rest, requiring fewer continuing voices, etc. It is important to write-out your exercises so that they can be played at the keyboard. Play everything you write at the piano, so that you will develop proficiency hearing the connections in this harmonic style.

CHAPTER EIGHT
Harmony between 1839 and 1885 (Liszt)

1. Introduction

Bach's *Musical Offering* (1747), was dedicated to the veneration of a monarch "whose greatness and strength, equally manifest in the study of war and peace, and therefore, especially in music, creates wonder and admiration in all." Bach's work, however, was no pompous multiple-choir work (the medium composers usually employed to praise greatness and strength until around 1600). Instead, Bach honors the king [Frederick the Great of Prussia] by using one of the ruler's own musical themes in a set of compositions that demonstrate the inexhaustible musical possibilities of that theme. *The Musical Offering* contains two ricercars, a fugue, a sonata, a perpetual canon and eight diverse canons, all of which are based upon the "Royal Theme." The composer lauds the king for his inventiveness and then further flatters him by indicating that the Frederick had foreseen all the musical possibilities in the theme. Bach [the humble servant] claims only to have worked-out and recorded the various possibilities. In this set of pieces, greatness and spiritual strength are characterized by the highest level of contrapuntal art.

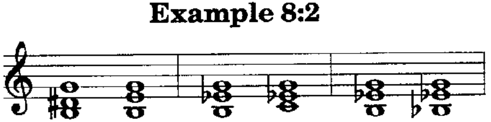
Nearly a hundred years later (1839), Franz Liszt, inspired by Michelangelo's famous statue, composed a piano piece entitled *Il Penseroso* [The Thinker]. This piece is a kind of funeral march, whose melody is reduced to the repetition of a single pitch. In fact, there is so little melody in *Il Penseroso*, that there is hardly a melody at all. The substance of this work belongs almost entirely to the realm of harmony. The "thinker" who inspired the work, is musically expressed by continuous harmonic transformations and reinterpretations of the melody-pitch E, as it is passed from sonority to sonority.

Ex. 8:1 contains a short passage from *Il Penseroso* reduced to one staff. In this excerpt, the thematic E functions as the minor third above C#, the fifth above A, the minor seventh above F#, a suspended-sixth above G#, the major third above C, a suspended-fourth above B and the root of an open-fifth sonority built on E.

Example 8:1

The same kind of musical texture is repeated a few measures later (see Ex. 8:2). Here, in addition to major and minor triads, several augmented triads also take part in the harmonization of a similar single-pitch melody line (this time, on G).

Example 8:2



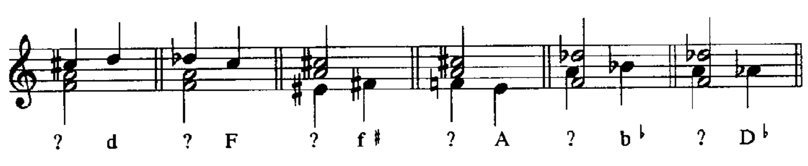
The materials here have been transposed from the original score in order to keep all of the chords in the same register

As is shown in Ex. 8:3, Liszt represents Faust in a similar fashion to "the thinker" in the first movement of the *Faust-Symphony* (1854). The melody, which contains all twelve chromatic pitches, is derived from the tones of four augmented triads. Furthermore, even the first-inversion minor triad (last measure, beat 2) resolves to an augmented triad directly before the eighth-rests. This passage seems to characterize Faust as a spiritual giant, whose contemplations cannot be limited to conventional patterns of thought.

Example 8:3

Like the diminished-seventh chord, which has no sounding root because its minor thirds partition the octave into four equal parts, the root of an augmented triad is also indefinable, since the chord's structure consists exclusively of major thirds. (Major thirds partition the octave into three equal parts.) In his music, Liszt often uses suspension figures that emerge from the tones of an augmented triad. The six resolutions in Ex. 8:4 are all produced by half-step motion (upward or downward) from the pitches of an augmented triad.

Example 8:4



It is possible to progress away from an augmented triad by stepwise motion in two voices (see Ex. 8:5), and conversely, it can be approached by means of the same smooth voice-leading in the opposite direction. Liszt, however, regularly employs augmented triads without harmonic preparation, and without approach by means of smooth voice-leading.

Example 8:5

Exercises: Write out (on a single staff) various progressions toward and away from augmented triads.

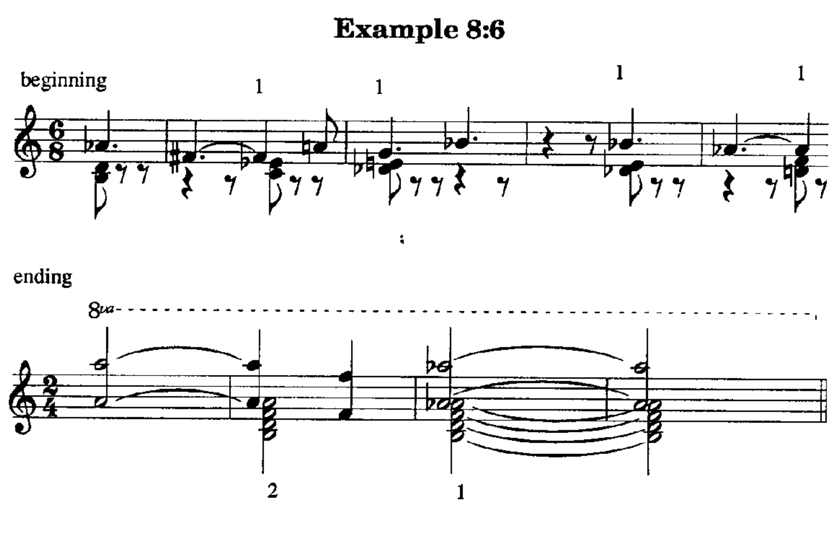
2. Tonality as Reminiscence

It was Wagner's *Tristan* that changed the soundscape of the musical world, but though unrecognized at the time, Liszt broke the same musical ground with important keyboard works some twenty years earlier. Today, Liszt's revolutionary use of harmony is widely recognized as the work of a great composer, in spite of his difficulties with melody writing.

Indeed, the casual listener will have great difficulty coming to terms with much of Liszt's music, since it requires mastery of so many, often contradictory, listening skills. On one hand, the listener must be able to judge the musical effectiveness of a work, and on the other, be able to correctly perceive and understand a work's musical connections. Liszt's compositions run the gamut from Mozart-like major-mode melodies in easy tonal settings, to harmonies that teeter on the very brink of atonality.

As is shown in Ex. 8:6, Liszt employs Wagner-like four-tone sonorities at the beginning and end of his piano piece *Sospiri* from *Three Late Piano Pieces* (1879).

Example 8:6

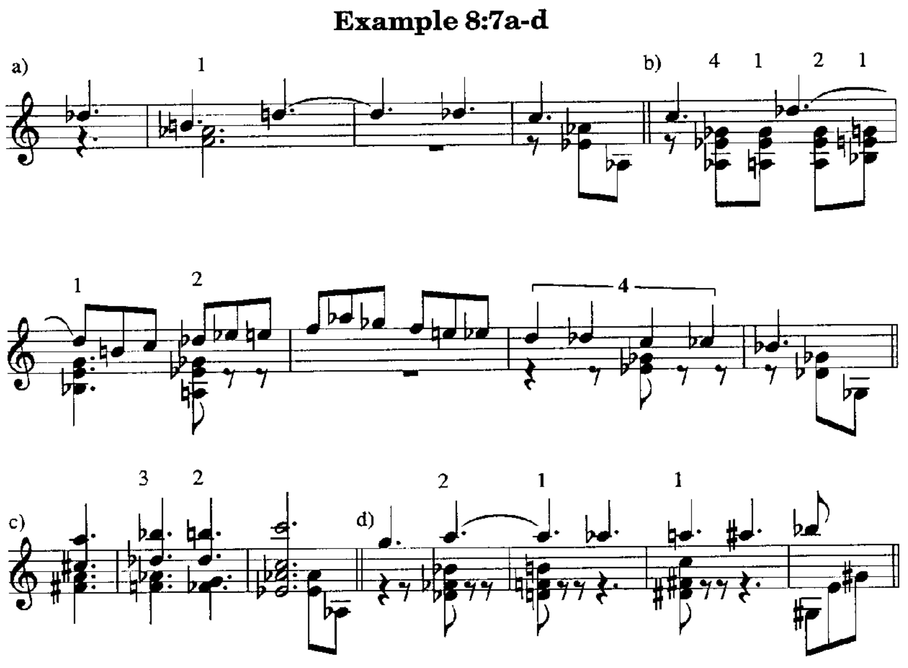


Liszt interrupts the tonally free texture of four-tone sonorities seven times with a three-measure major-mode melody. This short melodic passage is also harmonized by a straightforward harmonic progression $T\not{D}^{v}T$ [$I^{vii^{o7}}I$]. These momentary cells of tonality then resolve directly, or after literal repetition, to the next tonally free passage of four-tone sonorities. Since these tonal diversions appear in the keys of A♭-major, G♭-major, A♭-major, G♭-major, E-major, F-minor, and F♯-minor, it is impossible to define a main tonal center in this piece.

Furthermore, all of these tonal sections are introduced non-traditionally and cannot be anticipated. (There is a *ritardando* and a thinning-out of the musical texture before each tonal section, but this process gives no clue as to the specific key area that will be presented.) There is a certain beauty about these tonal passages, and they come to the listener like an unexpected gift.

Ex. 8:7 shows several ways that these tonal areas are introduced in *Sospiri*.

Example 8:7a-d



If we regard the four-tone sonority in Ex. 8:7a in an enharmonic spelling (E♯-G♯-B-D instead of F-A♭-B-D), a dominant-ninth chord with an omitted root ($\not{D}^{9}_{7\,3}$) is produced. This incomplete ninth-chord is then completed by the following melodic half-step D-D♭ (enharmonically viewed as D-C♯). This enharmonically spelled dominant-ninth produces an implication of F♯-minor.

In Ex. 8:7b, the interval E♭-G♭ appears in two of the lower voices both before and after the measure with the rest. This interval implies the same basic sonority in both spots; that is A-C-E♭-G♭ (Đ^{v}) [vii^{o7}] in the key of B♭-minor. It is obvious, however, that the D♭ in the top voice of measure 2 must be considered a passing suspension-figure [accented passing tone]. Since this sonority resolves to an unexpected G♭-major triad, the pitches E♭ and G♭ can be heard, after the fact, as the third and fifth of the C♭-major triad (subdominant in G♭-major).

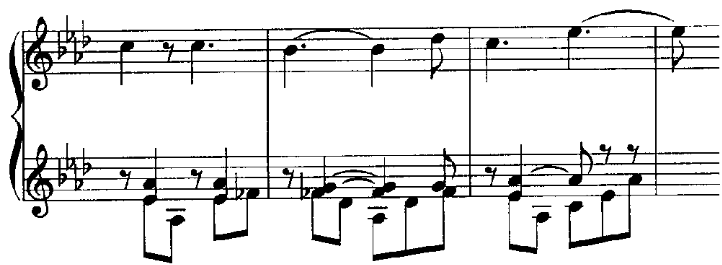
Ex. 8:7c contains a progression that does not connect functionally. The initial F♯-minor triad progresses to an $S^{6}_{5,3}$ (D♭ = subdominant pitch) [ii$^{4}_{3}$ in A♭-major]; then to an s^{6}_{5} (enharm. E = subdominant pitch) [ii$^{ø6}_{5}$ in D-major]; and finally to an A♭-major triad! It does not make sense to interpret the third chord as an abridged dominant-ninth ($\text{Đ}^{9}_{7,5}$) in D-major (enharm.: C♯-E-G-B).

The voice-leading which occurs in the resolution of the Đ^{v} [vii^{o7}] chord (Ex. 8:7, measures 3-4) would have been out of the question in traditional music. The actual voicing of this resolution is impossible to anticipate because of the parallel fifths between the bass and soprano (see Ex. 8:8).

Example 8:8

The three measures of major-key tonality in Ex. 8:9 only seem trivial, when observed outside of the larger context of the piece. For that reason, this excerpt cannot reveal its true importance. If islands of tonality occur within atonal space, the tonality will lose its most important characteristic; that is, its strength of stability. Short tonal passages such as these, are little more than nostalgic reminiscences—the pain of farewell. It is as if these precious harmonic connections (precious now, but simply taken for granted before) are being held in the hands one last time. The materials of tonality are indeed precious, but they have meaning only when they can be understood in the context of the overall form. This pain of reminiscence, noticeable at such a high level in the musical materials of *Sospiri,* needs to be correctly interpreted in performance. The insensitive pianist errs who produces a sentimental *expressivo* in these passages.

Example 8:9



Overall form and harmonic details follow the same basic rules. The tension provided by tonic-dominant key polarity gives meaning to both the local cadences and the large formal concerns in a Classical sonata. The diminished-seventh chord and the augmented triad, harmonic structures which divide the octave into equal intervals, presented Liszt with a model for releasing his music from the bounds of Classical style at the level of large-scale form and local details.

The song and the keyboard arrangement of Liszt's *Sonetto 47 del Petrarca* (1839) are both worth studying in this regard. The four verses, which are set in the keys of D♭-major, G-major, E-major and D♭-major indicate the importance of the minor-third relationship in the overall form. Ex. 8:10 contains an excerpt from the introduction to the first verse. Here in the local detail, major triads on A, C♯, F and again on A (roots related by major third) prepare the entrance of the verse (D♭-major).

Example 8:10

Between the subsequent verses, the same type of atonal fields prevail that we observed in Liszt's *Sospiri.*

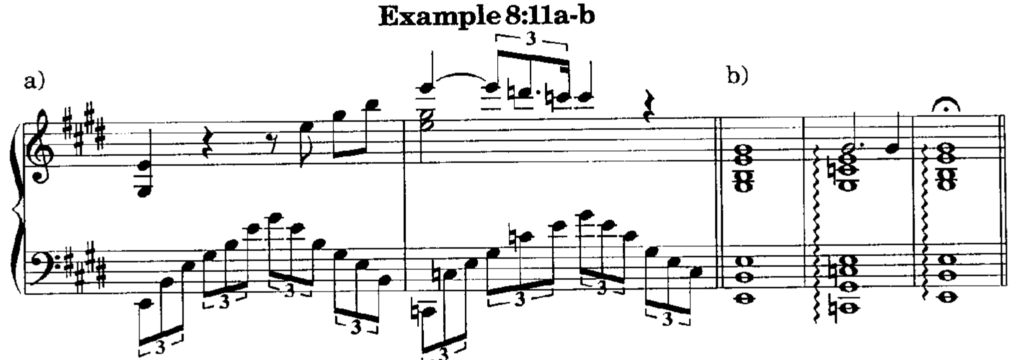
3. The End of Tonal Harmony

As we have discussed, it is possible to find systematic relationships in Wagner's use of four-tone sonorities [though these relationships are often quite distant]. Passages containing Liszt's most interesting harmonic passages, however, actually defy any attempt to produce systematic analysis. Such passages neither contain uniformly treated harmonies nor recognizable new sonority types (which could be extracted from the texture and tested-out in exercises). Rather, every chord resolution must be considered on its own merits as an existential single case. Liszt employs sonority types and invents harmonic connections between them without regard to their traditional [classical] rank or ordering. He then applies melodic materials to these unconventional harmonic backgrounds. Liszt's inspiration is not transferable from one piece to the next. For that reason, systematic study of tonal harmony ends here. From now on, harmony must be interpreted in the context of specific applications within specific works. In this section, I will attempt to describe a few of these single-case harmonic devices as they appear in the works of Liszt.

The augmented triad occurs two times in the final section of *Sonetto 104 del Petrarca* (1839). It appears twice in arpeggiation twelve measures before the end (Ex. 8:11a), and in chordal form in the final measures (Ex. 8:11b). In both cases, the augmented triad is located between two framing measures of tonic. The root and third (E and G♯) of the E-major triad remain common tones in the upper voices, but the bass leaps downward from the tonic pitch (E) to C♮. This bass leap forms the root of the augmented triad (C-E-G♯), before it leaps upward again to the tonic pitch in the following measure. None of the three pitches in the augmented triad are produced by or produce a functional resolution. Even the returning-tone figure in the third-highest voice (B-C♮-B), (which might help make this progression more traditionally convincing) is contradicted by the stable change of root provided by the leap in the bass.

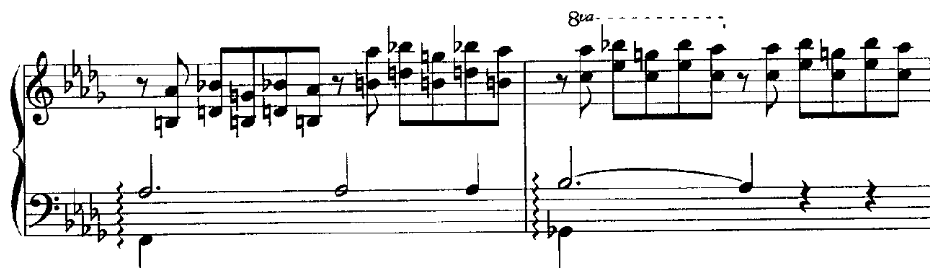
Thus, none of an active sonority's pitches demand resolution—a sensational new method of treating dissonance. Up to this point, we have always been able to trace leading-tone relationships backward from the point of resolution in order to determine which pitches were actually dissonant. In this case, however, we have a non-consonant sonority placed between two tonic triads, where the upper voices carry-through as common tones. Since this type of cadence has no functional equivalent, we must refer to the augmented triad in the middle as a *non-tonic* sonority (T $\overline{\not{T}}$ T).

Example 8:11a-b



In the previously discussed *Sonetto 47,* Liszt finds a completely different solution for a similar harmonic situation. A passage in *Sonetto 47* also contains a contrasting chord placed between two framing sonorities of the same function (see Ex. 8:12). In this case, the chord in the middle can be functionally classified as a D_7^{98} [V^4_3-2]. The chords on both sides of this dominant-function sonority can be considered T_3 [I^6], but, as we will soon see, the harmonic motion into and away from the middle sonority is anything but traditional.

Example 8:12



The pitch A♭ (Ex. 8:12, measure 1) was heard in the previous measure as an enharmonic G♯ (major third above the root of an E-major triad), but, because of the newly entered bass pitch F (measure 1), the G♯ is respelled as A♭ (a minor third above the bass and the fifth of the D♭-major triad). It is this latter interpretation of the pitch that seems to be confirmed, considering the dominant-seventh chord in D♭-major that appears in measure 2. In Ex. 8:12, the top voice of the piano continues to be centered around this A♭, but a second accompanying voice appears that was not present before [bottom notes of the right hand]. It is the addition of this new voice, however, that puts traditional harmonic analysis on an uncertain footing. The initial sonority in Ex. 8:12 can be spelled B♮-D-F-A♭, and this sonority could certainly function as $\not{D}^{v}$ [vii^{o7}] in C-minor (if B♭ is considered an upper-neighboring tone to A♭). It only becomes clear in the second measure, however, that the chord in measure 1 should be interpreted as T_3 [I^6] in D♭-major. (The oscillating eighth-notes B-D in the first measure are heard as a double upward-resolving suspension-figure to C-E♭ in the second measure.)

The longer we listen to this passage, the more remarkable it becomes. On one hand, the disguised T_3 [I^6] in the first measure turns into the goal of resolution in measure 3, after a measure of clear dominant preparation (measures 3-4 are direct repetitions of measures 1-2). On the other hand, we do not actually experience a true tonal cadence, because only the top minor third of the implied tonic triad is actually present in measure 3; that is, there is no clear sounding root in this tonic chord. Instead of providing the convincing resolution normally supplied by dominant harmony, the implied tonic triad in measure 3 only hints at establishing harmonic closure.

Measure 5 of this excerpt is found in Ex. 8:13. Although the first half of measure 5 seems to be another repetition of the first half of measure 1 (see Ex. 8:12), the dominant-seventh chord (in A-major) occurring in the second half of measure 5 strongly suggests that the first three quarter-notes of the measure be enharmonically reinterpreted as G#-B-D-F ($\not{D}^{v}$ [vii^{o7}]. It is also surprising how this entire measure functionally sounds like $D^{7}_{2>}\overline{\overset{6}{1}5}$ in A-major [that is, a dominant-seventh chord with a half-step suspension resolution in the bass (F-E) and a 6-5 suspension (C#-B) in the next to highest voice]. If we consider the latter to actually be the best analysis, the upper neighboring-tone (A♭) in the top voice of measure 5 will be heard as non-harmonic. (G#-A♮-G# would have been most correct, considering the implied change to A-major, but Liszt presents this neighboring-tone figure as A♭-B♭-A♭, an enharmonic spelling of G#-A#-G#.)

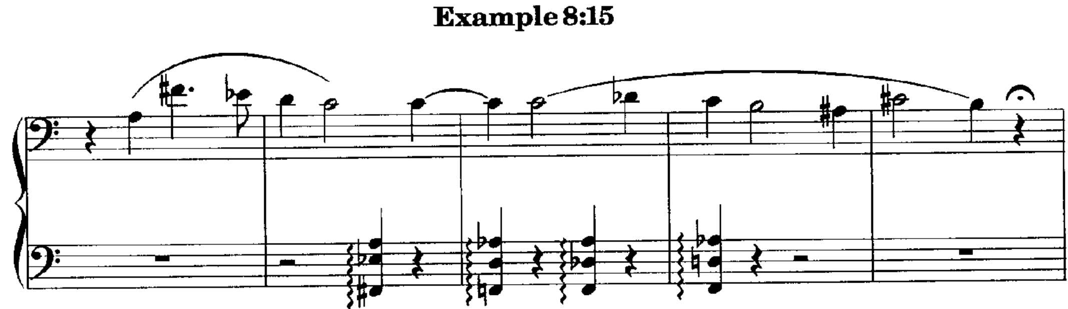
Example 8:13

If we analyze the short eight-measure double period that forms the introduction to *Sonetto 104* in the key of E-major, the antecedent phrase ends on an F#-minor triad (Sr) [ii] and the consequent phrase begins on a D-major triad (see Ex. 8:14, measures 1-2). Since the first two measures of the consequent phrase are parallel in construction with the first two measures of the antecedent, the consequent phrase begins with a weakened tonic that has been colored by the preceding events. At the same time, however, the new appearance of D-major can also be considered as the counter-relative (tG) [VI] of F#-minor. We could even go so far as to consider D-major the counter-relative of the subdominant (SrG) [VI] in F#-minor. Near the end of the consequent phrase (Ex. 8:14, measure 4), a rather unbelievable closed cadence on G-major takes place (G-major is still heard as the subdominant chord in D-major), before the E-major tonic triad is established (final measure) by means of a B^7 chord (penultimate chord).

Example 8:14

La lugubre gondola [The Lugubrious Gondola], one of the last piano pieces by Liszt, begins with an atonal recitative. Ex. 8:15 shows how the pitch C vacillates between a number of harmonic interpretations. The sonority F♯-A-C̲-E♭ (measure 2) is then followed by F-A♭-C̲-D (measure 3, downbeat). On the third quarter of measure 3, the harmony changes and C is heard as an upward-resolving suspension to D♭ on the fourth quarter of the measure. On the downbeat of measure 4, the C is now heard as a downward-resolving suspension to B in the sonority B-D-F-A♭. A second look at the downbeat of measure 4 also shows that C could also be considered a chord member in the sonority F-A♭-C̲-D. In this case, the melody's half-note B would be a passing tone. Whether the pitch B is considered the leading-tone in the $\not{D}^{v}_{5}$ [vii$^{\circ 4}_{3}$] chord or simply a passing tone, it appears to take over the function of tonic, as it is confirmed at the end of a single-voice line (with a melodic cadence formula that has been in use for centuries).

Example 8:15



As is shown in Ex. 8:16, a passage in the middle section of this same remarkable composition contains suspension-figures created from the major thirds in both tonic (F♯) and subdominant (B) chords. These major thirds then act as downward-resolving suspensions and move to [less traditionally stable] minor thirds. It is an interesting reversal of traditional harmonic figure and ground, when dissonant chords seem to occupy the musical space and consonant sonorities seek to resolve into them. Even the attentive listener must alter the way he or she actually hears in order to comprehend such passages!

Example 8:16

4. Two Pathways to Atonality

Liszt composed *Bagatelle sans tonalité* [Bagatelle without a Key] in 1885. Though Liszt is now known as an undisputed pioneer of atonal space, the fact that this Bagatelle was only first published in 1956 indicates the small impact his far-reaching musical achievements had on the general development of musical style in succeeding generations. The sonorities in this composition can be explained, for the most part, by considering them as layered sets of thirds. In *Bagatelle,* Liszt also employed a specific sonority to act as a central harmonic ground for the entire piece. This same technique would later become an important characteristic in the music of Debussy. Such ground sonorities actually help establish musical coherence in the same way that the tonic established a central harmonic focus in more traditional works. Liszt employs an augmented triad with an added major second (C♯-F-A + B) as the ground sonority in *Bagatelle*.

Ex. 8:17 shows three passages from *Bagatelle sans tonalité* that contain this ground sonority. Note that the sonority C#-F-A+B is found in transposition at the end of both the second passage (D-F#-B♭+C) and the third passage (E-G#-C+D).

Example 8:17

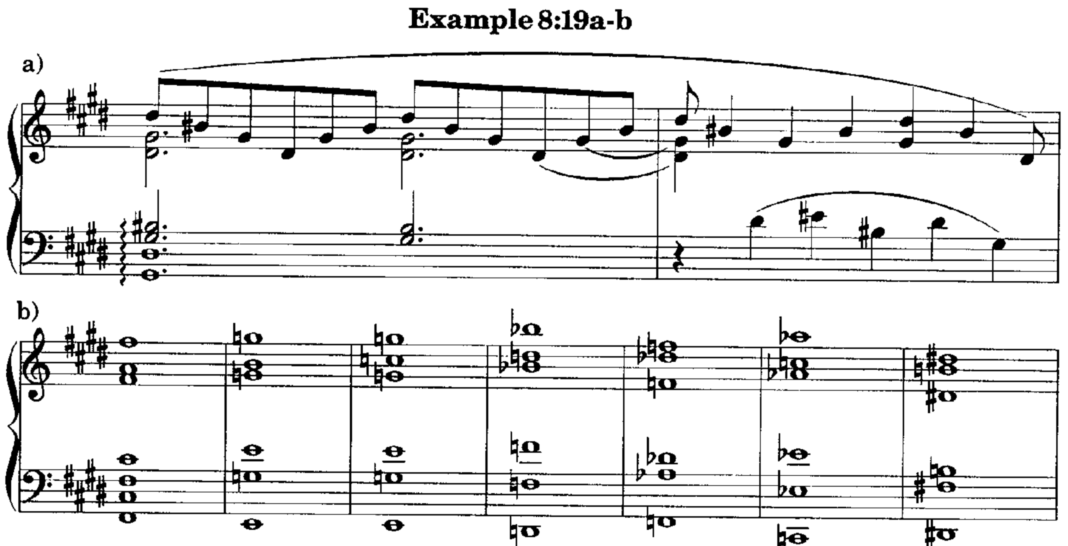
In Liszt's late works, melodic materials often correspond to the harmony in an non-traditional manner. The already cited *La lugubre gondola* ends with a single-voice recitative (see Ex. 8:18), which, for a few measures, implies the key of G#-minor (particularly since harmony in the key of G#-minor actually precedes the recitative). Five measures before the end, however, the pitch G♮ no longer functions as an enharmonically spelled leading-tone (F𝄪) in the key of G#, since G is immediately followed by A (a whole-step higher). This brings the piece to an end with a sense of suspended atonality. (It is actually not a very large step from this passage to the viola recitatives in Mahler's Tenth Symphony!)

Example 8:18

There is a second pathway that leads to future harmonic developments, however, and the harmonic processes of this approach are drawn from the musical materials of the distant past. With this second pathway, the tradition of functionally related sonorities is avoided by the adoption of chord progressions that were employed ca. 1600 (see Chapter One). To the listener, however, this second method of side-stepping tonality is not so conspicuous, since all basic sonorities are constructed from traditional triads. Liszt was certainly familiar with the motets of the late-sixteenth and early seventeenth centuries, and it is quite likely that his 1839 piano piece *Sposalizio* [Wedding] was consciously influenced by sacred music from this earlier time.

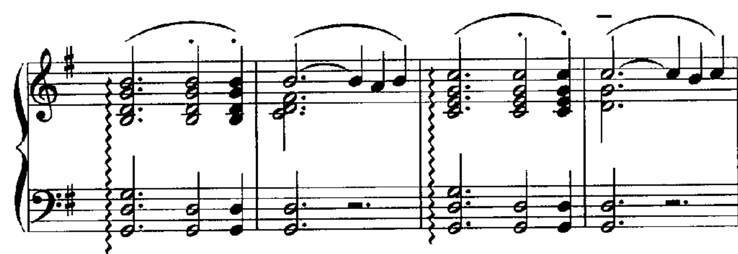
Ex. 8:19a contains a two-measure excerpt from *Sposalizio* and Ex. 8:19b is a continuation of the harmonic progression which is melodically figured in a similar manner to that shown in Ex. 8:19a.

Example 8:19a-b



The chord progressions used in the middle section of the piece (see Ex. 8:20) are related to those harmonies employed in music around 1600. Note that Liszt overcomes and functionally neutralizes the standard classical cadence formula (T S D^7 T) by simply exchanging the dominant and subdominant chords within the formula (i.e., T D^7 S T).

Example 8:20



Exercises: Examine the harmonic progression at the beginning of Liszt's piano piece *Chapelle de Guilleaume Tell*, and compare it to harmonic practices ca. 1600. Study the use of church modes in Brahms, especially the use of the Aeolian mode (which has no leading-tone) in the third movement of the *German Requiem;* also consider the use of the Mixolydian mode (major mode with a lowered-seventh scale degree) at the beginning of the slow movement in Brahms' Fourth Symphony. Remember, however, that the use of modal materials was intended to enrich standard harmonic progressions as much as to replace them in the late-nineteenth century.

CHAPTER NINE
Harmony between 1900-1918 (Debussy)

1. Sléndro and Whole-tone Scales

The far-Eastern countries of Java and Bali have one of the most highly developed and carefully maintained musical cultures. The music of these cultures recognizes two separate pitch systems for partitioning the octave. These systems are called *Pélog* and *Sléndro.*

Metallophone instruments are placed in the center of the *gamelan* (the orchestra of Java and Bali). These metallophones have various sizes of sounding plates and attached resonating chambers. In fact, every metallophone is designed to resonate for a specific length of time, depending upon the musical function of the instrument. Certain instruments specialize in soft melodic-ground figuration (a kind of *cantus-firmus* technique), whereas others specialize in countermelody, rapid figural passages, etc. Because of the two different partitions of the octave required by gamelan music, each performing ensemble contains a set of Pélog-tuned instruments and a set of Sléndro-tuned instruments.

As is shown in Ex. 9:1, Pélog is a seven-tone structure, but two of the pitches (small notes) are rarely used. For that reason, the musical intervals associated with Pélog are somewhat variable (half-step, whole-step and major-third). To our Western ears, East-Indian pieces based on Pélog have a certain similarity of sound to pieces based in the Phrygian mode.

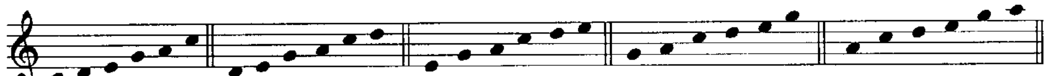
Example 9:1

On the other hand, Sléndro divides the octave into five similar, but not exactly equal, parts. In Sléndro, two of the intervals are somewhat larger than the other three. Every gamelan places the larger intervals differently within the musical texture, but these larger intervals are never found directly one after the other. Since our ears interpret the smaller Sléndro intervals as major seconds and the larger intervals as minor thirds, Westerners often equate the pentatonic scale to the sounds produced by Sléndro-tuned instruments. Because the larger intervals are placed differently by each individual gamelan, Sléndro compositions played by different ensembles are often perceived, by Western ears, to have their scale bases in different forms of the pentatonic scale. However, the difference between the sizes of the intervals is much smaller on actual Sléndro instruments than is implied by the way we notate them (see Ex. 9:2).

Example 9:2

The basic differences between these pentatonic-scale forms are easier to see in Ex. 9:3.

Example 9:3



It is important that we learn to hear Sléndro (pentatonic) without a pitch center, since different Javanese gamelans build their Sléndro sonorities differently (that is, it will seem to our Western ears, that different gamelans will employ different forms of the pentatonic scale). For this reason, one pitch of the pentatonic can serve as a pitch center as well as any other.

Claude Debussy heard Javanese gamelan music at the Paris World Exhibition of1889, and the strong impression this music made on him can be traced in a number of his subsequent compositions. Typical gamelan-like structures and pitch materials occur in Debussy's piano piece *Pagodes* (1903) and his orchestra work, *La Mer* (1905).

In addition to the pentatonic scale, the whole-tone scale provides us with another point of contact between Javanese music and Western music. Though the pentatonic scale is closer to Sléndro than the whole-tone scale (because the pentatonic divides the octave with five pitches), the whole-tone scale, with its six-pitch division of the octave, corresponds better to the small actual difference in the size of Sléndro intervals. Sléndro and the whole-tone scale are also similar, in that the whole-tone scale has no single tone that acts as a tonal center.

A differentiation between consonant and dissonant musical elements is not practiced in gamelan music. For that reason, Javanese music and Debussy's whole-tone and pentatonic compositions have the following points in common:

a) Every pitch of the scale can sound together with any other; there are no dissonances to resolve.

b) There is no pitch center.

c) Different simultaneous musical processes can be considered equal in importance; there is no implied hierarchy of melody and accompaniment.

Western notation does not clearly present the equal-sized intervals of the whole-tone scale. As we can see in Ex. 9:4a, Debussy takes pains to hide the unavoidable diminished-third leap as much as possible (the diminished-third leap into F♯ on the second sixteenth-note of measure 4 is not very obvious after the long tied-over A♭). In measure 3, Debussy avoids the diminished third by notating the first pitch in the right hand as G♯, while notating the second pitch in the left hand as A♭. The A♭ (left hand) is a lower-neighboring tone to B♭, while the G♯ (right hand) begins a downward scale passage. In Ex. 9:4b, there is no necessity to resolve the apparent dissonances that occur between the hands, since both streams of sonorities are of equal weight and importance.

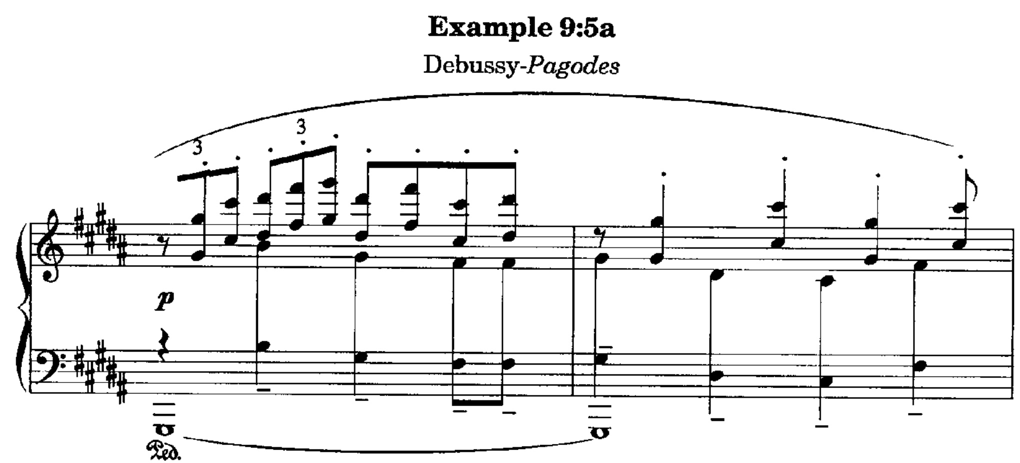
Example 9:4a-b

Debussy-*Voiles* from *Préludes,* Book I

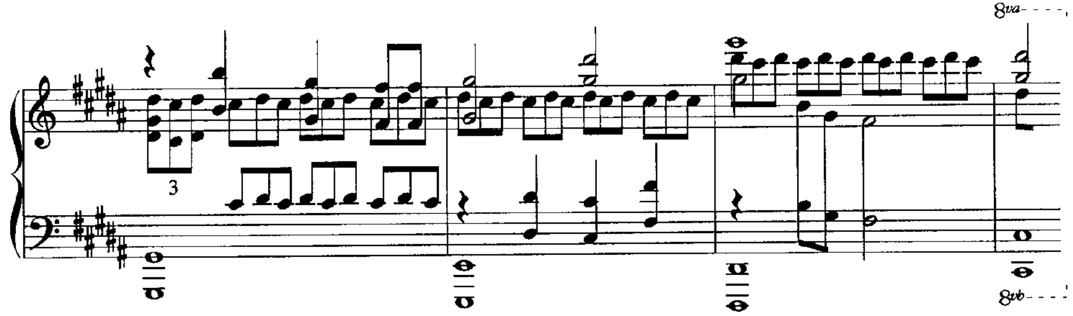
Ex. 9:5a-b are examples of the pure-pentatonic texture that enter in a number of places throughout the work. Ex. 9:5a shows the beginning of the work. In the second excerpt (Ex. 9:5b), only the pitch E (measure 2, bass) does not belong to the pentatonic scale. Ex. 9:5b contains an ideal demonstration of gamelan technique. The fundamental melodic ground is found in the bass, and two separate melodic groups and a rapidly figured passage (triplets) occur in the upper voices.

Example 9:5a

Debussy-*Pagodes*



Example 9:5b



In terms of traditional rules, Debussy's voice leading is inexcusable. In Ex. 9:4a, measure 3, we can see rhythmically-displaced parallel octaves between the two hands on the pitches B♭-A♭. In Ex. 9:5a (measure 2, last two beats), there are rhythmically-displaced parallel perfect fifths (C♯-G♯/F♯-C♯) between the two hands. The traditional rules of voice-leading that deal with the handling of consonance and dissonance are simply not valid in this music. Since the minor seventh and the octave are considered equally stable intervals, the minor seventh does not create an impetus for suspension resolution (see Ex. 9:6).

Example 9:6

The term *counterpoint* does not apply to textures where voices are totally independent of each other, but rather, where voices constantly depend upon and react to one another. For that reason, it is not possible to explain or label Debussy's Javanese-like multi-voice pieces by the principles of counterpoint.

2. Harmonic Texture in the Music of Debussy

Debussy's musical style is like an endless fabric, woven from many threads of the same durability. In this section we will attempt to describe harmonic texture in his works by considering several specific passages from *La Mer*. We will see that there are no princely melodies worthy of a Mozart in this work, but neither are there materials as musically trivial as a Mozart viola part.

Ex. 9:7 shows a melodic-harmonic texture from *La Mer*, which is created from five pitches of the scale: A-B-C#-F#-G#.

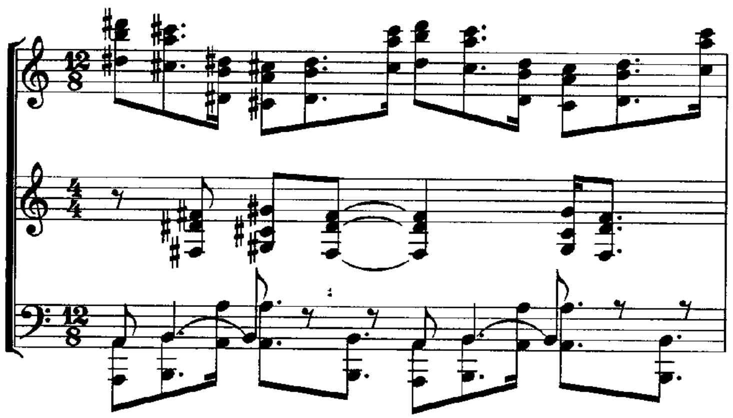
Example 9:7

Debussy-*La Mer* (2 measures after rehearsal No. 2)

Ex. 9:8 shows a melodic-harmonic texture from *La Mer*, which is created from six pitches of the scale: A-B-C#-D#-F#-G#.

Example 9:8

Debussy-*La Mer* (3 measures before rehearsal No. 12)



The alternating sonority planes, based on the pitches A and B, are of equal weight in both Ex. 9:7 and 9:8 (A and B also sound simultaneously in both excerpts). It is quite typical for Debussy to restrict the bass line to the interval of a major second.

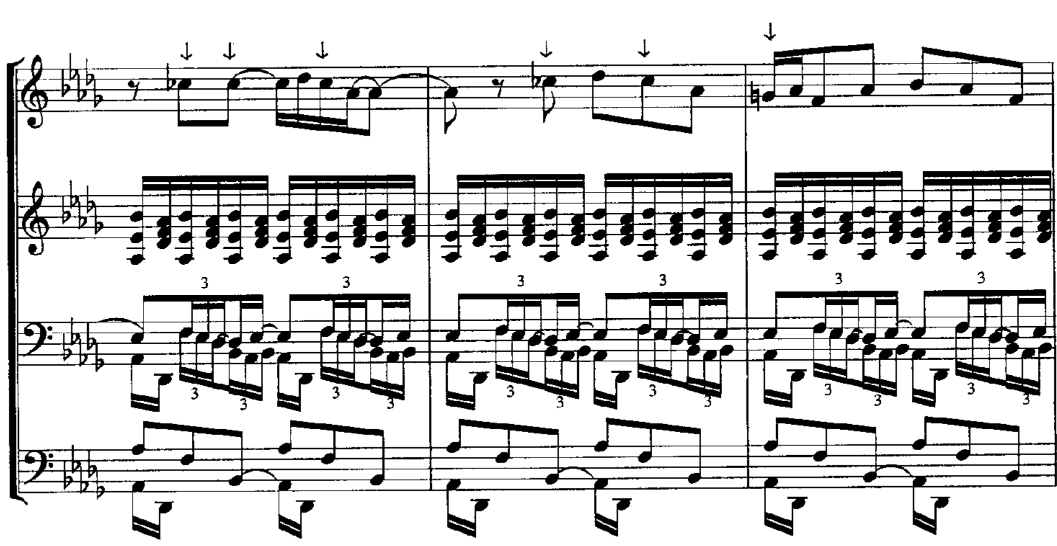
In traditional melodies, the interval of a pitch above the bass provides each melody note with a specific and characteristic color. In Schubert, for instance, the pitch C might first appear as an octave above a root-position C-major triad, and then reappear later as the sensitive third (or tenth) above A♭-major. With Debussy, however, it does not seem to really matter what specific interval the highest voice maintains above the bass. Debussy transfers into his music (from Sléndro) a sense of harmonic rootlessness. It is possible to regard many of his sonorities only as heavy or light.

The cycle of events which unfolds in Debussy's works often shows a similar indifference to tradition. Classical-period melodies, carried along by their underlying harmonic rhythms, have definite beginnings and endings. However, when melodic events are brought to the foreground in Debussy's music, the situation is completely different. In such cases, most, if not all of the tones seem to share in a tension-free pitch environment. Here individual pitches have neither specific intention nor direction toward a goal. Many melody-like structures in Debussy do not really come to conclusive endings. Instead, they simply recede again into the background by way of a decrescendo.

Ex. 9:9 contains another excerpt from *La Mer* . The pitches of the foreground voice that do not belong to the underlying harmonic texture are marked with arrows. Note that the entrance of this voice is announced by the pitch C♭ (not a part of the underlying texture). Outside of the marked notes, the melody line is constructed only of pitches from the underlying pentatonic sonority (D♭-E♭-F-A♭-B♭).

Example 9:9

Debussy-La Mer (at rehearsal No. 3)



Example 9:9 (cont.)

3. Mixture-like Sonorities in the Music of Debussy

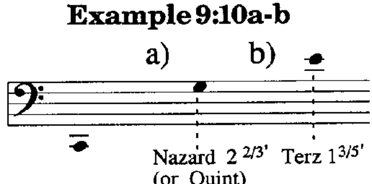
On the organ, the pipes that sound in the same octave as their notated pitches are said to belong to the eight-foot (8') register. In addition to this so-called "concert-pitch" register, most organs also have pipes that also sound an octave lower than their notated pitches (16' register); or one or two octaves higher than their notated pitches (4', respectively 2'). It is possible for an organist to couple together pipes from one or more of these sounding registers to produce multiple-octave pitch complexes (while depressing only one manual or pedal key). Technically speaking, this simple octave-coupling operation could be considered a mixture, however, many organs have special mixture stops which automatically couple a number of specific higher-pitched ranks of pipes to a basic sound that the organist chooses (in the middle ages, up to 22 ranks of pipes could be sounded simultaneously). The sounding ranks of pipes in a mixture are not all simple octave multiples, however. Mixture stops often include coupled ranks of pipes that sound a fifth higher, an octave higher, an octave and a fifth higher, a double octave higher. . .etc. Though used less often, some organ mixtures also include ranks that sound a third higher, a tenth higher. . .etc. A mixture consisting of four simultaneous sounding ranks is called a four-rank mixture (Mixture IV).

Mutation stops are also common on organs. With a mutation stop, a shorter single-rank of pipes will be automatically coupled to an eight-foot rank so that a particular overtone of the lower rank will be reinforced. These stops are often labeled with a numeric integer followed by a fraction. This number indicates the length of the shorter rank (in registral feet). The following are common examples:

The Nazard (or Pedal Quint)-$2^{2/3'}$ creates a harmonic interval of a perfect twelfth; that is the shorter pipe will sound a unison with the third partial [natural harmonic series] of the longer pipe (see Ex. 9:10a). Since the shorter of the two pipes will only be a third the length of the longer pipe, we can calculate the shorter pipe's length (in registral feet) by the following method: 1/3 x 8'= 8/3' or $2^{2/3'}$ [when the fraction is reduced].

The Tierce $1^{3/5'}$ creates a harmonic interval of two octaves and a third; that is, the shorter pipe will sound a unison with the fifth partial of the longer pipe (see Ex.9:10b). In this case the shorter pipe will be only a fifth the length of the longer pipe; therefore: 1/5 x 8'= 8/5' or $1^{3/5'}$.

Example 9:10a-b



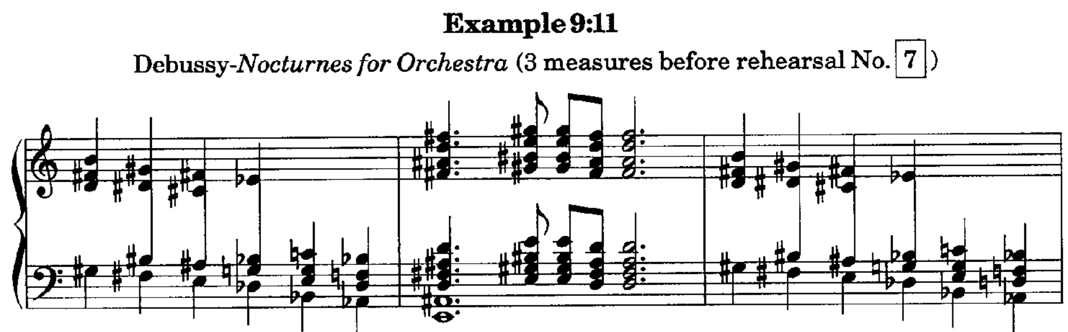
Mixtures and mutations are not generally used by themselves, nor are their specific intervals always directly perceived. Instead these stops are usually employed to add special harmonic brilliance to other stops.

As we proceed now with a discussion of Debussy's harmonic techniques, we will see that the way he conceives of harmony in his works is similar to the way an organist constructs a full and brilliant sonority above a single pitch.

Real Mixture: A real mixture will be defined as an exact [interval for interval] duplication of harmonic voices above the pitches of the lowest voice [parallel specific intervals above the lowest-sounding voice]. Such mixtures are exceptionally rare in the music of Debussy. In Ex. 9:11, the initial B-minor triad with an added sixth in the bass [G#] is followed by a real mixture formation, which is created by a scalar descent of five major-minor seventh chords [third inversion]. In measure 2, another real mixture of augmented triads occurs above a double pedal point (tritone).

Example 9:11

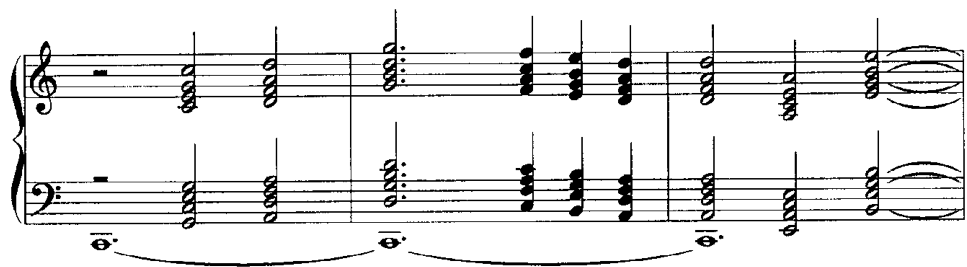
Debussy-*Nocturnes for Orchestra* (3 measures before rehearsal No. 7)



In Ex. 9:14, parallel second-inversion triads move in tonal-mixture above a long held-out pedal tone.

Example 9:14

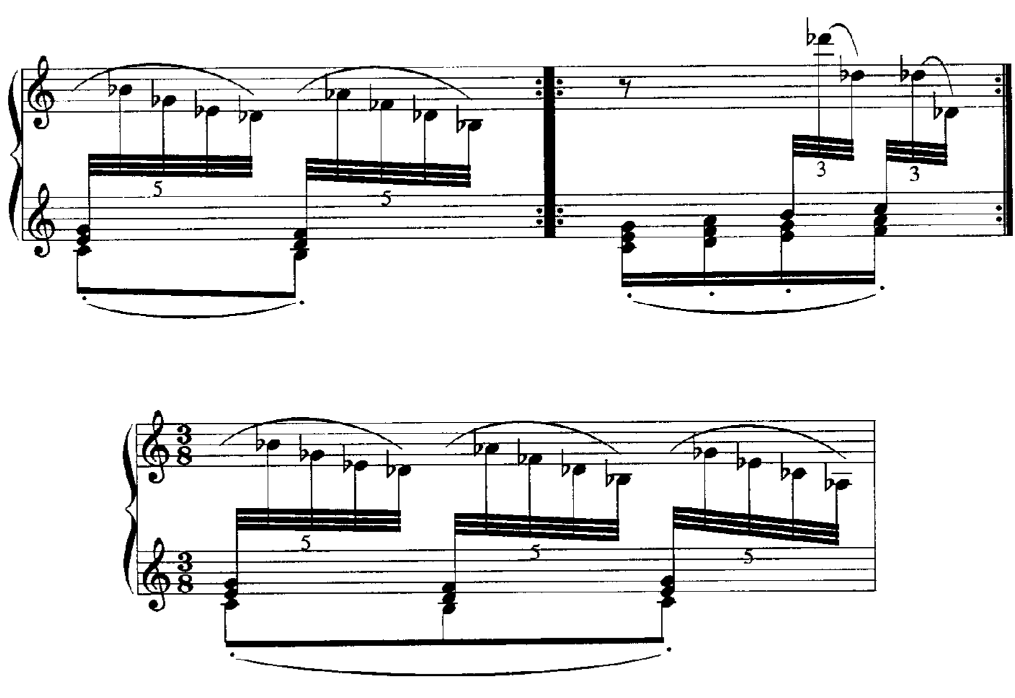
Debussy-*La Cathédrale engloutie* from *Preludes,* Book I



Ex. 9:15, contains a tonal mixture that includes the diminished triad. Note how the free pitches in the right hand complement the texture by providing a kind of compositional stereo effect.

Example 9:15

Debussy-*Brouillards* from *Préludes,* Book II

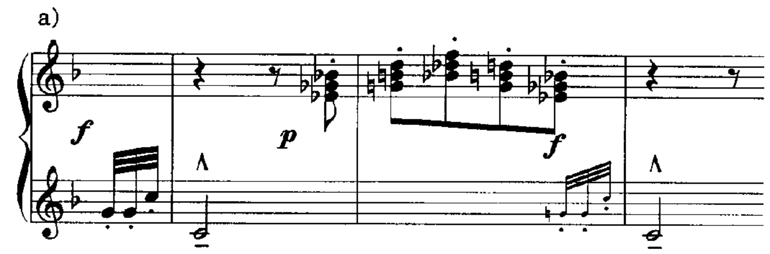


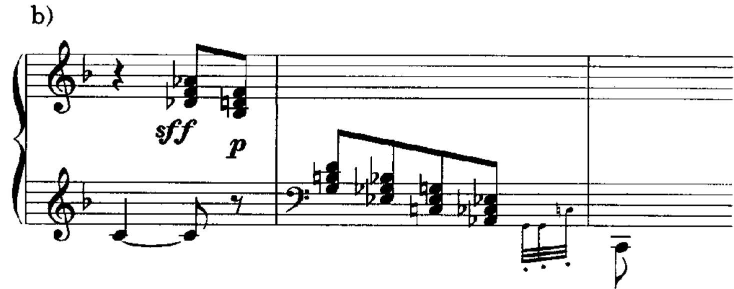
Atonal Mixture: The piano piece *General Lavine* contains a juxtaposition of major and minor triads in such a way that there are few common tones between the chords. The progression between chords is guided by at least one triad member that moves by step to the next sonority (although the step progression may not appear in the same voice in both chords). The roots of all these triads are a third apart, however, and each chord in the progression is only distantly related to the previous chord.

Ex. 9:16a-b contain two excerpts from the beginning of *General Lavine.*

Example 9:16 a-b

Debussy-*General Lavine* from *Préludes,* Book II



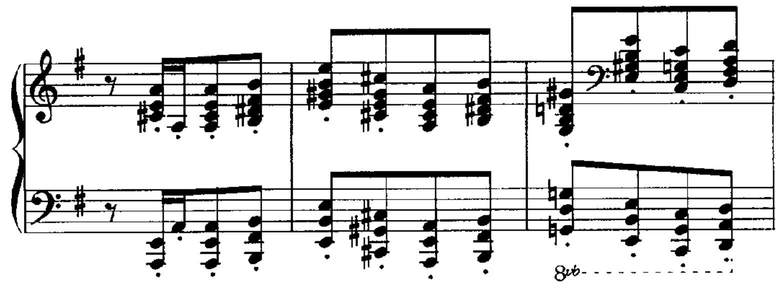


Modulating Mixture: Debussy's mixture techniques must not be considered robotic means of maintaining particular sonorities or tonal areas. The majority of his mixture passages pass by without calling too much attention to themselves, and their overall expression tends to dissipate any mechanical effect that might seem to be present in the details.

Though all of the pitches in the first two measures of Ex. 9:17 belong to the key of E-major, this passage sounds more like a coloration of A-major [A-lydian]. Further, the last measure employs a G#, though the passage sounds generally close to G-major. We will call this kind of reference to other keys or tonal centers within a mixture passage modulating mixture.

Example 9:17

Debussy-*Minstrels* from *Préludes,* Book I



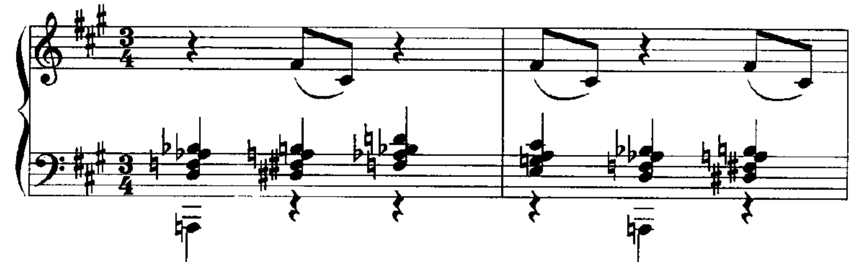
Framing Mixture: The opening measures of *Les sons et les parfums . . .* is worth our attention (see Ex.9:18). Here, only the outer voices proceed in parallel motion. (There are also longer passages that employ this technique in the first movement of Debussy's *Children's Corner Suite* or in Puccini's *Madame Butterfly.*)

Inside these outer-voice parallel-octave mixtures (measures 1-2), Debussy even hints at functional harmony. The first two chords actually imply a progression in the key of D-minor; the first sonority is a clear dominant six-four chord (D_5) $[V^{6}_{4}]$ and the second is an $s^{6}_{\substack{4\\3}}$ $[ii^{ø4}_{3}]$. In the last two measures, Debussy employs mixture sonorities consisting of major-minor seventh chords, but these sonorities are not functionally related to one another. Note the single change of harmonic mixture in the third chord of measure 3. Perhaps Debussy freely changed the inversion of this sonority (from first-inversion to second) in order to keep from overusing the pitches F♯ and A. (If the established mixture of this passage had been retained here, and if the bass voice had remained within the key signature, this sonority would have been spelled F♯-A-C-D.)

Example 9:18

Debussy-*Les sons et les parfums . . .* from *Préludes,* Book I

Example 9.18 cont.



Sléndro Mixture: Though it may not be totally appropriate to describe the excerpt in Ex. 9:19 in terms of mixtures, there is a great deal of parallel motion here. All the sonorities except the third and fourth chords in the second measure and the last three chords are constructed from the pitches of the four-tone scale E♭-G♭-B♭-D♭. This four-tone scale appears to be a pentatonic scale with one pitch missing (A♭). With the exception of those chords cited, the voices here proceed in parallel motion within four-tone space.

Example 9:19

Debussy-*La fille aux cheveux* from *Préludes,* Book I

Polyphonic Mixture: Frequently, in the music of Debussy, we encounter two types of mixtures set polyphonically against each other. A good example of this technique can be observed in the middle section of Debussy's *La terrasse. . .* (*Préludes,* Book II).

4. Harmony and Compositional Structure as a Unity of Invention

In the works of Debussy, harmony, compositional structure and form are related to each other in completely non-traditional ways. Generally, Debussy's chords do not harmonize single melody pitches (though some examples of this traditional practice are occasionally encountered). Instead, complete melodies are often accompanied by only one underlying harmonic sonority. Debussy's understanding of the relationship between harmony and melody is just the opposite of traditional practice [where melody is directly related to an underlying harmonic progression]. In Debussy's music, harmonic sonorities emerge from the process of melodic elaboration. Though the pitches of the harmony are most often the same as those found in the melody, occasionally a harmonic sonority will introduce a contrasting foreign pitch into the texture. For this reason, it is possible to provide Debussy's music with a new definition of dissonance [non-melodic tones].

Every sonority, or perhaps better stated, every pitch complex in Debussy's works presents its own phrase structure and orchestrational color. In fact, it is often quite impossible to tell whether the phrase structure produces the color or vice versa. [Traditionally, form and structure were considered to be the generators of all other musical parameters.] When Debussy changes an instrumental color or a rhythmic texture, the harmonic structure frequently changes at the same time. As compared with earlier music, the harmonic changes that take place in Debussy are far less frequent, but when they do occur, they are more easily remembered, since harmonic changes are directly connected to important articulations in phrasing and orchestral color. Specific sonorities often cannot be separated from their musical contexts. Harmony, phrase structure and orchestration were conceived together (not invented one after the other). As a result a highly unified musical texture is produced.

At this point, those readers who wish to further test my harmonic theories on Debussy may look with me at an eighteen-page excerpt from the score of *La Mer*. As a score-study aid, Ex. 9:20 includes specific sonorities extracted from the score (each change is numbered), page numbers and dynamic markings.

The tie-like arches show passages where common tones between sonorities are maintained by the same instrument. Take special note of the following situations:

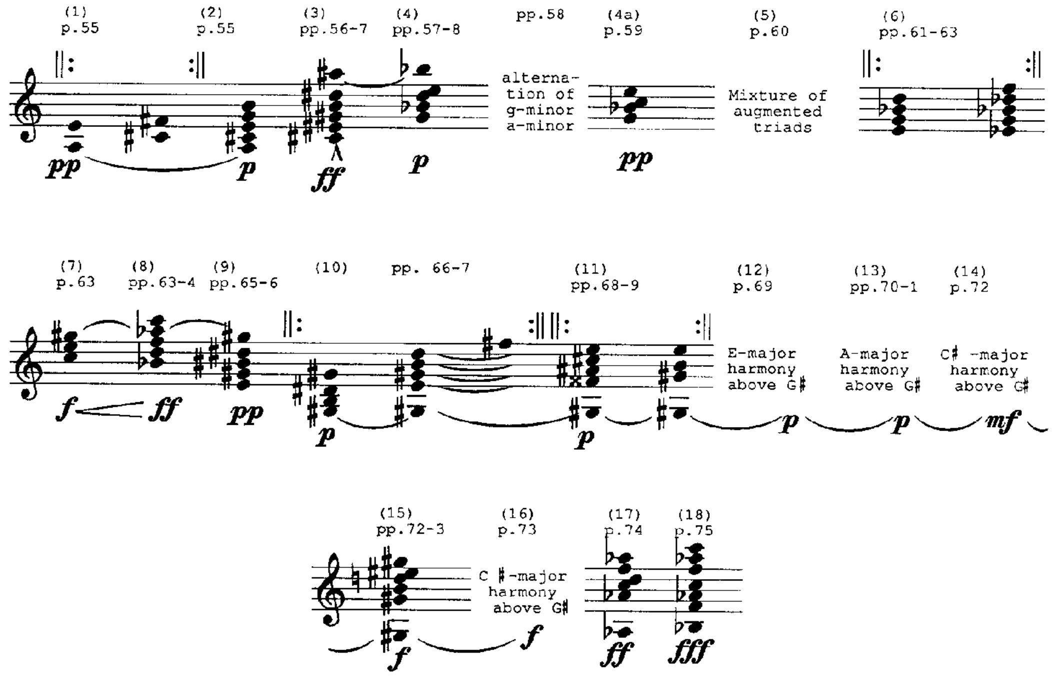
a) The harp reinforces the common-tone connection between sonorities (3) and (4) (pp. 56-7) through its constant quadruple-meter rhythm.

b) The transitional section (pp. 64-5) is concluded with a double bar and a tempo change. Just before the section change, however, the first violins provide a common-tone connection by means of a trill figure. This figure begins on the pitch G♯ in (7), is then heard in (8) as an enharmonic A♭ (minor seventh above B♭), and finally again in (9) as G♯ (the third above E).

c) Above all, notice the common-tone connection that is maintained between all of the sonority groups by the bass-line G♯ (pp. 66-74).

Fixed chordal sonorities like (3), (4), (7), and (8) alternate with: a) arpeggiated chords (17)

Example 9:20



The musical passage for this harmonic reduction, which is found in the movement entitled: *Jeux de vagues*, begins 4 measures before 28 and ends 4 measures after 38. See Claude Debussy, *Three Great Orchestral Works* (New York: Dover, 1983) pp. 172-217.

and (18); b) large textural planes (6), (9), (10), (11); c) pendular motion between sonorities (1); d) real-mixture sonorities (5); and e) tonal-mixture sonorities (12), (13), (14), and (16). All sonorities in this excerpt are constructed from stacks of thirds. Especially common are seventh-chord forms (in various inversions) and ninth chords. There are also a number of augmented triads, some with added sevenths.

CHAPTER TEN
Selected Topics in Harmony (after 1912)

1. Atonal Harmony (Scriabin, Schönberg)

Between ten and thirty years after Debussy, most composers had turned away from the practice of employing major-minor tonalities and sonorities built in thirds. Arnold Schönberg (1874-1951),[1] and Josef Hauer (1853-1959)[2] independently developed different twelve-tone methods; Paul Hindemith (1895-1963) set forth new principles of harmony in his *Craft of Musical Composition*;[3] and Oliver Messiaen (1908-) established a new system of modal classification.[4] Although not yet termed *atonal*, this music, which was no longer obligated to the processes of traditional harmony, was suspected of being composed in an arbitrary and illogical fashion. As we look back at this music, composers writing ca. 1915 show a surprising unity of sonority choice and progression. As we shall see, harmonic analysis of works by composers as distant as Alexander Scriabin (1872-1915) and Schönberg yield nearly identical results.

Although reading a composer's theories, treatises or work logs may prove interesting, we shall focus our attention on actual music rather than theoretical writings. It is well known, that musical scores do not always perfectly agree with a composer's declared intentions. (Sometimes a composer may consciously use materials and techniques that deviate from an ideal concept, and other times these alterations may be the result of unconscious musical intuition.) Since this book is not intended as a history of music theory, we will limit our discussion to those twentieth-century materials and techniques that can be uncovered by score analysis.

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[1] Although Schönberg did not formally publish articles on his twelve-tone method during and directly after its development, the relatively long incubation of Schönberg's method is discussed in: Ethan Haimo, *Schönberg's Serial Odyssey: The Evolution of his Twelve-tone Method 1914-1928* (Oxford: Clarendon Press, 1990). See also: Arnold Schoenberg, "Composition with twelve tones" in his *Style and Idea* (New York: Philosophical Library, c.1950), pp. 102-143; "Delivered as a lecture at U.C.L.A., March 26, 1941."

[2] Josef Matthias Hauer, *Vom Melos zur Pauke* (Vienna: Universal-Edition, 1925); *Zwölftontechnik* (Vienna: Universal-Edition, 1926).

[3] Paul Hindemith, *Unterweisung im Tonsatz*, 2 vols. (1937;1939); transl. as: *The Craft of Musical Composition* (New York: Schott Music Co., 1941; rev. 1945).

[4] Oliver Messiaen, *Technique de mon langue musicale* (Paris: 1944); transl. by John Satterfield as *The Technique of My Musical Language* (Paris: A. Leduc, 1956).

Ex. 10:1a-b contains excerpts from one of Scriabin's last compositions.

Example 10:1a-b

Scriabin-*Prélude,* op. 74, No. 1

Most of the pitches in Ex. 10:1a-b are either treated as leading-tones or they are turned into leading-tones by the action of intermediate pitches (the most convincing kind of melodic motivation).

All the sonorities in Scriabin's *Prélude* contain five to eight voices. In addition, there are never fewer than five and never greater than six different pitch classes per sonority (octaves are considered members of the same pitch class). For that reason, the set of sonority types in *Prélude* is highly unified. (It would be interesting to write a history of sonority types and their

employment in different musical eras. From 1600 to the early Classical period, chords are mainly constructed from three pitch classes [triads] with a tendency to add an extra fourth pitch-class [seventh chords] as we approach the time of Wagner and his four-tone sonorities. Five and six pitch classes per sonority seem to be the norm ca. 1915. . etc.)

Every sonority in Ex. 10:1a-b contains either one or two tritones. The augmented triad is also regularly employed. (Although there is no tritone in the augmented triad, it is perceived to have a similar harmonic function to the tritone.) The bass pitch in almost every sonority takes part in the interval of a tritone. The bass tritone is actually an alteration [mistuning] of the traditional harmony-defining perfect fifth. The bass, in music ca. 1915, is thereby deprived of its customary role in strongly defining the chord. In fact, all the voices in Scriabin's sonorities have approximately the same harmonic weight. In physics, the term *equilibrium* is used to describe a situation that has no clear top or bottom, where there is no heavy or light component, and where no element is either supporting or being supported. Since the bass voice no longer provides a clear harmonic foundation, it is also important to make sure that the top voice of each chord is handled very carefully, so that harmonic equilibrium can be maintained among the voices.

Since many listeners tend to hear sonorities downward from the highest voice to the lowest, the uppermost interval of a chord is particularly important. In most traditional sonorities, the topmost interval is usually a third or a sixth, and it is this imperfect consonance that gives the sonority its rich sense of euphony and sweetness. The perfect fourth and fifth, create a strong, dissonant, and harsh sound when they occur in sonorities other than major and minor triads. The top interval of the sonorities in Ex. 10:2 will not be heard as consonances when played at the keyboard.

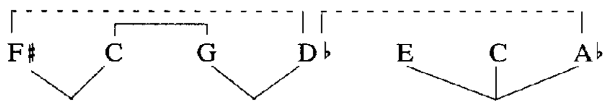
Example 10:2

All the sonorities in Ex. 10:1a-b also contain strong dissonances such as major sevenths and minor ninths (major seconds, minor sevenths and major ninths are considered mild dissonances in this style). Associations with traditional sonorities are eluded by the process of concealing perfect fifths or by avoiding them altogether.

The intervals of the penultimate sonority in Ex. 10:1a are shown in Ex. 10:3 (the diagram proceeds from left to right upward from the bass note). The lower part of this chord is dominated by two tritone groups, while the top portion contains an augmented triad. Though the sonority

contains three perfect fifths, the two fifths (dotted lines) that contain the clearly audible highest and lowest tones are conjunct perfect fifths (the D♭ functions simultaneously as the top pitch of the lower fifth and the bottom pitch of the upper fifth). The two perfect-fifths become tonally ambiguous because of their conjunct relationship and the presence of intermediary pitches.

Example 10:3



The excerpt in Ex. 10:1a also demonstrates how different an octave can sound in this style, and the freedom with which Scriabin handles it. This example underscores the view that the ear must be allowed to decide about the propriety of the octave on a case by case basis. (The employment of octaves here contradicts a number of second-rate twelve-tone treatises, which strongly forbid any use of this fundamental interval.) The second sonority in Ex. 10:1a contains an octave leap A-A in the bass. Because of the tritone-forming pitch D♯ (directly above the leap), the octave here shares a similarity to the octave that occurs in the last sonority of the example. In the final chord of Ex. 10:1a, notice that the uppermost pitch in the left hand is a perfect octave above the E in the middle voice of this sonority. Between this interval however, is a B♭, which divides the octave interval into two tritones. In both the second and last sonorities of Ex. 10:1a, the octave intervals are associated with pitches a tritone away.

In Ex. 10:1a-b, the spacing and doubling of the octave is handled quite differently in the three sonorities marked (♀). In these chords, a major seventh or minor ninth is substituted for an octave, while the actual octave equivalent is transposed upward to its next higher registral position. Two of these sonorities are analyzed in Ex. 10:4.

Compared to the lowest C in Ex. 10:4, D♭ seems like a vital new pitch. Furthermore, starting with this D♭, the higher C also sounds new to my ears. Because I hear the octave doublings in all three of these sonorities as separate pitches, I have re-counted the pitches I actually perceive and entered the result inside the circle of the ♀ markings. I strongly urge every reader, however, to examine these sonorities independently. I am simply reporting what I hear, and do not wish to state my opinion as an unquestionable fact. You will need to come to your own conclusion about how many sounding pitches are actually present in these sonorities.

Example 10:4

Exercises: Using the principles we have discussed above, invent and write-out several progressions in this style. Because of the paramount importance of hearing each sonority and how it continues forward to the next, always work at an instrument. Try out several possibilities and seek to hear as much as possible. Better connections between sonorities will prevail, if, like Scriabin, one or more voices move by step. Either invent the next basic sonority first and then try out the best melodic connections, or create the connections first and then invent the sonority.

I have removed the *Sprechstimme* voice-part from Exs. 10:5-6, which are excerpts from Schönberg's 1912 composition, *Pierrot Lunaire* (certainly, not every reader will approve of this!). Ex. 10:5 is a two-staff reduction of the clarinet part, the violin part and the four-voice piano part from No. 15.

Example 10:5

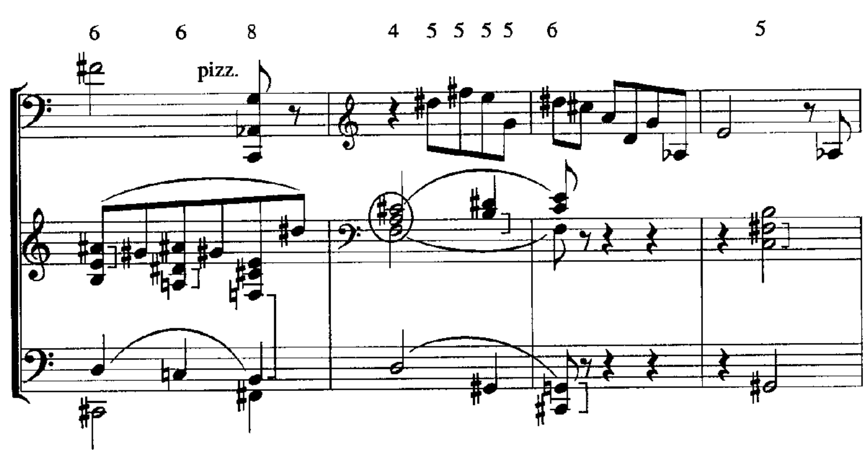
Schönberg-*Pierrot Lunaire*, No. 15

6 6 6 6 6 5 5

Ex. 10:6 is an excerpt from No. 19, showing the cello and piano parts.

Example 10:6

Schönberg-*Pierrot Lunaire*, No. 19



Example 10:6 cont.

As we observed in the Scriabin excerpts, nearly every sonority in Ex. 10:5-6 contains one or more tritones. Further, those few sonorities where tritones are absent nearly all contain an augmented triad. Schönberg's use of tritones and augmented triads here is further evidence for the position (discussed above) that tritones and augmented triads have a similar function in this style. The Schönberg excerpts also contain the same strong dissonances that we observed in Scriabin. It is clear from the excerpt in Ex. 10:6, that the old term *piano accompaniment* no longer applies, since Schönberg almost always states pitches in the piano part that are not simultaneously sounded in the cello. The pitches of Schönberg's sonorities are seldom built in thirds. All of the harmonies here contain four to eight pitches and, for the most part, five or six separate pitch classes are present in each sonority. In Ex. 10:6, only a single octave is found in the piano part. This octave is formed by the bass pitch (F♯) in measure 5; it functions here like an unaccented passing tone. This passing octave is evidence for yet another reversal of traditional harmonic practice. In earlier music, dissonances were regularly justified as non-chord tones, but in this style it is the perfect consonances that require justification.

2. Sonority and Structure (Webern)

Those who attempt to analyze harmony or melody in the works of Anton von Webern [1883-1945] should not attribute unfortunate results to the music, but rather to the questions Webern's music raises. In this regard, I remember well my own analytical difficulties as I prepared the supplement for the tenth edition of Hermann Grabner's *Allgemeinen Musiklehre.*[5] A complete discussion of how Webern applied Schönberg's twelve-tone method and then eventually invented serial methods of organizing sounding registers and dynamic markings go beyond the scope of this text (for more on these aspects of serial music see my supplement to Grabner). At this point, we will discuss several aspects of the structural use of sonority in the first movement of Webern's Symphony, op. 21 (1928). The minimal instrumentation here includes only a clarinet, bass clarinet, two horns, harp and solo string quartet.

Webern's Symphony, op. 21 is based on a twelve-tone row that shows retrograde symmetry on both sides of its central axis; that is, the second half of the row presents the same intervals, backwards, as are presented in the first half (see Ex. 10 :7). (Also note that the six pitches that comprise the second half of the row are transposed by tritone from the first half.) The juxtaposition of these two six-pitch sets [hexachords] produces a complete twelve-tone row that is intervallically identical when played either forward (original) or backward (retrograde). Since the original (O) and retrograde (R) forms are intervallically identical, the inversion (I) and retrograde inversion (RI) forms will also have the same order of intervals. Therefore, this particular twelve-tone row has only two actual forms [O and I].

Example 10:7

There is a double bar line at the end of measure 25 in the first movement. We will consider this section to be the *exposition.*

Ex. 10:8, shows the tone-row forms that are established in the first fourteen measures. These row forms are orchestrated in such a way that some instruments will play a group of several pitches from a row, while other instruments will play only single pitches.

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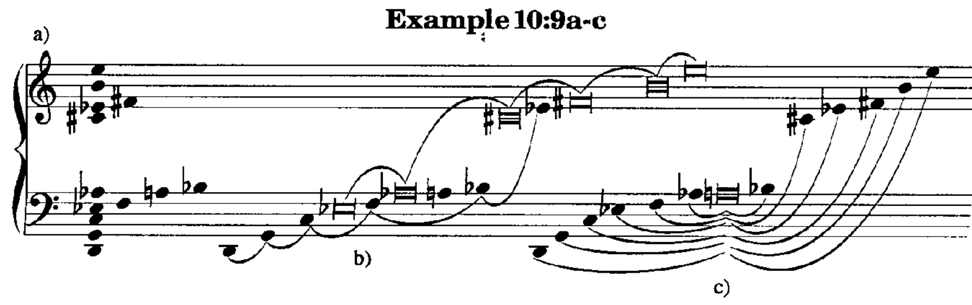
[5] Hermann Grabner, *Allgemeinen Musiklehre,* 10th ed. (Kassel: Bärenreiter-Verlag, 1970).

Example 10:8

Only the notes shown in Ex. 10:9a are employed in the first 25 measures of the symphony. Upon analysis, these notes yield two interlocking series of perfect fourths (see Ex. 10 :9b) [black note heads show the pitches of one series and white note heads show the other series]. Standing outside of both series of fourths is the pitch A♮, which functions as the axis of symmetry for the entire pitch collection (see Ex. 10:9c).

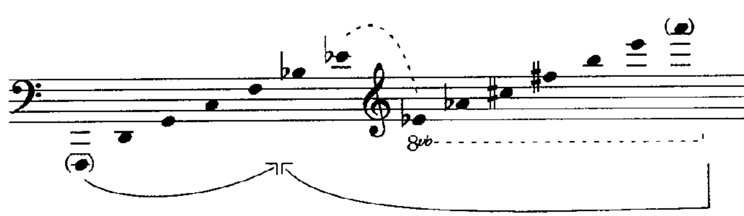
Example 10:9a-c



Note that all twelve chromatic tones are contained in this pitch set. Eleven of the twelve appear only once, but E♭ occurs twice. E♭ appears both a tritone above and below the central A♮, and at the same time it is also the highest pitch in one series of fourths (the sixth pitch, counting upward in the black-note series) and the lowest pitch in the other series (the sixth pitch counting downward in the white-note series). It is necessary to have either both E♭'s present or no E♭'s at all!

It is also possible to see this thirteen-note set as a single series of perfect fourths (see Ex. 10:10). Here the central E♭ drops down one octave so that the series will not end in such a high register. The two A's (in parentheses), which would lie a perfect fourth above and below the series, are combined and moved to the registral center of the pitch set.

Example 10:10

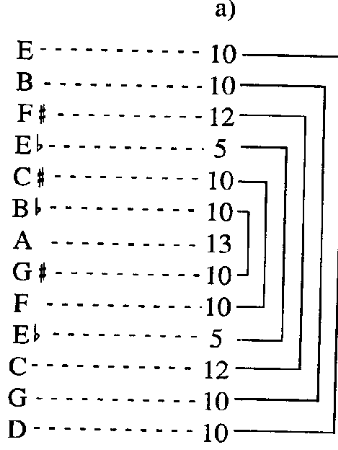


If we appraise this work only according to the principles of twelve-tone construction, Webern's texture fails miserably. It is bad enough that pitch A♭ is directly repeated in the same register (measures 3-4), but then B♭ (measures 5-6) is repeated twice. However, both these pitch repetitions tend to focus our attention, not only on the pitches themselves, but also on the central register of the whole set, much like a moving searchlight highlights a specific object for a short time before passing on. In repeating the A♭ and B♭, Webern highlights the symmetrical structure contained in the complete pitch set by emphasizing the two closest pitches on either side of the central A.

Notice that both twelve-tone rows beginning with the pitch A (Ex. 10:8; top two staves) are rhythmically identical, as are the two rows that start respectively a major third below and a major third above the pitch A (Ex. 10:8; bottom two staves). By this method [double canon in inversion], Webern ensures that all of the pitches above A will receive the same number of entries and durational emphasis as those pitches occurring below A. Ex. 10:11a-b contains a chart of these symmetries as they occur in the first-movement exposition.

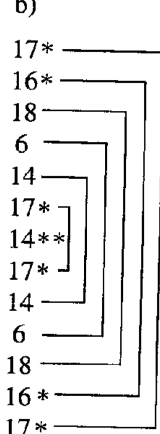
Example 10:11a-b

a)



a) shows the symmetry created by the number of entries of each pitch

b)



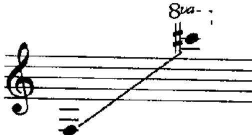
b) shows the symmetry produced by the respective duration of each pitch in quarter-note values

(grace-notes are indicated with *)

Exercises: Listen to a recording of this exposition a number of times. At first, pay very close attention to the twelve-tone rows as they occur; practice recognizing and aurally analyzing them. After you have achieved some success with this, turn your attention to an aural analysis of individual harmonic sonorities and then to the overall sound of the exposition.

After this, listen to the rest of the composition (you may stop counting-off twelve-tone rows now). Listen to and aurally analyze the harmonic changes as they occur; this means that you should pay special attention to registral emphasis. After the exposition, the sounding register of the movement moves upward (the instruments that Webern employs here do not have many lower pitches available!), until we reach the third section of the movement, which lies in a very high register. Ex. 10:12 shows the lowest and highest pitches in the third section. (The lower C in the cello (measure 66a) belongs to the middle section of the movement, because of the repeat sign.)

Example 10:12



3. Classification of Harmony (Hindemith)

Wagner's extensive displacement of the triad by four mildly dissonant four-tone sonorities[6] indicated a clear tendency toward a homogeneous sonority world. The music of Scriabin and Schönberg shows a further extension of this same tendency. Scriabin and Schönberg consistently employed five- and six-tone sonorities constructed from strong dissonances (including either the tritone or the augmented triad). These sonorities present such a high level of harmonic homogeneity and renounce the traditional contrast of harmonic tension to such a degree, that the harmonic style could not be passed on to future generations of composers.

It was only by this kind of sonority treatment, however, that harmonic styles of the Baroque, Classical and Romantic could be overcome (and not just interestingly extended). It was necessary to take such drastic means to contrast the musical tradition controlled by the harmonic ebb and flow of dominant and tonic. Though different in surface textures, the forms of the older styles all relied on harmonic processes which established definite formal goals; this was usually worked out by establishing a tonality, moving to an area of contrasting tonality (or tonalities) and then returning again to the original area. Schönberg's avoidance of consonance and the emancipation of dissonance stands completely outside of this musical tradition, however. Those who rarely listen to Schönberg, do not hear his music as the end-point in a long evolutionary process. Instead, this style is often simply considered dissonant, because every Schönberg sonority is measured against trusted sounds from the past.

Hindemith actually employs far fewer intense sonorities in his music than Schönberg (Hindemith's sonorities allow perfect fifths and major and minor triads). Indeed, Hindemith's music has more to do with the style of Bach and Haydn than Wagner, but nevertheless, it is still perceived to be dissonant. Even though traditional characteristics of contrast between consonant and dissonant areas and between harmonic tension and relaxation are important considerations in the music of Hindemith, these parameters are defined by the composer in a completely new way.

In this section we will discuss the main theses of Hindemith's *The Craft of Musical Composition.*[7] Unlike all earlier studies of chords dealing only with selected sonorities, this treatise covers all possible sonority types and organizes them into six main categories. Hindemith then proceeds to define various methods of harmonic progression.

As Hindemith explains in *The Craft of Musical Composition,* one of the two pitches in every interval functions as the root of that interval. With perfect fifths, all thirds and all sevenths, the lower tone is considered the root, whereas the root of perfect fourths, all sixths and all seconds

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[6] These four, four-tone sonorities avoided the intervals of a minor second or major second (see Chapter Seven; pp. 285-6).

[7] Paul Hindemith, *The Craft of Musical Composition* (New York: Schott Music Co., 1941; rev. 1945).

is the upper tone. With sonorities of more than two pitches, the root is considered to be the root of the *best interval* contained in that sonority.[8] As the root of one sonority moves to the next, the greatest amount of harmonic unity will take place when roots move by step. Hindemith calls the process of moving from one sonority root to the next a *step progression.*

Hindemith made sure that his own music was well-insulated from his theories, however. His distinguished classification of sonorities and his insights about how harmonies should be introduced is certainly significant, but his own compositions tend to disqualify many of these principles. Hindemith [chauvinistically] calls one group of sonorities "a strange riff-raff, exaggerated, brightly colored and unrefined," while major and minor triads are considered "the noblest of all sonorities." Unfortunately, what emerges in *The Craft of Musical Composition* is a sense that certain sonorities are "more important" than others.

Though it might not matter much if we replaced single "exaggerated and unrefined" sonorities with "noble and more important" chords in pieces that have little artistic value, replacing an alleged "exaggerated" sonority with a "more important" chord in a successful work could greatly damage the musical texture, especially in those compositions where the materials are highly controlled. In successful works, nearly every correctly placed sonority has equal stature [regardless of its classification]. Naturally, Hindemith the composer was well aware of this. For that reason, we will turn away from his textbook theories and examine his worthiest legacy—his music.

Ex. 10:13 shows the first two measure of Hindemith's Piano Sonata No. 1 (1934).

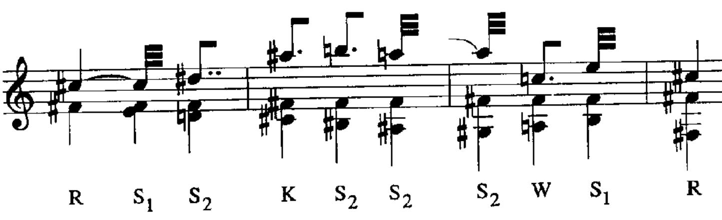
Example 10:13

[8] The best interval is defined as that interval contained within a sonority which is closest to the beginning of the following order: perfect fifth, perfect fourth, major third, minor sixth, minor third, major sixth, major second, minor seventh, minor second, major seventh.

There are eight sonorities in Ex. 10:13. In spite of a short rest, the melody takes on an arch form. Though this phrase opens and closes on a major triad, there are no other triads between these two. Sonorities 2-4 are mildly dissonant. These three chords are then followed by two chords that have an increased level of dissonance. The major seventh (A-G♯) in the fifth sonority is somewhat hidden in the inner voices, but the sixth sonority brings the same major-seventh interval to the foreground, since it occurs between the two upper voices. The penultimate chord, which contains a tritone (A-D♯), does not contain any strong dissonances. For this reason, it sounds milder and less dissonant than the previous chords. Hindemith frequently uses a tritone sonority to decrease harmonic tension as he approaches a consonant cadence chord. (Note the difference between Hindemith's tritone-containing sonority, which acts as a step in the process of resolution, and the traditional tritone-containing dominant-seventh chord, which produces a large amount of harmonic tension.)

A similar kind of harmonic progression occurs in the movement *Lied* from the little played, but remarkably charming set of pieces entitled *Reihe kleiner Stücke* [Series of Little Pieces] from 1927. Ex. 10:14 contains an excerpt from this movement (the coloratura upper voice is omitted here). The harmonic tension curve of this excerpt is executed in two segments—a short [four-sonority] progression followed by a longer and more harmonically intense progression.

Example 10:14



Rather than using the composer's own harmonic classification system, I have found that the following symbols are better suited to sonority analysis in Hindemith's compositions:

R = *Ruheklang;* [stable sonority]; constructed of perfect fifths or octaves

K = *Klanggehalt* [chord containing sonority]; dominated by major and minor triads and their inversions. This category also includes other important sonorities constructed in thirds.

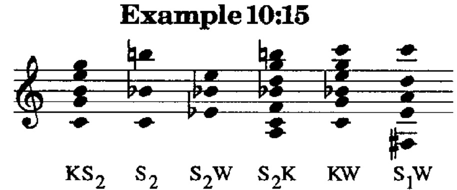
S1 = *Spannung ersten Grades* [first-order tension producing sonority]; sonorities dominated by major seconds and /or minor sevenths and perfect fourths.

S2 = *Spannung zweiten Grades* [second-order tension producing sonority]; sonorities dominated by minor seconds and/or major sevenths.

W = *Klangaufweichung* [tension-easing sonority]; a sonority clearly dominated by tritone or augmented triad.

As is shown in Ex. 10:15, double symbols can also be used to explain a given sonority. When double symbols are used, the predominant element should be written first.

Example 10:15

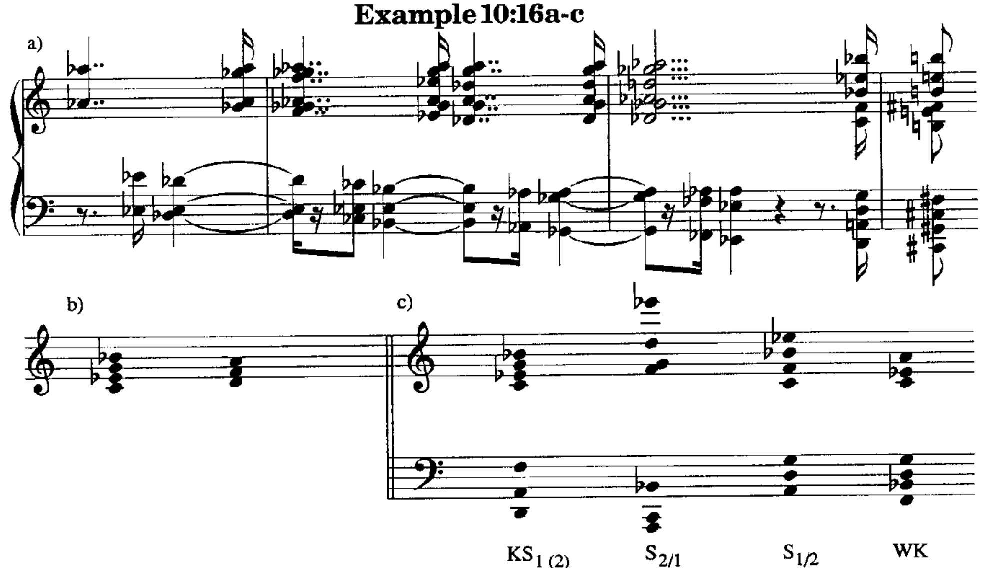


Though this harmonic classification system is useful, I wish to emphasize that it is quite useless to attempt perfecting the system. Even with the possibility of double symbols, different listeners will hear certain sonorities differently. For that reason, specific elements of a particular sonority will seem subjectively weaker or stronger to various individuals, thus creating the possibility of dispute over the use of a particular symbol. Nevertheless, my chord classification system, derived from analysis of Hindemith's music, is more practical than Hindemith's system. For example, Hindemith's Group III Chords ("with seconds and sevenths") do not distinguish between the two levels of dissonance associated with those intervals [major and minor] in spite of the fact that Hindemith treats these two levels of dissonance quite differently in his own compositions. Furthermore, his classification system does not take into account the order and placement of pitches and intervals within a sonority.

Hindemith is very meticulous about the way he orders the pitches within sonorities in his compositions, however. At one of the fortissimo climaxes in the *Temptation of Saint Anthony* from *Mathis der Maler,* Hindemith the classicist is satisfied with a mildly dissonant arrangement of the pitches (see Ex. 10:16a). The pitches of these sonorities are arranged so that major-seconds and perfect-fourths predominate. It is possible, however, to reconfigure the perfect fourths in the penultimate chord of Ex. 10:16a so that the pitches appear to be constructed in thirds (Ex. 10:16b). These same pitches can then be further reconfigured to form quite dissonant sonorities (Ex. 10:16c).

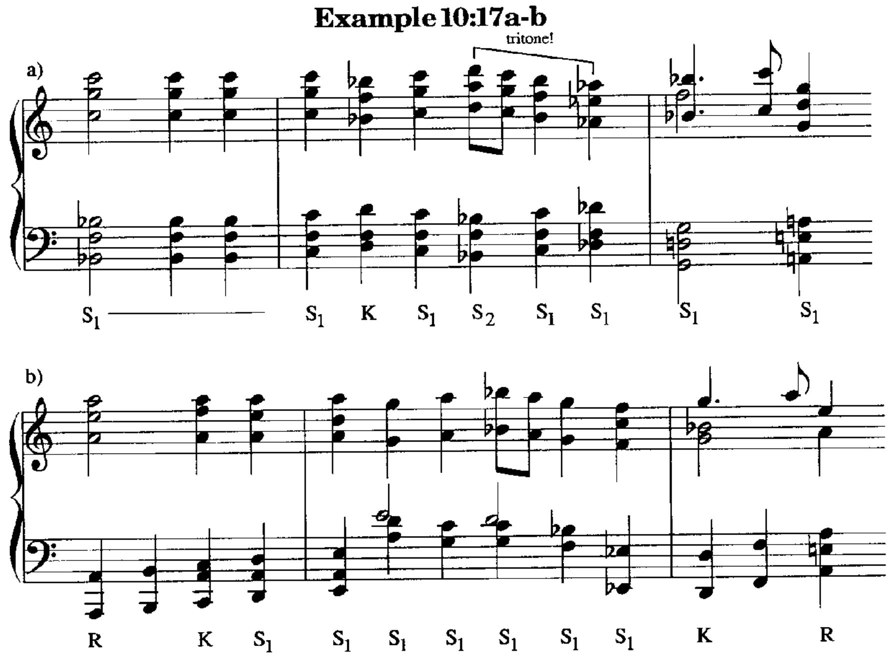
Because each of these reconfigured sonorities has a fundamentally different tension level than the others, my classification system was designed to show multiple levels of harmonic tension and relaxation. In Hindemith's system, all of the structural variations in Ex. 10:16a-c belong to the same chord-group classification (only the position of the root within the sonority would change).

Example 10:16a-c



Ex. 10:17a shows the opening measures to the introduction section of the last song in the 1922-23 version of Hindemith's cycle *Marienleben* [Life of Mary]. Ex. 10:17b shows Hindemith's revised version of the same passage from 1948. The sonorities in the earlier version consist almost entirely of one sonority class (S_1), while the later revised version is a model of increasing and decreasing sonority tension as the phrase passes through several sonority classes.

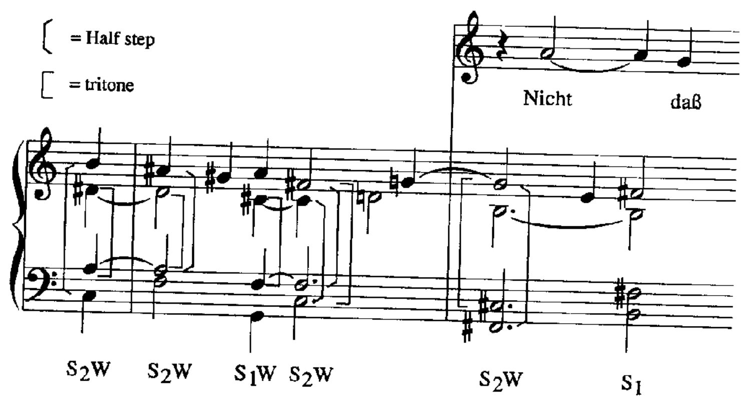
Example 10:17a-b



The revised version, shown in Ex. 10:17b, is, without a doubt, musically convincing and it should not be associated with that pernicious and widespread opinion of Hindemith's music now in vogue; namely, that too many of Hindemith's phrases were fashioned along the same lines after *The Craft of Musical Composition* appeared. It is also claimed that Hindemith's fascination with the same basic tension-curve lacks an element of surprise that might otherwise help his late works to be more successful. The criticism is often heard, that one can tell ahead of time how a late work of Hindemith will sound.

In the piano introduction to the first version of *Mariä Verkündigung* [The Annunciation], it is curious how unified all the sonorities are (like in the music of Schönberg), and yet how distantly related they actually sound (see Ex. 10:18). All of the chords (except the last one) contain tritones, and four of the six sonorities contain major sevenths or minor ninths. In spite of these Schönberg-like unified sonorities, however, the outer voices move in a pattern that is unmistakably Hindemith. The bass leaps three times by perfect fourth against a carefully modulating tonal melody.

Example 10:18



Though it is possible to write compositional exercises in the style of Hindemith, I do not recommend such assignments. Between the works of Hindemith and his German disciples, there are so many pieces written this style, that it is an all but worn-out musical approach. It deserves a well-earned rest.

4. Sonority as Theme (Messiaen)

The idea behind Debussy's *Tierces alternées* [Alternative to Thirds] from *Préludes,* Book II was the construction of musical materials from intervals other than the third. In addition, there are a number of pieces in Béla Bartók's piano-pedagogy series *Mikrokosmos* that share the same

kind of inspiration and material restrictions. A chordal sonority or a particular harmonic element used to construct sonorities can be the central idea behind a composition. In fact, such sonorities or elements can actually be considered *thematic*. There are many examples in twentieth-century music where a particular formal element is transferred to the surface details of a work. Although these elements are not necessarily melodic, they often serve as the basic components from which an entire composition is constructed.

Oliver Messiaen's full-length piano work *Vingt Regards sur l'Enfant—Jésus* [Twenty Aspects of the Child—Jesus] from 1944 is interesting because the musical situation is even more ambiguous. Several of the twenty movements employ single-voice melodies that thematically pervade the musical texture like a Wagner *Leitmotif* (Theme of the Star and the Cross). Several other movements employ the concept of a combined melodic-harmonic theme (Theme of God; Theme of Love).

Standing somewhere between the [large-scale] form and the surface details, Messiaen invents the *Thème d'accords* [Chord Theme], which consists of four, four-voice sonorities (see Ex. 10:19). Each of these chords is quite different in terms of its intervallic structure and sonority content. Of the sixteen pitches within the Chord Theme, only the tones F♯, G♯, B♭ [A♯] and B♮ are used twice. The other eight tones of the chromatic scale are employed only once.

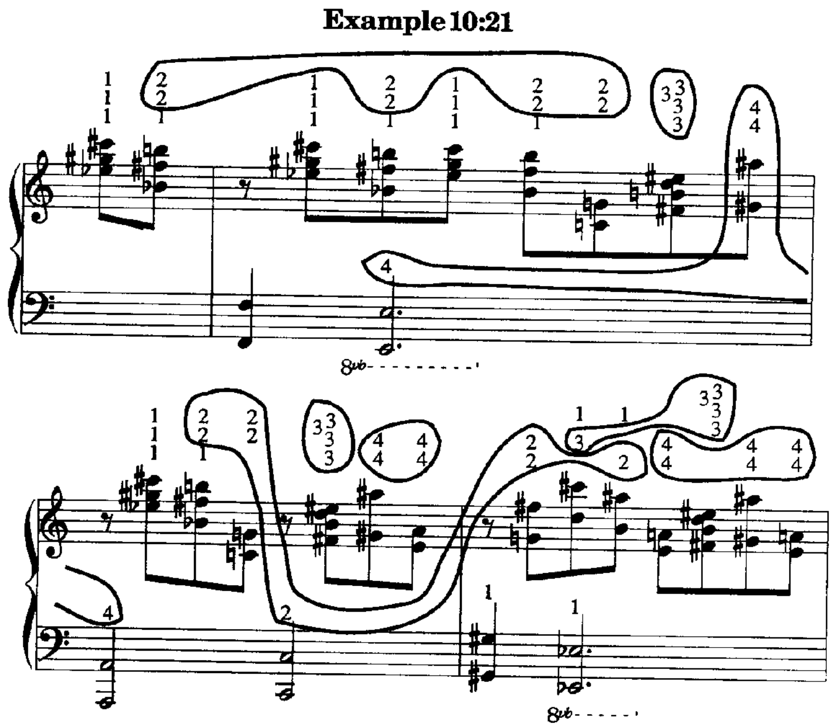
Example 10:19

These four chords are treated like thematic material throughout the entire composition. In movement XIV these sonorities simply appear in a rhythmic setting without further manipulation (see Ex. 10:20a). These same sonorities also provide materials for other kinds of textures, where the Chord Theme can no longer be heard. In movement VI, every other chord of the sonority-theme is used to provide pitch material for an arpeggiated texture (Ex. 10:20b). The *Thème d'accords concentré* [Concentrated Chord Theme] occurs in movement IV, where two of the sonorities are counterpointed against the other two (Ex. 10:20c); in movement XVII, these counterpointed sonorities appear against each other in a different arrangement (Ex. 10:20d).

Example 10:20a-d

Ex. 10:21 contains an analysis of an excerpt from movement XIV. This excerpt shows that the processes of setting pitches horizontally or vertically in the twelve-tone method are quite similar, since the pitches of the Chord-Theme sonorities partially lie outside one another in the horizontal dimension.

Example 10:21



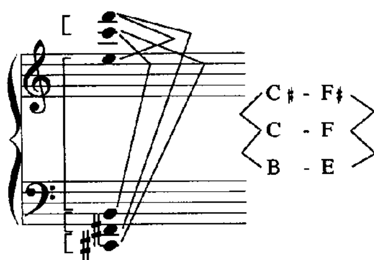
5. Discussion of Selected Twentieth-Century Sonorities

1.) The first sonority we will examine comes from the middle section of Hindemith's composition, *Klaviermusik* (No. 1 from *Übung in drei Pieces* [Studies in Three Pieces], 1925). In this section of the piece, there are long two-voice sixteenth-note runs, marked *ppp*. Twelve times, like the crack of a whip, these soft runs are interrupted by a single chord marked *ff* (Ex. 10:22). This percussive use of single sonorities occurs frequently in the music of Hindemith, Bartók and others.

The predominance of the perfect fourth in this sonority foreshadows Hindemith's preferential use this same interval in the sonorities of his later works. This intense sonority, with four strong dissonant intervals (formed by three perfect fourths a half-step apart), would not be typical of his later works, however.

My harmonic symbol S_2K offers only a negative description, since the third-sixth component (E-C) of this sonority is hidden in the inner voices and does not take an active foreground role in the sound of the chord.

Example 10:22



2.) On page 69 of Alban Berg's *Lyrische Suite* [Lyric Suite] for string quartet (1926), the four instruments repeat their respective double stops ten times in a unison rhythm at *fff* (Ex. 10:23a). This creates an eight-voice sonority which consists of a series of half-steps interrupted by only one minor third (Ex. 10:23b).

Example 10:23

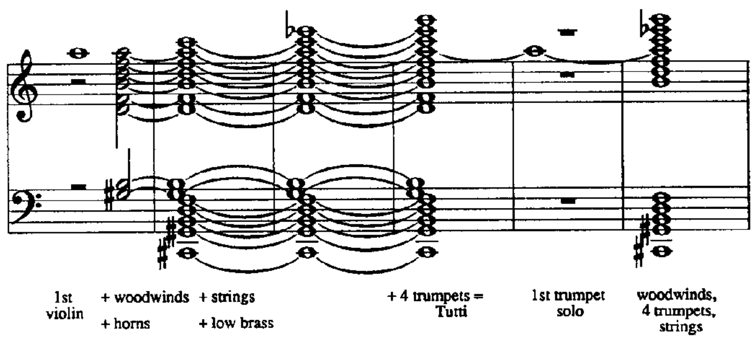
Many neighboring pitches sounding together in the same register tend to lessen the aural impact of the individual interval qualities within the sonority. In other words, the dissonant effect of such a sonority is weakened. Since major sevenths or minor ninths are the strongest dissonant intervals, they can only be weakened by adding other pitches to the sonority. (In the third scene of the third act in Berg's *Wozzeck,* where Wozzeck's hand becomes covered with blood, a major seventh drills itself unabated into the ear throughout the entire scene.)

3.) Another sonority is found a few measures later in the *Lyrische Suite.* This spot is also formed by a repeated rhythm as in (2) above. This time, however, the cello plays the pitch E twice alone, then to the E it adds a double-stopped G which is also repeated; following this, the viola enters above the on-going cello double-stop with a repeated D♭ before adding a double-stopped B . . . etc. Ex. 10:24 shows the resulting eight-voice sonority, built upward from the bass; the interval content of this sonority is indicated below the example. This chord has a more intense impact than the sonority in 2.) above. This holds true in spite of the fact that this later sonority: a) has the same number of pitches; b) its pitches are spread out over a much wider range; c) the interval content is much weaker (there is only one perfect fifth; all the rest of the intervals are thirds and sixths); d) the note-for-note entries of each ascending pitch tends to weaken the available strong dissonances. The listener will hear this sonority as radiant and glorious rather than harsh and strong. The impact of the third-sixth component is pronounced as compared to Hindemith's sonority in 1.) above.

Example 10:24

4.) At this point, we will turn to a sonority in Gustav Mahler's Tenth Symphony. In the only movement actually completed by Mahler, two single tutti climaxes, marked *ff,* directly follow one another. The first of these two is an A♭-minor triad in a conspicuously high register. As is shown in Ex. 10:25, the second climax (measure 4) is brought to completion with the entry of the trumpets after a passage featuring woodwinds, horns, strings.

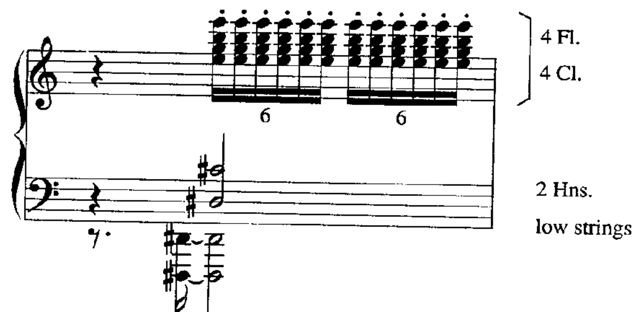
Example 10:25



The climax chord in measure 4 is produced by adding four thirds (F-D-B-G♯) under the unison A played by the strings at the beginning of the excerpt. In addition three thirds are successively added above this A (C-E♭-G). The entire second climax sonority is constructed from nine separate tones (the total chromatic lacks only the pitches E, F♯, and B♭). This type of straightforward sonority construction in thirds would later dominate the music of Berg. The stacked-third chord sounds extraordinarily exciting, wild and threatening, however, and it creates an atonal outburst in the midst of a broadly tonal movement. It is especially shocking after the previous A♭-minor tutti. Each of the sonorities in this example takes on a particular character from its immediate environment. The third sonority sounds somewhat less intense, since it immediately follows the noisy eight-tone sonority (sonority 2). The strong dissonant relationship between the outer voices is also a factor in the sound intensity here. In the first sonority, the G♯ (stopped-horn) sounds against the high A, whereas the C♯ bass sounds against the high C in the second sonority, thereby enlarging the interval between top and bottom of the sonority.

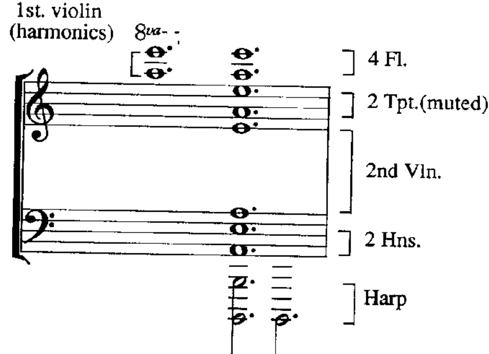
5.) We shall now discuss the effect of register on sonority, by looking at two chordal sonorities in Berg's opera *Wozzeck*. The first chord appears when the doctor sings the line *"Wozzeck, er kommt ins Narrenhaus"* [Wozzeck is going to the mad-house] on page 133 of the score. As is shown in Ex. 10:26, this harmonic structure consists of two parts that have no connection with each other in terms of register or articulation. It is as though Berg employs this sonority to express loss of reason. A high and dense E-minor triad is repeated staccato against a low and sustained minor seventh. Placing the clarinets an octave lower than the flutes here would have destroyed the musical effect.

Example 10:26



The second chord is found at the end of the second scene in the third act. In this scene, Marie is dead and a fleeting bassoon motive is played. As Wozzeck silently drowns himself, empty perfect fifths covering five octaves sound in the orchestra (see Ex. 10:27). Below this stack of fifths, the harp continues to play its lowest pitch, which has sounded like a drum beat throughout the entire murder scene. The upward extension of the empty fifths toward the borders of hearing is a spiritually precise musical gesture that expresses the hopelessness of Wozzeck's situation.

Example 10:27

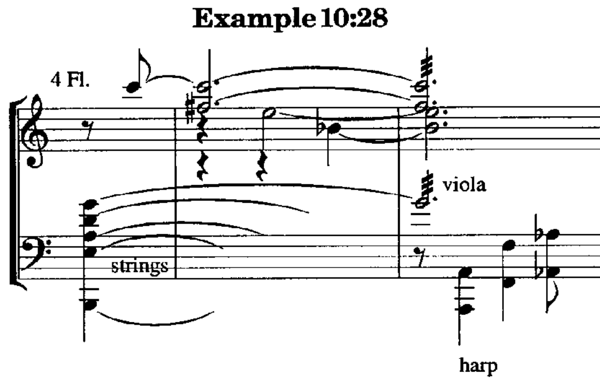


6.) An intended sonority effect can either be clarified or obscured through specific instrumentation. In order to discuss the relationship between sonority and instrumentation we will look at two more passages in *Wozzeck* and a passage in an orchestral song by Hans Werner Henze.

First we will discuss a spot in the fourth scene of the first act in *Wozzeck* (see Ex. 10:28). Here, the strings play a low-register quartal sonority. This would be usual harmonic practice for Hindemith, but Berg seldom uses sonorities without thirds. (For that reason this sonority calls attention to itself.) Against this dark empty sound, the four flutes enter with a warm and glowing sound in double tritones. The separation of the two sonority groups is perfectly understandable in this spot. Had Berg set the F# against G in the strings, a major-seventh would have appeared

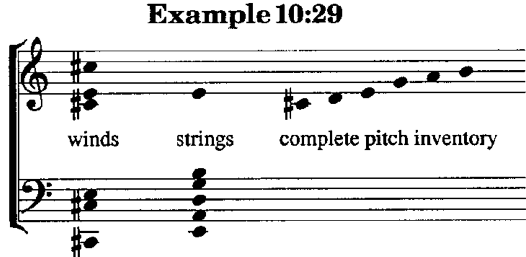
in the top voice of the string texture, thereby bringing this interval to the foreground and intensifying the sonority. On the other hand, had the fourth flute exchanged its B♭ with the viola's G, the effect of the double tritones would have been weakened. The instrumentation is explained by the text: Wozzeck sings, *"Dunkel ist, und nur noch ein roter Schein im Westen"* [It is dark, but there is yet a red glow in the west].

Example 10:28



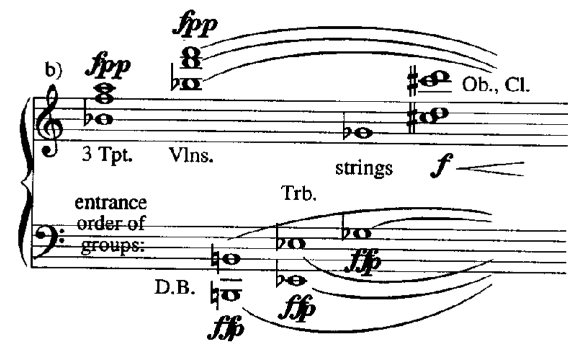
Now we will look at the way Henze orchestrated the first sustained orchestra sonority after the unaccompanied recitative of the singer in *Neapolitanische Lieder* from 1957 (see Ex. 10:29). Had Henze exchanged or instrumentally mixed the pitches of the winds and strings, the guitar entrance would have been obscured (the strings play the pitches of the open strings of the guitar) and the charming instrumental contrast of tension in the complete sonority would have been lost.

Example 10:29



Instrumentation can also provide a special intensification of sonorities. In a subsequent passage in the fourth scene of the first act of *Wozzeck,* Wozzeck sings "Es ist, als ginge die Welt in Feuer auf" [It is as though the world has gone up in fire]. Berg sets this text by introducing instrumental groups one at a time until an eight-tone chord is established (see Ex. 10:30a). The five first instrumental groups enter *fpp* or *ffp*, but a crescendo takes place only after the entrance of the last woodwind group then first after the entry of the last woodwind group. However, this places the minor seconds (C#-D), entering *f*, clearly in the foreground (see Ex. 10:30b). Naturally, this intense final entrance would have appeared much weaker, if the oboes and clarinets had played pitches of the sonority that were already sounding (see Ex. 10:30c).

Example 10:30a-c



Example 10:31

The sonority shown in Ex. 10:31a is a major seventh with an intermediate perfect fourth and tritone, and the sonority shown in Ex. 10:31b is a minor ninth with an intermediate perfect fifth and tritone. Neither of the two sonorities contains third-sixth components. These sonorities predominate many of the works of Webern and composers of the Kranichsteiner School, who base their compositional techniques on Webern. Though these sonorities could be labelled S_2 W K (if they occurred in a Hindemith work), such labelling looses its meaning when an entire composition is based on such harmonies. A harmonic labelling system can only represent something significant when a variety of chord types connected to one another.

It is possible to use terms such as *chord-containing sonorities, tension* or *strongly dissonant sonorities, weak sonorities* and *stable sonorities* with music by composers such as Hindemith, Berg, Henze and many younger composers of the present, because these artists tend to employ a large number of sonority types in their works. This is partly the way things have always been, and partly a return to earlier practices.

Before we can accurately discuss single sonorities, however, we must seek out the sonority palate that is common to an individual work. It is the palate of harmonies in a work that sets the boundaries for the ear and which creates a measuring stick against which we can judge single sonorities.

Table of Functional Symbols

The following is a brief explanation of the analytical symbols used in this book:

Symbol	Explanation
T, S, D	These upper-case letters stand for the primary harmonic functions (tonic, subdominant and dominant) in major keys; analogous to I, IV and V in the Roman-numeral/figured-bass system.
t, s, d	These lower-case letter stand for the primary harmonic functions (tonic, subdominant, and dominant) in minor keys; analogous to i, iv, and v in the Roman-numeral/figured-bass system.
$T_{4\,3}$ t_5 $T_{1\,2\,3}$	Subscript numbers following the functional symbol indicate which chord factors and/or non-harmonic tones appear in the bass.
D^{565} T^{43} t^{78}	Superscript numbers indicate melodic events in one of the upper voices.
T^3 D^5 t^8	Superscript numbers may also refer to the chord factor present in the top-most voice.
D^7 S^6 T_7 D^9_7 D^6_4	Superscript and subscript numbers also indicate added tones or chord-factor substitutions in the upper voices and bass, respectively.

Small arabic numbers (without modifiers) always stand for chord factors or non-harmonic tones which are diatonic to the major or minor key in force. Therefore, the ninth of the D^9, when it appears before t, will be a minor ninth; the ninth of a D^9 before T will be a major ninth. Similarly, the minor sixth is implied in the progression $D^{6\ 5}_{4\ 3}$ t, and the major sixth in the progression $D^{6\ 5}_{4\ 3}$ T.

Symbol	Explanation
$D^7_{5>}$	The symbol ($>$) indicates that the chord factor is chromatically lowered one half-step (in this case, the fifth of the dominant chord).
$S^{6<}_5$	The symbol ($<$) indicates that the chord factor is chromatically raised one half-step (in this case, the sixth above the subdominant chord).
$D^{6>\ 5}_{4\ \ \ 3}$ T	Despite the major-mode implication of the resolution chord, the sixth above the dominant is chromatically lowered.
$T\underline{\ S\ T\ }\ T_{1\,5\,1}\overline{\quad}$	The line after a functional symbol indicates that the root tone of that function holds through in one or more voices (similar to a pedal tone).
s^n	Neapolitan-sixth chord (= $s^6_{1>}$).

$\not{D}^{7}_{5}$ $\not{D}^{9}_{7}$	The slash through the symbol indicates that the root-tone of the chord is not present in the sonority.
$\not{D}^{v}$	The diminished-seventh chord [vii^{o7}] which resolves to t or T. (In Wilhelm Maler's system, this symbol appears as D^{v}.)
	Note: $\not{D}^{v}$ should be numbered: 1,3,5,7 above the leading-tone, whereas Maler's D^{v} should be considered a dominant-ninth chord with an omitted root; therefore its members are numbered 3,5,7,9 above the dominant.
${}^{t}\not{D}\!\!D^{v}$	The diminished-seventh chord [vii^{o7}/V] which resolves to D or d (In Maler's system this symbol appears as $\not{D}\!\!D^{v}$).
(D^{7}) Tr T $(s^{6}_{5}\ D^{6\ 5}_{4\ 3})$ Tr	Parenthesis around symbols or groups of symbols indicate that these functions tonicize the secondary key area which follows.
Tr ← (D^{7}_{5}) S_{3}	The arrow pointing backwards from a functional symbol in parenthesis indicates that this function is related to the key of the previous function.
(D^{7}_{3}) [Tr] S_{3}	The sonority within the brackets [ ] show the expected functional goal of resolution; however, the chord below the bracketed sonority is substituted for this expected goal.
$\not{D}^{\$7}$	The leading-tone diminished-seventh chord in major [vii^{ø7}]. An important chord in the Classical period. (In Maler's system this symbol appears as $\not{D}^{9}_{7}$.)
D^{9}_{7} T and D^{9}_{7} t	This sonority occurs both as suspension figure and a sonority; however, the latter became a discrete chord only in the Romantic era. The symbol $\not{D}^{9}_{7}$ (dominant-ninth with an omitted root tone) should not be used for analysis of music before the nineteenth century .
vii^{o} and vii^{ø7} in major; ii^{o6} and ii^{ø7} in minor	Useful in labelling the middle of sequences. Otherwise root-position diminished triads and half-diminished seventh chords are quite rare (especially in Baroque-era works).
Tr; tR	The relative minor of a major tonic triad; the relative major of a minor tonic triad.
Tg, Sg	(*Gegenklang*) counter-relative chords (rare).
tG	The major counter-relative of a minor tonic chord (important in deceptive cadences).
TR	The major relative of a major tonic chord.
tr	The minor relative of a minor tonic chord.
tg	The minor counter-relative of a minor tonic chord

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